

# RELIGION AND THE DECLINE OF FERTILITY IN THE WESTERN WORLD

Edited by  
Renzo Derosas  
Frans van Poppel



# Religion and the Decline of Fertility in the Western World

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Renzo Derosas and Frans van Poppel

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## INTRODUCTION

### 1. RELIGION AND THE DECLINE OF FERTILITY IN THE NINETEENTH AND TWENTIETH CENTURIES: THE EMERGENCE OF A RESEARCH ISSUE

During the last quarter of the nineteenth century, almost all European countries began to experience a decline in their fertility level. This transition was recognized as crucial almost from its inception, and provided a strong stimulus for the scientific study of fertility: until then there had been no apparent trend toward a decline in fertility (with the exception of France) and differentials in fertility had not been very conspicuous (Lorimer 1959: 142). Handbooks and articles on population – mainly of a statistical demographic nature – took up the question of falling birth rates and its causes. The bases for these studies were the routinely-collected population statistics that made it possible to observe fertility trends for administrative regions. By identifying administrative regions that differed in the timing and extent of the fertility decline, researchers hoped to find explanations for the fertility transition. Municipal statistical offices in larger cities such as Berlin, Vienna, Budapest and Amsterdam were able to obtain more diversified data than were generally collected by national agencies, and offered social scientists the opportunity to carry out more intensive investigations of “differential fertility,” that is of variations in fertility of socially defined subpopulations, or categories defined by occupation or rural/urban residence. Somewhat later, the national statistical agencies started to collect and publish comparable data at the national level.

In religiously heterogeneous countries, statisticians concerned with the decline of fertility identified religious differentials in fertility already at an early stage of the transition. The bases for their conclusions were comparisons between published birth rates of areas where the population was overwhelmingly Protestant – in Germany, The Netherlands and other countries – with those in

overwhelmingly Catholic areas in the same country (Knodel 1974: 132-133). The Dutch economist and statistician Anthony Beaujon (1853-1890), using marital fertility rates for Dutch provinces in the period 1860-1879, pointed to the absence of voluntary family limitation in the Catholic provinces of Noord-Brabant and Limburg as early as the 1880s (Beaujon 1888: 90). A more direct approach consisted of calculating separate fertility indices for each religious group in a country or in smaller administrative areas. Some German state statistical bureaus had already started to publish data on the number of births according to the parents' religious affiliation from the 1840s on, and in combination with census data on the religious composition of the population this made it possible to calculate fertility measures with which religious differentials could be examined (Knodel 1974: 136-137). For The Netherlands, comparable data became available on a national scale from 1906 on. In other countries, in particular in Middle Europe, data on fertility by religion were published from the same period on (see, for example, for Hungary, Szél (1936), and for Bulgaria, Michaykoff (1936)). According to Krose (1936), in the 1930s of all 28 European states only Belgium, France, Great Britain, Russia and Spain did not publish vital statistical data classified by religious affiliation. In most of the countries differences in the level of fertility of the major religious groups (Roman Catholics, Orthodox Catholics, Protestants, and Jews) were evident at any time between the start of the fertility transition and the 1930s. Jews had the lowest fertility; Roman Catholics the highest.

The results of the demographic studies became the subject of a lively debate from the beginning of the twentieth century on. Knodel found out that in Germany alone at least two monographs were devoted exclusively to the topic and that many others included substantial sections considering religious differentials and their implications. Several of these studies were of a polemical nature (Knodel 1974: 132, 141). Catholic authors, for example, wanted to demonstrate that the higher Catholic fertility rates were an indication of their more vigorous fight against Neo-Malthusianism. Protestant authors argued that this was mainly due to the different social and economic circumstances in which Catholics lived. The vehemence of the discussion was partly due to a growing polarization among religious groups, and between the religious groups on the one hand, and the Liberals and Socialists on the other. From the last quarter of the nineteenth century onward, Protestants and Catholics organized themselves into separate factions in which there was a strong link between political power, social organization and individual behavior. This development, known as compartmentalization or pillarization, was observed in countries such as The Netherlands, Germany, Switzerland and Canada. Orthodox Protestant and Catholic political parties with religiously inspired programs were formed and

gained political power in the first decade of the twentieth century. Catholic and Protestant views on the family, sexuality and the position of men and women then started to determine local and national policies. There were differences and competition between the various religious groups, but on other issues they were united in opposition against the secularized Liberal and Socialist parties. Thus, in homogenous Catholic or Protestant countries such as Belgium and Italy, polarization of society along ideological lines could be observed as well. Differences in fertility were considered an important factor in the prospects for an increase in the political power of the various religious groups and, as a consequence, outcomes of such studies were often politically interpreted. That happened, for example, when the German economist Julius Wolf (1862-1937) showed that regions with high percentages of Socialist votes had undergone the strongest decrease in birth rates whereas regions with high percentages of votes for the *Zentrum* (confessional party) had the smallest decrease in birth rates (Wolf 1912a). In another publication, Wolf (1912b: 230-236) even tried to find out whether the Catholic minority parties in Switzerland and The Netherlands had any prospects of attaining a majority position in the foreseeable future as a consequence of the fact that the decline in Catholic fertility rates lagged behind that of the Protestants. In the first decades of the twentieth century, many Dutch Protestants still feared that Roman Catholics would ultimately attain a majority position (Van Heek 1954: 150-151).

Gradually from about the 1930s on, a more objective discussion of the role of religion became possible. Specific surveys were held in various countries, which allowed more sophisticated analysis of the relationship between religious affiliation and fertility (number of children ever born, parity etc. For an overview mainly of US studies, see Bouvier and Rao 1975: 2-3) and census volumes included detailed tables specifying the link between fertility and religious affiliation. Researchers stressed again and again that they were not prompted by political, religious or any motives other than scientific in undertaking this work (see the preface by H.W. Methorst, Director of the *International Statistical Institute* from 1913-1948, in Sanders 1931).

The Indianapolis Study, carried out in 1941, is usually considered the most outstanding survey of religious differentials in fertility. The intention of the study was to investigate “the network of cultural and personal factors inducing some people, more than others, to resort to family limitation” (Whelpton and Kiser 1946: v). In particular, in the Intensive Study of the Household Survey, specific theoretical approaches were tested regarding the way in which religion affected reproductive behavior (Freedman and Whelpton 1950). In the 1950s and 1960s numerous surveys were held in Western countries that focused on religious differences in fertility and on the factors causing these differences (for

overviews, see Bouvier and Rao 1975: 2-5; Gérard 1970: 1-44). A thorough systematic study of the relation between religion as an intrinsic aspect of culture, and fertility was published in the 1950s (Lorimer 1954: 183-217).

From the middle of the 1960s on, the family in Europe and other western countries underwent a revolutionary transformation. During what is now commonly called “Europe’s second demographic transition”, childbearing was postponed and fertility declined to very low levels (Lesthaeghe 1995; Van de Kaa 1987). Most Western countries lost their interest in the relationship between religion and fertility: for the few countries for which this kind of information was still collected in surveys, only very small differences in fertility between religious groups could be observed (United Nations 1976: 52).

## 2. THE EUROPEAN FERTILITY PROJECT AND ITS CRITICS

Theories and explanations of the transition from high to low birth rates remained a dominant issue and subject of debate long after the fertility transition in the West was completed. The question as to which specific social changes brought about the reduction in fertility was motivated by theoretical interests as well as by policies directed at the fertility decline. In the early 1960s, Ansley J. Coale initiated a project at the Office of Population Research at Princeton University to reconstruct the course of the fertility decline in nineteenth- and early twentieth-century Europe. By constructing detailed time-series on fertility and demographic and socioeconomic characteristics for more than 700 provinces in Europe, it was possible to document the levels and changes in fertility during the period of the fertility decline and to test theories about the association between specific indicators of social change and fertility decline.

Classic theories about the causes of the fertility decline had hypothesized that socioeconomic modernization – the spread of urbanization, increases in literacy, and increased costs of raising children – was the driving force. As the European Fertility Project developed, the emphasis shifted from the traditional socioeconomic explanation of the fertility decline toward a regional-cultural one (Friedlander, Okun and Segal 1999). The books and articles that came out of the European Fertility Project to varying degrees presented the view that cultural, that is ethnic, religious or linguistic boundaries, hindered or promoted the use or legitimation of the idea of family limitation and/or the change to the small family norm. In particular, in the contributions to the summary findings by Anderson (1986), Watkins (1986; see also Watkins 1991), and Lesthaeghe and Wilson (1986), the explanatory power of cultural and regional variables on the level of and the changes in fertility is stressed. Regions sharing a common culture, distinguished by a long-established political division, different

languages or dialects, showed different nuptiality and fertility patterns, as did regions characterized by an early or late start of the secularization process and by a specific religious composition. There thus took place a change in theories to explain when and where fertility fell. In a highly influential article, Cleland and Wilson (1987) argued that it was the spread of novel ideas rather than changes in material conditions that were the basic factors behind the fertility decline.<sup>1</sup>

In the years that followed, the approach followed by the European Fertility Project was seriously criticized. In particular the role assigned to cultural factors was debated.

Critical remarks, downplaying the role of cultural factors, were made by Brown and Guinnane (2002, 2003). Brown and Guinnane have made serious reservations about the statistical data and statistical methods underlying the European Fertility Project. Their argument is that the choice of particular units of analysis and of particular statistical methods has led to an underestimation of the importance of economic and social change in causing the fertility transition and to an overestimation of the role of innovation and diffusion processes driven by similar attitudes and communication networks. In the Princeton project, information on fertility and possible explanatory variables was collected at the level of administrative units. Brown and Guinnane argued that the aggregated data referring to very large units of analysis masked considerable internal heterogeneity. As a consequence, the standard errors of the regression coefficients of the selected independent variables – such as religion of a region, or socioeconomic characteristics – will be much higher, leading to the unjust rejection of hypotheses. What is even more important is that the grouping of administrative regions used in the Princeton project was “produced by the historical processes that led to the regional distribution of religion, urbanization and other potential explanatory variables.” Variation in Catholicism was mostly at the provincial level, but variation in urbanization was not. Aggregation at the provincial level thus implies that little of the variation in Catholicism but considerable variation in the degree of urbanization is lost. The spatial organization of German society thus had as a consequence that the high degree of aggregation in the Princeton project was relatively more likely to downplay factors such as urbanization and was less likely to underestimate the impact of Catholicism. The authors suggested that a similar problem might have affected other countries involved in the Princeton project. Brown and Guinnane argued that “large-scale studies such as the European Fertility Project have a perspective that makes it difficult for them to dig into the details of the history of any country or region” (Brown and Guinnane 2002: 47). Individual-level data are therefore better suited to identify the effect of a given environmental variable.

The evidence that the populations of adjacent regions “with similar religions and languages tended to experience fertility decline together” provided the main stimulus for the publication of *The European Experience of Declining Fertility*. Unlike Brown and Guinnane, the authors of the essays in this book argued in favor of a more prominent place for culture in the explanation of fertility change (Tilly 1992: xi-xii).

The essays in *The European Experience of Declining Fertility* were not only characterized by the stress that was laid on cultural factors responsible for the fertility decline in Europe, they were also very skeptical about the methods used and the objectives mentioned in the Princeton studies.<sup>2</sup> The fact that in the Princeton studies data were collected at the provincial level, rather than from smaller units such as the parish and the household, made it impossible in their opinion to answer all the questions about personal and social behavior in which historians were interested. A second point of criticism relates to the exclusive use of quantitative data, which made it difficult to look for causes of the fertility decline at the level of intentional behavior. Gillis, Tilly and Levine (1992: 3-4) stressed the importance of studies in which micro-processes and small-scale settings are central. In the same volume, Alter (1992: 21) argued that the European Fertility Project was not designed well enough to examine a cultural hypothesis: the database did not include indicators of culture and mechanisms through which linguistic regions could determine the timing of the fertility decline were not discussed.

A fundamental and often comparable critique of the dominant approaches of the fertility decline has also been developed by anthropologists, in particular by Greenhalgh (1995) and Kertzer (1995, 1997). According to Greenhalgh (1995: 12-13), the aim of fertility studies is to contextualize reproductive behavior in social, economic, political and cultural terms. “Historical contingency” and “societal specificity” are central concepts in their approach. What the anthropological studies have in common is that they focus on the experiences of individuals and couples in particular communities and not on demographic aggregates (Friedlander, Okun and Segal 1999). They emphasize the relationship between the fertility transition and the wider social system, political institutions and the family economy. They stress the connections between the changes at the local level and those at the regional and national level, and use both quantitative and qualitative research methods and materials. What is very specific to this approach is that it does not break down reproductive life into distinctive categories such as fertility, marriage and mortality (see Garrett, Reid, Schürer, and Szreter 2001: 425-433 for a very convincing proof of the need to include male and female age at marriage and mortality at the individual level in an analysis of the fertility decline in nineteenth-century England). Rather it sees



reproductive life as a whole. The approach does not make an artificial distinction between political, economic or cultural factors. In particular, the way in which many demographers use culture, as just another statistical category and as such comparable to occupation or rural/urban residence, has been severely criticized (Greenhalgh 1990: 13).

Kertzer (1995: 44-46), especially in his contribution to *Situating fertility*, has delved deeper into the way the concept of culture has been used by demographers. He argues that to measure the cultural factor very often features are selected that are not chosen on the basis of a theory linking culture and demographic behavior, but simply because it is a variable for which statistical information is available: language, ethnicity, region or religion. Kertzer points to the fact that very often culture, social organization and social institutions are all subsumed under the single heading of culture. In particular, by referring to the role that religious institutions, practices and beliefs have played in shaping people's reproductive behavior, Kertzer shows the need to sort out the role of culture in the narrow sense of the word from the part that is linked to social organization. Kertzer is sensitive to the problem with which those working in historical demography are confronted: the difficulty in operationalizing the cultural dimension. Identifying the mechanisms through which political and economic forces, and social organizational structures and cultural norms, operate on people's reproductive behavior is needed to make progress in understanding demographic behavior in the past.

Elsewhere Kertzer (1997: 137-138) has argued that coping with culture in explaining demographic behavior does not imply that cultural variables cannot be integrated into the usual micro-models with which demographers try to explain the demographic behavior of individuals. "Cutting culture down to size, conceiving of culture as theoretically divisible into a set of measurable entities, and going out and measuring them" might enrich the dominant paradigm of demographic research. This does not imply that those who engage in such kinds of analyses are not obliged to start from theoretically relevant concepts instead of the easy availability of existing data. Yet the culture concept also has dimensions that are much more difficult to cut up and measure. In referring to Greenhalgh, Kertzer argues for an approach to demographic explanation that pays serious attention "both to history and historical contingency and to political factors that shape behavior." The cultural sphere is "interwoven with, both shaping and being shaped by, political and economic institutions, as well as by kinship and other social organizational structures" (Kertzer 1997: 152-153).

### 3. NEW THEORIES ON THE RELATION BETWEEN CULTURE, RELIGION AND DEMOGRAPHIC BEHAVIOR

Building on the growing body of empirical research on the influence of cultural variables on demographic behavior and on the theoretical work by Goldscheider (1971), Kertzer (1995, 1997), Greenhalgh (1995) and others, McQuillan (1999a, 1999b, 2004) tried to identify the elements of culture that might be considered critical *for* and the mechanisms *through which* culture influences demographic behavior. His ideas focused in particular on the way in which religion might shape demographic behavior. McQuillan (1999b: 8-15) distinguished three elements in the religious influence on demographic behavior: religious teachings touching directly or indirectly on demographic issues (including not only norms and values on the permissibility of contraception but also on the value of children, ideas about sexual relationships, parental authority, gender relations, etc.);<sup>3</sup> social organizations that are able to transmit cultural messages to people and try to promote compliance to their rules; and the degree to which religious values are part of the personal identity. McQuillan stresses that in studying the effects of religion in a specific setting it is necessary to examine how the religious influences are mediated by the economic and political setting of the society in question.

McQuillan's theoretical framework was mainly developed to study the relationship between religion and reproduction in historical populations, and has been strongly inspired by recent research in (historical) demography, anthropology and history. It is interesting to note that after a period in which the relation between religion and family was neglected, from the 1990s on epidemiologists, sociologist and psychologists too have developed new, more encompassing theoretical and conceptual frameworks and appropriate analytical models to describe the specific linkages and mechanisms through which religion, health, family and fertility are connected (see, for example, Pankhurst and Houseknecht 2000; Lehrer 2004). From the end of the 1980s on, studies and reviews have been published in major biomedical and public health journals in which possible underlying mechanisms in the religion/health relationship were systematically described in terms of substantive epidemiologic concepts such as health behaviors, social support, and stress buffering (Jarvis and Northcott 1987; Levin and Vanderpool 1987; Levin 1994; Levin 1996; Seeman, Dubin, and Seeman 2003).

An excellent summary of the developments in the area that is relevant here (the relation between family, fertility and religion) is given by Chatters and Taylor (2005). Chatters and Taylor (2005: 518) distinguish the following general links between religion and family behaviors:

- Religion condemns certain forms of behavior and promotes specific beliefs and practices that are conducive to family solidarity and assistance;
- It provides a framework of beliefs, norms and practices that reinforce the fulfillment of certain family roles;
- It gives guidelines for the handling of life difficulties and conflicts between family roles;
- It fosters positive feelings that promote certain family characteristics;
- Religious settings provide benefits and support for families.

Like McQuillan, Chatters and Taylor (2005: 519-520) point to the fact that the religious teachings that provide guidance for appropriate attitudes and behaviors associated with family roles do not exclusively apply to religious norms proclaiming procreation as the main purpose of marriage, and the strict interdiction to limit family size. Religious values affirm and validate positive norms of obligations and assistance to family members, particularly younger generations' responsibilities for the provision of care to their elders. They provide specific guidelines for the performance of marital and family roles that shape role behaviors. Religious settings constitute environments in which participants can sanction and reinforce valued behavioral norms. They expose individuals to particular beliefs and provide models of marital and family behavior, in schools, church buildings and via the media. Formal educational programs such as marital counseling often focus on these issues, thereby making role expectations explicit. Milestones in family life are commemorated in religious rituals, enhancing the sense of family cohesion and connection to the religious collective. Rituals marking these life events are often accompanied by changes in expectations with respect to individuals' family roles.

In addition to suggesting a general framework for the study of the religion/fertility link, Chatters and Taylor (2005: 526) also stress the need to study religion/fertility links in their context to gain a better understanding of the nature and meaning of religion. A concentration of coreligionists in social locations and variations in the religious climate may have an effect on the link between religion and fertility. The way in which different denominations structure and pattern personal and public religious activities (centralized and hierarchical versus decentralized and lay-based authority) determines the specific relationship between religion and family.

The sociological (and the epidemiological) literature is also characterized by the attention it pays to problems related to the conceptualization of religious involvement. Chatters and Taylor (2005: 525-526) stress the multifaceted nature of this concept and the various functional implications for behavioral outcomes. Swenson, Pankhurst and Houseknecht define religion as "the individual and

social experiences of the sacred that is manifested in mythologies, rituals and ethos, and integrated into a collective such as a community or an organization” (Swenson, Pankhurst and Houseknecht 2005: 530). They argue that all these dimensions – individual religious experiences (such as prayer), rituals (such as attending rites of passage and public prayer), belief systems (for example, the image of God), ethos (values, norms, ethics, codes of behavior and how these are to be lived out in everyday life), sacred communities (such as spaces in which rituals are celebrated and where people go through their rites of passage) – might be linked to family life.

#### 4. PURPOSE OF THIS VOLUME

Although the linkage between family and religion has started to receive a more systematic treatment on a comparative basis in sociology, this is not yet the case in historical studies of the nineteenth- and twentieth-century fertility decline, exception made for the work by McQuillan. As a consequence, the actual contribution of religion to the changes in the demographic landscape of the West remains rather obscure. The theoretical and methodological criticism of the European Fertility Project has hardly led to empirical studies in which the new insights have been applied to the fertility decline. In our opinion such empirical studies are urgently needed to take the debate further.

We formulated a set of basic principles that in our opinion have to guide these studies and invited a number of scholars to present a paper according to these analytical and conceptual lines.

First of all, we wanted the authors to make use of micro-level data on as large a number of dimensions of religion, family and family size as possible. In studying the effect of religious affiliation ideally one would like to have information not only about the religious label of individuals, allowing a link to the official rhetoric of a religious group, but also about the beliefs of the members of those groups, and the practices of those individuals (Denton 2004: 1152-1153). For historical populations it is difficult to find information at the individual level about service attendance, religiosity, and other private behaviors for a sizeable proportion of the population or about distinctive features of the social organization of the religious groups. Methods such as in-depth interviews with couples, priests, clergymen, and other religious officials or analysis of church documents and archives are better suited to collecting information on this issue than vital registrations and population registers.<sup>4</sup> To compensate for the lack of data on the various dimensions of religion, we wanted scholars to be innovative in their research, and where possible to use indirect indicators for the relevant dimensions.<sup>5</sup>

Secondly, a recurrent argument is that religious differentials might be attributed to other socioeconomic and demographic factors that are characteristics of religious groups such as regarding occupations, wealth, etc. In particular with historical populations, it is very difficult to control directly for most of these and other potentially relevant variables in the analysis of religious differentials. We wanted the authors to use individual-level data that would allow them to disentangle the interactions between religious affiliation and other aspects of a person's position in society, such as socioeconomic status, education, ethnicity, and so on.

Thirdly, we hoped that all studies would include at least minimum information on a collection of more or less the same variables, ranging from biological (age of the mother, postpartum infecundity) to economic (occupation of husband) and cultural ones such as religion. We wanted the studies to make use of comparable advanced statistical methods specifically suited for these kinds of data. Both factors were considered a prerequisite for the comparative approach that we had in mind.

We also encouraged the authors to follow a clear theoretical approach and to focus explicitly on a variety of mechanisms through which religions could have an effect on family life and fertility. This relates at least to three levels. First of all, we wanted the authors to pay attention to the reproductive life of the individuals and groups concerned as a whole and not an exclusive focus on changes in the number of children. Secondly, we thought it important that in analyzing fertility a distinction be made between the behavioral components that determine the number of children eventually born within marriage (starting, spacing and stopping) in the various religious groups. Thirdly, on a higher level of abstraction we stressed the necessity to pay attention to a variety of mechanisms through which religious teachings and religious institutions could affect reproductive behavior: this could include differences between religions in the purpose of marriage (companionship, support, procreation); gender role differences; the value of children; religious teachings on birth control; the more or less active role of churches in these matters at local and national level; the control system of churches, etc.

Finally, we asked the authors to place the descriptions and analysis of fertility at the micro-level in their proper historical context, and to pay attention to the role of other institutions such as polity and economy. Drafts of the papers were presented at a workshop in Venice and were subsequently revised taking into account the comments of the discussants and the other participants.

Investigating the fertility decline along the suggested lines requires that one turns to local studies. Although the conclusions from this kind of studies cannot be very easily generalized, they help us understand better what role religion

played in the fertility decline and whether common forces played a role in the communities selected (Segalen 1992: 229). We did not aspire to follow a comparative approach on the scale of the European Fertility Project; yet we wanted our project to be truly comparative, showing the similarities as well as the differences in the positions of the various churches on matters important for reproduction.

We focused on the fertility decline in Western Europe and Canada in the period 1850-1930. Comparability has been sought in several ways. Each chapter (exception made for the theoretical overviews and the conclusions) focuses on one specific country and in each chapter at least two religious traditions are compared. Until now, the majority of research on the relationship between religion and fertility has focused on mainstream Christian denominations. A more systematic exploration of different religions might enhance our understanding of the linkage between religion and family life, and position this information within a much broader social and cultural context. The authors invited presented papers on Roman Catholics, Levantine Jews who practiced the Sephardic rite and Ashkenazim, Lutherans, and Orthodox and more liberal Calvinists. The societies covered in the book are partly religiously homogeneous such as France and Italy, partly very pluralistic ones such as Canada, Germany, Switzerland and The Netherlands. Finally, we included different types of economies, towns and rural areas in our study. We realize that in this volume the situation in Canada and The Netherlands carries more weight than might be expected; a more balanced volume would have included another Germany study, as well as chapters on Ireland and communities in Austria or Hungary. The subject of the volume in our opinion is extremely relevant for those interested in the religious history of Europe in the nineteenth and twentieth century: moral issues related to fertility decline and family change (divorce, unwed motherhood, women's movement, etc.) played an extremely important role in the secularization process and the reactions to this process, such as factors behind religious secessions. It is a serious omission that we were not able to include a chapter in which specialists in religious history commented on our findings.<sup>6</sup>

## 5. OVERVIEW OF THE VOLUME

The second chapter by Lynch gives an overview of the various theoretical and analytical approaches to religious beliefs, values, and identities during the first fertility transition. She focuses on a number of newer works concerned with the cultural dimensions of the modern fertility transition that have challenged the theoretical underpinnings of older approaches, generally informed by some version of modernization theory, which tried to understand the relation between

religious affiliation and birth control practices within marriage. Her paper considers the hypothesized dichotomy between “traditional” and “modern” forms of birth control within marriage; the acceptability of birth control in the context of pre-transition religious beliefs; the impact of relations between husbands and wives on values surrounding birth control; and the approach to religion’s impact on fertility behavior that studied it mainly as a matter of individual choice and preference. The paper suggests that dichotomous approaches to traditional and modern forms of birth control have been overstated; that many married couples in the past did find their religious beliefs compatible with efforts to regulate their reproduction; and that relations between husbands and wives did not necessarily have to undergo a modern revolution for them to practice birth control. Moreover, to understand the role of religious identities in the history of the fertility transition, the attitudes of husbands and wives towards reproduction must be traced beyond the life of the couple to their networks of acquaintanceships and to the life of their larger community. Evidence suggests that the study of why people of different religious identities were slower to adopt birth control or fertility limitation than others must consider the production of religious identities within civil society and the political sphere.

Goldscheider in chapter three focuses on the role of the community and of religious institutions in shaping the relationship between family values, religion and fertility. His examples are mainly taken from present-day research. The case of Israeli Muslims is used to provide an example in point. In contrast with Jews and Christian Arabs, Israeli Muslims maintained high fertility levels as a consequence of the segregation policy of the Israeli government; Muslims were obliged to keep a strong residential concentration, which reinforced local ties and the influences of kinship and family networks on individuals and especially women. It is at the level of the community and the family that values such as the subordinate role of women within households and gender hierarchies operate to keep fertility high. The general lessons that can be learned for historical studies of the fertility decline are that variation has to be studied at the level of the communities, defined in terms of religious divisions, that the state can play a powerful role in altering fertility patterns, even when there is no direct family policy, and finally that changes in fertility are connected to other issues of demographic importance, especially migrations, and that these should be taken into account when studying the influence of religion on fertility.

Chapters four and five both focus on religious differentials in marital fertility in The Netherlands and both make use of data collected from the population registers. Schellekens and Van Poppel study the changes in fertility in a large town, The Hague, in the second half of the nineteenth century. They try to find

an answer to the question of whether religious differentials (between Jews, Catholics and Protestants) in fertility result from socioeconomic characteristics or from religious ideology. They try to find out which proximate determinants account for the religious differentials and whether the Jews were forerunners in the marital fertility transition in Europe. The results provide some evidence of relatively low levels of parity-dependent fertility control among Jews before the transition and among Catholics during the transition. Religious ideology probably accounts for the low level of fertility control among Catholics. The findings do not support the hypothesis that Jews were forerunners in the marital fertility transition.

Kok and Van Bavel based their analysis on life-course data of married couples from the city of Rotterdam and the province of Utrecht in the period 1845-1945, drawn from birth, marriage and death certificates, and population registers. On the basis of religious doctrines regarding procreation, religious norms on the roles of men and women and the institutional means to enforce compliance to those rules, the authors try to test the hypothesis that only where direct supervision of the church members was possible could Catholicism and Orthodox Protestantism have slowed down the advent of birth control. By using various indicators of religiousness at the individual level they have been able to show that reduction of family size was achieved first among Liberal Protestants. The authors also found that mechanisms and conditions of effective social control were crucial intermediaries in the linkage between religion and fertility.

In chapter six Benz challenges the view that orthodox Roman Catholicism was an obstacle to contraception. Reconstituted family histories in local genealogies from the German state of Baden reveal that supporters of a new political Catholic movement in 1869 joined in the fertility transition by the middle years of the nineteenth century, a generation or two ahead of most Europeans. Benz also studies the interaction between the *Kulturkampf*, the struggle between the liberal State and the Roman Catholic Church, and the contraceptive revolution. Comparing reconstituted family histories for public supporters of national liberalism and its new clerical rival reveals no significant difference between the two groups in levels of family limitation. Regardless of formal Church doctrine and despite increasing political and religious polarization, ultramontanes practiced contraception as enthusiastically as their anticlerical political rivals. Jews in this region were just on the verge of taking up birth control, and temporarily lagged behind their Christian neighbors. If active, dedicated Roman Catholics could prove no less receptive to contraception than adherents of other world-views, even in the midst of enduring public controversy over those views. Benz concludes that possible impacts of religion on fertility go beyond doctrines, values, and institutional



controls to the ways religious contacts spread information and practices of all sorts.

McQuillan in chapter seven draws on data from a family reconstitution study based on parish registers of five villages in Alsace. These data make it possible to study differences in fertility patterns between Catholics and Lutherans back to the mid-eighteenth century. From the starting point of the analysis in the mid-eighteenth century, the tempo of fertility among Lutheran couples was slower. For couples married in the nineteenth century, this slower pace of childbearing was accompanied by an earlier end to childbearing. The author stresses the role of diversities in the nature of the marriage bond and the roles of husbands and wives between Protestants and Catholics in explaining fertility differences. Teachings on marriage raise issues related to communication and decision-making among married couples. A second issue centers on the link between Protestantism and education with the greater Protestant support for literacy and schooling. In contrast to the situation in the Lutheran communities, there is no evidence of declining religious practice among Catholics. The power and influence of the Catholic Church over its followers reached its apogee in the nineteenth century and strengthened its ability to shape the behavior of its adherents. Crucial in explaining religion's influence on demographic behavior was the role of religious institutions and the place of religious practice in the lives of individuals.

In chapter eight Praz studies in detail three mechanisms through which religious norms and values influenced fertility decisions in the Swiss cantons of Vaud (Protestant) and Fribourg (Catholic). For each of these mechanisms the author analyzes the religious norms and values pertaining to fertility, and its interaction with those of political elites and their strategies, the incorporation of these norms and values into state institutions and policies and the changes in the cost-benefit structure effecting fertility behavior. Mechanisms studied are compulsory schooling, gender differences regarding the importance of education, and parental investment in education. In particular, differences in school policy, inspired by religious values and norms, had an impact on the cost of children at the individual level and through this on fertility levels. The growing costs of children in Protestant families constituted an important incentive to practice birth control. Catholic parents avoided considerable education costs, above all by discriminating against their daughters. This shows the importance of integrating gender as an explanatory variable into analysis of fertility decline.

In chapter nine Derosas provides an empirical test to the hypothesis that Jews practiced fertility control before the rest of the European population. He argues that studying intra-Jewish differentials might provide a clue to

disentangle the particular position of European Jews in the history of fertility transition. Following Goldscheider, Derosas argues that in studying fertility differences the total content of social organization has to be taken into account, in particular the social status of the communities under study. The minority group status is an essential characteristic of social organization and might play an important role in shaping the fertility of religious groups: high fertility represents an obstacle to full integration into the majority, persistent separation from the majority should result in higher fertility to ensure group preservation, and group identification and segregation imply a greater commitment to religious ideology and a stronger social control on religious norms. To test this hypothesis, Derosas contrasts the reproductive behavior of a large sample of Jews and Catholics in mid-nineteenth-century Venice, drawing mainly on population-register data. Assuming that residential choices express different degrees of integration, Derosas contrasts the fertility patterns of Catholics and Jews and, within the Jewish population, those of Jews who had abandoned the Ghetto with those remaining in it. Overall, results confirm the minority status hypothesis. The Jews who settled outside the Ghetto were more inclined to adopt forms of fertility control, while those who remained in the Ghetto displayed higher fertility than the Catholic majority. From a general point of view, this suggests that the anticipation of fertility limitation by the European Jews was an outcome of their integration into the larger society to which they belonged.

Both chapters ten and eleven deal with the fertility decline in nineteenth-century Canada. In chapter ten Thornton and Olson use the cultural laboratory of nineteenth-century Montreal, where religious and linguistic affiliations were cross-cutting, to discuss the role of religion in relation to fertility. French-speaking Catholics, English-speaking Catholics and English-speaking Protestants all thought of themselves as minorities, and the several churches jealously exercised their claims over newborns. Analysis of a full-year cohort of births, matched to mothers, reveals signs of declining fertility as early as 1880. Differences in the rates of overall fertility between the three communities were substantial, inflected by differences in “starting” behaviors. Irish Catholics married considerably later than others, and women born outside the province (more common among Protestants) were marrying much younger. Religion had a significant effect on levels of fertility within marriage with variations extending to differences among the Protestant denominations, but it had no effect on marriage, where origin seems to be important. The authors argue that religious affiliation reinforced social boundaries and ensured persistence of the three distinct demographic regimes. They infer that religious affiliation alone is an inadequate indicator of “cultural difference.” In this context, an effective

“community of communication” requires a multivariate definition, taking into account language and origin.

Gauvreau in chapter eleven uses the nominal data of a public use sample of the 1871 and 1901 census to illustrate the diverging paths followed by people of various religious backgrounds when marital fertility rates started their decline in Canada. As was the case in Montreal, religion was not the sole factor nor did it play an isolated role in the fertility decline. Whereas within the Protestant denominations differences in fertility were rather small, much higher differences were observed among Catholics. French Catholics in particular were hardly touched by the fertility decline, whereas Catholics of Irish origin took a different path. The author relates these differences to the specific social and political situation of both groups, to their relation towards modernity, to the way in which intimate relationships were embedded in the public sphere, and to the consequences of being barred from involvement in the Church.

In a concluding chapter Kertzer highlights some of the important lessons learned from the chapters in this book. First of all, Kertzer points to the fact that the attention paid to religion in explaining fertility decline has been a good indicator of theoretical fashion in demography over the past half century. Whereas in the mid-twentieth century religion was considered a key factor in explaining fertility trends, and in the 1970s seemed to have lost its rationale, by the 1990s it made a dramatic return to the demographic world. This had to do with the fact that from that period on, countries where the Roman Catholic Church had been strongest had reached the lowest fertility in the world. The challenge to demographic theory became to explain the conditions in which religion could lose its power to influence fertility. A second factor that played a role was a call for more serious demographic attention to the role of culture in explaining the “second demographic transition.” Kertzer also discusses the complexities of the concept of culture and its use as a category that is opposed to other domains. In particular, he emphasizes the variety of ways in which the political dimension directly or indirectly affects the link between religion and fertility.

Overall, we think that this volume provides new important insights into the relationships between religion and reproductive behavior in historical populations. Apart from providing a wealth of descriptive information on family life and fertility in different national and religious settings, the major strength of the book lies in its conceptual insights. A variety of mechanisms are identified linking religion and family/fertility, coming from or fitting into a diversity of frameworks developed by social scientists such as role theory (dealing with the ways in which roles define and regulate social life and relationships) and social networks and social support theories (the collections of relationships that

surround individuals) (Chatters and Taylor 2005). Various papers in the book use elements of the role-theory framework to explain observed links between religion and fertility in the past. Differences in ideas regarding marital power and masculine and feminine roles, reflecting differences in religious beliefs are, for example, integral part of the references to “marital debt” in the contributions by Praz, Schellekens and Van Poppel, and Kok and Van Bavel. In other studies the relation between religion and the support flow between generations has been mentioned as a factor favoring high fertility among Catholics (Van Poppel 1985: 371). Topics from social networks and social support theories include the curtailing of support from formal and informal church networks as a consequence of negatively valued behavior, or life in societies highly segregated by religion, making it difficult to be informed about attitudes towards family limitation, adopted in other religious communities (Chatters and Taylor 2005: 524-525). Both factors are discussed in contributions in this book. These insights, borrowed from the sociology of religion, might give a strong impetus to the historical study of the fertility decline.

A second asset of the book is the continuous attempt that the authors have made to identify and include in their studies indicators of the various dimensions that religions have. Official statements cannot be taken as direct indicators of how individuals actually behaved as they often reflect the most extreme positions and ignore more moderate discourses (Denton 2004: 1152-1153). They cannot be considered “as a proxy of how the person in the pew interprets and applies religious ideology to his or her personal life.” There is also very often a discrepancy between stated ideology and actual practice within families. One could imagine a variety of rather refined measures of these dimensions at the individual level, some of which have actually been used in this book. Kok and Van Bavel in their chapter used bridal pregnancy and mixed marriages as indirect measures of religious involvement. To study the embeddedness of couples in networks of co-religionists, Derosas in his chapter used information on the address where people lived to distinguish between Jews dwelling in the Venetian Ghetto and Jews who lived elsewhere in the city. Street residence was used as a proxy for the degree of integration into the Gentile majority and of detachment from the social control of the Jewish community.<sup>7</sup> One could easily imagine other factors identifiable at the individual level with which dimensions of religiousness could be measured. Following earlier studies (Lesthaeghe 1991; Van Poppel 1995), use might be made of information on whether or not a marriage was contracted during a religiously prohibited period. Networks within which changing norms regarding family size and family limitation spread rapidly (see Knodel 1974: 140-141; Watkins and Danzi 1995) could be studied, making use of information on the religion of witnesses at marriage ceremonies

(Van Poppel and Schoonheim 2005). In some cases it might be possible to link civil population registers and vital registration data to church registrations (baptisms, burials, marriages) to find out whether or not a couple attached value to a church wedding or a marriage ceremony before a rabbi. The prospective study designs used in most of the studies presented here might also be used to explore changes in religious orientations over time and the way in which these religious life histories are related to the fertility and family histories. Population registers, in particular during periods of secularization or schism, offer the opportunity to study the effect of changes in individual religious orientation on fertility behavior. This might also offer an excellent opportunity to study the demographic behavior of the relatively small and heterogeneous group that reports to have “no religion” (Lehrer 2004). This group is usually omitted in contemporary and historical research, but might offer an excellent opportunity to study a variety of hypotheses on the role of religion in the fertility decline.

## NOTES

<sup>1</sup> The role of cultural factors in explanations of fertility changes, especially in the diffusion of new ideas, was the central theme in a collection of essays edited by Richard Leete (1999). The papers in *Dynamics of Values in Fertility Change* focused in particular on the question of whether and how changes in fertility-related values preceded and led to fertility changes. Various papers in that volume (McQuillan 1999a; Goldscheider 1999) explicitly paid attention to the role of religion in fertility change. Casterline (2001) includes various essays in which the diffusion of new values and ideas that affect fertility is discussed at length, without paying much attention to religious values and ideas.

<sup>2</sup> Many of these arguments resemble the highly critical remarks on the data and methods used in the European Fertility Project by Banks (1972) made shortly after the start of the project.

<sup>3</sup> Noonan (1972) was of course one of the first authors who elaborated on this idea.

<sup>4</sup> See, for example, Gervais and Gauvreau (2003) and Somers and Van Poppel (2003) for studies based on interviews with Catholics priests. Westhoff (1986) analyzed a collection of letters, written by Catholic women to Smulders, Dutch Catholic doctor and co-inventor of the rhythm method.

<sup>5</sup> Haan (2005), for example, following earlier work by Leasure (1982) and Hacker (1999) tried to identify the impact of the seriousness of a family's adherence to a religion by calculating the proportion of children in that family that were biblically named.

<sup>6</sup> In the main textbooks on the religious history of Western Europe, only very limited attention is paid to the changes in family and fertility and the religious reactions to it. See, for example, McLeod (1997, 2000) and McLeod and Ustorf (2003).

<sup>7</sup> A comparable approach was followed by Guinnane, Moehling, and Ó Gráda (2001). They observed that at the beginning of the twentieth century Catholics in Dublin who lived on Protestant streets had smaller families than those who lived in Catholic streets.

KATHERINE A. LYNCH

THEORETICAL AND ANALYTICAL APPROACHES  
TO RELIGIOUS BELIEFS, VALUES,  
AND IDENTITIES DURING THE MODERN  
FERTILITY TRANSITION

1. INTRODUCTION

Recent research into the modern fertility decline in Europe and North America has confirmed many of the empirical results of older studies, which documented different levels of fertility among religious groups in the same countries and differences in the pace of adoption of modern, parity-related forms of birth control according to religion. The finding of higher fertility of Catholics than Protestants in the same countries or regions has been reconfirmed in the studies of Ó Gráda (1991) and McQuillan (1999b), for example. Newer works concerned with cultural dimensions of the modern fertility transition have, however, challenged key theoretical underpinnings of older approaches that were generally informed by some version of modernization theory, which tried to understand the relation between religious affiliation and birth control practices within marriage. This paper will consider several of these challenges to older scholarship, including the hypothesized dichotomy between “traditional” and “modern” forms of birth control within marriage;<sup>1</sup> the acceptability of birth control in the context of pre-transition religious beliefs; the impact of relations between husbands and wives on values surrounding birth control; and approaches to religion’s impact on fertility behavior that study it mainly as a matter of private individual choice and preference.

This discussion suggests that dichotomous approaches to traditional and modern forms of birth control have been overstated; that many married couples in the past had religious beliefs that were compatible with the regulation of reproduction; and that relations between husbands and wives did not necessarily have to undergo a modern revolution for them to practice birth control. Moreover, to understand the impact of religious identities in the history of the fertility

transition, attitudes of husbands and wives towards reproduction must be traced beyond the life of the couple to men and women's networks of acquaintanceship and to the life of their larger community. Evidence suggests that the study of why persons of different religious identities were slower to adopt birth control or fertility limitation than others must therefore consider the creation of religious identities within civil society and the modern political sphere.

## 2. BIRTH CONTROL AND FERTILITY LIMITATION

As is well known, the dichotomy between "natural" and controlled fertility was fundamental to a previous generation of research into the history of fertility limitation in Europe and elsewhere. Louis Henry, whose work shaped the whole field of research, defined natural fertility as a regime in which fertility might be controlled by a variety of practices, but that the control had to be more or less incidental and not intended. Henry believed: "Control can be said to exist when the behavior of the couple is bound to the number of children already born and is modified when this number reaches the maximum which the couple does not want to exceed..." (Henry 1961: 81). True fertility control, or fertility limitation, was said to exist only in cases where its implementation was guided by the number of children already born.

This definition led Henry and others to try to identify the who, what, where, and when of modern fertility limitation within marriage. Henry conceded that pre-modern Europeans might have had a wide repertoire of ways to control births – through prolonged lactation, abstinence, even coitus interruptus. However, the fact that these practices appeared not to be associated with the number of children born, and lacked the strategic aspect of more modern notions of target family size, meant that they were of little analytical interest for those such as himself, who were concerned with the origins of modern fertility control. Given the emphasis on studying the development of modern forms of fertility limitation, he and others devoted their attention to creating methods for its detection, through graphic, or eventually, more mathematically sophisticated models (Coale and Trussell 1974, 1978).

Research into the origins and causes of modern fertility limitation was of more than purely academic interest, of course, since one of the key goals of some studies was to learn "lessons from the past" that could inform contemporary birth control initiatives in the developing world (Knodel and Van de Walle 1979; Banks 1981: 4). Determining the key causes of the European fertility decline would, it was hoped, point towards the most constructive policies for bringing about the same changes elsewhere. To these researchers, it was fairly obvious that pre-modern Europeans as well as many women and men in the developing

world lacked effective forms of birth control. Otherwise, why would there be so much historic evidence of unwanted children in the European past? Why would birth control workers in the developing world consistently encounter women whose actual fertility outstripped their stated preferred family size? Having shown, to their satisfaction, that traditional forms of birth control were either absent or ineffective, Knodel and Van de Walle and other observers concluded that it was logical to dissociate traditional forms of birth control from fertility limitation. They also largely discounted the importance of social customs while looking for the widespread appearance of recognizably modern forms of fertility limitation.

The result was a large body of research on the evolution of modern fertility limitation. This was capped by the completion of the Princeton group's fertility decline project, which, while initiated on the basis of modernization models linking the demographic transition to economic and social development, famously ended without demonstrating any necessary relationships between economic and social modernization and the onset of fertility limitation within marriage (Coale and Watkins 1986). While the project seemed to show a convergence in the timing of fertility limitation within European areas at very different levels of development, important spatial variations, shaped by differences of culture, remained to be explained (Lesthaeghe 1977: 227-232).

More recent analysts have challenged the idea of a fundamental dichotomy between traditional forms of birth control that Henry considered consistent with natural fertility, and parity-related fertility limitation. They also reject the fundamentally innovative or revolutionary character of modern fertility limitation, at least in Europe. Focusing, as earlier observers did, on marital fertility, students of the fertility decline today are more likely to describe their focus as the study of "reproduction" rather than fertility alone, placing fertility patterns more firmly in their social, economic, cultural and political contexts (Santow 1995; Szreter and Garrett 2000: 70). Studies of Europe and North America have also suggested that practices leading to birth spacing were more widespread than previous research had suggested. They argue that through a combination of coitus interruptus, abstinence, prolonged breast-feeding and/or occasional condom use, husbands and wives, when highly motivated, could shape their fertility (Bean, Mineau, and Anderton 1990: 209-237; Van Bavel 2004a).

Simon Szreter's (1996: 367-439) argument that there was a "culture of abstinence" in Europe well before the fertility transition, and that Europeans' previous experience with reproductive control within marriage helped made them receptive to modern forms of fertility limitation, stands as a firm rejection of the idea that modern fertility limitation represented a radical departure from



older cultural norms. Indeed, Santow (1995: 24) hypothesizes that there was an “intermediate stage” in the European past between an era of little effort to control births, through the intensification of birth control, which then paved the way for modern fertility limitation. These analyses suggest a model of “path dependency” at odds with older models of the fertility transition associated with modernization theory. At the same time, earlier studies using the Coale and Trussell indices to measure fertility limitation have come in for criticism because of perceived problems with the methods and measurement tools associated with them (Guinnane, Okun, and Trussell 1994).

### 3. THE “THINKABILITY” OF BIRTH CONTROL

These challenges to an older view that emphasized differences between pre-modern birth control and modern fertility limitation are critical to the study of the religious dimensions of fertility behavior. They undermine the notion that pre-modern Europeans were guided by beliefs that made the control of births within marriage unthinkable (Ariès 1960). Evidence from newer studies suggests that whatever religious beliefs were held by those who controlled births within marriage before the fertility transition, they were apparently not strong enough or, what is more likely, not believed to be in sufficient conflict with practices such as coitus interruptus to inhibit their use.

It is, therefore, wise to review some earlier hypotheses that sought to explain differences in attitudes towards birth control or fertility limitation, particularly between Protestants and Catholics. It has been argued that theological developments of the Protestant Reformation led to a more rationalistic world view among its members, particularly those of the Reformed tradition, given that Calvin’s and Zwingli’s denunciations of “superstition” within Catholic ritual life and their doctrinal departures from Catholicism were even more radical than those of Luther. The rationalism inherent in Reformed Protestantism is hypothesized to have made believers more open to the secularizing forces of modernity.

However, the Protestant Reformation also opened the door to a rather different process within its various churches that is better thought of as “laicization” than “secularization.” This notion is important in understanding attitudes towards birth control in general or fertility limitation in particular. Laicization can be defined as the growth of a more active role for the laity within the governance, administration, and worship of various Protestant denominations. The appearance of a married clergy was, of course, an integral part of the Protestant Reformation’s success in breaking down the boundary between clergy and laity. Luther’s notion of the “priesthood of all believers” lay

at the heart of this transformation, which became an integral part of the tradition of all Protestant groups from the Reformed to the Methodists, and most radically to Quakers, Baptists and others. Indeed, some of the most “low church” or theologically “radical” Protestant groups have no full-time or paid clergy at all.

This lay influence was critical in shaping how Protestant authorities, whether clerical or lay, viewed the legitimacy of their intervention into the sexual lives of their congregations’ *married* members. From the time of the Protestant and Catholic Reformations of the sixteenth and seventeenth centuries, when confessional boundaries were high and religious identities sharply drawn, Protestant pastors and lay authorities in Britain, New England, and continental Europe alike drew a very sharp distinction between the sexual behaviors of married and unmarried people. The idea that married people’s bedrooms are or should be “off limits” to external intervention is not, therefore, the product of secularization in modern society but instead lay at the foundation of Protestant religious and civic culture. From the sixteenth century onwards, Protestant authorities rarely sought to intervene in relations between husbands and wives unless they were invited to do so, or were forced to, by public scandals within the confessional communities they oversaw (Perrenoud 1974: 962-963; Lynch 2003: 144-154). This reluctance to intervene did not reflect any particular theological doctrine, but rather the world view of the married lay men and pastors who governed Protestant congregations, and who, as fathers of families and husbands, would not willingly have tolerated such intervention into their own lives. Interestingly, and very importantly, the reluctance of Protestant authorities to intervene into sexual relations between husbands and wives who were causing no public disorder contrasted sharply with these same authorities’ highly developed efforts to regulate the sexual behavior of the unmarried.

Even as Protestant church authorities drew away from intervening into marital sexual relations, they sought to regulate public life so as to bring it into tight conformity with their notions of godliness and sexual continence. Thus, from the sixteenth century through the middle of the twentieth century in cities, towns, or entire societies dominated by Protestants – from Reformed denominations to “low” churches such as Baptists – lay leaders and clergy sought to regulate public discourse and behavior through religious admonition and civil legislation. While respectable marital sexuality was, to a large degree private, sexual conduct itself was held to be of deep public concern requiring the close collaboration of civic and religious authorities.

In contrast, the Roman Catholic Reformation of the sixteenth and seventeenth centuries, which led to the creation of the modern church, took a rather different turn where sexual relations were concerned. This movement of

reform led the clergy to become more aware of the moral needs and values of the married laity, and raised the status of marriage within Catholic culture from its previous inferiority to virginity and celibacy (Flandrin 1976: 143-169). However, the increasing concern of the clergy with the lives of husbands and wives meant a growing potential for conflict between clerical and lay values regarding sexual and family matters. The better training of the clergy, and the higher degree of doctrinal conformity among the secular clergy that the Catholic Reformation created, seem to have moved clergy-lay relations in a different direction from the Protestant path, at least temporarily. Research suggests that, at the peak of its militancy, the clergy of the Catholic Reformation placed much greater emphasis than Protestants upon the private, individual conscience of the believer and sought to probe it during oral confession. This could lead priests to make more aggressive inquiries about sexual relations between husband and wife (Lynch 2003: 148). As we will see, this feature of clergy-lay relations was not a constant, and its intensity varied with time and place. However, it became part of a Catholic tradition that could be mobilized when church leaders believed it necessary for its doctrines regarding marital sexual relations to be communicated more effectively to the laity.

Evidence thus suggests that nearly all Protestant denominations were without any consistent theological doctrine regarding sexual practices between married people. Statements of disapproval on the part of Luther or Calvin indicating their outrage over such practices as *coitus interruptus* doubtless reflected their views, but it is not clear that their scattered statements were anything more than shock at the public mention of practices that were long associated with the worlds of prostitution and fornication. However, though it seems unwise to argue that pre-modern Protestants were necessarily more open than Catholics to secular influences that motivated them to begin limiting their births, it is true that, compared with Catholics, the sexual lives of married Protestant couples were generally freer of clerical intervention. It is not clear what variations in fertility limitation one might predict among the various Protestant groups at different points in their history, given the lack of this doctrinal dimension.

Thus, it is not surprising that studies examining different Protestant denominations in the New World have varied so widely in ways they try to link religious beliefs to attitudes towards birth control and interpret the results of their analyses. Different Protestant groups or denominations have been shown to vary in their levels of fertility sufficiently to suggest different practices of birth control within marriage. However, efforts to understand what it is about these religious groups' beliefs or life circumstances that produced the results have proved difficult. In their study of late-nineteenth-century Illinois, Donald and Jo Ann Parkerson (1988) argued that members of "liturgical" denominations of

Protestantism (presumably Episcopalian and Lutheran) were less open to birth control than “pietistic” Protestants because of the latter’s greater belief in “free will” as the road to salvation. Belief in individual “free will” suggests that Pietists left birth control decisions to the individual, which made it therefore more probable. This hypothesis conflicts sharply, however, with other analyses that have suggested that members of Reformed denominations, such as Congregationalists and Presbyterians, who firmly rejected free will doctrines, were in the vanguard of birth control in the United States (Hacker 1999: 344). The Parkersons (1988: 67) admit the complexities of using denominational labels by noting that different denominations had their own “pietistic” and “liturgical” wings. Other evidence shows that the variations the Parkersons found between “liturgical” and “pietistic” denominations played themselves out in Canada somewhat differently. Around the turn of the twentieth century, Baptist and Methodist women in Ontario and the Prairie Provinces had significantly fewer children than Anglicans, controlling for age, while Lutherans and Pentecostals had more (Gauvreau 2002: 183).

Although the use of denominational labels to analyze the possible association between denominational cultures and attitudes towards birth control has led to inconsistent results, other approaches have been somewhat more fruitful. One is to use the presence of biblical names of children as a measure of the strength of Protestant religiosity across denominations, an approach that seems to yield relatively consistent results in predicting family size (Hacker 1999). These studies can be confounded, however, by the regional concentration of various American Protestant denominations (Hacker 1999: 357-8), which meant that certain denominations lived in economic and social settings quite different from others, making it difficult to disentangle the independent effects of religious affiliation. The notion that there was some positive relationship between Protestant religiosity and larger families has also been suggested by a recent study that found Protestant pastors more likely to have married earlier and fathered more children than other men of their denominations and similar social standing, such as physicians, businessmen and lawyers (Murray and Lagger 2001: 33).

Having made the broad distinction between Protestant and Catholic traditions regarding doctrine on marital sexual practices, it is wise not to take it too far in discussing the whole period from the sixteenth to the nineteenth century. It is also wise not to fall into the trap of believing that Catholic doctrine has evolved in a clear and logical fashion over the years, or was successfully taught to the laity in all times and places. Although certain elements of doctrine, such as prohibitions on abortion or infanticide, were quite clearly drawn, doctrine on practices like coitus interruptus was often not transparent even to the parish

clergy, and was therefore infrequently articulated to the laity in any consistent fashion. Thus, it is highly inaccurate to say, as one mid-twentieth-century observer did: "For centuries the Christian doctrine regarding deliberate family limitation was clear-cut and unambiguous" (Campbell 1960: 131).<sup>2</sup>

The transmission of Catholic Church doctrine on birth control presented its own problems. The relative success of articulating doctrine on sexuality and fertility limitation from the top of the church hierarchy, diffusing it through the clergy, preaching it to the laity at the parish level, and having lay members understand and acknowledge it has varied enormously across times and places. In general, it seems fair to say that it was not until the nineteenth and twentieth centuries that the mass of Catholics would have been able to explain what the church's teachings on marital sexuality were. While intellectual historians of the Catholic Church's doctrines on birth control can recount a coherent story of the evolution of church teachings on these matters, the social history of the transmission of doctrines to parish clergy, and through them to lay members is filled with gaps, silences, and misunderstandings both willful and innocent.

Many Catholics before the nineteenth century rarely heard references to church doctrine on coitus interruptus, or if they did, the references were often transmitted in such coded or veiled language as to make little impression on them (Noonan 1986: 373). Even catechisms that the clergy used often broached the subject in roundabout fashion. Thus, it seems quite erroneous to believe that the willingness of pre-nineteenth century Catholics to practice birth control within marriage would have required a conscious violation of taught doctrine, as it arguably would in the twentieth century. Rather, it may have meant only a lack of understanding or a failure (sometimes willful) to integrate murkily transmitted church doctrine into people's own mental and moral worlds.

The willingness of clergy to use the confessional to question congregants closely about their sexual practices varied over time as well, with the relative intrusiveness probably at its highest during the Catholic Reformation, and much later, after the Church became embroiled in public debates with modern birth control reformers. In many times and places between these two periods, parish clergy in particular were loath to use the confessional to inquire closely into the sexual mores of their married parishioners. Although sermons from the pulpit may have had as their goal the denunciation of efforts to limit births within marriage, the use of highly veiled language was absolutely necessary. The confessional could be a minefield in this regard. First, probing the sexual practices of congregants was held to be a source of possible sexual temptation to the confessor himself. Even during the Catholic Reformation, one of the most widely used manuals for confessors admonished them to avoid "imprudently questioning the young of either sex, or others, about matters of which they were

ignorant, lest they be scandalized and learn thereby to sin” (Noonan 1986: 375). Requesting details of sexual practices by overly aggressive questioning of married confessants also risked teaching innocent lay men and women about anti-conceptual sexual practices that the church wanted them to avoid in the first place.

From a completely different standpoint, eighteenth-century parish clergy dealing with poor parishioners whom they suspected of practicing coitus interruptus in order to limit or space births might take pity upon their situations and avoid raising the issue altogether. It is unwise therefore, to project onto the period before the nineteenth century an image of a Catholic laity that was extremely well informed about church teachings on something as specific as, for example, coitus interruptus. Understanding the different and sometimes problematic ways that members of religious groups learn doctrines regarding sexual behavior is critical to uncovering the subtleties of a topic that received relatively little attention until recently in studies of the fertility transition, whether those transitions took place a century ago or in the contemporary world.

#### 4. HUSBANDS, WIVES, AND THEIR SOCIAL NETWORKS

Previous research on the introduction of birth control techniques into marital sexual relations tended to emphasize the idea that such behavior came at the initiative of women, and entailed a new ability of wives to assert themselves in decisions over family size and the timing of births (Seccombe 1993: 168). Certainly, early birth control reformers were inundated with more letters from women than men seeking information and counsel on the most effective techniques.

However, some of the most recent evidence from oral interviews of those who began their marriages in the first half of the twentieth century, and who used coitus interruptus or abstinence, suggests there was apparently very little of the heartfelt “sharing of feelings” about birth control that is now so central to modern Western notions of intimacy between spouses. This recent evidence also points to the importance of male initiatives in implementing birth control by men’s access to information gleaned from male friends and encouraged especially by their participation in military service. Husbands who were generally considerate, avoided too much alcohol, and had some knowledge of matters sexual were the most successful controllers of births. Thus, there is little evidence in recently published oral history studies that implementing traditional forms of birth control required a transformation of the husband-wife relationship that yielded greater intimacy or a growth of wifely power.

According to recollections of a sample of English respondents, both

husbands and wives saw the control of births as a deeply sexual matter, leading them to communicate about it in a kind of “coded” language that we have already seen as part of the Catholic clergy’s coping mechanism. Birth control being a sexual matter, married women apparently deferred to their husbands’ expertise while proclaiming (whether truthfully or not) their ignorance about the subject. How to control the number and spacing of births was not thought of or spoken of in the abstract language of planning and strategy for the future. Indeed, if husbands and wives mentioned birth control matters to one another outside the bedroom, it seems that they did so only in the most perfunctory way, in a language filled with “euphemisms” (Fisher 2000a: 169, 182-185; 2000b: 306-307; Fisher and Szreter 2003).<sup>3</sup> Thus, it now seems possible to theorize that the increasing limitation of births within marriage, particularly among couples using methods mainly within the control of the husband, did not require a modern revolution in the ways that husbands and wives communicated with one another, but only the sort of consideration that has characterized happy marriages for centuries. The use of coitus interruptus or condoms was related to the sexual act quite narrowly without requiring meta-discussions about target family sizes or finely meshed spacing schedules.

Moreover, if conversations about birth control did occur, recent evidence suggests that some of the most important ones may have taken place not in the privacy of the home between the couple but rather out in the more public world of friends, neighbors and larger social networks. Whereas earlier work had focused on the dyadic husband-wife relationship as the locus of the most important conversations about limiting births, newer work has identified conversations within the same “action-groups” (Smith 1987), “communication communities” (Szreter 1996), or social networks (Behrman, Kohler and Watkins 2002), as of equal if not greater importance for understanding how attitudes towards birth control are shaped, legitimated, or changed.

In societies with populations differentiated by religion, ethnicity, language or residential differences – particularly when these different characteristics reinforce one another – the influences of networks of association are of particular importance. It is within these networks that interacting groups of people interpret the desirability of birth control or, later, modern fertility limitation, against economic, financial, and cultural conditions of – to use the words of one contemporary study – people like themselves (Behrman, Kohler and Watkins 2002). The fact that many networks were and are likely to be gender-segregated, and ordered not only by formal linguistic differences but also by a whole range of idioms that distinguish language by class or occupation, meant that these groups may have been the most comfortable venue in which individuals historically discussed such topics as birth control.

## 5. RELIGIOUS IDENTITIES AND THE VARIETY OF DEMOGRAPHIC REGIMES

New research has also confirmed that people of different group identities, including religious ones, can sometimes be said to be living under different demographic regimes, even in instances when groups are dwelling in close physical proximity to one another. “Close proximity” can mean adjacent *départements* (in the French case), but also adjacent regions, neighborhoods, or streets (Derosas 2003). “Demographic regimes” may be a bit of an exaggeration, but we do know that it is possible in highly segmented or segregated societies for groups or networks cut off from one another to develop different family formation values, child care practices affecting infant and child mortality, or attitudes towards family limitation. In his examination of a set of nineteenth-century German villages, Arthur Imhof (1984) argued that there were two distinct demographic regimes (one might say “ideal types”), which distinguished villages by a combination of region, history, and religion. Predominantly Protestant villages, Imhof concluded, tended towards a reproductive regime in which the pace of childbearing was rather slow and child mortality relatively low. Women living in predominantly Catholic villages, in contrast, bore their children at a more rapid pace, their children experiencing significantly higher rates of infant and child mortality. Kevin McQuillan (1999b: chs. 5-6) has shown this to be characteristic of the province of Alsace as well, where levels of marital fertility and infant mortality were higher among Catholics than Lutherans.

In Imhof’s study, there was no evidence on levels of interaction between Catholic and Protestant villages. However, we know from other evidence that different ethnic or religious groups can dwell side by side and yet live under quite different demographic regimes. In his study of late-Imperial Russia, David Ransel (1991: 125) showed the significantly different cultures of fertility and childcare that separated Volga Muslims and orthodox ethnic Russians living in the same villages. Muslims here had significantly lower levels of child mortality that were caused, Ransel hypothesized, by the lower labor demands placed on Muslim women and their higher levels of personal and public cleanliness.

Residential, linguistic, and religious differences, when inter-related, have been shown in studies of the contemporary world to affect attitudes towards and practices of fertility limitation. One study of the impact of Islamic identity suggests that the fertility of Muslim populations in Thailand that live in the center of the country, speak Thai, and have “regular contact” with Buddhists is significantly lower than that of Malay-speaking Muslims dwelling in the southern part of the country. The latter, who also tend to be more rural, are intermarried with and identify much more strongly with the religion, language,



and values of Malays living to the south of the Thai border in the Malaysian states of Kelantan and Trengganu, with whom they form a “single ethnic subgroup” (Knodel, Gray, Sriwathcharin, and Peracca 1999: 151-152, 160-161). In a similar vein, Calvin Goldscheider (1999: 321-322, this volume) has argued that the persistence of spatial segregation of religious groups acts to reinforce extant variations in marital fertility patterns in contemporary Israel.<sup>4</sup>

By implication, social circumstances that break down the barriers standing between religious or linguistically-segregated networks and groups are hypothesized to suggest the possibility of new attitudes or information passing from one group to another, or “diffusing,” as the older demographic literature defined it. Migration, including seasonal migration, could figure importantly when groups that had little exposure to information about birth control in their place of residence come into contact with those who were better informed (Praz 2003: 41). Migration to the New World seems to have strongly affected the demography of different groups, though in opposite ways according to the time period considered. Whereas European migrants to the American colonies or to the United States in the first half of the nineteenth century probably experienced significantly higher fertility than their countrymen who remained in Europe, late-nineteenth century migrants’ fertility was apparently shaped in the opposite direction. Arriving in a United States, where the fertility decline was already well underway, later immigrants generally adjusted their fertility downwards within one generation (King and Ruggles 1990). In both situations, the demographic regime prevailing at the point of destination seems to have strongly shaped group experience.

Research suggests that the diffusion of new attitudes towards birth control can also happen in the opposite direction. Migrants themselves may figure among the vanguard of family limitation (Oris 1996). The arrival of newcomers who are culturally or religiously different from others who are dwelling in the same neighborhood can, in certain circumstances, “demonstrate” new ways of behaving that might be sufficiently appealing to stimulate emulation. This latter case is illustrated in one study that suggests that this “demonstration” effect can be significant even if newcomers who are practicing birth control are not well integrated into prevailing networks of association (Van Bavel 2004b: 67).

There is nothing inevitable, however, in the process of migration that ensures the breakdown of barriers between religious groups. Urban areas might be thought of as inherently more likely than rural ones to contain a greater diversity of social networks, with changing individual compositions that facilitate interactions across religious or cultural boundaries. Quite the opposite can occur, however, if religious or ethnic groups become sufficiently large so as to make interactions with people in other groups unnecessary. Thus, the

growing size of cities that are characterized by religious or cultural diversity may in some cases work to reduce interaction and reinforce boundaries between groups, potentially reinforcing relationships between cultural identities and demographic behavior.

## 6. FROM SOCIAL NETWORKS TO THE REINFORCEMENT OF RELIGIOUS IDENTITIES IN CIVIL SOCIETY AND THE POLITICAL SPHERE

Public advocacy of birth control and fertility limitation entered public discourse in Britain much earlier than the New World, and within a very particular social and political context, one that had been radically affected both by the Enlightenment and political values of revolutionary France. In the British setting, the work of Malthus represented a backlash against revolutionary ideas of human perfectibility, yet remained closely associated with the early English movement that advocated birth control within marriage. The movement to speak and write publicly about birth control using traditional methods such as coitus interruptus or even more modern “appliances” emerged in nineteenth-century England among a group of reformers such as Richard Carlile and Francis Place, many or most of whom were avowed atheists or “freethinkers” (McLaren 1976: 243-244; Szreter and Garrett 2000: 57). Although the movement won some supporters among British working class radicals, middle-class, clerical, and most working-class public opinion remained quite hostile to it. The association of the birth control movement with the dreary philosophy of Malthus was particularly important in alienating many workers throughout the nineteenth century, who saw population control either through Malthus’s “moral restraint” or birth control within marriage as yet another attempt by the ruling classes to enforce their social domination.

It would be wrong to assume that early birth control advocates’ deep hostility to the clergy was based on any pre-existing, well-publicized position of the Anglican Church that opposed efforts by married couples to regulate their reproduction. Hostility to the church stemmed not from an antipathy to Christianity per se but principally from birth control activists’ radical republican leanings, which led them to oppose the clergy’s political power in the established state church (McLaren 1976: 247). Interestingly, as McLaren notes, what freethinkers seemed to be offering was not purely a technical discussion about human reproduction, but an entirely different morality – or, we might say – moral discourse than the one enforced by established authorities, both political and clerical (McLaren 1976: 244-245). That the early birth control movement was associated with such radicals and their critique of the status quo alienated

many groups in British society, not only the established church and its defenders. Moreover, though some early-nineteenth century reformers and their followers later in the century advocated traditional birth control methods such as coitus interruptus, reformers on both sides of the Atlantic gradually became more committed to precisely the kinds of “artificial devices” that oral histories suggest were least appealing to the sensibilities of even twentieth-century workers (Fisher and Szreter 2003: 277-280) because they violated their sense of hygiene, their view of what was “natural,” and their concepts of the body and health.

While Malthus’s views gained many readers in France, developments in the history of the French Catholic Church alone did more than birth control reformers’ activities or publications by Malthus’s intellectual heirs to shape public discourse and behavior there. The expulsion of the French Jesuit order in the eighteenth century, a concomitant growing “laxity” of French confessors, and finally the destruction of the church under the revolution, facilitated the diffusion of the revolution’s secularizing influences in French society (Noonan 1986: 191-192).

## 7. CONFLICTS BETWEEN BIRTH CONTROL REFORMERS AND SOCIAL AUTHORITIES IN THE LATE-NINETEENTH AND EARLY-TWENTIETH CENTURY

While late-nineteenth and twentieth-century public struggles between advocates and opponents of birth control or family limitation occurred in quite different contexts in North America and Europe, the structure of the plots of these struggles seems remarkably similar. It was not that reformers were confronting churches whose clergy had clear, fixed opinions about birth control within marriage. Rather, reformers’ effort to claim the right to speak freely and publicly about birth control techniques, their association with “free-thinking,” and their advocacy of artificial devices seem to have combined to mobilize opinion against them. These factors stimulated churches and other organizations to consolidate their own views and compete with birth control reformers for the hearts and minds of people in their societies. Without going into a detailed narrative of these struggles, we can make a few points.

Studies of the conflicts between birth control reformers such as Annie Besant and Margaret Sanger and their opponents suggest that the mobilization of Catholic and Protestant authorities against public advocacy of birth control within marriage was forged on the basis of several considerations, not all of which can be considered to be narrowly religious. The militancy of the Roman Catholic Church in the United States, at least, needs to be seen against the sort of eugenicist, anti-Catholic world view that informed the early birth control

movement there. As is well known, proponents of modern fertility limitation, such as Margaret Sanger, were quite anti-Catholic, sometimes virulently so, not only because of the church's reactions to their efforts, but also because of their prior fear of what they and other eugenically-oriented activists saw as the excessive reproduction of racially inferior Catholic immigrant groups (Tobin 2001: 21-22).

The behavior of authorities from non-Catholic religious groups may appear more puzzling than that of the Catholic clergy, who had a body of anti-control doctrine that they could update and reframe. This is particularly the case for those Protestant and Anglican clergy who were part of religious traditions where, as we have seen, marital sexuality had been viewed as off limits to clerical intervention. However, to the extent that many religious and non-religious authorities viewed proponents of birth control as part of a frontal assault on basic moral values, they mobilized to contest not only the narrow message about birth control, but also the right of proponents to take such matters into the public sphere. Birth control advocates' public discussions clashed with values of propriety, discretion, and decency long characteristic of Protestant lay culture. It was these values and not narrowly religious ones that helped to mobilize such figures as the notorious American Anthony Comstock, father of the American laws that made it illegal to discuss or distribute birth control materials in person or through the mail.<sup>5</sup>

Other important forms of resistance to allowing birth control reformers access to the public sphere came from the medical community. Many physicians, as well as physicians' organizations on both sides of the Atlantic, criticized the movement because of their fears of the quackery that they associated with the peddling of potions and abortifacients, and the association of birth control techniques with illicit sexuality. These sorts of suspicions were doubtless reinforced by physicians' political conservatism and their prejudice against women's desire to regulate their sexual reproduction in the terms of a birth control movement that was beginning to identify itself with women's rights. The medical community's opposition to public advocacy of birth control before the 1940s contrasted with the fact that many physicians were very effective practitioners of fertility limitation within their own marriages (Caldwell 1999: 494-495; Van Poppel and Röling 2003).

While opposition to the modern birth control movement was frequently framed within the traditions of Christianity, from citations of the Old Testament injunction to "multiply" to doctrines of Christianity against fornication (with which birth control remained connected in the minds of many) it is wise not to take these claims at face value, since religious as well as political traditions can be evoked, reinvented, and deployed for various ideological battles. Instead, it is

clear that much of the opposition that claimed the authority of a timeless Christian tradition against birth control within marriage actually stemmed from concerns about decency and propriety that were part of secular as well as religious culture.

Moreover, while claiming allegiance to “traditional” religious doctrine, many religious and lay critics of the modern birth control movement were actually helping to construct a newer version of public Christianity with which to arm their coreligionists against an increasingly secular morality. As many recent commentators have noted, even the opposition of the Catholic Church to the modern birth control movement was highly reactive rather than proactive, seeking to mobilize its members and entering the public debate only after advocates had tried to claim a place for their own views in the public “marketplace of ideas” (Tobin 2001: 65). Even mid-twentieth-century critics who were hostile to the Catholic Church for its role in retarding the adoption of fertility limitation admitted frankly that the church’s entry into public discussions had occurred only in the previous fifty years and that: “Once the floodgates of discussion were open the Church authorities realized that they must try and direct the dangerous waters of controversy into clerically-approved channels” (Campbell 1960: 132).

The church mobilized in a number of ways: by proclaiming papal encyclicals such as Pius XI’s *Casti Connubii* in 1930 (Gervais and Gauvreau, 2003: 301), publishing pamphlets on the topic of artificial birth control for distribution in parishes, and sending regular clergy on missions to the laity. These militant sorts of missionaries were likely to be better informed about the specifics of the church’s increasingly explicit doctrine on marital sexuality and more likely to require conformity to teaching from penitents in the confessional. It was these visiting priests, in particular, who were most likely to refuse absolution for lay men and women found to be in violation of church teaching.<sup>6</sup>

Opponents of birth control were quite correct in their assessment of the importance of joining the public battle over the issue, since it was eventually the success of the movement in penetrating the sphere of public discourse that seems to have made the topic finally discussable between husbands and wives (Caldwell 1999: 492). Recent studies have confirmed the importance that the control of means of public communication played in shaping the interrelationship between politics and fertility in the late-nineteenth century. In places such as the Swiss canton of Fribourg, teachings within the Catholic schools, as well as Catholic lay and clerical control of print media, limited the kinds of views admissible to the public sphere by prohibiting the flow of information, leading to the maintenance of higher levels of marital fertility within the canton compared to Protestant cantons. Writing of church-state

control of Fribourg's public culture, Anne-Françoise Praz (2003: 47, this volume) notes: "Cultural factors are not limited only to doctrinal prohibitions on contraception. ...we can speak of a politico-religious culture that implied a whole vision of society that gave rise to concrete policies that families had to cope with." The point here is that political and religious forces often combined to control public debates over modern fertility limitation, which helped to create and reinforce powerful group identities.

Thus, the construction of pro-natalist doctrine can best be seen not as the result of the lingering effects of "traditional" Christianity but as part of a very modern process of identity formation and popular mobilization leading to the association of large families with various religious groups. Kevin McQuillan (2004) has recently recalled how, for a period from the late nineteenth century until the 1960s, the cooperation of the Canadian national state and Catholic Church helped to shape Quebecers' fertility. He shows how, after the end of political conflict in the 1830s, a kind of pact emerged between Canada's national government and the Catholic Church in Quebec that left the latter free to construct its modern self and with it, a renovated and modernized French-Canadian identity. The church's growing power up to the 1960s occurred with the national government's blessing in exchange for the church's willingness to stand as a legitimate source of social control over its parishioners.

The public power of the Catholic Church was also institutionalized in Quebec society through schools of all levels, the building of new parishes, and through its success in integrating its rituals into the lives of parishioners in public processions and festivals. The construction of this kind of modern religious identity informed by pro-family and pro-natalist values also came about through the creation of religiously related associational life for the laity. David Levine and Julie Savoie (2005) have suggested that the gradual association of a large "traditional" family with the ideology of Quebec nationalism largely ignored the fact that most Quebec women historically had no such reproductive experience. But, like ideologies the world round, this particular linkage of Quebec Catholic culture with high fertility was more a vision of a political and cultural ideal than an empirical description, one that persisted in the context of political battles of a minority in a modern democracy.

Modern religious identities identified with high fertility are not limited to the experience of Catholic minorities. Modern American religions such as the Church-of-Jesus-Christ-of-Latter-day Saints (Mormon), which has an explicit pro-natalist doctrine, also constructed their identity out of a history of oppression and exclusion. Mormon religious culture today suggests the compatibility of pro-natalist doctrines with lifestyles that are eminently this worldly and modern. Thus, whereas an earlier link between certain religions and

high fertility may have stemmed in part from the lack of availability of birth control information, this is no longer the case in the developed world. Older barriers to contraceptive knowledge put in place by media-monopolizing religious or political authorities can no longer be pointed to very profitably as “props” for higher fertility.

What this re-consideration of public struggles over birth control suggests is that the period beginning in the early decades of the twentieth century represented the emergence of the “culture wars” of the late-twentieth and twenty-first centuries over the family and its future that now divide opinions in many parts of the world. While the notion of a cultural “lag” in becoming “modern” may have formerly been useful in targeting which religious groups were most likely to lead and which groups more likely to follow in adopting marital fertility control, this model seems deeply inadequate for understanding the multiple ways that cultural and religious identities are shaped in the public world of associational life and formal politics.

Looking outside the west, we see some of the same ambiguities in the transmission of religion doctrine on marital sexuality as those documented for Europe and North America. Of great interest are the reportedly high levels of dispute among Muslims and others who disagree on whether or to what extent Islam forbids various techniques of birth control or fertility limitation (Omran 1992; Knodel, Gray, Sriwatcharin, and Peracca 1999). Here, as in the history of Christian doctrine, practices have varied by time period, national culture, and the degree to which an association between religiosity and high fertility has been integrated into political discourse. It seems no accident that the pro-natalist elements of Muslim tradition should emerge, and be constructed as part of a timeless “tradition” at the same time that many Muslims are seeking a greater political voice in their own societies as well as globally.

Religious traditions exist because they are constantly being renewed, reinvented, and redeployed in battles with various sorts of opponents and enemies, both real and imagined. What the above analysis has tried to explore are the many ways that recent observers have moved the discussion of religion and fertility beyond crude categories of “traditional” and “modern,” deepened our understandings of the complexities involved in communicating religious doctrine, explored the importance of linguistic codes in the formation of religious identities, moved our sights from the privacy of the home to the learning that takes place in people’s social networks, and shown the importance of modern political developments to the formation of values about fertility.

It is not possible to measure the pure effects of religion on demographic behavior, or to study its likely impacts by recourse to texts of doctrine or theology, edifying though these may be. Rather, as the discussion has tried to

show, religious identities of interest to students of the modern fertility transition are forged in the organizational life of civil society and in the political arena. When those identities are perceived to be under attack, we can expect defenders of competing values to mobilize a variety of ideas and arguments – both religious and secular – for their defense.

#### NOTES

<sup>1</sup> Following standard usage, the term “birth control” refers to any practice that helps to regulate either the number of children born or the spacing of those children. “Fertility limitation” refers to parity-dependent birth control, the kind that, according to Henry and others, is the sole kind that departs from a “natural fertility” regime. See Knodel and Van de Walle (1979: note 10). I have occasionally used the term “modern fertility limitation” to highlight this difference in terminology.

<sup>2</sup> On the other hand, he continued: “During the nineteenth century...the policy of the Churches – with very rare exceptions – was publicly to say as little as possible about such a disagreeable subject, and privately, if any warning was needed, to repeat the traditional condemnation by the Church” (131-132).

<sup>3</sup> Seccombe (1993: 175) cites the lack of an apparent “strategic” attitude as well. On the problem of the overuse of the notion of “strategy” in family history, see Viazzo and Lynch (2002).

<sup>4</sup> See also Van Poppel, Schellekens, and Liefbroer (2002) for the hypothesis that the spatial isolation of one urban Dutch Jewish population in the late-nineteenth century helped lower their levels of infant and child mortality.

<sup>5</sup> Comstock, who was both a postal agent and secretary of the New York Society for the Suppression of Vice, led the society to its success in having laws passed in 1873 which made the following activities a felony, to: “sell or lend, or give away, or in any manner exhibit, or...offer to sell, or give away, or in any manner exhibit...publish or offer to publish in any manner, or...have in [one’s possession], for any purpose or purposes, any obscene book, pamphlet, paper, writing, advertisement, circular, print, picture, drawing or other representation, figure, or image on or of paper or other material, or any cast, instrument or other article of an immoral nature, or any drug or medicine, or any article what ever for the prevention of conception, or for causing unlawful abortion, or...advertise same for sale” (quoted in Tobin 2001: 3-4).

<sup>6</sup> On the devastating impacts of this failure to receive absolution, see Gervais and Gauvreau (2003: 305).



CALVIN GOLDSCHIEDER

## RELIGION, FAMILY, AND FERTILITY: WHAT DO WE KNOW HISTORICALLY AND COMPARATIVELY?

### 1. GENERAL ORIENTATION

This paper focuses on the relationships between religion and fertility, highlighting what we know and what we should know in order to disentangle the variety of connections between religion (broadly conceptualized) and fertility (including family issues). I review both cross-national and historical studies to isolate the emergent mechanisms linking transformations in religion and the revolutionary reduction in fertility levels. I first outline the role of religion in the historical fertility decline and the low levels of contemporary fertility in western countries. I then turn to a more detailed examination of fertility changes among Muslim populations as exemplified by the patterns of the Muslim-Israeli population. Together with a preliminary exploration of religious influences in the fertility patterns of several Third World countries, I outline what emerges as the important ways that religions have influenced fertility, and point to several methodological and theoretical implications of these findings.

In this brief overview, I suggest that a major mechanism shaping the relationship between religion and fertility is the effect of some religious systems on reinforcing family values and segregated gender roles. This is not to suggest that religion represents “traditional” culture or values. The treatment of some religious systems as “traditional” and thereby encouraging high fertility and other religions as “modern” and thereby reinforcing low fertility merely rephrases the question about the role of religion. Since many religious systems (in both high and low fertility contexts) tend to emphasize family values, we need to specify which aspects of family values are more critical in influencing fertility. The challenge of our inquiry is to suggest how specific family values (derived and emphasized by religious systems) change and how are they transmitted generationally. My somewhat oversimplified answer to the question

about the mechanisms that link religion and fertility relates to the role of religious community cohesion and religious institutional power that translate these values into behavioral patterns including controlled fertility and small family size. In turn, these patterns are reinforced by peer pressures and religious competition in religiously pluralistic contexts. Thus, I shall explore the role of religious institutions and the cohesion of religious communities in shaping the relationships between family values, religion and fertility.

In part, I argue that the direct role of religious theology emphasizing large families and/or in discouraging the use of contraceptives and birth control is of secondary importance and is relevant only in select communal and institutional contexts. The key role of religious theology (or religious culture) is the emphasis on family values and gender inequalities. Socioeconomic and other characteristics of religious groups modify and qualify the relationship between religion and fertility and therefore always need to be considered. Nevertheless, religious systems may have an “independent” effect on fertility behavior. The analytic challenge becomes the specification of contexts where religion relates to fertility, rather than searching for universal relationships between religious affiliation and fertility behavior.

It is important to emphasize that there are two-way relationships between religion and fertility. My objective in this paper is to explore the diverse ways in which religious systems influence fertility. However, the study of the effects of changes in fertility on the religious lives of men and women and their communities is no less significant. It may be that the relationship between religion and fertility should be viewed as reciprocal over time, where each set of processes influences the other.

Several theoretical frameworks have served as paradigms to understand the importance of religious differences in fertility. They have identified how religious changes are linked to the emergence of small family size norms and have specified some contexts where religious systems impede the transition to low fertility and encourage large family size ideals and behavior. Declines in religion over time (often referred to as secularization) and reductions in family size have been linked. The key to clarifying how religious values influence reproductive patterns is located at the community-family level, where individuals and their values are anchored, where relationships between the generations and between men and women are under social control, and where economic development and political processes are translated into networks and opportunities.

At the macro level, the general argument has been that religion is part of “traditional” culture which reinforces large family size in conjunction with the demographic contexts of high mortality and rural agricultural economies, where

children are valued as laborers and women's reproductive and family roles are dominant. These cultural values change in response to broad processes of economic development, increases in education, Westernization, and urbanization. This generally appears to be the case for the western religions of Christianity and Judaism but may be less accurate for Islam and non-western religions. Religion has been viewed as the symbol of the past, the legacy of traditional society. Societal transformation involves the shift towards small family size as the cultural supports respond to new economic and socio-demographic conditions. In turn, high fertility religious values are replaced by secular orientations that emphasize the centrality of the individual in decision-making processes and the deliberate or "conscious" choice they make about the number of children that are appropriate for their emerging economic circumstances. Thus, in this perspective, religion and its associated values reinforce high fertility; the decline in religious centrality, in turn, becomes an important factor in fertility reduction.

Religious values, like "culture" generally, tend to be treated empirically as residuals, the unexplained variance after the "major" determinants of fertility have been examined. This is particularly the case in historical studies. Rarely have religious activities and the intensity of religious behavior been measured systematically and directly in demographic research. Often the effects of religion on fertility have been inferred from religious categories, or from oversimplified indicators of religiosity, reflecting both the limitations of available data and conceptual frameworks. At times, the behavior of persons identified as affiliated with a religious group is associated with a particular theological position of the religion on contraception or an emphasis on marriage or a stress on family values. How these formal theological positions or cultural values are translated to individual behavior and what is the role of religious networks and institutions are only occasionally studied.

The argument is often that cultural factors come into play after it is clear that demographic, economic, and other structural determinants have been explored and found incomplete as explanations of fertility variation and change. In classical demographic theory and even in some newly constructed variants, cultural variation is often considered primarily a mask for more basic and unmeasured socioeconomic structural sources and at best a marginal and untested set of determinants of fertility. While acknowledging that cultural factors are important, it too often remains unclear how these are translated to influence families, how they vary and change, and how they are linked to structural factors at both the community and societal levels.

## 2. RELIGION IN THE DECLINE OF FERTILITY IN EUROPE AND AMERICA

Classical demographic transition theory argues that the decline in religion (secularization) is associated, among other critical economic, political and social factors, with the reduction in family size and the transition from the centrality of extended kinship relationships to the emergence of the nuclear family (see Davis; Notestein; Glass; Demeny and McNicoll; Birdsall; Kirk; among many others). The results of the European Fertility project suggest that religion, language and other cultural issues were important factors in accounting for fertility variation and change (Watkins 1991). In this regard, religious categorical differences and the religious composition of areas indicate these cultural factors as they interact with socioeconomic and other structural changes. Historical data on changes in religious values per se (in contrast to religious categories or religious composition) are only available by inference and precious little direct evidence on connections between religion and family values has been developed.

Nevertheless, the association of the fertility decline with the transformations of religious systems is unlikely to be coincidental. The diminished role of the church in the lives of men and women, the increased specialization of economic, political, social and cultural (including religious) institutions are likely to have been critical determinants of the shift to smaller family size. Of course what is missing in the equation are the mechanisms linking religion and fertility (i.e., what is about religion that influences fertility), the direction of the relationship, and whether religious decline is a necessary or sufficient condition for fertility control.

The evidence available suggests that the expansion of economic opportunities altered intergenerational relationships and individual choice replaced family/kinship decision-making, and these were critical in the decline in fertility. The emergence of the nation state coupled with changes in the structure of the labor force, the new residential location of families and the increasing independence of young women and men were associated with reorientation of religious institutions and changes in its centrality in shaping family values. In turn these were part of the revolution in fertility behavior and family size values. In this sense religious changes and fertility changes were responsive to similar sets of socioeconomic and political developments.

A series of micro-level and community surveys complemented these macro findings and have documented the importance of religious differentials in fertility variation. In the United States and in Europe fertility differences by religious group have been extensively documented since the early 1920s. (The

best bibliography up to the 1960s is in Freedman 1961-62. See also Goldscheider 1971.) In the United States extensive survey data starting with early studies on contraceptive usage, the Indianapolis survey studies, the Princeton longitudinal study and the Growth of American Families studies of the 1950s and 1960s through the 1970s have documented the centrality of religious differences in fertility. These religious differences were documented for a wide range of fertility and family formation behaviors in dozens of studies, with extensive attention to measures of contraceptive usage and fertility values. The primary focus was on the higher fertility of Catholics than Protestants and the lower fertility of Jews. Surprising to most demographers, these fertility differences by religious category exceeded the important role of socioeconomic variation. Yet, with minor exceptions these fertility differences by religion were not linked empirically to family values or gender issues. And the primary measures of religious intensity were formal religious organizational membership and church attendance, with minimal attention to the meaning of religion to the family or to the roles of men and women. (Indeed, until the 1980s, fertility studies focused solely on women and childbearing and its socio-biological context was separated from studies of the social contexts of parenting.)

Some have argued that higher Catholic fertility had “ended” by the late 1970s and few differences among religious populations have remained in contraceptive usage and birth control (Westoff 1994). A general argument has been that convergences in fertility behavior and values has occurred such that religious differences are no longer critical in understanding the fertility regime in the period of the second demographic transition. Nevertheless, several interesting findings about religion and fertility remain unexplained in contemporary studies of fertility and family planning in western countries. In particular, the continuing higher fertility of Mormons, and of some Protestant fundamentalists and ultra-Orthodox Jews (Haredim and Hasidim) have yet to be explored critically or systematically. Despite the great diversity of these religious groups theologically and socially, their higher fertility levels require analysis. Moreover, while these religious groups are small in number and have exceptional forms of family, demographic and fertility behavior, they challenge the notion that religion has no continuing influence on fertility in the postmodern secular world of individualism. Indeed, the evidence seems to point to the reverse: even in the most secular and individualistic societal contexts, groups that emphasize gender-segregated roles, strong family values, and are characterized by community cohesion are likely to be differentiated in their family size and family formation patterns.

### 3. MUSLIM FERTILITY CHANGE AND VARIATION: THE ISRAELI EXAMPLE

The revolutions in religion linked to changes in Christian-Judeo traditions in the western world have not characterized Islamic religious traditions. In many countries around the world, and particularly in the Middle East region, there is substantial evidence that changes in various forms of Islam have emerged and have directly challenged the ways that family, gender, and fertility changes were linked with economic development in the past. Less recognized is the critical role that internal and international migrations have played in the diffusion of Islamic values to new areas and the changes experienced by Muslims in diverse national contexts. Often as a consequence of migration, contacts between different religious systems have resulted in the modification of religious activities and at times to the polarization of religious communities, political violence and economic inequality. These complex relationships between migration and religious conflict and their impact on fertility are only beginning to be specified systematically in comparative contexts. And the gender issues are often the points of greatest conflict and tensions. We turn to a brief examination of Muslim-Israeli fertility changes as one example of these complex linkages.

Fertility levels among Muslims living in Israel have been higher than for other religious groups for over a century. The sustained higher levels of fertility among Israeli Muslims and relatively recent decline (starting in the 1970s) raise important questions about the role of religious value changes and how these values interact with shifts in economic development to influence fertility patterns. (These patterns are documented in detail in Goldscheider 2002 and the studies cited there. For the early period, see Schellekens and Eisenbach 2002.)

What factors account for changes in Muslim fertility patterns? How do fertility changes and differences between Muslim and non-Muslim women in Israel reflect the context of changing economic and gender dependencies that are linked to religious communities? What contexts shape and reinforce particular Islamic religious values? Values that emphasize the subordinate role of women within households and gender hierarchies appear to be critical in sustaining high fertility levels. These values are intensified by structural economic and social dependencies within Israel. The evidence allows us to address the question of whether the higher level of Muslim fertility is a consequence of their lower rate of economic development, their specific religious commitments, their values emphasizing large family size, or the absence of contraceptive information. Indeed, the guiding question is: What is

the role of religious values in the fertility transition of Muslim women in Israel over the last several decades?

The factor in Middle Eastern culture, religion, and politics that encourages large families does not appear to be the “traditions” of Islamic culture or the “fatalism” of its religion. Rather, the major factors revolve around the family values emphasized within the traditions of Islamic societies and the culture that specifies segregated roles for men and women that are connected to economic relationships. These values are embedded in community networks that enforce strong kinship bonds and large families. While many Muslim communities throughout the world tend to be characterized by large families, it is likely that gender and economic dependencies at the community level are the critical contexts that reinforce these family values and are not simply derivative from them. High Muslim fertility reflects the economic and social value of children in Islamic culture, and sons are sources of economic security for parents in their old age because of the absence of effective state-based social welfare systems. But the lesson from studying Muslim fertility in Israel is that even when state welfare programs exist, when mortality levels have declined, and female education has increased, and when communication networks have expanded, high fertility may continue when there are supports for families at the community level.

Some have argued that fertility levels decline when the Islamic country becomes more urban and as women become more educated, as in Western countries, when, by implication, they become less Islamic (Omran and Roudi 1993: 11-12; Weeks 1988). Thus, a common argument is that the nearly universal high level of fertility in Muslim countries is not the result of religious influence but is a consequence of the recency of social and economic development in nearly all Islamic nations. There is therefore nothing unique or special about the fertility of Muslims except for the timing of socioeconomic development. Religion, in this context, is only a correlate of the key determinant—the level of development.

Clearly fertility levels are connected to socioeconomic development, employment patterns, labor market conditions, and opportunity structures; family kinship bonds are strong and children are valued in high-fertility societies. These are linked to fertility through their impact on the roles of men and women and the connections of families to the social controls exercised by communities. When these developments are associated with the break between community and family control, and when the roles of women become less family-based, fertility levels are likely to be reduced. Therefore, we need to study the mechanisms that result in the breakdown of family control over the economic lives and resources of the younger generation. These mechanisms are anchored

in communities and networks. The example of Israeli Muslims points clearly to the importance of migration (or its absence) as one mechanism for changes in fertility.

Changes in Muslim fertility have been complex, with fluctuations occurring over the last half-century, and with no uniform pattern. There has been a significant reduction in Muslim Israeli fertility since the 1970s, following a long period of initial high-fertility levels, despite major economic and increased welfare benefits. In contrast, Christian Arab fertility has declined steadily over more than half a century and is currently not very different from levels of overall Jewish fertility. Data document consistently higher levels of fertility among Muslims than among Jews in Palestine and in Israel throughout the last eight or nine decades. (Complex measures of fertility and a longer time span documenting higher Muslim fertility in Palestine are in Schellekens and Eisenbach 2002; see also Goldscheider 2002).

Both the level of fertility and the pace of its reduction differentiate Christian from Muslim Israelis. In turn, these populations exhibit different fertility patterns from Jewish ethnic groups, even as convergence towards a smaller family size becomes ubiquitous in Israel. The Christian Arab fertility levels are more similar to the Jewish levels than to those of other Arab populations. Christian Arab fertility declined slowly, beginning among the urban and more educated as early as the marriage cohort of the 1920s (Friedlander et al. 1979). An estimated one-third of the fertility decline of Muslim women between 1972 and 1983 can be accounted for by the decline in early marriages. The remaining two-thirds of the decline in Muslim fertility among the younger generation has occurred primarily through the control of births within marriage, through the use of contraception. Younger Muslim women have used contraception for both spacing births and stopping childbearing (Eisenbach 1989). Perhaps the salient analytic issue to emerge is the different way that education and fertility are related among Muslim Israelis. Controlling for educational level and comparing Muslims and Jews with higher levels of education does not reduce fertility differences. Actually such controls increase the differences. (The same pattern emerged in the 1960s among Catholics and comparing Jews and Protestants. It also characterized comparisons among racially defined groups.) Thus controlling for social class would not be expected to eliminate religious group differences. Indeed social class controls should widen religious group differences as non-Muslims with higher education have smaller families. Increases in education over time should not be expected to result in fertility convergences among religious groups since education for some is inversely related to fertility while for others education is positively related to fertility.



#### 4. WHY MUSLIM ISRAELI FERTILITY REMAINED STABLE AND THEN DECLINED

How are these patterns of change in Muslim fertility explained? What role do Islamic values play in the stability and subsequent decline? The general factors associated with the reduction of Muslim fertility in Israel are similar to the story of fertility decline around the world, historically and comparatively. The longer-run fertility changes are associated with declining mortality, increasing education, shifts to urban occupations, and rising standards of living, and increases in the centrality of nuclear families. However, these general changes do not account either for the specific timing of fertility reduction among Muslims or their continuing higher fertility levels. We briefly review several critical factors: mortality changes, education, and employment, and then we consider the role of the state and the importance of the family.

Mortality levels had been declining among Israeli Muslims without any clear links to changes in fertility. The extension of health care and public health facilities within Muslim communities accounts for most of the reduction of Muslim mortality. However, residential segregation continues to result in less health care in Muslim communities more distant from the more extensive health care facilities in large urban areas (Al Haj and Rosenfeld 1990; Anson 1992), resulting in an unequal distribution of life chances. Unless we postulate a unique lag between the reduction of mortality and the onset of the fertility decline among Muslims (a lag that characterizes neither the Arab Christian population in Israel nor the various Jewish sub-populations), we have to look elsewhere to explain the timing of the Muslim Israeli fertility pattern.

There has been a continuing increase in the educational attainment of Muslim women. Increases in educational levels are associated with the onset of the Muslim fertility decline, but fertility levels remained high well after there were indications of an increase in education. The labor force pattern of Muslim Israelis has also changed, with major shifts out of agriculture, but there has been no simple translation of educational attainment into jobs since the local opportunity structure has not expanded sufficiently. The formal participation of Muslim women in the paid labor force remains low. The best-educated Muslim women participate in the labor force as much as Christian Arab women, but the majority of Muslim women have not converted their improved education into work outside their communities. Muslims in Israel tend to reside in communities distant from major urban centers and lack the infrastructure to provide a rich array of employment opportunities within their communities. Most Muslim women work in their local areas and are limited to a few occupational positions (Lewin-Epstein and Semyonov 1993). There has been an expansion of

opportunities for Muslim women outside agriculture, which has necessitated organized commuting to factories. This labor force pattern has ensured community surveillance and social control, as well as continuing gender segregation, despite its location in areas outside their communities. Increases in female education reduce fertility when linked to jobs outside of the home. In turn, jobs among educated women imply empowerment of women and greater gender equality. When this does not occur, as has been the case among Muslim women in Israel, the result is sustained higher fertility.

An important set of factors influencing Muslim fertility connects to the employment of men and the labor market characteristics of Muslims in general. There has been a shift in the type of male employment, tied in to the economic integration of Muslims within the Jewish economy. Muslim Israelis have left agriculture and have commuted to jobs within the Jewish sector and the proportion of men working in white-collar jobs has increased significantly. But these remain in large part under the regulation of Jewish Israelis. Hence, economic integration has not resulted in independence and individual control.

Standards of living have increased in real terms as has consumption. Increasing levels of living, however, are combined with commuting; working in one area and living in another means the Muslim Israeli families remain under the control of small and segregated communities. In these ways the growing integration of the Muslim minority within the Jewish Israeli controlled economy has resulted paradoxically in their increased economic dependency, and has reinforced the dependency of women on family and community. To the extent that increasing autonomy and independence of women and men from the constraints of families and communities enhances fertility reduction, the work-residence linkage is a significant constraint for Muslim Israelis. The higher fertility of Muslims is a result of the power of communal control, not simply the economic benefits of children in agricultural communities or their higher costs in urban places.

Increases in the standard of living and in education, along with benefits from the welfare state and changes in the economic opportunity structure, have reduced the power of the extended family and the *Hamulas* (patrilineal descent groups that involve kin rights and obligations and establish kinship relationships), particularly among younger couples (Al Haj 1987). Changes in the decade beginning in 1970 put pressure on the family-economic connection and, combined with improvements in socioeconomic conditions, led to the beginning of the transition to small family size. Population growth (due to declines in mortality and high levels of fertility) in limited areas of geographic concentration (with little or no out-migration) and the expansion of work opportunities in areas outside the residential communities raised the classic

problem of the demographic crunch. These economic-demographic changes and the continuing control exercised by the broader community over the lives of Muslim women are at the center of the explanation of the delayed fertility reduction and the continuation of the higher levels of Muslim fertility.

One of the important contexts for an understanding of fertility changes among Muslim Israelis, therefore, is to examine their residential concentration. In contrast with Jewish Israelis, political control limited the voluntary movements of Muslim Israelis during the mid-1960s; informal constraints continue to limit their internal migration. Circular migration or daily commuting patterns have substituted for more permanent forms of migration and have been critical in slowing down changes that would have occurred under a more open internal migration policy. The absence of large-scale internal migration reinforces local ties among Muslims and the powerful influences of kinship and family networks. There are also important economic consequences of population growth without migration, since there are pressures from increasing numbers on the opportunities available in local areas. The regional concentration of the Muslim Israeli population and their residential segregation exacerbate their economic dependence on Jewish employers and on jobs in economic sectors controlled by Jews (Lewin-Epstein and Semyonov 1993). The solution to this classic demographic dilemma has been circular movement or commuting. And these types of migration delay fertility reduction.

Large family size is therefore consistent with the traditional family roles of Muslim women, their segregated roles, their lower status, and their relative powerlessness within society. Muslim men are powerless economically because of their dependence on the Jewish economic sector; Muslim women are doubly burdened by their economic dependency as Muslims and as women. High fertility has been costly for Muslim women because it has been combined with limited socioeconomic opportunities for the next generation, and because it has reinforced their family-centered roles.

One argument has been that the decline in fertility requires the extension of non-family roles among women that are not under the control of the community or their families. The theoretical challenge of this perspective became to understand why the role of Muslim Israeli women did not change with the first indication of economic development, and why large family size was reinforced by the absence of migration and by state welfare policies. But gender dependencies and family roles are also the consequence of family size. Large family size ties women to households and families in a way that reinforces their segregated roles. It takes sustained economic, political, and social demographic changes to break the cycle so that women (and men) are able to move towards the small family size model. Often this sustained break comes with migration (or

immigration), wherein the family is no longer the source of economic reward, and family members become less dependent on traditional economic supports. The break between family and economic resources is often facilitated by geographic and social mobility. In the case of Muslim Israelis, the state reinforced the family-economic connection politically as it integrated them into the Jewish economic sector. The absence of Muslim geographic mobility resulted in higher levels of economic dependency at a time when economic and social characteristics would have led to the expectation of greater mobility and reduced fertility. The longer-term disadvantages of high fertility for mobility are clearly emerging among Muslims, while the role of large family size in sustaining the family-oriented roles of women is clearly weakening.

Most Muslim-Israeli communities are concentrated in small, non-urban places where economic opportunities are scarce and economic development and infrastructure are limited. Health facilities, educational opportunities, and other key elements of social and economic infrastructure are significantly weaker in Muslim communities. In contrast, the state has disproportionately invested in areas with Jewish populations. The geographic isolation, small community size, and residential separation, combined with lower state investment, conspire to impoverish the everyday lives of Muslim Israelis as well as increase their powerlessness. The reduced aspirations of the young, the weak translation of education into jobs, the restricted role of women that results from increasing their dependence on men and the economic dependence of men on the Jewish economic sector are major consequences of this residential concentration. Economic dependency shapes continued gender dependency.

## 5. GENERALIZATIONS FROM THE MUSLIM ISRAELI CASE

As the above review suggest there are some unique political and historical features of Muslim Israeli conditions that have an impact on their fertility trends. However, the combination of residential constraints and labor markets, the limited opportunity structure, and the reinforcement of values placed on segregated gender roles in family-community contexts apply generally. In particular, the strong linkages between economic and gender dependencies in the study of fertility and religion are not the direct consequence of Islamic religious values or the concentration of Muslims in lower social classes or disadvantaged socioeconomic categories. Communities and networks, labor markets and migration, women's and family roles are key points on the theoretical map of explanation of Muslim fertility, as they are likely to be in understanding other religious and ethnic communities. We suggest the following general features of fertility that can be learned from the specifics of the Muslim case study.

The first general lesson is the importance of examining variation at the level of community, where communities are defined in terms of religious divisions. This emphasis takes us away from the characteristics of individuals to the contexts of families and communities. These communities may be coterminous with bounded geographic areas, but not necessarily so. (Indeed, one of the interesting questions to ask in other contexts is whether Muslims living in all Muslim areas behave differently than those who live in areas where they are part of non-Muslim majority or are in competition with other religious groups.) Emerging from our analysis is the importance of family-level connections (beyond the individual characteristics of women) in the context of the roles of women (and men) and the connection of the family to the community. The key linkages have been those that connect family processes to the economy that emphasize social class, political, and family networks. A focus on family and household units is the most direct way of approximating the links between the individual and community.

A second general lesson is that the state can play a powerful role in altering fertility patterns, even when policies are not fertility-specific and regardless of the intention of the policy. The state has played an important role in the process of fertility reduction but not in the sense of direct birth control or anti-natal family planning policies. The state has developed an extensive welfare entitlement system along with health and educational programs, which have provided indirect incentives to reduce family size. In the past, these incentives had the reverse effect on the Muslim population, slowing the pace of fertility reduction by relieving the pressures on the family. (This is all the more remarkable and ironic since the formal policy of the government and the official ideology was pro-natalist for the Jewish population (which witnessed a most impressive decline in fertility) and unintentionally pro-natalist for the Muslim population which experienced long-term delays in fertility reduction despite family and economic changes.)

A third conspicuous, but often neglected lesson is that changes in fertility are connected to other issues of demographic importance. As elsewhere, there are important relationships between fertility and mortality changes that have long been recognized. But it continues to be less well appreciated how migration and location-specific ties have shaped fertility responses: the non-migration of the Muslim Israeli population points to the reverse: the power of migration to break the links between the individual and the family-community of origin. Migration (internal in the Israeli Muslim case and international in cases of Muslim migration to the United States and Europe; rural-urban migration in the past of the European experience) is likely to have an impact on fertility through its connection to religious changes. We should incorporate this three-way

connection more systematically in other cases where religious groups are segregated residentially, where constraints are imposed (formally and informally) on residential mobility, and where communities are reinforced through migration, its absence or its type (circular). We need to move away from examining whether migration to urban places results in the reduction of fertility as rural migrants become urbanites to considering the impact of migration on communities and on those who do not migrate. This is an important connection that we need to emphasize in our research exploring the relationship of religion and fertility in third world countries.

Comparatively it is difficult to generalize about Muslim fertility patterns. Research in nine Muslim countries shows no clear pattern of fertility levels or contraceptive usage (Karim 1997). No typical pattern of fertility emerges as “Islamic”. Even in their detail, there is variation of Muslim fertility in relationship to key characteristics. Thus, for example, fertility among Muslims in Jordan remains high despite urbanization and high levels of female education. A review of theological views of Muslims about the intermediate variables of fertility (abortion, marriage, contraceptive usage, breast feeding) also reveals considerable variation. The relationship between gender segregation and fertility among diverse Muslim communities is not clear (Jones and Karim 2005). These conclusions are not surprising since no one would expect Islamic fertility patterns and Islamic ideology to be similar across social and political contexts any more than we expect Christian fertility and values to be identical over historical time and in different social contexts.

Two interesting findings suggest further insights to the religion-fertility connection. First is a set of studies by economists that finds fertility is higher among families who have been exposed to Islamic schools (Berman and Stepanyan 2003). Arguing that these Islamic schools are associated with “radical Islamic sects” in Indonesia, Bangladesh, India, and Côte D’Ivoire, the authors claim that there is a consistent relationship between high fertility and low returns to schooling in these countries. The low returns are associated with a variety of economic, political and cultural contexts. But gender role segregation that is reinforced in institutions may be an important factor (unmeasured) in their continuous higher fertility. I would add that the power of cohesive communities among those with particular forms of religious education reinforces these gender segregative values. Similar arguments about schooling and cohesive communities with high levels of social control over gender segregation appears to operate among religious sects of Judaism (the ultra-orthodox) and Protestant fundamentalists (e.g. Anabaptists).

A second study of demography and religion in India (Iyer 2002) documents how Muslims have higher fertility than Hindus or Christians. Examining these

patterns in one community in depth, the study finds that socioeconomic characteristics affect religious groups differently. The effects of religion are not direct but operate through their educational characteristics. In contrast to Christians and Hindus, better educated Muslims have higher, not lower, fertility. This in turn may be related to the opportunities available for Muslim educated women. It may also be tied in to the type of education received and the ways in which education can be translated into female empowerment. Clearly we will need to go beyond the simple socioeconomic differences among religious groups in analyzing the complex relationship between religion and fertility.

While Muslims in some contexts tend to have higher fertility than others in a number of countries, it is not likely to reflect their specific theology on fertility or contraceptives. Not more so than we would employ these factors to account for the fact that religious Catholics and some Protestant fundamentalists in America have had higher than average fertility over the last several decades and continue to have distinctive fertility and contraceptive usage patterns. Jews in Western countries over the last century have had lower fertility than other religious and ethnic populations and continue to have distinctive contraceptive practices (see Mosher, Johnson and Horn 1986; Goldscheider and Mosher 1991; Goldscheider 1971). But more pious and segregated Jewish communities have significantly higher fertility in the United States, Israel, and Europe.

The diversity of historical circumstances, and the variety of religious groups in countries around the world where religious differentials in fertility have been documented, defy simple theological or social-class interpretations. Clearly, Catholicism, Islam, Judaism, and some Protestant fundamentalist denominations do not share similar ideological commitments or theological imperatives to reproductive values. Nor do religious persons tend to be characterized by some common concentration in social-class categories associated with higher fertility. While the search for one theory to account for these religious patterns is unlikely to be fruitful, it is nevertheless remarkable how religious differences in reproductive behavior remain salient cross-nationally and over time. The argument that seems to be most fruitful is based on the premise that understanding religious differences in fertility must be integrated with general explanations of fertility variation and change. Indeed, a subtext of the analysis presented here is that through an understanding of religious differentials, greater clarity about the broader determinants of fertility will emerge. Religion and religious expressions are variables, not constants, and reflect social contexts and changing institutional forms. Similarly, and less well appreciated, relationships between religion and social factors in some contexts and at particular points in time do not necessarily hold for all times and contexts. The ubiquity of the religion-fertility relationship should not obscure

the fact that there are diverse paths to the influence of religion on fertility over time in different contexts.

Religious affiliation and religiosity are important in understanding fertility because they are linked to values about the centrality of the family and to relationships between the economy and the family structure, as well as to relationships between men and women and between parents and children. Therefore, the search for understanding why some religious groups have distinctive fertility patterns, and why religiosity is a major determinant of fertility levels, should not begin with a review of the theological pronouncements of religious institutions about fertility and family size, or about contraception and birth control, but rather about family values and gender roles. In turn, religious and family-gender values are embedded in the structure of family-gender patterns and the ways economic and family relationships are linked. Thus, understanding religious differences in fertility requires the examination of three complex phenomena: (1) family structure and gender roles associated with religious groups and how they are connected to economic activities; (2) the values that are embedded in these structures and roles; and (3) how religious affiliation and the intensity of religious commitments reinforce these structures and, in turn, these values.

One of the contexts shaping how these values are transmitted generationally may be the exposure of migrants (or their non-exposure) to new opportunities. As in other cases, linking migration, fertility, and religion at the level of community is necessary to obtain a coherent and systematic analysis. In turn, the place of one religion in the context of other religious groups, not only their relative minority status but also their religious pluralism may shed additional light on these complexities. And the community context may help bring into focus the role of family and community networks in shaping both the diffusion and innovation of fertility control for women and men in religious societies.

It is astonishing that after decades of research demonstrating the potential role of migration in fertility changes, so little research has systematically incorporated the links between types of migration and fertility. Indeed, the absence of migration in some contexts reinforces the role of gender segregation and relationships of men to location and to opportunities; economic dependencies emerge clearly. Gender dependencies are reinforced despite changes in jobs and location to urban destinations. Population stability can reinforce the power of the community to withstand economic and social structural changes. Residential segregation of religious communities reinforces family-related values and the control exercised by the community over the lives of women. It is not residential segregation per se, but the power of the community to reinforce social control and family values. Out-migration has



often been the demographic safety valve that has resulted in exposure of families to new communities where jobs and housing become available. The question needs to be raised whether international migration of Muslims to western countries are likely to break the bonds of religious community and their values or are new communities formed that empower women, change their family values toward the greater secular and egalitarian societies of destination. Again the nature of the community formed upon immigration and the generational transmission of values become critical dimensions of these potential changes in family and fertility.

Unless women in their families and their communities are more empowered, economic value will continue to be assigned to children because of their contemporaneous contribution to the household economy and to their prospective economic contributions in the future. The value placed on having children may, in turn, reinforce the family roles of women and of men. Sometimes these roles are transformed through education and through migration, and when the links (responsibilities and obligations) between the generations are redefined. When education levels increase but are not readily translated into commensurate jobs, and migration is temporary or circular, and when new communities are formed that reinforce these distinctive values, a weaker basis exists for the transformation of family roles and values.

Where does this leave the analysis of the role of values in sustaining high fertility and its subsequent reduction? The evidence suggests two major points. First, the values that most influence fertility are those that relate to the centrality of the family, the roles of men and women, and the roles of parents and children. These values are significantly more important than religious views on contraceptive usage or ideal family size. Second, values do not operate in a social and political vacuum but are variables that respond to political-economic and demographic contexts. Values are reinforced and reconstructed as these contexts change. It is unlikely that the changing relationship of religion and fertility can be understood without attention to the broader community contexts shaping changes in both fertility and religion. Religious systems and fertility are complex processes. Disentangling the linkages between these complex processes are major challenges for social scientists and historians.

JONA SCHELLEKENS AND FRANS VAN POPPEL

## RELIGIOUS DIFFERENTIALS IN MARITAL FERTILITY IN THE HAGUE (NETHERLANDS), 1860-1909<sup>1</sup>

### 1. INTRODUCTION

The spread of fertility control differs from religion to religion. For instance, the decline in marital fertility among Catholics in countries including Germany and The Netherlands was delayed compared with that in other religious groups (Knodel 1974; Van Poppel 1985), while Jews are thought to have led the rest of the population in achieving lower levels of reproduction in countries like Germany and Italy (Knodel 1974; Livi Bacci 1986). As yet, much needs to be learned about the proximate and ultimate determinants of religious differentials in fertility. In this paper, these determinants are investigated in a Dutch setting, using birth-history data from the population registers of The Hague, which are available from 1850. Our questions are, first, whether religious differentials can be explained by socioeconomic characteristics; second, to what extent religious values explain the behavior of religious groups; third, which proximate determinants account for the religious differentials; and fourth, whether Jews were “forerunners” in the fertility transition. Since religious differentials and their determinants may change over time, we examine the first three questions for two different periods - before and during the transition.

### 2. RELIGION AND FERTILITY

There are three kinds of hypotheses about the relationship of religion to fertility: the characteristics hypothesis, the religious-values hypothesis, and the minority-group-status hypothesis (Goldscheider 1971). The first type contends that religious differentials will disappear once the proper socioeconomic and demographic variables are taken into account. “Suppose that on average Catholics have both higher fertility and lower socioeconomic status than Protestants. If

Protestants and Catholics with the *same* socioeconomic status did not differ in fertility, then the higher fertility of Catholics as a group would be presumed to result from the compositional effect of a higher proportion of Catholics than of Protestants having low socioeconomic status” (Anderson 1986: 299). Schrover’s (1997) study is a Dutch example of the characteristics hypothesis. She associates the relatively high fertility among Catholics in rural areas of the south of The Netherlands in the second half of the nineteenth century with the contemporary reduction in women’s tasks on farms. Petersen (1961: 223), discussing the results of the 1941 Indianapolis study, provides an additional example when he argues that “the small family size of Jews derives from their concentration in cities, especially in those urban occupations that are always associated with low fertility.”

Religious ideology may influence fertility not only directly through proximate variables, such as the use of contraceptives or breastfeeding, but also indirectly by increasing the number of children that couples desire, or by teachings on the appropriate roles for men and women without specifying a particular proximate determinant (McQuillan 2004: 31). During the nineteenth century, the policy of the Catholic Church and other denominations was to say as little as possible in public about contraception, and, in private situations, where necessary, to reiterate the traditional condemnation by the Church (Campbell 1960: 131-132). In the twentieth century, the Catholic Church placed more severe sanctions than the Protestant churches or Judaism on the use of contraception (Feldman 1968: 104-105).

Marital fertility may also be influenced through religious attitudes to breastfeeding. In The Netherlands, the Catholic Church did not start a vigorous campaign against the use of birth control until after 1900 (Westhoff 1986: 26-42; Röling 1987: 135-141 and 218-225). Hence Meurkens (1989: 129) has argued that marital fertility among Catholics was high in the nineteenth century because of a decline in breastfeeding (see also Lesthaeghe 1983). In the second half of the nineteenth century, Catholic priests in The Netherlands started to oppose the baring of any part of the female body, in particular breasts, to prevent sexual stimulation of men. The Catholic politician P. J. M. Aalberse (1871-1948) explained that “Catholics ... do not breastfeed because of a misplaced sense of shame [when baring their breasts] or, even worse, because of the tradition of binding young girls’ breasts so they won’t develop [making breastfeeding difficult] ... This terrible habit is probably the result of prudishness which is wrongly equated with morality...” (translated from Aalberse 1917: 354).

Writing in the first half of the nineteenth century, the Polish Rabbi Abraham Zvi Hirsch Eisenstadt (1966) advised parents not to wean infants before the age of two. Nineteenth-century observers in Amsterdam and Rotterdam reported that

Jewish mothers breastfed their infants more than Catholics and Protestants (Van Poppel 1992), but it is not clear whether this was for religious reasons. A local health commission in The Hague reported relatively small religious differentials in breastfeeding patterns in 1908. Forty per cent of Jewish mothers breastfed for more than ten months, compared with 35-36 per cent among Protestants and Catholics (Gezondheidscommissie 1912).

A number of religions have elaborate rules about the timing and frequency of sexual intercourse. The concept of “marital debt” - the obligation of spouses not to deny sexual gratification to their partner - may be one of the few elements of Catholic theology to have promoted coital frequency (Hull 1996: 12; McQuillan 2004: 29). Jewish marital law stipulates that a woman is entitled to a minimum coital frequency, depending on the husband’s occupation, as part of her marital rights (Feldman 1968).

If differences in neither characteristics nor religious ideology explain religious differentials in marital fertility, there remains the minority-group-status hypothesis, which relates the fertility behavior of a given group to the social context in which the group exists. Explanations of reproductive behavior among Jews during the transition are often of this kind. For instance, Goldscheider (1967: 207) contends that Jews, as members of a minority group that is conscious of discrimination, feel insecure and believe they lack full acceptance in the non-Jewish world, and that their aspiration to social mobility and desire for acceptance in society, has tended to encourage small family size. While Goldscheider stresses the desire for *integration* as a decisive force, Knodel argues that it was rather *segregation* that favored the adoption of practices of family limitation among Jews. He attributes (1974: 140-141) the early fertility decline among German Jews to “the close cultural and social ties between them which resulted in their being a more self-contained, closed cultural entity than Protestants or Catholics and provided a situation in which changing norms regarding family size and family limitation could spread rapidly and relatively independently of the rest of German society.”

Of course, it would be wrong to associate the minority-group-status hypothesis with Jews only. During the overall period described in the present study, Catholics in The Hague also constituted a minority, albeit a much larger one. This is likely to have affected their compliance with the requirements of Church authorities, and hence their reproductive behavior.

Religious ideologies seem to play a pivotal role in some settings but not in others. McQuillan (2004: 32) argues that religious values are most likely to matter when religious institutions have the means to communicate values to their members and to institute mechanisms to promote compliance and punish nonconformity. The Netherlands seems to have provided such a setting for

Catholics. Dutch Catholics have held a minority position for several centuries. In their opposition to the Protestant majority, they developed strong religious institutions, and these dominated their group in The Netherlands to such an extent that the Church's moral objection to family planning could be maintained (Van Poppel 1985: 368).

In the nineteenth century, religion deeply divided Dutch society. It played an important role in determining the choice between the three main types of school: public, Protestant, or Roman Catholic. Thus, by the age of six, society was already split along religious lines. In Dutch, this phenomenon is known as *verzuiling* (the "pillarization") of society. Typically, a Dutch child played with children of his or her own faith only. When a Dutch male grew up, his circle of friends would consist of people of the same faith and he would marry someone of that faith. He would join the party and trade union, and read newspapers and periodicals associated with his faith (Van Poppel 1985: 352-353).

### 3. DATA AND VARIABLES

Because of the unbalanced regional distribution of Catholics in The Netherlands, a national study of this group may confuse the effect of religion with that of region. We therefore decided to focus on a city in the western part of the country, where the numbers of Protestants, Catholics, and Jews were large enough for our purpose. Because, for practical reasons, our choice fell on The Hague, the results presented here relate mainly to the urban sector, though rural migrants may to some extent have mitigated the differences between urban and rural settings. Although the choice of The Hague may affect the size of any effect of religion, we do not expect this to affect its *direction*.

In the second half of the nineteenth century, The Hague evolved from a provincial capital and a quiet place to live into a big, modern city. In 1850, the city had about 72,000 inhabitants. After 1870, when prosperity increased, the population grew steadily, reaching 206,000 at the turn of the century. More than half of this growth was due to migration. The presence of the Royal Court, Parliament, and government offices attracted large numbers into the service sector. In 1850 this sector made up 42 per cent of the labor force. Another 34 per cent were employed in industry, mostly in the construction sector and in the clothing and shoe industries. By 1900 the service sector had declined to less than 37 per cent, while almost 36 per cent were employed in industry (Stokvis 1987: 88, 149).

In 1850 about 60 per cent of the population of The Hague was Dutch Reformed. After 1880 their numbers declined, reaching about 40 per cent in 1920. The percentage of Roman Catholics remained more or less stable at about

30 per cent for most of the period, while the percentage of Jews slowly declined from about five to three per cent in 1920. Before the twentieth century, few people in The Hague were unaffiliated to a particular religion.

It should be noted that the Dutch Reformed in The Hague, as elsewhere, included both fundamentalists and liberals, the former being much more outspoken in their opposition to neo-Malthusianism. At the end of the 1880s members of the Dutch Reformed congregation in the city received the right to vote for new clergymen. This led to the domination of more orthodox clergy, and after a while liberal clergy were no longer appointed in The Hague (Stokvis 1987).

At the restoration of the Catholic episcopal hierarchy in 1853, The Hague became a deanery in the diocese of Haarlem. Stations (congregations having neither a church nor a resident priest) were replaced by parishes with defined territories, and from then on the faithful were instructed to keep to their own local parish. This removal of choice is thought to have increased the hold of local priests over the faithful in their parishes. Between 1853 and 1900 the number of Catholic parishes and churches in The Hague doubled, enabling the faithful in new neighborhoods to go to church (Voets 1981). The growing Catholic self-confidence expressed itself in the neo-Gothic style of churches, the Maria cult, and the foundation of religious brotherhoods (Dumas 1983).

Most Jews lived in four neighboring streets known as *De Buurt* - literally "the neighborhood" - and in a few streets nearby. Although this was not an exclusively Jewish neighborhood (many non-Jews lived there) in the middle of the nineteenth century, there was still a certain degree of cultural isolation because of the Yiddish still spoken by many inhabitants. In the second half of the nineteenth century those who could afford it started to move out to streets around *De Buurt*. The Jewish community in The Hague had its own hospital, orphanage, and home for the aged. Towards the end of the century complaints about the decline of religious commitment became more common (Van Creveld 1989).

For the present study, marriage registration was used as a sampling frame. A degree of oversampling was necessary to ensure that a sufficient number of Jews were included in the study. The marriage registers do not contain information on religion. To identify Jewish couples, we first compiled a list of surnames common among Dutch Jews, drawing on four different sources: a list of names of Jewish families living in the Jewish quarter of The Hague in the years 1811-1942 (Van Creveld 1989: 214-222); an index of surnames of Jews marrying in the period 1811-1852 (Veldhuijzen 1996); a list of surnames in the archives of the Sephardic Jewish community of The Hague; and the registers of rabbinical marriages in The Hague for the period 1873-1902. Because only a very few Jews

were not registered members of the Jewish community in the nineteenth century, the registers of rabbinical marriages cover the vast majority of the growing secular Jewish population. Using the list of surnames, we searched the marriage registers for couples who married in The Hague during the years 1859-1902, and consulted the population registers of The Hague to verify whether the bride or groom or both were indeed Jewish. For all other religious groups, a random sample was drawn from the records of civil marriages contracted between 1859 and 1902. The sample fraction ranges from 4.6 per cent (1902) to 8.2 per cent (1885), and the initial number of cases was 3,966 couples. However, many couples who married in The Hague did not settle there after their marriage. Other couples simply could not be located in the population registers for technical reasons. Second marriages were excluded from the study, and a few more cases were lost because of data inconsistencies and missing values. The final sample, on which the data are based, comprised 2,145 women, giving 24,943 years of exposure. Note that there are women who contributed years to the analyses of both periods.

Next, socioeconomic and demographic information on the couples was extracted from the population registers. Continuous population registers - bound documents with non-removable pages - were prescribed in The Netherlands by a royal decree of 22 December 1849, to record the population residing within each municipality. The returns from the census of 1849 were copied into the population register, and from then on all changes occurring in the population during the following decades were recorded there. For each individual, the following details appear in the record: date and place of birth, relation to the head of the household, sex, marital status, occupation, and religion. Births after 1909 are not included in the study.

For the town of Tilburg, Janssens (1994) checked the accuracy of the population register's recording of demographic events by comparing the registration of births there against the birth registers. At most 0.2 per cent of births were not entered in the population register, all such cases being children dying soon after birth. The omission of less than one per cent of births should not significantly affect the conclusions of the present paper.

Couples are divided into four religious groups according to the denomination of the husband. The Dutch Reformed constitute the largest group, with 924 couples. There are 494 Roman Catholic and 613 Jewish couples, the latter mostly *Ashkenazim*. The residual category (114 couples) consists of different groups of Calvinists, such as the *Christelijk Gereformeerde Kerken* and the *Gereformeerde Kerken in Nederland*, small liberal Protestant groups such as the *Evangelisch Luthers Kerkgenootschap*, the *Remonstrantse Broederschap*, and people without religion.

We used the first occupation listed in the population registers. Occupational categories are a far from perfect basis for a socioeconomic stratification of the population. For example, in the early years of the population registers they do not indicate whether a person is an employer, self-employed, or an employee. In particular, occupations in the trade sector pose a problem: it is usually impossible to tell whether a person is a great merchant or just a street trader.

The study is based on a slightly adapted version of the socioeconomic classification by occupational category designed by Giele and Van Oenen (1976). This is based on the relationship of the individual to the means of production and on the ideas of contemporaries about the class structure. The categories are:

1. Upper class (employers in industry, professionals, higher civil servants, higher military personnel).
2. Petite bourgeoisie (shopkeepers, small entrepreneurs and merchants, self-employed artisans).
3. Lower white-collar (lower-level professionals and lower-level civil servants; foremen and supervisors of various kinds).
4. Gardeners and fishermen.
5. Skilled manual workers (craftsmen, skilled laborers, construction workers, service employees, lower-level military personnel).
6. Unskilled laborers.
7. Without occupation, and unknown.

The different religious groups have different socioeconomic profiles. Jews are over-represented in the trade and retailing sector ("petite bourgeoisie") of The Hague, whereas Catholics and the Dutch Reformed are more likely than Jews to have working-class occupations (see Table 1). This does not mean that Jews were on average better off than others. Indeed many Jews in the trade and retailing sector were just street traders living in one of the poorest neighborhoods of The Hague (Van Creveld 1989). Almost all fishermen were Dutch Reformed, all living in the coastal village of Scheveningen, which belongs to the municipality of The Hague.

The following demographic variables are included in the study: age of the woman; marital duration; a dummy variable indicating the first year of marriage; age difference between the woman and her husband; infant mortality; the number of births, or crude parity; and the number of surviving children, or net parity. A set of dummy variables is used to model the effect of a woman's age. The dummy variable indicating the first year of marriage is added to take into account the fact that some women were exposed to sexual intercourse and may have conceived before marriage.



*Table 1. Occupational distribution of male heads of household by religion, The Hague 1860-1909.*

Occupational group	Dutch Reformed	Catholics	Jews
Upper class	6.8	3.2	7.4
Petite bourgeoisie	17.0	24.5	57.8
Lower white-collar	6.6	6.1	8.1
Gardeners and fishermen	7.5	2.4	0.1
Skilled manual workers	36.3	35.3	13.1
Unskilled laborers (ref.)	9.3	9.7	3.7
Without occupation and unknown	16.4	18.8	9.8
Total	100.0	100.0	100.0
Number of cases	1114	621	727

Source: Population registers of The Hague.

In the absence of parity-dependent marital fertility control, the age pattern of marital fertility closely follows a standard schedule, a fact which led Coale and Trussell (1974) to propose to use the deviation of the age pattern of marital fertility from such a schedule as a measure of parity-dependent fertility control. However, fertility control is a function not only of age but also of marital duration. For this reason, Page (1977) proposed a model of marital fertility incorporating both age and marital duration. Later Van Bavel (2003) introduced parity into the model in order to determine whether the effect of marital duration on marital fertility is primarily attributable to parity-dependent fertility control or to declining coital frequency. The present study makes use of his method to uncover evidence for parity-dependent control. Van Bavel's model includes both net and crude parity. Net parity equals crude parity minus the number of children who died. Thus, after controlling for crude parity, the effect of net parity is exactly the opposite of the effect of the number of children who died. Although parity-dependent fertility control is a function of net rather than crude parity, the inclusion of crude parity is essential in order to control for fecundability and secondary sterility. There is a positive correlation between crude parity and fecundability, while there is a negative correlation between crude parity and secondary sterility. Fecundability and secondary sterility will also influence net parity, but less so than they do crude parity.

Crude parity is modeled as a count variable, and net parity by three dummy variables indicating two, three, and four or more children being alive in the previous year, one child or none being the reference category. The death of an infant to a breastfeeding mother would be expected to shorten the post-partum

infecundable period. To control for this physiological effect, the study includes a variable indicating whether an infant death occurred in the previous year.

When family limitation is practiced, the reproductive behavior of couples will depend on net parity. However, net parity is also a function of past levels of breastfeeding, coital frequency, and contraceptive use, just as crude parity is. Hence, after controlling for crude parity and infant mortality, a *negative* correlation between net parity and subsequent fertility suggests the presence of family limitation in the broadest sense, including parity-dependent abstinence and reductions in coital frequency. In this study, crude and net parity are lagged by one year (see the next section, “Statistical methods”).

Because the individual’s view of the ideal family usually encompasses preferences about both number of children and their distribution by sex, this latter preference may affect the reproductive behavior of couples when family limitation is practiced. Pollard and Morgan (2002) have shown that among American cohorts born between 1915 and 1954 a child of each sex was often required before parents stopped childbearing. For the present study, we constructed two variables, one indicating that the only children alive in the previous year were boys and the other that girls were the only children alive. Both same-sex variables produced similar results. To prevent multi-collinearity with net parity we excluded the “only boys” variable from the model.

The study comprises women who married in The Hague only. Thus, all the women went through at least a partial process of socialization in an urban area before marriage. It is not possible to differentiate between migrants and locally born mothers, which is a shortcoming in our analysis since it has been shown that migrant status is related to fertility control in urban settings (Alter 1988: 193). However, if the omission of this variable does not affect the coefficients of the other variables in the analysis, it should not affect our conclusions.

#### 4. STATISTICAL METHODS

A discrete-time multi-level hazard model is used to assess the effects of the independent variables on the probability of giving birth (Barber et al. 2000). On the first level we have years and on the second women. It is now an accepted procedure to estimate discrete-time hazard models using logistic regression (Efron 1988). A logistic regression can easily accommodate two common features of event histories: censored data and time-varying variables such as crude and net parity (Allison 1982).

Event-history models were initially developed in the health sciences, where the canonical study is one of mortality. By contrast, the nature of fertility is that births are repeatable events. Because the focus of the present study is not any

specific interval but rather fertility levels in general, intervals were pooled, turning the model into a repeated-events duration model (Box-Steffensmeier and Zorn 2002). The use of logistic regression to estimate the repeated-events history model effectively turns this analysis into a binary time-series cross-section analysis, in which binary time series for women are pooled. Researchers typically analyze time-series cross-section data with a binary dependent variable assuming temporal independence. However, observations in a time series are likely to be temporally dependent, and ignoring this may lead to misleading results (Beck et al. 1998). The simple solution used here is to add a lagged dependent variable. A random effect was added to the model in order to control for unobserved heterogeneity between women (Amemiya 1985: 348-352; Yamaguchi 1986). MIXNO, a computer program for mixed-effects logistic regression, was used to estimate the coefficients (Hedeker 1999).

Since we do not censor intervals (after five years, for example) but follow all married women, including infertile ones, until the end of their marriages, or until age 50, or, depending on the period, until 1880 or 1910 - whichever comes first - last intervals can be quite long. Moreover, unlike deaths, births cannot occur every month. Hence, we opted for annual rather than monthly intervals. The model, therefore, assumes that the hazard for a birth is constant within annual intervals, but is otherwise unconstrained. There is some chance that a woman

Figure 1. Coale's marital fertility index  $I_g$ , The Hague 1848-1931.



Source: Van Poppel (1984: 75).

will have two births in a calendar year. However, we found that less than 0.5 per cent of second and higher-order births occurred during the same calendar year as the previous birth. The dependent variable in the model is the log odds of a woman giving birth in a specific calendar year.

## 5. RESULTS

Using Coale's marital fertility index as a criterion, it is clear that a marital fertility transition was well on its way in The Hague in the 1880s (see Figure 1).<sup>2</sup> Allowing for some inaccuracy, we will refer to the periods before and after 1880 as "before the transition" and "during the transition", respectively.

Table 2 presents age-specific marital fertility by religion before and during the transition in The Hague. Before 1880 total marital fertility was highest among Jews. In the second period, marital fertility was highest among Catholics. An analysis of the shape of the marital fertility function by age may indicate whether parity-dependent fertility control accounts for any of these observations. The age pattern becomes more apparent when the value for the 20-24 age group in each schedule is taken as 100, as is done in Figures 2a and 2b. For comparison, a population with "natural fertility" - the Hutterites - has been added to the figures. In the pre-transition period, the age-pattern of Jewish fertility shows a close resemblance to that of the Hutterites, suggesting a very low level of parity-dependent fertility control. Like that of the Hutterites, Jewish fertility shows a pattern of a slow decline up to the age of 35-39, falling rapidly

*Table 2. Age-specific marital fertility rates and total marital fertility by religion and period, The Hague 1860-1909.*

Age group	1860-1879			1880-1909		
	Dutch Reformed	Catholics	Jews	Dutch Reformed	Catholics	Jews
20-24	0.524	0.547	0.557	0.502	0.507	0.488
25-29	0.455	0.462	0.525	0.423	0.471	0.394
30-34	0.487	0.361	0.442	0.302	0.355	0.314
35-39	0.315	0.338	0.391	0.210	0.261	0.272
40-44	0.161	0.200	0.248	0.137	0.154	0.182
45-49	-	-	-	0.019	0.026	0.021
Total marital fertility	9.5	9.5	10.8	8.0	8.9	8.3
Years of exposure	1477	775	1562	9912	5262	4942

Source: Population registers of The Hague.

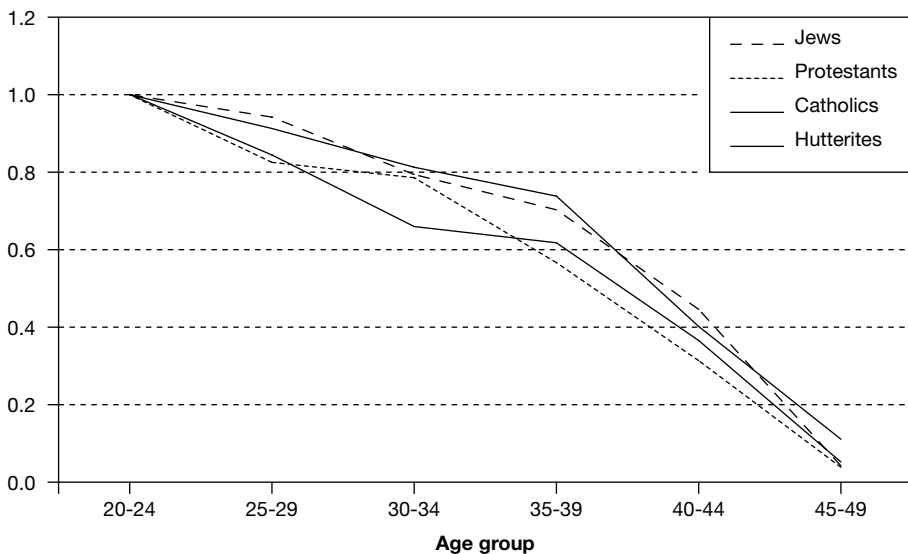
thereafter. This pattern is less clear among the other two groups, who diverge slightly from the Hutterites, but not enough to show with any certainty whether family planning was being practiced. Marital fertility tends to be higher among women who have recently married, because the first birth interval does not

*Table 3. Mean age at first marriage of women by religion and period and age at last birth by religion, The Hague 1860-1902.*

Religion	Age at first marriage				Age at last birth	
	1860-1879		1880-1902		Mean	n
	Mean	n	Mean	N		
Dutch Reformed	26.0	254	25.1	670	38.3	195
Roman Catholic	26.3	136	25.3	358	39.7	90
Jewish	25.5	212	25.7	401	40.9	69
Others	27.0	26	25.6	88	37.5	25

Source: Population registers of The Hague.

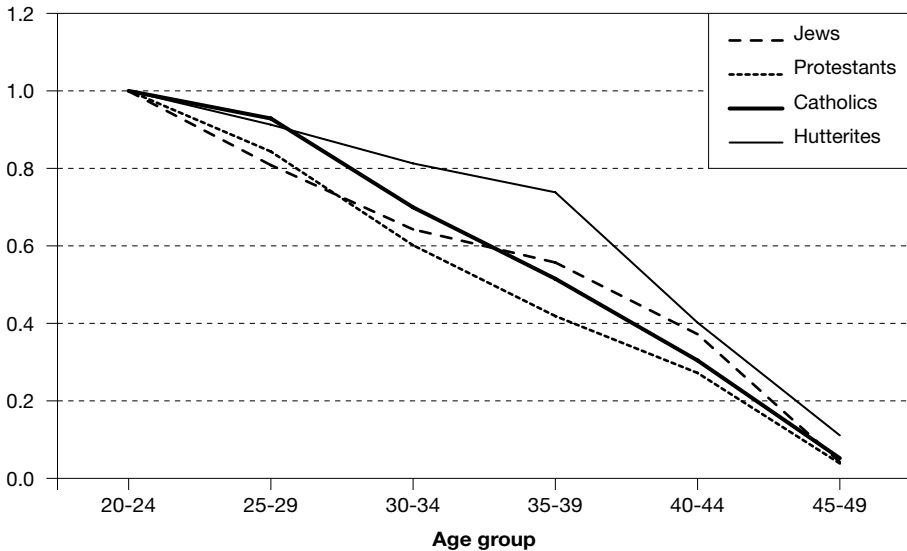
*Figure 2a. Indexed age-specific marital fertility rates by religion, The Hague 1860-1879.*



Note: There are not enough cases in the last age group to estimate marital fertility rates; instead estimates for 1880-1909 are used.

Source: Computations based on Table 2.

Figure 2b. Indexed age-specific marital fertility rates by religion, The Hague 1880-1909.



Source: Computations based on Table 2.

include a period of postpartum non-susceptibility. This may explain part of the deviation from the Hutterite pattern in Figures 2a and 2b. In the first period, when Jewish women married earlier than others on average, such deviations are more likely among Catholics and the Dutch Reformed, while in the second period, when Jewish women married later than others, deviations are more likely to occur among Jews (see Table 3). For this and other reasons the graphical method may not be sensitive enough to measure low levels of parity-dependent fertility control. Below, we will use regression analysis to show that the Dutch Reformed already practiced this type of fertility control before the transition.

When couples can use some method of family limitation, they make efforts to reduce or cease further childbearing and thus lower fertility when they reach their desired family size. For this reason, fertility falls more rapidly as age, and thus parity, increases (Wilson 1984: 229). Figure 2b shows that marital fertility among the Dutch Reformed declined at a similar speed both before and after the age of 35-39. This is clear evidence of the practice of family limitation after 1880 among the Dutch Reformed. Figure 2b suggests that family limitation was also practiced among Catholics and Jews but may have been less widespread among them.

*Table 4. Descriptive statistics for all variables used in a study of religious differentials in marital fertility in The Hague 1860-1909, by period.*

Variable	1860-1879		1880-1909	
	Mean*	Stand. Dev.	Mean*	Stand. Dev.
<b>Birth</b>	0.377	0.485	0.277	0.447
<b>Religion</b>				
Dutch Reformed (ref.)	0.388	-	0.471	-
Roman Catholic	0.200	0.400	0.249	0.433
Jewish	0.384	0.486	0.236	0.425
Others	0.028	0.165	0.044	0.205
<b>Demographic variables</b>				
Age of woman:				
<25 (ref.)	0.160	-	0.099	-
25-29	0.313	0.464	0.222	0.416
30-34	0.267	0.443	0.249	0.433
35-39	0.158	0.365	0.202	0.402
40-44	0.102	0.303	0.142	0.349
45+	-	-	0.086	0.280
Marital duration	5.105	4.519	8.842	6.463
Age difference	1.557	4.480	1.444	4.092
First year of marriage	0.145	0.352	0.068	0.252
Birth in $t-1$	0.305	0.460	0.260	0.439
Infant death in $t-1$	0.048	0.214	0.035	0.185
Crude parity in $t-1$	2.059	2.134	3.181	2.700
Net parity in $t-1$ :				
0-1 (ref.)	0.572	-	0.367	-
2	0.184	0.388	0.206	0.405
3	0.119	0.324	0.144	0.351
4+	0.125	0.331	0.283	0.450
Daughters only in $t-1$	-	-	0.330	0.470
<b>Occupational group</b>				
Upper class	0.110	0.313	0.064	0.245
Petite bourgeoisie	0.337	0.473	0.298	0.457
Lower white-collar	0.095	0.293	0.065	0.247
Gardeners and fishermen	0.030	0.170	0.057	0.232
Skilled manual workers	0.334	0.472	0.348	0.476
Unskilled laborers (ref.)	0.059	-	0.081	-
Without occupation and unknown	0.035	0.185	0.087	0.282
Number of women	584		1778	
Woman-years	4,584		22,645	

Note: \*means of woman-years; the averages for the two periods are not comparable owing to differences in marital duration.

Source: Population registers of The Hague.

Table 4 presents descriptive statistics by period for the variables used in the discrete-time event-history analysis. Note that many women who married in the first period continue to contribute years of exposure to the second. This and its longer duration explain the second period's relatively high mean values of crude and net parity and marital duration.

Table 5 presents three models of a discrete-time event-history analysis of births before the transition. The first model shows that there is no significant difference between Catholics and Protestants during the pre-transition period, while the odds of a birth among Jews are significantly higher than among Protestants. The effect of being Jewish does not change, and remains significant in the second model after occupational categories are added. Upper-class and lower-white-collar families have lower fertility than the families of unskilled laborers. This finding is consistent with the theory that high fertility is a strategy adopted by working-class families to cope with life-cycle poverty (see Schellekens 1993). The third model adds infant mortality and crude and net parity. All three have a significant effect. Note that the inclusion of these variables reduces heterogeneity, as well as the effects of the occupational categories. Yet the effect of being Jewish does not diminish.

Table 6 shows evidence for parity-dependent fertility control among the Dutch Reformed before 1880. In a one-sided test, having two children in the previous year has an effect that is significant at the five-per-cent level. No evidence of parity-dependent fertility control among Catholics or Jews is revealed. If anything may be inferred from the shape of the marital fertility function in Figure 2a, it may be that the relatively high fertility of Jews before the transition was due to a low level of parity-dependent fertility control. But we cannot exclude other explanations, except for one - late marriage among Jews that may be associated with a slower decline in coital frequency or level of contraceptive use as women age. First, age at marriage is controlled for indirectly by including marital duration and age. Second, Jewish women married relatively early in the pre-transition period compared with non-Jews (see Table 3).

In any case, the analysis does not provide any evidence of Jews having a higher level of parity-dependent fertility control before the transition than other groups. Without such evidence, the hypothesis that Jews were forerunners in the transition cannot be supported in the case of nineteenth-century The Hague.

The first model in Table 7 shows that there is no significant difference between Protestants and Jews during the transition, while the odds of a birth among Catholics are significantly higher than among Protestants. The effect of being Catholic does not change, and remains significant in the second model after the inclusion of dummy variables for the occupational categories. Again,



Table 5. Discrete-time event history analysis of births, The Hague 1860-1879.

Variable	Model 1		Model 2		Model 3	
	exp. (b)	<i>p</i> -value	exp. (b)	<i>p</i> -value	exp. (b)	<i>p</i> -value
<b>Religion</b>						
Dutch Reformed	1.000	-	1.000	-	1.000	-
Roman Catholic	0.929	0.568	0.878	0.322	0.937	0.525
Jewish	1.262	0.031	1.256	0.055	1.238	0.020
Others	0.864	0.607	0.943	0.822	1.139	0.517
<b>Demographic variables</b>						
Age of woman:						
<25	1.000	-	1.000	-	1.000	-
25-29	0.852	0.212	0.868	0.271	0.896	0.366
30-34	0.792	0.133	0.835	0.246	0.855	0.253
35-39	0.669	0.035	0.722	0.091	0.724	0.048
40+	0.226	0.000	0.247	0.000	0.266	0.000
Marital duration	0.922	0.000	0.918	0.000	0.795	0.000
Age difference	1.000	0.968	1.005	0.688	0.999	0.911
First year of marriage	0.104	0.000	0.104	0.000	0.121	0.000
Birth in <i>t</i> -1	0.244	0.000	0.243	0.000	0.204	0.000
Infant death in <i>t</i> -1					3.940	0.000
Crude parity in <i>t</i> -1					1.433	0.000
Net parity in <i>t</i> -1:						
0-1					1.000	-
2					0.892	0.276
3					0.918	0.586
4+					1.082	0.692
<b>Occupational group</b>						
Upper class			0.518	0.005	0.625	0.013
Petite bourgeoisie			0.896	0.620	0.943	0.731
Lower white-collar			0.552	0.014	0.665	0.030
Gardeners and fishermen			0.702	0.302	0.760	0.287
Skilled manual workers			0.877	0.546	0.940	0.712
Unskilled laborers			1.000	-	1.000	-
Without occupation and unknown			0.844	0.624	0.852	0.555
Intercept	2.260	0.000	2.786	0.000	2.450	0.000
S. D. random effect	0.655	0.000	0.630	0.000	0.093	0.404
Number of births		1,730		1,730		1,730
Woman-years		4,584		4,584		4,584
-2Log-likelihood						
Initial		6,076.337		6,076.337		6,076.337
Final		5,407.976		5,387.788		5,260.277

Source: Population registers of The Hague.

Table 6. Discrete-time event history analysis of births by religion,  
The Hague 1860-1879.

Variable	Roman Catholic		Dutch Reformed		Jewish	
	exp. (b)	p-value	exp. (b)	p-value	exp. (b)	p-value
<b>Demographic variables</b>						
Age of woman:						
<25	1.000	-	1.000	-	1.000	-
25-29	0.703	0.128	0.859	0.367	1.045	0.810
30-34	0.509	0.012	1.083	0.683	0.887	0.560
35-39	0.542	0.063	0.678	0.105	0.866	0.576
40+	0.257	0.005	0.275	0.000	0.280	0.000
Marital duration	0.878	0.001	0.786	0.000	0.737	0.000
Age difference	0.975	0.199	1.002	0.903	0.997	0.819
First year of marriage	0.141	0.000	0.172	0.000	0.055	0.000
Birth in $t-1$	0.297	0.000	0.259	0.000	0.132	0.000
Infant death in $t-1$	3.941	0.000	3.007	0.000	5.314	0.000
Crude parity in $t-1$	1.212	0.062	1.443	0.000	1.624	0.000
Net parity in $t-1$ :						
0-1	1.000	-	1.000	-	1.000	-
2	1.029	0.908	0.740	0.083	0.948	0.770
3	1.043	0.910	0.759	0.271	0.956	0.848
4+	0.988	0.983	0.959	0.897	1.098	0.770
<b>Occupational group</b>						
Upper class	0.369	0.085	0.722	0.175	0.456	0.013
Petite bourgeoisie	0.757	0.547	1.045	0.835	0.758	0.315
Lower white-collar	0.593	0.338	0.785	0.332	0.508	0.033
Gardeners and fishermen	0.621	0.417	0.829	0.510	-	-
Skilled manual workers	0.728	0.476	1.058	0.771	0.756	0.357
Unskilled laborers	1.000	-	1.000	-	1.000	-
Without occupation and unknown	0.892	0.845	0.929	0.826	0.530	0.145
Intercept	2.931	0.025	2.127	0.001	4.698	0.000
Number of births	328		651		708	
Woman-years	919		1,777		1,759	
-2Log-likelihood						
Initial	1,197.676		2,334.918		2,371.177	
Final	1,071.727		2,056.261		1,932.929	

Note: the random-effect variance cannot be reliably estimated as being different from zero.

Source: Population registers of The Hague.

Table 7. Discrete-time event history analysis of births, The Hague 1880-1909.

Variable	Model 1		Model 2		Model 3	
	exp. (b)	p-value	exp. (b)	p-value	exp. (b)	p-value
<b>Religion</b>						
Dutch Reformed	1.000	-	1.000	-	1.000	-
Roman Catholic	1.276	0.001	1.292	0.000	1.176	0.001
Jewish	1.026	0.718	1.097	0.231	1.069	0.215
Others	0.807	0.185	0.876	0.406	0.912	0.407
<b>Demographic variables</b>						
Age of woman:						
<25	1.000	-	1.000	-	1.000	-
25-29	0.863	0.054	0.880	0.093	0.918	0.220
30-34	0.612	0.000	0.636	0.000	0.690	0.000
35-39	0.495	0.000	0.525	0.000	0.578	0.000
40-44	0.329	0.000	0.354	0.000	0.405	0.000
45+	0.044	0.000	0.048	0.000	0.070	0.000
Marital duration	0.889	0.000	0.886	0.000	0.789	0.000
Age difference	0.967	0.000	0.973	0.001	0.979	0.000
First year of marriage	0.112	0.000	0.112	0.000	0.127	0.000
Birth in $t-1$	0.262	0.000	0.262	0.000	0.249	0.000
Infant death in $t-1$					2.608	0.000
Crude parity in $t-1$					1.428	0.000
Net parity in $t-1$ :						
0-1					1.000	-
2					0.743	0.000
3					0.912	0.174
4+					1.079	0.389
Daughters only in $t-1$					1.259	0.000
<b>Occupational group</b>						
Upper class			0.571	0.001	0.724	0.006
Petite bourgeoisie			0.798	0.063	0.872	0.114
Lower white-collar			0.639	0.004	0.790	0.033
Gardeners and fishermen			1.227	0.263	1.137	0.304
Skilled manual workers			0.866	0.225	0.899	0.210
Unskilled laborers			1.000	-	1.000	-
Without occupation and unknown			0.668	0.006	0.768	0.009
Intercept	2.359	0.000	2.782	0.000	2.027	0.000
S. D. random effect	0.927	0.000	0.913	0.000	0.420	0.000
Number of births		6,268		6,268		6,268
Woman-years		22,645		22,645		22,645
-2Log-likelihood						
Initial		26,716.563		26,716.563		26,716.563
Final		22,830.025		22,797.334		22,275.705

Source: Population registers of The Hague.

upper-class and lower-white-collar families have lower fertility than those of unskilled laborers. Differences in infant mortality, crude and net parity, and sex composition account for some of the difference between Catholics and Protestants, because the effect of being Catholic is smaller in the third model. The decline in this effect is mostly due to the inclusion of net parity and sex composition rather than infant mortality (results not shown). Part of the effect of being Catholic seems therefore to be due to differences in parity-specific fertility control. Note that about half of the heterogeneity is explained by infant mortality and crude and net parity.

While differences in socioeconomic characteristics do not seem to account for much of the effect of religion in either period, there may be religious differentials in the coefficients of occupational categories. Hence, the religious groups are analyzed separately. Table 8 presents three models of discrete-time event-history analyses of births for each of the three major religious groups during the transition. The effects of the occupational categories vary among religious groups, with no significant effect among Catholics. Differences among the occupational categories in this period are thought to be due to differences in fertility control (Schellekens 1993). Thus, the absence of any significant effect among Catholics suggests a low level of fertility control during the transition (see also Figure 2b), as well as a strong religious influence touching all parts of the community. The strongest effects are seen among Jews. This could be a result of relatively large social inequalities and not necessarily a higher level of fertility control. However, caution is necessary when comparing logistic regression coefficients across groups. Differences in the degree of residual variation across groups can produce apparent differences in coefficients that are not indicative of true differences in causal effects (Allison 1999).

Those among the Dutch Reformed and Catholics who use parity-dependent control seem to do so usually after having had two children, while Jews seem to do so after reaching a net parity of either two or three. Note the relatively high likelihood of births among Dutch Reformed families with four or more children; we suspect that most of these are fundamentalist families. The effect of sex composition is significant only among the Dutch Reformed.

## 6. CONCLUSION AND DISCUSSION

Coale's marital-fertility index cannot be used for reliable dating of the early stages of a marital-fertility transition (Guinnane, Okun, and Trussell 1994). The regression analyses presented here provide additional evidence for this, since some degree of parity-dependent fertility control can be seen before 1880 among

*Table 8. Discrete-time event history analysis of births by religion,  
The Hague 1880-1909.*

Variable	Roman Catholic		Dutch Reformed		Jewish	
	exp. (b)	<i>p</i> -value	exp. (b)	<i>p</i> -value	exp. (b)	<i>p</i> -value
<b>Demographic variables</b>						
Age of woman:						
<25	1.000	-	1.000	-	1.000	-
25-29	1.040	0.743	0.830	0.036	0.943	0.625
30-34	0.743	0.025	0.603	0.000	0.850	0.226
35-39	0.612	0.002	0.498	0.000	0.829	0.236
40-44	0.405	0.000	0.416	0.000	0.546	0.002
45+	0.094	0.000	0.077	0.000	0.073	0.000
Marital duration	0.779	0.000	0.777	0.000	0.760	0.000
Age difference	0.993	0.408	0.966	0.000	0.991	0.335
First year of marriage	0.145	0.000	0.145	0.000	0.149	0.000
Birth in <i>t</i> -1	0.281	0.000	0.253	0.000	0.256	0.000
Infant death in <i>t</i> -1	2.553	0.000	2.790	0.000	2.580	0.000
Crude parity in <i>t</i> -1	1.489	0.000	1.469	0.000	1.606	0.000
Net parity in <i>t</i> -1:						
0-1	1.000	-	1.000	-	1.000	-
2	0.788	0.024	0.776	0.002	0.643	0.000
3	0.878	0.311	1.060	0.563	0.789	0.085
4+	0.979	0.900	1.430	0.006	0.926	0.683
Daughters only in <i>t</i> -1	1.016	0.673	1.229	0.002	0.973	0.532
<b>Occupational group</b>						
Upper class	1.014	0.951	0.856	0.224	0.491	0.000
Petite bourgeoisie	1.046	0.705	0.870	0.162	0.674	0.011
Lower white-collar	0.953	0.800	0.698	0.006	0.695	0.057
Gardeners and fishermen	1.287	0.234	1.096	0.395	-	-
Skilled manual workers	1.148	0.218	0.858	0.085	0.600	0.003
Unskilled laborers	1.000	-	1.000	-	1.000	-
Without occupation and unknown	0.983	0.903	0.785	0.035	0.607	0.045
Intercept	1.862	0.000	2.218	0.000	2.719	0.000
Number of births	1,685		2,823		1,519	
Woman-years	5,642		10,669		5,342	
-2Log-likelihood						
Initial	6,880.065		12,329.351		6,378.512	
Final	5,731.261		10,159.953		5,463.959	

Note: the random-effect variance cannot be reliably estimated as being different from zero.

Source: Population registers of The Hague.

the largest of the three major religious groups in The Hague. Although our characterization of the periods before and after 1880 as, respectively, “before the transition” and “during the transition” is not entirely accurate, we have kept 1880 as a dividing point, because religious differentials in marital fertility in The Hague show a divide around this time.

There are no significant differences between Catholics and Protestants for the period before the transition. Marital fertility for these two groups only started to diverge in the 1880s, Catholics lagging behind other religious groups. After controlling for occupational categories, the coefficient of being Catholic remains almost unaffected. This lends support to the argument that the characteristics hypothesis does not explain the relatively high fertility of Catholics. Perhaps there are socioeconomic variables not included in our analysis that are not correlated at all with the occupational category variables and account for some of the differentials. However, if this is not the case, then two possible explanations remain: the religious-values hypothesis and the minority-group-status hypothesis. The present analysis does not enable us to differentiate between them. Although the low level of parity-specific fertility control among Catholics during this period seems at least partly to explain their relatively high marital fertility, the study does not enable us to test Meurkens’ breastfeeding hypothesis. However, judging by the 1908 report of the local health commission (Gezondheidscommissie 1912), low levels of breastfeeding are a less likely explanation of the relatively high level of marital fertility among Catholics in The Hague.

If the present results may be taken at face value, The Hague’s Jews had above-average marital fertility before the transition. As far as we can tell, this was not due to their occupational characteristics, but our analysis is inconclusive about the proximate reason. A graphical analysis of the shape of the marital fertility function suggests a low level of parity-dependent fertility control, as do our regression results. However, differences in parity-dependent fertility control are unlikely to have been large before 1880. This leaves low levels of non-parity-specific fertility control (spacing) or breastfeeding or both as the most likely proximate explanations. The 1908 health commission’s report indicated relatively small religious differentials in breastfeeding patterns (Gezondheidscommissie 1912). Breastfeeding patterns, however, probably changed during the transition, and religious differentials may therefore have been larger before 1880. To what extent the relatively high fertility of Jews before the transition was due to their being a minority group we cannot tell. In any case, the absence of evidence of a relatively high level of parity-dependent fertility control means that the Jews in The Hague in the nineteenth century are unlikely to have been “forerunners” in the marital fertility transition.

Before and during the transition, Jewish infant and child mortality in Europe as well as The Hague was lower than that of most other religious groups (Van Poppel, Schellekens, and Liefbroer 2002). Demographic transition theory would predict an early fertility decline among Jews in such a case, all else being equal. This is indeed what several authors claim happened. Livi Bacci (1986) describes Jews as forerunners in the fertility decline in Italy. An early fertility decline has also been ascribed to German Jews (Knodel 1974). However, Derosas (2003: 114) finds no evidence of an early fertility decline among Venetian Jews. Furthermore, one of the few German family-reconstitution studies to compare Jews with other religious groups does not fit this characterization. For couples who married before 1830, the marital fertility of Protestants in the village of Nonnenweier already shows a large deviation from the Hutterite age pattern, while the first signs of family planning among local Jews only become visible among couples who married in the 1840s (Goldstein 1981: 132, Table 8). The results shown in the present study raise further doubts about the special characteristics of Jews during the marital fertility transition. We did not find any evidence of higher levels of parity-dependent fertility control among Jews than among the rest of the population before or during the transition. In some places Jews may have been forerunners, but this was not a general European phenomenon.

Previous research assembled data on forerunners in the hope that this would increase our understanding of the complex transition of the populations of Western Europe from high to low marital fertility (Livi Bacci 1986: 183). However, when religious groups such as Jews are forerunners in one place but not in another, religion is unlikely to contribute much to our understanding of the origins of fertility declines. Instead, it is more likely to explain leads and lags in the speed of these declines (Lesthaeghe and Wilson 1986).

The pace of fertility decline is a relatively unexplored topic. "The classic statements about the determinants of fertility decline are addressed much more to the question of *why* fertility declines than to *how rapidly* it declines" (Casterline 2001: 18). Religion can be a major determinant of the pace of fertility declines, as the results of this and previous papers suggest. Whether a particular religion has any influence depends not only on its values, but also on the level of commitment of its members. Hence, future research should try to estimate the pace of secularization by religion and relate this to the pace of fertility decline.

## NOTES

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<sup>2</sup> As defined by Coale and Treadway (1986),  $I_g = B_t / \sum m_i F_i$  where  $B_t$  is the annual number of legitimate births in the specified population,  $m_i$  is the number of married women in each five-year age interval in the reproductive span in the specified population, and  $F_i$  is the fertility of married Hutterite women in each age interval.



JAN KOK AND JAN VAN BAVEL

STEMMING THE TIDE.  
DENOMINATION AND RELIGIOUSNESS IN THE  
DUTCH FERTILITY TRANSITION, 1845-1945

1. INTRODUCTION

Since the sixteenth century, The Netherlands have been the home of very divergent religious groups, ranging from Catholics and Calvinists to Lutherans, Jews and Anabaptists. The relationship between this religious variety and demographic patterns, both regional and temporal, has attracted a lot of scholarly attention. The discussions centered around three questions. First: To what extent can local and regional differentiation in marital fertility be ascribed to religion? Second: Can the slow decline of fertility in the late nineteenth and early twentieth centuries in the south and east of the country be attributed to Catholicism? And third: Why did The Netherlands have an overall high marital fertility rate compared with other countries until well into the twentieth century?

Until the advent of advanced statistical techniques, the first question was difficult to answer given the fact that regional differences in the economic structure ran parallel with those in religion. The urbanized and commercialized areas roughly overlapped with the Protestant parts of the country, whereas the region with self-sufficient agriculture was predominantly Catholic (Van Heek 1956; Buissink 1971; Hofstee 1981). Controlling for variables such as mortality, migration and population density, Boonstra and Van der Woude (1984) demonstrated that religion explains a large amount of local variation in marital fertility (1850-1890). Using twentieth-century census data at a low level of aggregation, Van Poppel (1983) was able to assess separately the effects of region, occupation of the husband and religion on the average number of children per marriage. In his opinion, the combination of familial forms of production and Catholicism accounts for most of the regional differences in fertility.

The researchers were less confident that religion was the prime cause of differences in the *pace* of fertility decline. According to Boonstra and Van der

Woude (1984), religion could not explain local changes in fertility, at least not before 1890. Both Hillebrand (1991) for the provinces of Utrecht and Groningen and Engelen (1987) for the province of Limburg concluded that economic changes were foremost in changing the motivation of people to adopt fertility control. However, “traditional” religions (Catholicism and Calvinism) acted as a “filter” delaying the acceptance of birth control. This filter was eroded earlier in cities than in the countryside. In addition, however, they pointed at regional mentalities – for which dialects were used as proxies – that seemed to exert an autonomous influence (Engelen and Hillebrand 1986).

Depending on the statistical definition chosen, the fertility transition in The Netherlands started either in the 1880s or in the late 1890s.<sup>1</sup> At the onset of the transition, the level of Dutch fertility was among the highest in Europe (Knodel and Van de Walle 1979: 221). Furthermore, the pace of decline was slow and accelerated only from 1930 onwards. Thus, in 1960, the country was still characterized by high fertility, surpassed only by Ireland, Portugal and Spain (Coale and Treadway 1986: 39).

According to Lesthaeghe and Wilson (1986), religious mobilization against secularizing tendencies may have contributed to the relatively slow demographic “modernization” in some countries. In The Netherlands, Orthodox religions were rapidly gaining strength and societal impact in the second half of the nineteenth century. The combative spirit of the Catholic minority was fuelled by their emancipation to full civil rights (1798) and in particular by the restoration of the clerical hierarchy (1853). From the 1850s onwards, the number of specific Catholic associations and institutions, such as schools, increased rapidly. On the Protestant side, the Orthodox were similarly building their own organizations. In the decades to follow, both groups intensified their efforts to improve national morality through education, poor relief and lay organizations (Righart 1988). The competition between Catholic, Orthodox and more liberal groups was intense. From the 1880s onwards, Dutch society gradually became “pillarized.” Pillarization means compartmentalization on an ideological basis: pillars strive toward autarky by providing their members with all possible services, from cradle to grave: unions, insurance, banking, mass media, schools, hospitals, old people’s homes, youth and adult movements, as well as a political party (Billiet 1997). The essential elements in the building of group identity among the Orthodox Protestants and Catholics were family values and sexual purity.

There seems to be a consensus that religion, in particular through the emerging minority churches of Catholics and Orthodox secessionists, slowed down the adoption of deliberate fertility control in The Netherlands. But it is not clear precisely what aspects of religion were relevant. Most Dutch studies on the

subject concentrate on the three largest denominations: Dutch Reformed, Roman Catholics and “Calvinist” *Gereformeerden* (see below). Other religions are generally assembled in a single group. The highest fertility is always found among the Catholics and *Gereformeerden*, for which their “traditional” stance against family limitation is held responsible. However, there is a danger of tautological reasoning here. One lacks clear hypotheses on why belonging to particular churches would have an effect on fertility. Building on Goldscheider’s work (1971, 1999), McQuillan (2004) recently surveyed when and how religion can have an impact on fertility. In his opinion, essential conditions have to be met on the distinct levels of religious ideology, church organization, and individual motivation. The next section uses his discussion as a guide to build hypotheses on how denominations could influence fertility in The Netherlands.

A more specific problem of research on the subject is that the single largest church in The Netherlands, the Dutch Reformed (54.5 per cent of the population in 1879) tends to be described as an “intermediate” group with moderate fertility. Clearly, this is a statistical artifact due to researchers’ incapability of making a distinction between the very different subdivisions within the Dutch Reformed Church. Instead of being “moderate”, this church actually consisted of very outspoken liberal and orthodox streams. In this contribution, we will make more fine-tuned distinctions and use them in the fertility analyses.

To date, most empirical studies have analyzed fertility levels without discriminating between the behavioral components that determine the number of children eventually born within marriage. This chapter starts off from the distinction between starting, spacing and stopping to analyze the underlying dimensions of fertility differences between religious groups. We then concentrate on the behavioral innovation that shaped the fertility transition, i.e. parity-aimed stopping behavior.

The impact of religion on stopping behavior has seldom been studied at the micro-level of individuals. Even rarer are multivariate approaches to the study of individual fertility. It is our view that only in this way a clear distinction can be made between the host of factors that influence fertility. These factors range from biological (age of the mother, postpartum infecundity) to economic (occupation of husband) and cultural ones such as religion. In this chapter we will analyze the fertility reconstructions of 1272 individual couples from the central and south-western part of The Netherlands. Apart from the availability of data these regions have the advantage of not being dominated by a single denomination. However, this does not mean that they are representative of all parts of The Netherlands.

Dutch historiography has recognized the importance of religion in explaining the late and slow decline of fertility. However, the causal relationships have not

been elaborated satisfactorily and have at best been analyzed at the aggregate level of municipalities. In this contribution, we aim to hypothesize the religious influence of fertility with respect to doctrines and values, institutions and personal identification. Furthermore, we investigate the religious impact on starting, spacing and stopping. By using individual data and multivariate regression, we can bypass many of the problems that have beset earlier researchers. Thus, we hope to answer our central question: What aspects of religion were primarily responsible for delaying the fertility decline in The Netherlands?

The next section introduces the Dutch denominations and describes the ideology (doctrines and values) that may have influenced fertility. We also look at the institutional means at their disposal. Finally, we discuss individual identification with the church, its beliefs and values. To what extent can we actually measure religiousness in the past at the individual level? Does religiousness have more explanatory value than denomination? In the third section, we describe the family reconstitutions that we have employed. In the fourth section, we answer the question whether differences between religious groups were due to differential starting, spacing, or stopping, or to some combination of these behaviors. Our question in the final section is: what are the differences between religious groups after controlling for their socioeconomic characteristics? And what can we say about the importance of religiousness, apart from the effect of self-declared denomination?

## 2. RELIGIOUS BELIEFS AND REPRODUCTIVE BEHAVIOR

In his survey of when and how religion influences fertility, McQuillan (2004) distinguished three necessary conditions, pertaining to ideology, organization, and identification, respectively:

1. the religion must articulate values and norms that somehow, directly or indirectly, manifestly or latently, affect any of the proximate determinants of fertility;
2. it must possess the means to communicate these norms to its members and to enforce compliance;
3. members must feel a sense of attachment to the religious community.

None of these conditions is sufficient on its own, while the stronger they all apply, the stronger the expected impact on fertility. With the three conditions as a guide, we now categorize the major denominations represented in The Netherlands and discuss their possible impact on fertility.

### *2.1. Ideology*

To what extent did a particular religion develop specific norms regarding sexuality and procreation? For instance, were children seen as a gift from God and was one supposed to take the call to “be fruitful and multiply” literally? We also need to pay attention to more general values that may have an indirect effect. These values relate to the perception of marriage, to the importance of families and children and to the roles that women were supposed to adopt within society. Considering all these points, Roman Catholicism in The Netherlands stimulated high fertility among the flock. The Catholic Church reacted against “neo-Malthusian” propaganda for birth control by emphasizing its norms regarding marriage and reproduction. Intercourse without the intention of procreation was declared sinful, and family size limitation was strictly forbidden (Schoonheim 2005). Lay organizations, such as the Roman Catholic Union for Large Families (1918) agitated against the availability of contraceptives. But more general values were of importance as well. From the second half of the nineteenth century, the clergy was actively seeking to improve the morality of the believers. For instance, women were supposed to hide their bodily forms as much as possible. Lacing of the breasts may have stunted them, resulting in a reduced capacity for breastfeeding. According to some authors, the clergy even explicitly discouraged breastfeeding (Meurkens 1985). The lower incidence of breastfeeding can explain the relatively high infant mortality often found among Catholics (Van Poppel, Schellekens, and Liefbroer 2002). In addition, it may have stimulated fertility even more. From the 1870s onwards, the “Brotherhood of the Holy Family” devoted to improving Catholic morality and family life gained a mass adherence (Righart 1988: 203). Couples were reminded that the sole purpose of marriage was procreation and that it was sinful to deny each other sexual gratification (the “marital debt”) (Flandrin 1970; Schoonheim 2005: 214, 218).

The largest Protestant group, the Dutch Reformed, stems from the Calvinist brand of the Reformation. In the seventeenth century, they advocated a rather strict interpretation of the Bible and professed a strong belief in predestination. Their view on marriage was different from the Catholic one: Protestantism emphasized mutual support between the spouses, whereas in Catholicism, the prime function of marriage was procreation (Van Poppel 1985; McQuillan 1999b). In the late eighteenth and nineteenth centuries, the leading circles were influenced by Enlightenment ideas. “Modernist” theology tried to reconcile scientific insights and rationality with religion. Literal interpretation of the Bible, predestination, and the Resurrection of Christ were discarded and replaced by an optimistic belief in human reason, that was seen as a manifestation of divinity (Cossee 2001). In the late-nineteenth century, the

“modernists” organized themselves in associations of *Vrijzinnig Hervormden* (Liberal Reformed). In 1920, almost 30 per cent of the Dutch Reformed ministers were Liberal (Knippenberg 1992:109). Somewhat less radical was the group of the “Ethicals.” They were receptive to new scientific insights, but did not reject the authority of the Bible. In 1920, 28.4 per cent of the ministers were affiliated with this group. The Liberal Reformed, and to a lesser extent the Ethicals, were inclined to grant the individual a large degree of autonomy in matters of family planning. In other words, the necessary “ideological” precondition for a religious effect on demography is not valid in their case.

Not surprisingly, the advance of rationalist and “modernist” theology met with increasing resistance from conservative elements in the Dutch Reformed Church. Led by discontented rural elites, secessions of Orthodox ministers and their followers took place in 1834 and in 1886. In 1892 these groups merged in the Reformed Church (*Gereformeerde Kerk*), but a remainder of the 1834 group continued as the Christian Reformed Church. Both churches were very clear in their doctrinal message: sexuality could only take place within marriage and only with the aim of procreation. This message was conveyed through youth organizations, journals, periodicals, etc. For instance, in an Encyclopedia (1925) specifically directed to the *Gereformeerde* audience, a lengthy article was devoted to Neo-Malthusianism. This article dismissed the economic reasons for limiting family size. In fact, education of the children was less effective in small families. When medical problems made it irresponsible to have more children, abstinence was the only solution. The point was that one put oneself in God’s place by using contraceptive devices. Ultimately, engendering life was “an act of the God of Life.” The lemma concluded by reminding the reader that “[something] that defiles shall not enter the new Jerusalem”(Grosheide et al. 1925 IV: 342-344, our translation). By 1900, both Orthodox churches accounted for 13.6 per cent of Dutch Protestantism (Knippenberg 1992: 97).

However, there were many more Orthodox Protestants. A large Orthodox segment of the Dutch Reformed Church had chosen to remain within this church, which they held to be God’s own “planting” in The Netherlands. How could they maintain their position, given the dominance of Enlightenment theology? This was possible because of the very loose structure of the “People’s Church.” Although the Church had a set of doctrines (such as the Heidelberg Catechism), church discipline in doctrinal matters had been abandoned. In fact, restoration of this discipline was the main bone of contention during the nineteenth century. Also, the Dutch Reformed Church was highly democratic. Members elected the deacons and elders who formed the church council. The council in its turn called a minister to the parish whose preaching was deemed to match the conviction of the parish majority. In other words, Orthodox

congregations could go on as much as they liked. During the second half of the nineteenth century, they formed associations of their own. From 1864 onwards, the *Confessionele Vereeniging* (Confessionals) aimed at restoring doctrinal discipline. From their circle, an ultra-Orthodox group split off in 1895. This fundamentalist *Gereformeerde Bond* (Unionists) was to become the strongest bulwark of Orthodoxy in the twentieth century. Their communities were characterized by a strong geographic and mental isolation; leaving the village was discouraged, newcomers were mistrusted and scientifically-based innovations such as inoculation and chemical fertilizers were often rejected. In 1920, both groups accommodated 48 per cent of the Dutch Reformed.

Finally, a number of smaller Protestant groups deserve attention. The Anabaptist *Mennonites* had their roots in the Radical Reformation of the sixteenth century. Although consisting of very diverse sub-branches, the Mennonite Brotherhood was overall characterized by anti-authoritarianism, rationalism and a large emphasis on individual autonomy. As early as the eighteenth century, their growth was hampered by very low marital fertility (Knippenberg 1992: 53). The Mennonites were also highly receptive to new scientific insights. In 1800, two Mennonite ministers initiated the campaign against smallpox by having their own children inoculated. Even more “liberal” were the *Remonstrants*, who had seceded from the Dutch Reformed Church already in 1619 because they could not accept the doctrine that predestination overruled individual belief. In subsequent centuries, this groups of dissenters formed a haven for liberal Protestants from other churches. Mennonites and Remonstrants were quite modern in allocating responsible roles to women. For instance, the Mennonites had female deacons in charge of poor relief. In addition, these churches were the first to allow women to become priests (in 1905), on condition that they were not married. Lastly, the Lutheran Church, strongly associated with German and Scandinavian immigrants and their descendants, was by and large moderate in its doctrines, apart from a very small Orthodox secessionist group.

## 2.2. Institutions

As far as the churches held doctrines or values concerning demographic behavior, it is relevant to know whether they also had the means to communicate their messages to their followers and, if necessary, to ensure conformation. The Roman Catholics had an extensive array of institutions at their disposal. Their message was brought home through periodicals, schools and lay organizations. Even more impact had the system of confessions and absolution of sins. Also, priests made a point of remarking on (the need for) family extension during their

house calls (Bots and Noordman 1981; Schoonheim 2005; for a contrary opinion, see Somers and Van Poppel 2003). The *Gereformeerden* were probably even more successful in organizing their supporters and forging a sense of corporate identity. Their leader Abraham Kuyper, who created his own newspaper, political party and university, is considered the first modern mass-politician in Dutch history (Van Rooden 2002). In the *Gereformeerde* Churches, traditional systems of moral control were revived. Disciplinary measures ranged from admonition, prohibition to join the Lord's Supper, to public confession of sins and, if all else failed, expulsion from the congregation. In the Dutch Reformed Church these measures had already become obsolete in the first half of the nineteenth century. The liberals rejected them as "Calvinist drilling." Likewise, the Lutheran Church was lenient in matters of morality (Kemkes-Grottenthaler 2003: 718). Disciplinary measures such as the public shaming of pregnant brides seems to have secured high levels of conformity: Catholics and *Gereformeerden* had relatively low levels of prenuptial pregnancies (Kok 1990).

The Orthodox groups within the Dutch Reformed Church lacked the organizational drive of the secessionist Orthodox (Van Rooden 1996). In addition, they were remarkably ineffective in terms of moral discipline. This has everything to do with the pietistic character of these fundamentalist groups. Redemption is granted by divine grace, not earned by one's own belief or pious acts. Only a person knows whether he or she is redeemed and only then will he or she take part in the Lord's Supper. Thus, "avoidance" of communion is widespread in these circles. On the one hand, this belief requires a constant inspection of the state of one's soul. On the other hand, there is a overpowering emphasis on the sinfulness of the "world" and the "flesh." This situation creates, so to speak, an ethical vacuum: there are no clear behavioral rules and no clear control mechanisms, either from the side of the parents or from the church (Miedema 1989). One of the most embarrassing problems of the Dutch "Bible Belt" was (and still is) the unruly behavior of youths, in particular in the field of premarital sexuality (Drukker 1937; Kooy and Keuls 1967).

Both in terms of ideology and institutional practices, Dutch Protestantism displays a bewildering variety. For the sake of simplicity, we place the major groupings into a scheme based on McQuillan's first two criteria: the presence of doctrines or values stimulating high fertility and the presence of institutional means to communicate these (Scheme 1). There is a clear distinction between groups with no or moderate doctrines regarding procreation and groups with outspoken doctrines and values. Along more or less the same line, the religious groups are divided by the strength of the organizations and control mechanisms.

For analytical purposes, we divide for the remainder of this chapter the Christian groups in three: Roman Catholics, Liberal Protestants (Mennonites,



Remonstrants, *Liberal* Reformed, *Ethical* Reformed and Lutherans) and Orthodox Protestants (*Confessional* Reformed, *Unionist* Reformed, Christian Reformed and Reformed (*Gereformeerd*)).

*Scheme 1. Dutch religious groups by ideology and institutions.*

<i>Strength of institutions</i>	<i>Importance of values and norms regarding sexuality</i>		
	Low	Moderate	High
Low	Mennonites Remonstrants Dutch Reformed ( <i>Liberals</i> )	Dutch Reformed ( <i>Ethicals</i> ) Lutherans	
Moderate			Dutch Reformed ( <i>Confessionals</i> ) Dutch Reformed ( <i>Unionists</i> )
High			Christian Reformed (1834) Reformed ( <i>Gereformeerd</i> ) (1892) Roman Catholics

### 2.3. Identification and religiousness

According to McQuillan, for religion to have an impact on demographic behavior a third condition is necessary: individual believers need to identify with their church. In the period between roughly 1880 and 1960, the level of identification of most Christians with their church was extremely high and, in fact, unprecedented. Developments in this period have been described in terms of a cultural class-formation. The *Gereformeerde* leader Kuyper was not only successful in mobilizing and organizing the revolt of commoners against the Enlightened elites, his discourse came to be accepted by other groups as well. He claimed that the Dutch people had always consisted of three groups: Liberals, Orthodox Protestants and Catholics. In his view, the dominance of the liberals was unjustified and all groups should be free to run their own affairs. Indeed, the success of Protestant and Catholic political parties ensured that this vision was realized: state subsidies were directed to private confessional schools as well as to confessional broadcasting corporations. Dutch “pillarization” goes beyond McQuillan’s notion of the coincidence of religion and nationalism. The identity of the “imagined communities” of religious groups superseded national identity:

“What happened in effect was an ethnicization of religion. Religious identity involved membership of a group, and vice versa” (Van Rooden 2002). The attachment was strongest among the Roman Catholics and the *Gereformeerden*. For example, in the early 1960s 90 per cent of their members attended church several Sundays per month.

The level of religious identification (or religiousness) is very difficult to measure at an individual level. Often, a declared official denomination is too weak as an indicator of identification. Modern research has shown that religious schooling is a more powerful variable to predict demographic outcomes than denomination (Janssen and Hauser 1981). Also, Goldscheider and Mosher (1991) have successfully linked religiosity (indicated by church attendance and communion) with sexual behavior. Can we work with the concept of religiousness in historical populations?

Our family reconstitutions are derived from the population registers that registered individuals' religious affiliation. Indeed, in the population administration from 1850-1940 we find about 75 different abbreviations pertaining to different denominations. However, without a link to the records of the local churches, we do not know the *nature* of the affiliation. Was one a practicing member when one was confirmed? Or was one a member only through baptism or even only in name, because one's parents had been members? The presence of members without any real attachment was particularly acute in the case of the large Dutch Reformed Church. Sometimes people only remained a member because deregistering entailed some cost and effort. Atheist activists were helpful in removing this final barrier by organizing collective deregistrations (Kruijt 1933). Apart from the nature of the membership, we would like to have detailed information on church attendance, religious schooling, etcetera. At the present stage of our research, this is not feasible.

We propose two measures to indicate a low individual level of religiousness: religiously mixed marriage and bridal pregnancy. First, churches have strongly discouraged mixed marriages, even among the Protestant groups (e.g. Grosheide et al. 1925 II: 271-273). During the heyday of pillarization (1935-1955) the intensity of mixed marriages was the lowest in Dutch history. For instance, in 1947 only about 5 per cent of Catholics had a mixed first marriage (Hondius 2001: 59). It is interesting to note that in mixed marriages the mothers were more important in determining the religion of the children than the fathers, even though the latter had the legal right to decide on this issue (Van Leeuwen 1959). From the 1920s onward, however, the children were often registered as non-denominational. Mixed marriages have often been associated with a low level of religiosity by contemporaries (Sanders 1931; Kruijt 1933). According to some authors, the indifference to religious prescriptions can explain the remarkably

low marital fertility of mixed couples (Van Leeuwen 1959). Others, however, have warned that the evidence of low fertility may be faulty (due to an overrepresentation of mixed couples among marriages that were not yet completed) (Dekker 1965).

Premarital sexuality can be interpreted as a flouting of the Church's emphasis on official marriage as the only legitimate basis for sexuality. Although for Protestants marriage was not a Sacrament, the doctrine was that a couple could only be brought together through God's own servants: the ministers (Schippers 1955). Without marriage, sexuality is nothing less than fornication. Bridal pregnancies can be interpreted as a low internalization of these rules as well as an indication of low (church) control on adolescent behavior (Hardy 2001). However, as an indicator of infidelity bridal pregnancy is probably only useful in the case of the Roman Catholics. As we have seen, in Protestantism strong pietistic beliefs could go along with very high levels of "enforced marriages."

Contemporary studies of secularization noted the strong decline in religiousness in cities. Catholic statistics on the Easter duties revealed the greatest negligence in the city of Utrecht. Among the Dutch Reformed as well as the *Gereformeerden* in Amsterdam and Rotterdam, attendance of services and doing confirmation were much less intense than elsewhere. Kruijt (1933) listed several reasons for this phenomenon. In the countryside, church attendance was often part of communal traditions (in several villages people went to church in procession) and embedded in intense social control. The more isolated the villages, the longer this situation could continue. Migrants to cities did not feel "at home" in church and would often cease going altogether. Cities were also places where people with divergent backgrounds and beliefs intermingled. To avoid conflicts, the topic of religion tended to be avoided in social encounters. Finally, the apparatus of the church had not kept pace with the growth of the cities (Schoonheim 2005: 101). For ministers and elders it was impossible to make personal acquaintance with all the members. In addition, people were often "lost" due to frequent removals.

#### 2.4. Hypotheses

Our discussion of the doctrines and institutions of the various churches and the religiousness of their members can be summed up in a number of hypotheses regarding demographic behavior. We expect Catholics and Orthodox Protestants to have the highest marital fertility. A combination of factors works in that direction. With respect to birth spacing, the Catholics' low incidence of breastfeeding and the norm of the "marital debt" may have been a pressure towards shorter birth intervals. Orthodox Protestants as well as Catholics had

pro-natalist doctrines, high internal social control, a fatalistic attitude towards life and low receptiveness of new, scientific knowledge. This would hinder the acceptance of any form of birth control, and of stopping behavior in particular. In contrast, liberal Protestant couples were probably more willing to experiment with birth control. We expect the same inclination to adopt new forms of birth control among couples showing little religiousness: mixed marriages as well as Catholic couples that already expected a child before the wedding date.

Our empirical analysis is limited to the fertility patterns of the Christian groups in the sample populations. For other groups, such as Jews and atheists, the number of observations is too low. We will first describe where the differences were, if any, in starting, spacing, or stopping, or in some combination of these. Then we fit a multivariate model in order to assess how religion and religiousness hindered or facilitated the adoption of stopping behavior as an innovative way to limit fertility. Because we expect that the institutional mechanisms of both Catholics and the Orthodox were more effective in rural places than in cities, we make separate analyses of the influence of religion for urban and rural areas.

### 3. CONTEXT AND DATA

In this article we analyze family reconstructions from the province of Utrecht and the port city of Rotterdam, The Netherlands in the period 1845-1945. Utrecht is a small province located in the central part of the country. The rural economy was based largely on dairy farming which grew continuously in importance. Farms were small in size and workforce but highly oriented towards producing quality products for export characterized agriculture. From around 1850 onwards, chemical, textile and cigar making industries were founded. However, the most important impetus for the economy came from Utrecht's central location at the nexus of Dutch railway lines. This attracted railroad offices and workshops, metallurgical industries and a host of commercial service companies. Due to the commercialized and specialized character of the Utrecht economy, most people depended on wages. The labor market was clearly divided in a skilled and an unskilled segment. Up until the latter decades of the nineteenth century, there were large numbers of unskilled day-laborers whose income was highly insecure and who often turned to charity to supplement their incomes.

Rotterdam is one of the few nineteenth-century boom-towns in The Netherlands. The city is conveniently located in the area where the large rivers, coming from Belgium and Germany, reach the North Sea. Rotterdam had always been an important harbor, but in the second half of the nineteenth century it

profited enormously from the German Unification and the rise of Germany as an industrial superpower. The waterways and harbors of Rotterdam, where bulk goods were trans-shipped, were constantly improved to keep up with the increasing flow of products to and from Germany. In Rotterdam, related services formed the largest share of total employment. Their share increased from 34.8 per cent in 1849 to 45.5 per cent in 1909. Trade and transport offered jobs to constantly increasing numbers of Rotterdam men: from 11,000 in 1849 to more than 70,000 in 1909. Between 30 and 40 per cent of the employed in the commercial services were dock laborers. In the twentieth century the demand for dock labor declined, due to mechanization.

In Utrecht province and Rotterdam we find the major religious groupings of The Netherlands represented. Southern Utrecht and the polders to the east of Rotterdam are part of the “Bible Belt”, the regional concentration of ultra-Orthodox Protestants in the central Netherlands. As we have described above, a large number of these fundamentalists are registered as Dutch Reformed and therefore undistinguishable from other, much more liberal Dutch Reformed. However, the religious orientation of the church *ministers* is known for the year 1920 (Beekink et al. 2003). For instance, in 33 southern Utrecht municipalities, all ministers belonged to the Orthodox *Confessionals* or *Unionists*. Since communities chose their own ministers, it is likely that they were already Orthodox in the second half of the nineteenth century. We have assumed that a Dutch Reformed individual was Orthodox, when he or she was born in a municipality where all ministers were associated with an Orthodox organization.

Our dataset is drawn from the Historical Sample of The Netherlands, a large database that is scheduled to contain more than 70,000 life courses. The database is built from a random sample (0.5 per cent) from the Dutch birth certificates of 1812-1922, linking and entering all information in both the civil registers (birth, marriage and death certificates) and the continuous population registers (Mandemakers 2000). Thus, complete life courses were reconstructed by following them in all their successive places of residence. From 1850 onwards, Dutch population registers recorded all life events (birth, death, marriage and migration) of individuals within their households, and noted additional information on occupation and religion. We have used the first, more or less completed, parts of this database. We limit the analysis to the first marriages of self-declared Christian sample persons (608 born in the province of Utrecht and 664 born in the city of Rotterdam). In our analysis, we will compare marital fertility in rural and urban contexts. We define a context as urban when a (first) child was born in a municipality of more than 10,000 inhabitants.

## 4. STARTING, SPACING, AND STOPPING

McDonald (1984) has proposed a simple formula to describe completed marital fertility. Starting from the fact that the average completed fertility of a group of ever-married women is a function of their starting, stopping and spacing behavior, he proposed the following equation as a tool to distinguish between the different components:

$$CEB = s \cdot \left( 1 + \frac{l - m - f}{i} \right)$$

The mean number of children ever born (CEB) is a function of:

- $s$  = the proportion of the group who have at least one child;
- $l$  = the mean age at last birth of the wife;
- $m$  = the mean age at marriage among women who ever have a birth;
- $f$  = the mean length of the interval between marriage and first birth;
- $i$  = the mean length of interbirth intervals (McDonald 1984: 25).

The purpose of the formula is to show what proportion of an observed change in CEB is due to starting, spacing and stopping respectively. Starting is represented by  $m$  and  $f$ , spacing by  $i$ , and stopping by  $l$ .

We include only married couples with at least one child, which makes  $s$  equal to 1 in all cases. Table 1 gives the values calculated for the other parameters by cohort, place of residence, and religious group. We distinguish between two (maternal) birth cohorts. The first includes all couples with women born between 1815 and 1875. The second cohort (women born between 1876 and 1903) started their reproductive life when the fertility transition had become evident in The Netherlands (around 1890). We also separate between urban and rural places. Finally, as to religion, we distinguish between liberal Protestants, Orthodox Protestants, Catholics and mixed couples, as discussed in section 2.

First, the table indicates that the difference in completed fertility between Catholics and Orthodox Protestants on the one hand, and liberal Protestant and mixed couples on the other hand was relatively small in the first cohort. Differences became much bigger in the younger cohort. The lack of substantial differentiation in the first cohort is remarkable given the differences in age at marriage, particularly in the countryside. Here, liberal Protestants married markedly earlier than Catholics. However, the latter had relatively short birth intervals and also a somewhat higher mean age at last birth. The short birth intervals of the Catholics may be associated with both relatively high coital

*Table 1. McDonald-parameters of starting, spacing, and stopping of couples (1845-1945) by birth cohort of the wife and religious group, The Netherlands, province of Utrecht and Rotterdam.*

1815-1875	Urban				Rural			
	Liberal	Orthodox	Catholics	Mixed	Liberal	Orthodox	Catholics	Mixed
	Protestants	Protestants			Protestants	Protestants		
<i>m</i> (years)	25.61	27.84	25.71	25.21	24.37	25.50	27.36	26.96
<i>f</i> (months)	20.01	9.69	17.09	16.69	20.18	11.97	15.60	18.22
<i>i</i> (months)	27.29	27.51	27.10	28.19	27.96	26.27	25.90	28.27
<i>l</i> (years)	37.81	41.26	38.46	38.53	38.32	38.17	38.93	38.56
<i>CEB</i>	5.53	6.50	6.01	6.08	6.27	6.33	5.76	5.28
<i>N</i> (marriages)	116	6	67	52	30	42	66	39

1876-1903	Urban				Rural			
	Liberal	Orthodox	Catholics	Mixed	Liberal	Orthodox	Catholics	Mixed
	Protestants	Protestants			Protestants	Protestants		
<i>m</i> (years)	24.39	24.98	25.06	23.98	25.91	24.08	25.89	24.45
<i>f</i> (months)	19.22	12.61	13.88	21.34	16.61	16.28	13.17	10.57
<i>i</i> (months)	35.91	28.54	28.82	35.33	36.42	27.87	27.55	30.09
<i>l</i> (years)	32.30	35.66	34.05	32.79	34.56	35.46	37.99	34.62
<i>CEB</i>	3.11	5.05	4.26	3.39	3.39	5.31	5.79	4.70
<i>N</i> (marriages)	182	21	103	124	33	35	38	37

Source: Historical Sample of The Netherlands.

frequency (“marital debt”) and a low incidence of breastfeeding. Our earlier multivariate regressions on the birth intervals have shown that the short intervals of the Catholics stand out, even after controlling for other characteristics, such as the age of the mother, marriage duration, socioeconomic position of the couple etc. (Van Bavel and Kok 2004b, 2005a). To some extent, deliberate spacing took place already before the fertility transition, in particular during the first ten years of marriage. The intervals tended to increase when more children were surviving (Van Bavel and Kok 2005a).

The differences in mean age at last birth are so small in the first cohort that they can easily be explained by the age at marriage and by differences in birth spacing. Under natural fertility conditions, both high age at marriage and short birth intervals are associated with a higher age at last birth (Okun 1995). In the second cohort, however, stopping became much more important. In this generation,

fertility had declined among all religious groups but it was lowest in the liberal and mixed groups. This was mainly due to the much lower age at birth of the last child. In the cities, strikingly early stopping accounted for the small number of children in completed liberal Protestant and mixed marriages. Interestingly, the birth intervals increased in the second cohort among the liberal Protestants (both in urban and rural areas) and the mixed couples (in cities). This is probably caused by long final intervals, that can be interpreted as failed attempts to stop.

Rural Catholics married late in the oldest cohort, but made up for the difference by having shorter intervals and by continuing longer with child bearing. In the youngest cohort they still had a high age at last birth. Clearly, Catholics adopted birth control by early stopping only in the cities, in combination with (moderate) spacing. The Orthodox Protestants seemed to have adopted stopping only slightly, in cities as well as in the countryside. For urban women, the exceptionally high mean age at last birth in the oldest cohort cannot be considered to be very robust because of the small number of completed marriages in this group (N=6). Finally, the mixed marriages lowered their fertility to some extent by spacing but foremost by stopping. Interestingly, they have the same behavior in rural and urban contexts.

Summing up, mixed couples and liberal Protestants adopted birth control by means of early stopping both in cities and in the countryside, whereas Catholics only did so in the cities. However, McDonald's model does not tell us anything about the causes underlying the observed differences in mean birth intervals and ages at last birth. Were they due to deliberate spacing and stopping or were they the unintended consequence of other characteristics of the religious groups?

In order to shed more light on these questions, we need to proceed to multivariable regression. The next section analyzes stopping behavior in the second cohort of mothers, because the different pace of the fertility transition between the religious groups appears to have been predominantly due to early stopping. The question is whether this is confirmed in a regression analysis that controls for demographic and socioeconomic variables.

## 5. LOGISTIC REGRESSION OF STOPPING

Stopping means that no more births occur after a previous one, which can be described as occurring with some probability. Therefore, it can be analyzed by means of a logistic regression model (Yamaguchi and Ferguson 1995; Van Bavel 2004b). The dependent variable is whether or not at least one more child is born within five years after the previous child. The probability ( $p$ ) of the dependent variable being a yes (stopping does occur) is expressed in terms of its *odds*, that is the probability of a "yes" divided by the probability of a "no" ( $p/(1-p)$ ). The



regression coefficients are estimates of the effects of the independent variables on the natural logarithm of the odds. By exponentiating the regression coefficients, we obtain *odds ratios*. These indicate the increase in the odds of the dependent variable of being a “yes” resulting from an increase of one unit in the independent variable (Menard 1995). Here, we model the termination of childbearing as a function of natural and social-structural determinants as well as religious characteristics.

The observational units in our sample are birth intervals (either open or closed), not marriages. But, obviously, these birth intervals are nested within marriages. Some couples may be likely to continue childbearing at higher parities; others will be inclined to stop early. As a result, the probability of stopping after each birth interval depends on its marriage. Even after controlling for the marriage characteristics that feature in the list of covariates, the probability of stopping may differ for reasons unobserved. Therefore, the birth intervals cannot be considered to be independent observations. Ignoring this results in underestimated standard errors for the regression parameters and, hence, a higher risk of falsely rejecting the null-hypothesis. The solution is to add a random component to the logit model to capture the effects of unobserved heterogeneity on the family level (Kreft and De Leeuw 1998). This amounts to allowing every single marriage to have its own overall likelihood of stopping, independent of, and unexplained by, the covariates.

Our model includes three basic sets of covariates. A first set consists of determinants of stopping under natural fertility conditions (see Van Bavel 2004b). Two very important predictors of natural stopping are the age of the wife and marriage duration. The former is highly associated with the onset of sterility, while the latter is negatively related to coital frequency. After controlling for these two variables, the fecundity of marriages still varies significantly. Couples characterized by high fecundity will have, on average, a higher cumulative number of births at any age and marriage duration. For these couples, the probability that the current interval is closed by yet another birth will also be relatively high. Therefore, we include the number of children ever born (CEB) within the current marriage at the start of the birth interval in order to control for natural fecundity differences.<sup>2</sup> The survival status of the previous child is also included in the model because infant mortality may interrupt breastfeeding and enhance the likelihood of an additional birth. The child survival variable is binary and set to one if the child dies within one year. In addition, this variable is set to one when a next child is conceived and the death of the previous child occurred before the conception (but still within a year).

The second set of covariates is included in order to control for the socio-economic situation of the family. Because the Dutch population registers provide

only very sparse and unreliable information on the economic activity of married women, we have to limit ourselves to the husband's occupations. The grouping of specific occupational titles has been derived from a classification often used in Dutch historical demography (Giele and Van Oenen 1974, 1976; see also the contribution of Schellekens and Van Poppel in this volume).

The final set of covariates is of central interest here. Based on the categorization in section 2 of religious denominations and our discussion of the relationship between religiousness and mixed marriages, we distinguish between the following groups: homogeneous (1) Catholic, (2) liberal Protestant, and (3) Orthodox Protestant marriages, (4) mixed Orthodox-liberal Protestant marriages, and (5) mixed Catholic-Protestant marriages. Within the latter group, we distinguish between (5a) marriages where the husband is Catholic and the wife Protestant (liberal or Orthodox), and (5b) marriages where the religious affiliations are reversed. We expect that mixed marriages will deviate from church norms more often than homogeneous marriages.

Finally, we include a binary variable indicating whether or not the wife was already at least for two months pregnant at the time of the wedding. However, as discussed in section 2, in Dutch Protestantism bridal pregnancy can hardly be seen as deviant behavior, because even strong pietistic beliefs could go along with very high levels of "enforced marriages." Therefore, we include an interaction effect of bridal pregnancy with Catholicism of the couple. Bridal pregnancy was lower among Catholics and may therefore to some extent be read as deviant behavior possibly signaling low religiousness. Table 2 presents the percentage distributions of the variables included in the regression.

We fitted the multilevel logistic model to birth intervals from first-married women from our second cohort, born between 1876 and 1903. As explained above, we fitted separate models for urban and rural areas because we expect that the mechanisms of institutional control were more effective in villages than in cities. Table 3 gives the estimates. The effect parameters are reported in exponentiated form in order to make interpretation in terms of odds ratios easier.

Turning immediately to the effect of religious affiliation, there were significant differences between the denominations in rural areas. Homogeneously Catholic and, to a somewhat lesser extent, Orthodox Protestant couples clearly had a lower propensity to stop early than liberal Protestant couples, as expected. For example, in the countryside, the odds of stopping at a given age, parity and marriage duration was about half for the Orthodox compared to the liberal Protestants.

Interestingly, the stopping pattern of mixed Catholic-Protestant marriages was somewhere in between the both Catholic and both liberal Protestant

*Table 2. Percentage distributions, or, means and standard deviations (between brackets) for characteristics of the birth intervals used in the model presented in Table 3.*

Covariate	Rural		Urban	
Age of mother: 15-24	20.74	%	25.97	%
25-29	29.51		31.12	
30-34	24.44		24.16	
35-39	17.78		13.59	
40 and +	7.53		5.15	
Mean marriage duration	6.64	(5.40)	5.90	(5.16)
Previous child died	5.68	%	7.73	%
CEB within marriage	3.89	(2.80)	3.24	(2.52)
Occupation of father				
- Unskilled worker	37.78	%	23.78	%
- Elite, professional	1.60		1.81	
- Farmer	17.78		1.75	
- Official & white collar	5.80		6.41	
- Shopkeeper or artisan	17.53		15.23	
- Skilled worker	19.26		49.59	
- Unknown	0.25		1.42	
Religion				
- Both Liberal Protestant (ref.)	15.68	%	39.67	%
- Both Catholic	33.21		26.08	
- Man Catholic, Woman Protestant	0.49		8.22	
- Man Protestant, Woman Catholic	2.35		10.52	
- Both Orthodox Protestant	28.40		5.42	
- Mixed Liberal-Orthodox Protestant	19.88		10.08	
Sample file: Utrecht	94.94	%	23.62	%
Rotterdam	5.06		76.38	
Premarital pregnancy	29.51	%	32.00	%
Premarital pregnant and Catholic	4.81	%	5.15	%
N birth intervals	810		1825	

Source: Historical Sample of The Netherlands, Utrecht and Rotterdam sample.

positions. In all cases, the difference between the stopping of homogeneous marriages and mixed marriages was too small to be statistically significant. If the husband was Protestant and the wife Catholic, the behavior resembled rather more the Catholic pattern of late stopping. If the husband was a Catholic and the wife Protestant, the couple's stopping position was closer to the liberal Protestant early stopping. This suggests that a woman's religious background was more influential than her husband's in determining their fertility. Again, this holds true only for the countryside.

In the cities, the differences between religious groups were much smaller – if any: none of the observed differences are statistically significant, even if the number of observations is bigger than for the countryside. In urban areas, the estimated odds of stopping for Catholics were only 0.77 times lower than the odds for liberal Protestants. In the villages, this odds ratio was 0.34. The odds ratios for Orthodox compared to liberal Protestants were 0.70 in the cities and 0.49 in the villages. This finding supports the hypothesis that an important aspect of the influence of religion on the pace of the fertility transition was the ability of religious institutions to enforce compliance with their norms. As people could be more easily monitored in small villages than in cities, social control mechanisms could do their job more effectively there.

Premarital pregnancy may be read as a sign of rebellion against the teachings of the church in the Catholic, but not in the Protestant case. That is to say, Catholic brides who were pregnant at the time of their wedding were significantly more likely to adopt stopping behavior than Catholic brides who were not pregnant. There was no such significant difference between Protestant brides.

We now turn to the control variables. First, the age of the mother is positively related to the probability of stopping, as it should be. Marriage duration has an independent effect in the same direction, because it is negatively related to coital frequency. Survival of the previous child had no significant effect, which suggests that there was no deliberate replacement of deceased children. Finally, the effects of husband's occupation, if any, ran in the same direction in urban and rural areas. Officials and white collar workers were the keenest stoppers, while unskilled workers, shopkeepers and artisans were less likely to adopt early stopping. The elite professions were somewhere in between. In rural areas, farmers may have been more likely to stop than unskilled workers.

After controlling for all these covariates, the level of heterogeneity among first-married couples was much lower in rural than in urban areas: the estimated family-level variance was 0.43 for urban and only 0.18 in rural communities. This suggests that reproductive behavior was more homogeneous in the countryside and more heterogeneous in the cities, as might be expected. All

*Table 3. Logistic regression of the probability that no more child is born within five years after the current birth, by rural vs. urban place of birth; birth intervals for first-married women born 1876-1903, Utrecht and Rotterdam sample.*

Covariate	Rural			Urban		
	exp. (b)	std (coef)	p-value <sup>(c)</sup>	exp. (b)	std (coef)	p-value <sup>(c)</sup>
Age of mother						
- 15-24 (ref.)	1.00	-	-	1.00	-	-
- 25-29	1.91	0.349	0.065	1.30	0.171	0.128
- 30-34	1.83	0.392	0.124	1.34	0.218	0.180
- 35-39	2.60	0.466	0.041	2.15	0.292	0.009
- 40 and +	9.36	0.599	<.001	14.81	0.477	<.0001
Marriage duration	1.58	0.064	<.001	1.36	0.034	<.001
Previous child died	1.09	0.425	0.838	0.75	0.233	0.214
CEB within marriage	0.49	0.107	<.001	0.60	0.064	<.0001
Occupation of father						
- Unskilled worker (ref.)	1.00	-	-	1.00	-	-
- Elite, professional	1.94	0.799	0.409	1.32	0.481	0.565
- Farmer	1.72	0.322	0.095	1.05	0.649	0.946
- Official & white collar	2.13	0.449	0.094	3.04	0.295	<.001
- Shopkeeper or artisan	1.03	0.326	0.935	1.08	0.224	0.718
- Skilled worker	1.43	0.301	0.237	1.41	0.171	0.043
- Unknown	-	-	-	0.47	0.621	0.223
Religion						
- Both Liberal Protestant (ref.)	1.00	-	-	1.00	-	-
- Both Catholic	0.34	0.370	0.004	0.77	0.205	0.200
- Man Catholic, Woman Protestant	0.55	1.441	0.675	0.84	0.254	0.503
- Man Protestant, Woman Catholic	0.39	0.718	0.189	0.83	0.232	0.416
- Both Orthodox Protestant	0.49	0.335	0.033	0.70	0.323	0.268
- Mixed Liberal-Orthodox Protestant	0.95	0.339	0.872	0.96	0.226	0.866
Locality						
- Utrecht (ref.)	1.00	-	-	1.00	-	-
- Rotterdam	2.08	0.448	0.104	2.44	0.189	<.001
Premarital pregnancy						
- No (ref.)	1.00	-	-	1.00	-	-
- Premarital pregnancy	1.16	0.280	0.604	0.87	0.173	0.419
- Premarital pregnant and Catholic	1.47	0.611	0.532	2.13	0.373	0.043
Marriage-level variance <sup>(*)</sup>	0.18	0.349	0.600	0.43	0.238	0.068
Intercept	0.15	0.436	<.001	0.16	0.300	<.001
Degrees of freedom	22			22		
Chi-square	222.4		<.0001	397.4		<.0001
Log-likelihood	-353.4			-991.45		
N birth intervals	810			1825		
N marriages	175			546		

<sup>(c)</sup> two-tailed Wald-test

<sup>(\*)</sup> not exponentiated

Source: Historical Sample of The Netherlands, Utrecht and Rotterdam sample.

results presented here indicate relatively conformist reproductive behavior in the villages whereas the old saying that *Stadtluft macht frei* apparently held in the field of fertility control as well.

## 6. CONCLUSION

In the last decades of the nineteenth century, The Netherlands were characterized by a very high level of marital fertility. In addition, the pace of subsequent decline was rather moderate. To what extent was the Dutch version of Christianity responsible for both the remarkable level and development of fertility? In assessing the impact of religion, it proved useful to consider its diverse aspects. Firstly, the various Christian churches in The Netherlands had very different ideologies, ranging from liberal and rationalist to fundamentalist. Several denominations granted the individual autonomy in interpreting the faith, thus weakening the power of clergy and (moral) theology. This autonomy extended into rational decisions in family matters. Thus, for a large part of late-nineteenth century Dutch Protestantism, there was no “religious” filter or barrier to family limitation, once the economic incentive was present. In the meantime, however, Orthodox Protestant and Catholic churches were developing anti-Neo-Malthusian and pro-family doctrines. Indeed, members of these denominations were the most reluctant to adopt stopping behavior.

Apart from ideology, we have looked into the institutional means the churches had at their disposal. The Catholics and *Gereformeerde* Secessionist churches were able to enforce their message with means of communication on the one hand and discipline on the other. However, these means were not very effective in the context of a city. In the cities, their members turned out not to behave differently from others, whereas in the villages they did.

Denomination itself does not disclose the intensity of the individual attachment to the church or its doctrines. In establishing the separate impact of religiousness we have taken a closer look at religiously mixed marriages. We hypothesized that the very fact of a mixed marriages indicates a certain indifference to the churches’ prescription on the side of both partners. Indeed, mixed marriages were quite innovative in their fertility behavior, both in urban and rural contexts. Interestingly, mixed marrying women not only determined the denomination of their children, but the “contraceptive style” of the couples as well. That is, a mixed couple resembled the Protestants more when the wife was a Protestant, and vice versa when she was a Catholic. Furthermore, we have looked at bridal pregnancy as an indicator of fidelity. Catholics who had transgressed the rules against premarital sexuality, were more inclined to employ “stopping” as well. At least, this was the case for urban Catholics.

The strong differences in the impact of religion between cities and villages, when all other factors are held constant, leads us to our conclusion that religion can only have a strong effect on demographic behavior when possibilities for direct supervision and intense social control among the members can accompany clear directions as how they are to behave.

#### NOTES

<sup>1</sup> According to the definition of Princeton's European Fertility Project the Dutch fertility decline started in 1897, when a 10 per cent drop in the estimated  $I_g$  was measured (Knodel and Van de Walle 1979).  $I_g$  relates observed fertility to the "maximum" level attained by Hutterite women, taking account of the age distribution of married women. However, the estimated Total Fertility Rate (average number of children per woman) dropped already in 1879. During the 1880's and 1890s, statisticians and doctors began to comment on the declining births rates (Van Poppel and Röling 2003).

<sup>2</sup> The problem can not be tackled by removing from the model the couples that stopped very early. Early stopping may have been deliberately planned, whereas, conversely, late stopping may have been caused by infecundity.

ERNEST BENZ

## FAMILY LIMITATION AMONG POLITICAL CATHOLICS IN BADEN IN 1869<sup>1</sup>

### 1. INTRODUCTION

Religion, or irreligion, may have influenced the contraceptive revolution in at least three substantive ways. German writers have long stressed the importance of formal confessional differences in historic transitions, often with the implication that Protestant doctrines or Jewish practices fostered more modern world-views than Catholicism (Weber [1905] 1958; Sombart [1911] 1982). French intellectuals are inclined to underline a more general distinction between clericalism of all stripes and Enlightenment, with the latter leading the way into the future. Drawing on many of the same attitudes, contemporary sociologists contrast traditional mores and rational fertility control. Whatever their differences, all three interpretations concur in treating orthodox Roman Catholicism as an obstacle stubbornly giving way to progress, especially in the form of contraception.

This case-study of precocious fertility transition challenges such views. Local genealogies from Ettenheim county, in the southwest German state of Baden, show that many couples practiced family limitation by the middle years of the nineteenth century, a generation or two ahead of most Europeans. The 1860s also inaugurated the *Kulturkampf*, a struggle for civilization by the liberal State against the Roman Catholic Church that dictated Baden's political life for the next half-century. How did these two phenomena, the contraceptive revolution and the *Kulturkampf*, interact? Comparing reconstituted family histories for public supporters of national liberalism and its new clerical rival reveals no significant difference between the two groups in levels of family limitation. Roughly equal numbers on both sides had initiated the fertility transition early. Moreover, political Catholics had cut their reproduction below the natural fertility still dominant at that point among their Jewish neighbors. If active, dedicated Roman Catholics could prove no less receptive to contraception than adherents of other world-views, even in the midst of enduring public



controversy over those world-views, then the place of religion in the fertility transition needs to be conceived differently. In particular, the importance of religion to fertility need not rest on doctrines, norms, or sacraments so much as on the patterns of sociability religions engendered.

## 2. THREE MODELS OF SECULARIZATION

The peculiarities of national historiographies often appear in the assumptions and oppositions researchers take for granted. In the German case, the enduring salience of the Reformation and religious wars has made the discovery of confessional differences an almost automatic reflex. Where Britons might look first to class, Canadians to language, and Americans to race, Germans tend to view religion as a natural basis for compiling statistics and interpreting them. German authors are readily drawn to contrast Catholic and Protestant behavior, or even to take for granted that whatever correlations they find testify to straightforward causal links (Imhof 1978; Zschunke 1984).

French history and French demographic theory highlight religiosity more than formal confessional allegiance. Since the French Revolution and even earlier, the contentious French have repeatedly found themselves at odds over the place of religion in public life. That place has arguably diminished over the long term, from the Gallican Articles of 1682 through the 1790 Civil Constitution of the Clergy and the separation of Church and State in 1905 to the twenty-first-century ban on religious symbols in school attire. Against that backdrop, ties between piety, feminine gender, and rightwing politics count as common knowledge (Barral 1954).

As the French also distinguished themselves by initiating the fertility transition a century ahead of the rest of the continent, it is tempting to link religious and contraceptive revolutions (Bardet 1988: 372-376). Theodore Zeldin (1970) has provocatively located such a link in the confessional. Zeldin speculates that popular anticlericalism could have arisen in reaction to aggressive interrogation of penitents and to attempts by some confessors to regulate sexual behavior. Resentment of such inquisitions would then appear in falling church attendance or anticlerical politics. By contrast, discreet priests might retain the affection and loyalty of their flocks.

At this level of analysis it is not necessary to determine whether the Church was first challenged in the bedroom or in the polling booth. Perhaps couples turned away from the Roman Catholic Church on political grounds, and then, free of its institutional controls, took up practices that priests had repressed earlier. Conversely, perhaps couples first took up family limitation, and then, when priests criticized them for it, abandoned organized religion. In either case, antipathy to the

Roman Catholic Church in particular would link fertility and politics.

Zeldin's speculation has been extended to Baden by Dagmar Herzog (1996), who gives it postmodern and feminist twists. She calls attention to public rhetoric as early as the 1840s that placed husbands and priests at loggerheads in controlling wives' bodies. Herzog (1996: 188) instances contraception as one site of contention. Moreover, she calls attention to the fact that both sides in political controversies, anticlericals as well as clericals, phrased their positions in religious language. For Herzog, that contest over the meaning of true Christianity also informed the complex attitudes progressives took to the Jewish question.

Related models of secularization influenced twentieth-century demography. The notion that political allegiances shed light on fertility came to exert a particular fascination for researchers connected with the Princeton European Fertility Project (Coale and Watkins 1986). They had set out to document the social and economic triggers of fertility decline in Europe from 1870 to 1930, province by province. Yet as studies of country after country rolled off the press, the prospective general theory of how fertility adjusted to modernization grew ever more distant (Tilly, Andorka, and Levine 1986; Gillis, Tilly, and Levine 1992). There were no simple general connections between fertility and infant mortality, or industrialization, or literacy, or women's participation in the paid labor force, or income, and so on. In an attempt to salvage the notion that fertility was adapting to something as it declined, some of the Princeton group turned to religious culture, and above all to secularization as demonstrated in political behavior – still within the framework of regional analysis. Only John Knodel (1988) moved to investigate the fertility of individual couples. Knodel's findings reinforced his inclination to stress innovation as well as adjustment in understanding and provoking fertility transitions (Knodel and Van de Walle 1979).

The attractions of secularization theory were manifold. On the one hand, it offered a plausible account of increasingly recalcitrant empirical evidence. Not only does secularization seem extensive in the present, a time of widespread birth control, but it also was arguably prominent in eighteenth-century France, the outstanding pioneer in family limitation. As for the years between, a turning away from otherworldly values and a harnessing of sex to the purposes of individual couples seem fitting companions within a larger process of modernization. They belong to a success story with readily identifiable winners.

In addition, that account was congenial professionally. If secularization were manifested in votes for and against religious parties and policies, its progress could be tracked quantitatively at regular intervals across large geographic expanses. The variable could be operationalized, as the jargon has it. Statistics on electoral behavior were often available for just the administrative aggregates that

the Princeton project was studying. It was easy to add the outcome of elections to the mix of economic and social statistics that had already been generated.

Moreover, analysis of the enhanced mix generated anecdotal evidence squarely in keeping with the hypothesis. Votes even generations later displayed much the same geographic patterns as fertility decline. Lesthaeghe and Wilson (1986) list high correlations between regional indices of fertility around the turn of the century and votes on schooling in Belgium (1958), induced abortion in Switzerland (1977), and divorce in Italy (1974). Using elections from around 1920, including one for Germany, regression analyses turn up broadly similar regional trends (Lesthaeghe and Wilson 1986).<sup>2</sup> There has been less effort to go beyond analysis of aggregates to show that secularization mattered at the level of the couple, who actually controlled fertility.

One reason may be that secularization summoned up an ideological setting comfortable for researchers. In a world in which sex and gender are prominent on political agendas, and in which those agendas often feature religious or anticlerical language, it is easy to imagine that politics was ever thus, that past disputes ostensibly over school textbooks or the authority of the pope were at bottom driven by more intimate concerns. The personal was political then too. How better to translate *Kulturkampf* than as “Culture War” (Clark and Kaiser 2003)?

Let me begin by questioning a few of these assumptions. Historians are more wary than social scientists of distinguishing contemporaries into traditional and modern. After all, if two people lived at the same time, must they not be equally modern, and equally traditional? But, it will be maintained in response, there are certain undeniable broad trends in the past, great transformations that have swept the world. In any given age, some human beings have fostered those transformations, or adopted stances appropriate to their outcomes, while others have vainly resisted change. The former were modern, and to them and their modernity we owe the modern world. The latter were traditional, and have been consigned to history.

These notions raise the hackles of historians (Butterfield 1973). Yet even the more sensitive among them concede that certain long-term trends are visible – without applauding them of course.<sup>3</sup> One such trend might be secularization, in something like its original sense. Just as lay sovereigns secularized by confiscating ecclesiastical properties and rights, so too the past few centuries have removed whole sections of public and private life from the sacred to the profane, one might claim. It is important to notice that endorsing this claim need not require endorsing the trend itself. One might, for example, deplore it.<sup>4</sup>

Such second thoughts are all the more intelligible when it comes to German history. It is true that some German Catholics stood aloof from the Church

when it was under attack by the State in the late nineteenth century, and that they justified their actions in terms redolent of secularization. It is also true that over the years from 1874 to 1933, the very years of fertility decline (Knodel 1974), the percentage voting for the Center party, the rallying point of German political Catholicism, fell off (Schauff 1975). Yet what that process did was to free many of those voters to support National Socialism (Hamilton 1982; Heilbrunner 1998). (In fairness, I add that, like committed political Catholics, most of the socialist voters whom Lesthaeghe and Wilson (1986) pinpoint resisted the siren song of Nazism.) For liberal Catholics, Nazism was often the logical outcome of secularization. The same arguments that justify – to whatever extent – calling the Center reactionary, equally make National Socialism modern. The historian may continue to cringe at the use of such terms, but if the social scientist is consistent in employing them, one ground of objection is cut away.

These general considerations do not of course settle whether the regional correlations reported above actually corresponded to differences in individual behavior. Whether or not anticlericals really were more modern than clericals, whether or not it actually was better to be modern, there remains an empirical question: how much did the fertility of the two groups differ? It may turn out that, for example, Nazi voters were indeed more advanced in their sexual attitudes and practices, in that they had resorted to birth control earlier and more thoroughly than Center supporters.

The three variants of secularization theory canvassed above all agree that such distinctions were significant. To be sure, they locate the key distinction in slightly different places. The first, focusing on formal denominational affiliation, would predict that Protestants, and even more Jews, should lead Catholics in the turn to contraception. The second variant would look rather within each confession, for distinctions between liberal and ultramontane Catholics, between Reform and Orthodox Jews, or between modernist and pietist Protestants. A strengthening of public sectarian identities, as in the *Kulturkampf*, should sharpen whatever influence religion might exert (McQuillan 2004). Proponents of the third model of secularization would offer political behavior as a bellwether. They would expect to find family limitation taking off among new movements such as nationalism, liberalism, and socialism, regardless of nominal religious affiliations. Whatever their disagreements on where to look for the pioneering contraceptive revolutionaries, all three models predict that Roman Catholics active in clerical politics should lag behind. In this common prediction, they all err, the data reveal.

### 3. THE STRUGGLE FOR CIVILIZATION IN BADEN

The southwest German State of Baden provides an appropriate setting for investigating historic change. Baden was notorious as the model in German politics, a hotbed of political creativity. If German liberalism went to school at the debates in Baden's parliament in the 1820s and 1830s, so too did German radicalism in the years leading up to the revolution of 1848. Later, in the 1860s, Baden opted precociously for national liberalism. In those years, Baden's government championed little German unification, emancipated Jews, abolished guilds, and eliminated property qualifications for marriage, all the while harmonizing the views of a liberal grand duke and a liberal parliament (Gall 1968).

Baden's liberals also introduced a campaign against the privileges of the Roman Catholic Church. They regarded the Church as an unfree institution, like guilds or absolute monarchies a hindrance to individual development. Having headed off a move to cement the independence of the Church through international treaty (the never-ratified concordat of 1859), the parliamentary majority pressed on to forestall future ultramontane threats (Becker 1973; Dörneich 1974). Laws replaced clerical oversight of education with public school boards (1862, 1864, 1868) and closed schools run by religious corporations (1870). New textbooks (1867) symbolized a new national and liberal curriculum. This educational transformation culminated in 1876 with the establishment of compulsory religiously mixed schools.

These years also saw requirements that priests pass a State exam before taking office or exercising ecclesiastical functions (1867, 1874). Violators of the State's new rules were repeatedly fined and jailed. Conversely, clerics dissenting from the Church hierarchy were freed from ecclesiastical discipline. Civil marriage became obligatory (1869). The government confiscated the assets of religious foundations and transferred them to welfare agencies (1870). In each case the State secularized, dedicating to purposes of this world aspects of life that had previously been transcendent.

Similar measures were later introduced elsewhere in Germany and found sympathetic echoes abroad. Yet if Baden had once more invented a political stance for others in anticlericalism, it also generated some of the earliest clerical resistance. Political Catholics took up the era's call for freedom on their own terms. For them, emancipation included liberating the Church from State tutelage. The Church was to be free to speak and to act as it saw fit. More generally, ultramontanes insisted that historic or natural liberties were immune to the modern State's absolutist pretensions. Such views advanced in Baden's clergy in the first half of the 1800s (Götz von Olenhusen 1991). By the 1860s,

significant elements of the Catholic laity too mobilized in opposition to the trends of the day. Documents of that popular resistance furnish the evidence I shall be drawing on below.

Qualitative accounts suggest the Manichean tone of this new religious politics at the grass roots. Take the 1865 election in the small town of Herbolzheim, one of the municipalities investigated at length below. The outcome was a solid victory for clericalism, and was recognized as such at the time. The liberal county gazette minced no words.

The clerical party has put through all of its electors in both votes, for the parliamentary as for the district elections; in the process the so-called catholic Catholics behaved so badly that they scrawled crosses and insults on the houses of those who strove in a progressive direction, and whistled out the mayor, at night of course – they did not require daylight for their heroic deeds. A guardian [*Waisenrat*] allowed himself to tell the mayor that the progressives had sold their souls. In addition, what is most to be deplored is that our elderly priest, previously loyal to the Wessenbergian school and who had even criticized the carryings on of the children of darkness [*Treiben der Finsterlinge*] as recently as a few days ago, in the end also went over to their camp. The educated [*gebildete*] part of our population is understandably withdrawing from this gentleman.<sup>5</sup>

One has here the dramatic elements of secularization theory: an electorate polarized between self-styled progressives and traditionalists, political activity by clerics, priests alienating parishioners, and so on. Religious politics might even supply the key to the plateau in family limitation in late nineteenth-century Herbolzheim (Knodel 1988: 292, 306-307). If part of the town were caught up in a religious revival antithetical to birth control, the latter movement might grind to a halt. The same dynamics could shed light on advances and delays in the spread of contraception across Baden and all over Europe.

As I just hinted, Baden's standing as a pioneer was not limited to politics, for the earliest reliably documented cases of family limitation in German lands are found among its citizens (Knodel 1988). In the first half of the 1800s, well ahead of most Germans, some residents of Ettenheim county on the Rhine plain (see map) began to restrict the number of children they bore within marriage. Instead of continuing to reproduce until menopause, as their ancestors had done, wives halted childbearing at ages when they were still fecund.

On a global level, hypotheses linking secularization and family limitation can easily accommodate this finding. Just as eighteenth-century France led Europe in exhibiting mass contraception and in undermining ecclesiastical authority, so

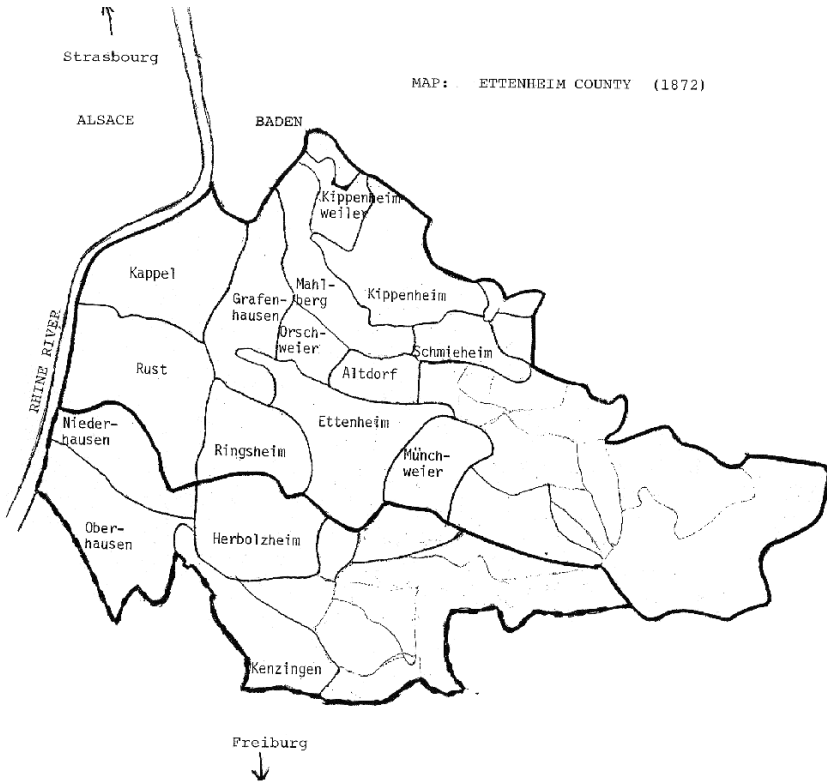
nineteenth-century Baden also brought the two movements together. Clearly such a link did exist at the level of countries, and again at the level of provinces within them. As aggregates, rural Bavaria and Poland delivered fewer socialist votes and more babies (Lesthaeghe and Wilson 1986; Brown and Guinnane 2002). What about on a still smaller scale, in particular the one at which decisions about fertility and politics were actually made? There the pattern is less clear because less studied.

Baden's precociousness makes it possible in favorable circumstances to identify individuals espousing ultramontanist right at the time that family limitation was first spreading. Rather than pore retrospectively over the votes of their grandchildren, one can examine the political stances of the very generation that switched from natural fertility to family limitation. Moreover, that generation's public battles on their face concerned secularization, rather than socialism. Most important, one can examine political movements one couple at a time, so that one is in a position to make sharp claims about what happened to human beings rather than to regions.

The data that make this possible come from the *Ortssippenbücher* (OSB), or local genealogies, prevalent in Ettenheim county. These OSBs assemble the reproductive histories recorded in the parish and civil registers of a locality. On such family reconstitution, compare Fleury and Henry (1965). This paper draws on the OSBs for Altdorf (Köbele and Scheer 1976), Grafenhausen (Köbele 1971), Herbolzheim (Köbele 1967), Kippenheim (Köbele, Siefert, and Scheer 1979), Kippenheimweiler (Köbele and Hentschke 1980), Mahlberg and Orschweier (Köbele and Siefert 1977), Münchweier (Köbele 1977), Oberhausen and Niederhausen (Köbele and Kirner 1975), Ringsheim (Köbele 1956), Rust (Köbele 1969), and Schmieheim (Köbele, Scheer, and Ell 1979). These towns and villages are marked on the map. I omit the area of impartible inheritance extending beyond the eastern border of Ettenheim county, whose OSBs are not complete. Unequal inheritance, dispersed homesteads, and difficult terrain, even more than Catholic politics, would make for a late fertility decline there.

The abundance of OSB data is all the more valuable for coming from Ettenheim county, a natural experiment in mixing religions, customs, and ideologies. In this region, the Thirty Years War (1618-1648) had left a complex hierarchy of lords and overlords in control of an even more variegated collection of subjects. Religious settlements varied jurisdiction by jurisdiction, even municipality by municipality. Uniform populations of Catholics abutted uniform populations of Lutherans, while some lordships tolerated both – even, as in Kippenheim, in the same church building (Hentschke 1979). Diversity only grew over the next century, as some lords accepted Jewish settlers into their territories, while others did not. The long-term outcome was an overall Catholic majority

Map 1. Ettenheim County (1872).



under a Protestant grand duke, with a wide range of confessional mixtures on the local level (Table 1).

As the district swung back and forth politically, between radicalism and moderation before 1848 and later between anticlericalism and ultramontanism, those wider public battles welded the parochial subjects of the former petty States into Baden and then German citizens (Benz 1999). At roughly the same time, those citizens began to transform themselves through the adoption of birth control. Family limitation can be detected in Rust from 1850, in Grafenhausen from the 1820s, and right back to the beginning of the nineteenth century in Herbolzheim (Knodel 1988; Benz 1999). All three collections of rural Catholics – unlike most of their neighbors in Kappel am Rhein – ran well ahead of the German average.

By the 1860s then, family limitation had been present in Herbolzheim and Grafenhausen for a generation or two, and was just becoming visible in Rust. The



*Table 1. Total population, distribution of population by religion in 1867, and number signing petitions in 1869 for selected municipalities in Ettenheim county, Baden.*

Municipality	Total	Percentage			Petitioners	
		Catholic	Protestant	Jewish	opposing government	supporting government
Altdorf	1206	78	1	21	91	
Ettenheim	2832	96	2	3		116
Grafenhausen	1406	100			135	
Herbolzheim	2013	99	1		115	
Kippenheim	1961	53	33	15	185	73
Kippenheimweiler	558	32	68		16	
Mahlberg	1089	69	31		130	58
Münchweiler	887	100	0		107	
Niederhausen	865	100			70	68
Oberhausen	1641	100	0		111	34
Orschweiler	613	95	2	4	86	25
Ringsheim	1378	100	0		105	
Rust	1752	88	1	11	112	
Schmieheim	1221	2	53	45		179

Note: Only the seven Jews among Ettenheim's signatories are considered in this paper.

Sources: Baden Handels-Ministerium 1868: 34-35, 38-39, Generallandesarchiv Karlsruhe 233/ 31538 and 233/ 31539, and Generallandesarchiv Karlsruhe 233/ 32613.

timing means that attitudes toward birth control could have been influencing political choices in 1869, and vice versa, for at least some citizens. Looking early in the *Kulturkampf* and early in the fertility transition maximizes the chances of detecting any mutual influence of secularization and family limitation.

#### 4. THE PETITION STORM OF 1869

Evidence of the political allegiances of large numbers of residents of Ettenheim county comes from signatures on petitions in support of the clerical opposition in Baden in May 1869 (Generallandesarchiv Karlsruhe 233/ 31538 and 233/ 31539). At this point, the opposition hoped to unseat the ruling liberals by depriving them of the indirect election system that incumbents worked so well. A new Catholic People's Party therefore called for the dissolution of parliament and special

elections by direct secret manhood suffrage. The ultramontane cause had displayed unexpected strength in a vote conducted on that basis the previous year for the parliament of the German customs union (Bader 1868; Dörneich 1964). Just as that demonstration of popular opinion had forestalled – temporarily, as it turned out – the creation of a Prussian-dominated little Germany with a Protestant majority, so the clear purpose of the proposed electoral reform was to halt the juggernaut of secularization.

As it happens, such petitions were submitted from a dozen municipalities whose fertility can be studied in depth. (See Table 1 and map.) The signatories were consciously endorsing clericalism. Parish priests and vicars typically led off or closed the lists. Clearly, a citizen's personal response to the priest would be a factor in deciding whether to sign, as would political convictions. The text of the petitions takes for granted acquaintance with the substantive issues at stake, and applauds the Catholic People's Party.

Comparing the number of signatures in Table 1 against the census populations reveals that support for clericalism varied geographically. Notable is the utter lack of sympathy for thoroughgoing electoral reform among Protestants and Jews. Of 1263 signatories, fewer than one per cent were Protestant and none was Jewish, while only a further dozen were Catholics wed to Protestants. There was much greater political differentiation within the Catholic population, where support ranged from one-quarter (Herbolzheim) to three-quarters (Kippenheim) of the Catholic citizenry. Again, because neither clericalism nor family limitation was universal, Ettenheim county provides a sensitive testing ground for theories of secularization. If everyone had signed or no one had signed, the significance of the petition for family limitation would be moot. Likewise, if no one were practicing birth control, or if everyone were, political divisions would be irrelevant to fertility.

It is worth noting that the exclusion of women from formal politics, including the petitions, should not undercut the usefulness of these data. After all, the means of contraception available, typically abstinence and withdrawal, required cooperation from males. Indeed, given the stereotypical association of piety with women, who attended church services more often and confessed more frequently, one might imagine that birth control was sometimes a male's initiative. Dynamics between the sexes and between couple and priest could then have been much as envisaged by Zeldin and Herzog.

For the most part, names on the petitions link straightforwardly to reconstituted families in the OSBs. Just six per cent of signatures were unidentifiable, usually because not enough information was supplied to distinguish individuals bearing the same name. Four per cent belonged to residents who remained celibate lifelong, and so made no measurable

contributions to marital fertility. A further five per cent of signatories were bachelors in 1869 who first wed later. As some adolescents would not have considered signing the petition and others would not have been allowed to if they had tried, at least in some locales, I have simply excised this entire group. Eliminating marriages beginning after 1869 has the added benefit of purifying the data of reproduction undertaken during the years of the conventional fertility decline.

These losses still permit unique identification of 85 per cent of the signatories. Because some men wed more than once, over 1200 marriages contracted before 1869 come into consideration. Fully 96 per cent of this enhanced collection of marriages was suitable for fertility analysis. That is, the OSB gives the date of the wedding to the day, the wife's birth date to the day or estimated to the year, the death date of at least one spouse (with no indication that the other had died first), and the birth dates of the children (including stillbirths). Anomalous family histories were excluded, unless checking against the second copies of the parish registers in Staatsarchiv Freiburg (L10) resolved the inconsistencies in the OSB record. I call unions meeting all these criteria documented marriages. The very high percentage of documented marriages testifies to the quality of German record-keeping and to the social importance of the local community. In turn, three-quarters of the documented marriages were complete, in that they remained intact until the wife had turned forty-five. Such an abundance of cases makes it possible to see to what extent these public supporters of clericalism were participating in the turn to family limitation.

Table 2 shows that some of them were indeed participating. Wedding dates were distributed around 1850, predating signs of fertility decline in aggregate statistics. Even young couples wed just before the petition circulated would have completed their reproduction by 1890, the first date at which aggregate fertility dropped for this region (Coale and Watkins 1986: map 2.1). Indeed, neo-Malthusianism had by no means taken over entirely from older controls on fertility, as the elevated ages at first marriage bring out. Customary and legal requirements that couples possess sufficient assets to support a family forced postponement of many weddings.

The middle section of the first column of Table 2, dealing with the 885 completed families only, suggests that some couples were also truncating childbearing at the other end of the wife's reproductive span. There are slight but unmistakable marks of family limitation, the classic stopping pattern identified by Louis Henry (1956). With ages at marriage so high, women would continue bearing children through age forty under natural fertility. The petitioners' wives had moved somewhat below that benchmark, on average.

*Table 2. Fertility of documented families of husbands signing opposition petitions in 1869 in Ettenheim county as a whole, and for locations predicted to display early family limitation.*

	All clerical petitioners	Wed 1850-1869 only	Petitioners from six municipalities wed 1850-1869
Average date of marriage	1850	1860	1861
Wife's age at first marriage	26.0	26.2	26.2
For completed families			
Age at last birth	39.5	39.0	38.4
Final birth interval (in years)	3.46	3.51	3.54
Number of legitimate children	5.8	5.7	5.5
For all documented marriages			
Total marital fertility rate	9.30	9.26	8.93
M	1.15	1.21	1.21
m	.20	.30	.37

Notes: The table is based on 1,156 documented marriages. There were 6,374 births, including stillbirths, in 23,014 woman-years from ages twenty to fifty.

The municipalities selected for signs of early fertility transition are Grafenhausen, Herbolzheim, Kippenheim, Münchweiler, Ringsheim, and Rust. The 397 documented marriages beginning there 1850-1869 included 2,059 births in 7,769 woman-years.

Sources: Generallandesarchiv Karlsruhe 233/ 31538 and 233/ 31539, and OSBs for Altdorf, Grafenhausen, Herbolzheim, Kippenheim, Kippenheimweiler, Mahlberg-Orschweiler, Münchweiler, Rheinhausen (Oberhausen and Niederhausen), Ringsheim, and Rust.

In addition, they had extended the final interval a bit beyond the length it would attain if it were simply the outcome of declining fecundity as menopause approached. Unusually long final intervals suggest temporary or only partly effective contraception. In particular, they are compatible with reliance on withdrawal rather than outright abstinence to prevent births within marriage. Family sizes, which include stillbirths, were less dramatically different from those in earlier generations.

The bottom section of the Table extends coverage to all couples regardless of their ages at the end of the marriage. For them, one may calculate age-specific fertility rates, plus two indices, M and m, that disentangle components of total marital fertility (Coale and Trussell 1974; Broström 1985; Wood 1994: 39-46). In

populations practicing birth control, fertility decreases with age more rapidly than it does under natural fertility. Small  $m$  measures the extent to which the schedule of age-specific fertility rates has deviated in that direction. Zero on the  $m$  scale corresponds to the average of ten populations under natural fertility (Henry 1961; Wilson, Oeppen, and Pardoe 1988). An  $m$  value of 1.0 means that marital fertility drops off with age as fast as in an average United Nations member about 1961 (Coale and Trussell 1974). The complementary index, capital  $M$ , aims to measure the underlying level of natural fertility, regardless of the extent of family limitation. An  $M$  value of 1.0 corresponds to the capacity to bear nine children from age twenty through fifty; higher or lower values scale that potential up or down.

The total marital fertility rate in Table 2 shows that a woman sharing the average experience of wives from age twenty to fifty would have produced just over nine children. Delaying marriage cut actual family size by over three children, to 5.8, as has been seen. The  $M$  index of underlying natural fertility indicates the potential for 10.35 children ( $9 \times M$ ), had it not been for family limitation. Because there was some family limitation, the total marital fertility rate was one child lower, at 9.30. In other words, neo-Malthusian control of fertility within marriage was less than one third as important as Malthusian control over entry into marriage in limiting fertility. Finally, the  $m$  index of family limitation, almost seven standard errors above zero, suggests tentative family limitation overall.

Trends over time reinforce these conclusions. Breaking the data roughly in half at 1850 (next column of Table 2) shows movement in the direction of family limitation on all the relevant indices. These averages understate the achievements of limiters. The modest aggregate shifts were generated by a growing minority who posted much lower ages at last birth, longer final intervals, and family sizes of two to four children.

Comparing all the petitioners to the post-1850 marriage cohort reinforces Henry's insistence on the crucial importance of stopping. Deliberately spacing births more widely or putting off childbearing during the early years of marriage are possible applications of birth control, but they emerge only later in the fertility transition, he postulates. (Bean, Mineau, and Anderton (1990) and Szreter (1996) stress spacing rather than stopping.) In Baden, stopping clearly dominated spacing at the onset of the fertility decline. Indeed, the rise over time in the  $M$  index of underlying natural fertility shows that reproduction was growing more rapid, not less, that intervals between births (before the last) were shrinking. (Compare Knodel and Wilson 1981.) As age at last birth fell and age at marriage held firm, childbearing was compressed into fewer years, with less time between deliveries. In the face of this increase in fecundity, the novelty that turned family size downward was the cutting short of the end of the reproductive span, in other words family limitation in Henry's strict sense.

Geographic variation was at least as strong as chronological variation. Just as average fertility in the first column of Table 2 was held up by the large majority of the pre-1850 marriage cohort subject to natural fertility, so too figures then and later include many couples from vicinities where the fertility transition had yet to begin. A better sense of the potential appeal of contraception to political Catholics can be derived by restricting attention to localities where there was any to be found at all. In practice, I have added to Grafenhausen, Herbolzheim, and Rust, three further municipalities where Benz (1999: 259-260) predicts an early fertility transition: Kippenheim, Münchweier, and Ringsheim.

The final column of Table 2 shows that family limitation among political Catholics was indeed concentrated in these six locations. Although entry into marriage and fecundity ( $M$ ) during it hardly differed from elsewhere, the end of childbearing was being transformed. Last births came younger. Moreover, they followed lengthening final intervals. If that last increase reflected reliance on withdrawal, the fact that coitus interruptus ran counter to Catholic teaching did not faze these devout clericals (Stengers 1971; Noonan 1986). Nor did birth control in general. Comparing  $M$  and the total marital fertility rate shows family limitation preventing two births on average, over and above the three and a half children that continuing older marriage was cutting from completed family size.

Table 3 breaks the political Catholics down still further to reveal a hierarchy of localities. Despite the fluctuations associated with smaller populations, that hierarchy holds good across two solid measures of family limitation. Grafenhauseners led the pack, with an average age at last birth under thirty-eight for all completed documented families of petitioners wed before 1869. Their  $m$  value exceeded .4, more than four standard errors greater than zero. The villagers of Münchweier followed closely, ahead of the townfolk of Herbolzheim and Kippenheim. All four municipalities posted significant  $m$  scores. Ringsheimers joined Rusters in the next tier, on the verge of family limitation. Clericals in the other four villages and in the town of Mahlberg had made no decisive escape from natural fertility as of 1869.

In other words, like almost every feature of life in Ettenheim county, family limitation formed a geographic patchwork. Yet that patchwork failed to correspond in any straightforward way to religious or political variation. I have been emphasizing the finding that significant numbers of political Catholics had taken up contraception at this early date. Just as important is that political Catholics exhibited a whole range of reproductive behavior, from robust natural fertility in Niederhausen and Oberhausen and rising fecundity in Altdorf and Mahlberg to early adoption of family limitation in Grafenhausen and its rapid spread in Münchweier. One cannot simply read birth control off religion or politics.

This discussion has made it clear that the significance of the fertility of petitioners depends strongly on how they compare to the rest of the local populations. Tables 2 and 3 have established that, as early as 1869, family limitation was not completely unknown among clericals. However, it remains possible that they practiced it less thoroughly or more belatedly, or that fewer of them practiced it at all. Any such relationship would support theories of secularization.

I therefore undertake further comparisons, placing the clerical activists in context. Over and over, political Catholics emerge as full-fledged contraceptive revolutionaries. In addition to reinforcing the message that public commitment to Roman Catholicism was no obstacle to family limitation, these comparisons

*Table 3. Average age of wife at last birth in completed documented families and m index of family limitation, with range, in documented marriages of husbands signing opposition petitions in 1869 from eleven locations in Ettenheim county.*

Municipality	Age at last birth	m	Range for m (two standard errors)
Grafenhausen	37.8	.43	± .18
Münchweier	38.4	.30	± .21
Herbolzheim	39.1	.26	± .22
Kippenheim	39.2	.24	± .15
Rust	39.7	.12	± .17
Ringsheim	39.8	.14	± .20
Niederhausen	39.9	.06	± .25
Oberhausen	40.2	.09	± .18
Orschweier	40.4	.07	± .21
Mahlberg	40.5	.18	± .18
Altdorf	40.8	.11	± .18

Note: The table is based on 1,142 documented marriages, of which 872 remained intact until the wife turned forty-five. There were 6,306 births, including stillbirths, in 22,723 woman-years from ages twenty to fifty.

Sources: Generallandesarchiv Karlsruhe 233/ 31538 and 233/ 31539, and OSBs for Altdorf, Grafenhausen, Herbolzheim, Kippenheim, Mahlberg-Orschweier, Münchweier, Rheinhausen (Oberhausen and Niederhausen), Ringsheim, and Rust.

also refine judgments about the significance of small apparent deviations from natural fertility (Guinnane, Okun, and Trussell 1994).

What is needed is a collection of residents of Ettenheim county as distinguished for their anticlericalism as these political Catholics were for clericalism. As it happens, such a broad comparison is indeed possible. In the face of the ultramontane petition storm, at the end of May 1869 liberals and nationalists mobilized a counter-petition in support of Baden's government (Generallandesarchiv Karlsruhe 233/ 32611 through 233/ 32613). This counter-petition denounced the democratic pretensions of the ultramontanes as a misleading screen for reactionary goals. (The vociferous rhetoric from both sides was eroding any middle ground. Just half a dozen individuals found it possible to sign both petitions, almost all in Niederhausen and Orschweier.) In particular, the counter-petitioners sought only moderate reforms compatible with maintaining the liberal policy directions of the cabinet. This current of thought would shortly congeal in a formal National Liberal party. Anticlerical appeals to Protestants, Jews, and liberal Catholics then allowed National Liberals to hold power in Baden right through to the First World War (1914-1918).

The final column of Table 1 shows the strong but lower level of support this national liberal effort enjoyed in Ettenheim county in 1869. Its 444 signatures link to OSB family histories at a slightly lower rate than on the clerical side: 82 per cent were uniquely identified husbands wed before 1869. Many of the signatories were civil servants and government agents stationed in the vicinity temporarily: schoolteachers, railway workers, gendarmes, tax collectors, and so on. Those families who do appear in the local records are sometimes only partially captured; 86 per cent of pre-1869 marriages were documented in sufficient detail for fertility analysis. (There is of course the danger that a few returned emigrants or divorced couples may be misclassified among the documented families.) While lower than the 96 per cent for the political Catholics, this coverage still far exceeds rates customary in historical demography outside Germany.

A fairly clear picture emerges of the National Liberal movement at its founding. For one thing, it recruited from all three major religious groups, with Protestants and Jews over-represented. This circumstance makes it possible to test for independent effects of religion and politics even in an era when they were closely associated.

Table 4 does just that. Dates of marriage were similar to those of the political Catholics; there was no generation gap in the *Kulturkampf*. Liberals did wed a tinge younger on average. The overall figures (notably the age at last birth and the m index of family limitation) show that the fertility transition was underway in this anticlerical population as well. However, it was no more advanced on the



whole. Last births came only three months younger to liberals' wives, while neither group could claim a convincing advantage in final birth intervals or completed family sizes. The Coale-Trussell  $M$  and  $m$  for each political tendency lie well within the confidence ellipses for its opponents.

The figures for the separate religions in the later columns of Table 4 are of necessity based on fewer cases. All the same, they bring out important differences between confessions, even within the same political tendency. Liberal Catholics stood, if anything, a little behind their clerical counterparts in birth control. Breaking with the Church politically hardly seems to have permitted or promoted recourse to withdrawal, as final intervals remained quite short. The low  $m$ , within range of zero, betrays no form of family limitation. Comparison with Table 2 suggests that, among Catholics, the more devout preceded the less devout into the fertility transition, contrary to French models of secularization. Likewise, political commitment to a public Catholic identity

*Table 4. Fertility of documented marriages of all husbands signing pro-government petitions in 1869 and of Catholics, Protestants, and Jews separately, in seven municipalities in Ettenheim county.*

	All national liberals	Catholics only	Jews only	Protestants only
Average date of marriage	1849	1848	1850	1850
Wife's age at first marriage	25.8	26.8	26.4	24.8
For completed families				
Age at last birth	39.2	39.6	40.5	37.9
Final birth interval (in years)	3.49	3.22	3.37	3.76
Number of legitimate children	5.9	5.6	6.8	5.4
For all documented marriages				
Total marital fertility rate	8.92	9.05	10.20	8.00
$M$	1.11	1.04	1.24	1.10
$m$	.22	.07	.15	.43

Note: The table is based on 352 documented marriages: 97 for Catholics, 103 for Jews, and 152 for Protestants. 269 of those families were complete. In all, there were 1,965 births, including stillbirths, in 7,247 woman-years from ages twenty to fifty.

Sources: Generallandesarchiv Karlsruhe 233/ 32613, Staatsarchiv Freiburg L10/ 1370 (civil registers for Ettenheim's Jews), and OSBs for Kippenheim, Mahlberg-Orschweier, Rheinhausen (Oberhausen and Niederhausen), and Schmieheim.

fostered participation in the contraceptive revolution, contrary to secularization theory as understood within the Princeton European Fertility Project.

Table 4's figures for the politically active Jews stand out, not for family limitation, but for a higher level of underlying natural fertility ( $M$ ). The average completed family contained almost seven children. This finding illustrates the advantage of focusing on such an early stage of the fertility transition. The fertility of this region's Jews was poised for a crash, which set in with a vengeance among couples wed after emancipation in 1862. (These remarks rest on my ongoing reconstitution of all Jewish communities under the jurisdiction of rabbinate Schmieheim, including Altdorf, Ettenheim, Kippenheim, Orschweier, Rust, and Schmieheim.) Had a comparison similar to Table 4 been made just one generation later, Jews would have enjoyed a massive lead in family limitation over Christians as a whole and over virtually all other sub-populations.

What Table 4 brings out is the novelty of that subsequent low fertility. As late as 1869, last births came at forty following short intervals, while  $m$  had yet to diverge significantly from zero. Jews were distinguished not by an early start on the fertility transition, but by the rapid pace at which it proceeded among them. If Judaism was relevant to that drop, it was not for timeless doctrines or practices, nor for longstanding gender norms or family patterns.

Among liberals, only Lutheran followers of Baden's united Protestant State Church exhibited decisive signs of a new demographic regime by 1869. Last births in the final column of Table 4 came younger, and followed the lengthiest final intervals seen thus far. Actual family sizes and total marital fertility, but not  $M$ , were considerably lower than for other confessions. Only for the Protestants did anticlerical  $m$  comfortably exceed zero – by five times the standard error. Without the Lutherans' contribution, the national liberals would hardly have deviated from natural fertility at all. It is worth noting that the bulk of these limiters hailed from Schmieheim. That village, like the six localities (including Kippenheim) singled out in connection with the political Catholics of Table 1, has been identified as a possible pioneer in contraception (Benz 1999: 259). The observed strength of family limitation among Protestants may then owe as much to geography as to religion.

Be that as it may, the Lutherans of Table 4 are the first population examined thus far for whom the reduction in family size brought on by stopping (1.9 children) approached that attributable to delayed marriage (2.6 children). That balance did not reflect greater family limitation alone, for Lutheran brides also posted the lowest average age at first wedding. As it happens, the advantage in entry into marriage somewhat undercuts the young age at last birth. Even under natural fertility, a youthful start to childbearing corresponds to diminished

fertility at older ages, when the marriage has endured longer than those of couples who waited to wed (Henry and Houdaille 1973: 895-897; Wood 1994: 38-39; McQuillan 1999b: 117). That physiological phenomenon means that part of the Protestant advantage in age at last birth and even in *m* could be an artifact. It might also make sense of the fact that there was no declining trend in age at last birth; Lutheran wives wed after 1850, whose ages at marriage climbed by a year or two, gave birth for the last time older than their predecessors. Even with all these caveats, it remains impressive that Protestants posted levels of family limitation almost at the mark achieved by the political Catholics of Grafenhausen.

The difference just noted in entry into marriage, which was far easier for the wealthy, hints that religion might be a proxy for other differences between political tendencies. The occupations attributed to the households by the parish registers and carried over into the OSBs permit a quick test of this possibility. To standardize the comparison, I limit attention to the five municipalities submitting petitions on both sides in 1869: Kippenheim, Mahlberg, Orschweier, Niederhausen, and Oberhausen. This restriction controls for variations by geography, such as the presence of fishing guilds along the Rhine and its tributaries, which were absent farther inland. It likewise controls for differences in the sizes and economies of towns and villages. For both tendencies, 80 per cent of signatories can be uniquely identified as husbands wed before 1869.

Table 5 bears out the surmise that anticlericalism recruited from somewhat different economic strata, on the whole richer and more influential ones, than did political Catholicism. In the late 1860s, the established political class remained attached to the national liberal government. In that respect political Catholicism represented an insurgency, a new claimant to recognition as a public power. In broader perspective, one could see the construction of a liberal German empire foundering on its exclusion of one elite, the Catholic clergy. Priests were numerous enough among the educated, and influential enough among the masses, that a full polity could not form without them.

In these five municipalities, both sets of activists drew on landed proprietors rather than the day laborers they employed. These agricultural categories, more confined within local horizons, were more heavily represented among the Catholic People's Party. The artisanate split. Most run-of-the-mill craftsmen and declining weavers endorsed political Catholicism. Leaning the other way were owners of more substantial establishments, such as bakers, brewers, butchers, cartwrights, millers, and saddlers. Anticlericalism was especially strong in the prominent affluent category, built around innkeepers. The huge advantage of the national liberals in commerce reflects the preponderance of such livelihoods among Jews, for whom they made up almost three-quarters of all occupations.

*Table 5. Distributions of occupations of Husbands signing opposition petitions and Husbands signing pro-government petitions in five locations in Ettenheim county in 1869.*

	Supported clerical opposition (per cent)	Supported anticlerical government (per cent)
Farming	30	24
Labor	7	4
Craft	28	17
Weaving	12	2
Fishing	3	4
Substantial	7	9
Affluent	2	7
Commerce	3	20
Profession	1	7
Other	<u>6</u>	<u>7</u>
Absolute total	465	207

Notes: The first two occupations the OSB assigns the husband in his first local marriage are weighted equally. If only one occupation is given, it is weighted double. Individuals who did not wed before 1869 are omitted.

On the OSB occupational labels and such classifications, see Knodel 1988 and Benz 1999.

Sources: Generallandesarchiv Karlsruhe 233/ 31538 and 233/ 31539, Generallandesarchiv Karlsruhe 233/ 32613, and OSBs for Kippenheim, Mahlberg-Orschweier, and Rheinhausen (Oberhausen and Niederhausen).

Conversely, the large discrepancy in the professions is accentuated by the focus on husbands' occupations, which excludes Catholic clerics.

Even when these occupational differences did not translate into greater wealth for anticlericals, they put liberals in more regular touch with economic, educational, and governmental networks outside the municipality. In so far as prosperity or access to outside information might foster birth control, all these distinctions should have touched off greater family limitation earlier among the national liberals. Yet, with the possible exception of the Lutherans, they did not. The political Catholics' disadvantages in occupation, like those in entry into marriage, render their incipient family limitation all the more remarkable.

How might one assess the relative standing of the political Catholics from localities without religious minorities or an active national liberal movement in 1869? This is most easily done for municipalities whose OSBs have already been

studied. A limited comparison can be performed for the village of Altdorf. A 50 per cent sample of Catholics from the Altdorf OSB (Goldstein 1984) shows high natural fertility in the village population as a whole, just as Altdorf's petitioners brought up the rear in Table 3. For example, the average last birth for Altdorfers wed 1840-1869 came after age forty, following an interval of three years. Active political Catholics did not trail their neighbors in family limitation, for no one in Altdorf had yet begun to practice contraception.

*Table 6. Comparison of fertility in documented completed families of husbands signing opposition petitions in 1869 and in all documented completed families, in Grafenhausen, Herbolzheim, and Rust, by date of wedding.*

	Wife's age at last birth	Final birth interval	Number of legitimate children
Grafenhausen			
Signers wed 1825-1849	38.7	3.32	6.0
All wed 1825-1849	38.5	3.55	4.7
Signers wed 1850-1869	36.9	3.79	4.6
All wed 1850-1874	37.5	3.87	5.0
Herbolzheim			
Signers wed 1825-1849	39.5	3.75	5.5
All wed 1825-1849	37.9	3.58	
Signers wed 1850-1869	38.7	3.69	5.6
All wed 1850-1874	37.3	3.59	
Rust			
Signers wed 1825-1849	40.8	3.13	5.6
All wed 1825-1849	40.0	3.29	5.2
Signers wed 1850-1869	38.7	3.63	6.0
All wed 1850-1874	39.3	3.50	5.5

Sources: Generallandesarchiv Karlsruhe 233/ 31538 and 233/ 31539 and OSBs for Grafenhausen, Herbolzheim, and Rust. For Grafenhausen and Rust overall Benz 1999: 98, 101 and for Herbolzheim overall Knodel 1979: 505, 509. Knodel 1988: 291 varies slightly due to different restrictions.

Grafenhausen, Herbolzheim, and Rust call for closer investigation. As all three, and especially the first two, saw an early fertility transition, this test is especially appropriate. Table 6 therefore compares the signatories from those three municipalities to the two marriage cohorts to which most of them belonged. The table deals only with completed fertility, because the more sophisticated M and m scales fluctuate more widely than age at last birth as the number of cases diminishes. As earlier, I limit attention to petitioners wed before 1869, which leaves them at a slight disadvantage in the comparison against the cohort wed 1850-1874. Because family limitation was spreading, couples wed from 1870 to 1874 would be more likely to practice it and so depress the fertility of the municipality as a whole below that of the petitioners' families. I discuss each locality in turn.

In Grafenhausen, the ultramontane petitioners barely lag in the 1825-1849 marriage cohort, the first to practice family limitation there. Their ages at last birth were comparable to the village average, but their final intervals were undistinguished. They produced rather larger families, in part because they wed a year and a half younger. That trend is decisively reversed in the next cohort. Family limitation intensified in the village as a whole, and even more so among the petitioners. If political Catholics were slower to make effective use of birth control, their disadvantage was momentary in Grafenhausen.

Herbolzheim's clericals display a more persistent lag. Ages at last birth fell only slightly and gradually among them. Family size did not fall at all. The town as a whole exhibited some of the same sluggishness, but at a higher level of family limitation.

The pattern in Rust is closer to that in Grafenhausen. In the 1825-1849 marriage cohort, natural fertility typified both the village as a whole and the sub-population identified with the Catholic People's Party. Clericals did exhibit slightly higher fertility at that point, but there is no decisive sign of family limitation in the rest of Rust. Such evidence does emerge in the next cohort, as ages at last birth drop and final intervals lengthen. Both developments were stronger among the ultramontanes. Here again, political resistance to secularization and ostentatious loyalty to the Roman Catholic Church were no impediment to adopting birth control.

## 5. CONCLUSIONS AND SPECULATIONS

At least six conclusions seem in order.

- (1) Early in the fertility transition, levels of family limitation varied strongly by locality. Place of residence was more important than political or religious affiliation in facilitating or impeding resort to contraception.
- (2) Religion and political affiliation were already linked to each other by 1869. Neither was necessarily linked to family limitation.
- (3) Political Catholics in Ettenheim county took up contraception at least as early and as actively as liberal Catholics.
- (4) Political Catholics in Ettenheim county took up contraception as early and as actively as non-Catholics, on average.
- (5) Political Catholics in Ettenheim county took up contraception earlier than Jews, and continued to lead them in this respect as late as 1869.
- (6) On average, political Catholics in Ettenheim county lagged behind Lutherans in contraception in 1869, but some political Catholics had outdone the Protestant group.

While these findings pose a difficult challenge to models of secularization, by no means do they imply that religion was irrelevant to the fertility transition. For example, the previous century of social discrimination was clearly relevant in distinguishing Schmieheim's Jews from Schmieheim's Lutherans, even in a municipality where their numbers were almost equal (Baumann 2000). Before emancipation in 1862, Judaism walled its adherents out socially from exposure to the contraceptive practices apparently underway in Schmieheim's Lutheran congregation. On the other hand, the strength of communications within the Jewish community meant that when Jews did get wind of birth control, as some were just doing in 1869, it spread so rapidly through their ranks that they soon overtook the Christians who had preceded them into the fertility transition. In other words, religion was decisive for Jews' fertility, not because of theological doctrines or gender norms, but thanks to the way it structured social life. In separating some groups and connecting others, in blocking or organizing contacts, religion was an important determinant of how information and values regarding contraception, including non-religious values, percolated and eventually spread.

Another way to make this point is to relate it to the classic debate over innovation and adjustment (Carlsson 1966). Secularization theory stresses adaptation, focusing on how religion might discourage – or rejection of religion might promote – the application of long-understood and widely available

techniques of birth control. For a diffusionist, by contrast, religion's importance lies in how it facilitates the spread of innovations. The institutions of the parish and the congregation, the physical settings of churches and synagogues, formal and informal rituals for selecting brides and grooms, brought some people together while dividing them from others. More generally, religion was obviously relevant to patterns of public socializing and kin networks. In so far as contraception spread along such channels, the true significance of religion for fertility transition might lie in the social pathways it opened or closed, rather than in dogma or institutional sanctions. In one vivid instance, Martine Segalen (1992: 240-244) traces the contraceptive revolution in Brittany to Catholic organizations mobilizing rural youth.

An analogy with language, another prominent element of culture, may reinforce this interpretation. Differences in fertility often run along ethnic frontiers as well as religious boundaries. Yet contrasts between Catalans and Castilians (William Leasure's classic example) or between French and Germans might not depend on the grammars of their languages or on national sentiments. Instead, linguistic differences can structure popular life, fostering communication between some people while isolating others. The resulting geographic pools of information and practices function as semi-independent populations, each perhaps experiencing the fertility transition on a different timetable (Szreter 1996: 546-555; Garrett, Reid, Schürer, and Szreter 2001: 12-14).

The same considerations apply to political divisions. Politics can influence fertility not only through direct lawmaking and substantive ideology, but also through the ways it organizes and mobilizes populations. In this perspective, the significance of political Catholicism – or of any other movement – lies in the solidarity it generated and the shifting alliances it symbolized, as much as in its content. Campaigning for clericalism might be more important for future fertility because it brought Grafenhauseners and Rusters, or more generally limiters and potential limiters, together than because it promoted specifically Catholic values. Equally, the same independence shown in siding with the ultramontane insurgency in 1869 might appear a generation later on the left wing, in the form of protest votes against the by then hegemonic Catholic Center (Benz 1999). That these 1,263 peasants signed a petition in May 1869 then might matter less because it marked a permanent statement of their values than because it evinced a flexible commitment to lively struggles over public power. Individuals engaged in or abstained from those contests for their own reasons (Levine 1982), much as they adopted or refrained from contraception for their own reasons.



## NOTES

<sup>1</sup> Archival research for this paper was partly supported by the Social Sciences and Humanities Research Council of Canada and by the Smith College Committee on Faculty Compensation and Development. I gratefully acknowledge the assistance of Hans Müller at the Generallandesarchiv in Karlsruhe, and Erdmuthe Krieg and Jochen Rees at the Staatsarchiv in Freiburg.

<sup>2</sup> “The moral and ethical acceptability of fertility control is embedded in a much broader ideological development, not necessarily concurrent with economic modernization.... Reactions to such changes may occur in such a way that more fundamentalist views are juxtaposed to secular ones; these divergences have proved to be closely associated with the acceleration or retardation of the marital fertility transition” (Lesthaeghe and Wilson 1986: 292).

<sup>3</sup> “It does seem for example that before the Reformation some wind in the world had clearly set itself to play on the side of kings...” (Butterfield 1973: 44).

<sup>4</sup> “But we, today, who have met the children and the grandchildren of European Liberalism and the Revolution, who have seen Mazzini turn into Mussolini, Herder into Hitler, and the idealistic early socialists into the intransigent communists are able from a new vantage ground to consider once more whether Pio Nono, or the optimistic believers in an infallible progress...will have, in the eyes of eternity, the better of the argument” (Hales 1954: 331).

<sup>5</sup> *Breisgauer Zeitung* 8 September 1865. Until 1827, Ignaz von Wessenberg was ecclesiastical administrator (in place of an archbishop) for the territories that became part of Baden in the Napoleonic era. He was distinguished by his Enlightenment, not least in his deference to the State. Wessenberg became a symbol, positive or negative, for both sides in the *Kulturkampf*. On the continuing evolution of his image, see Braun 1987.

KEVIN McQUILLAN

THE EVOLUTION OF RELIGIOUS  
DIFFERENCES IN FERTILITY: LUTHERANS  
AND CATHOLICS IN ALSACE, 1750-1860

1. INTRODUCTION

There is ample evidence that religion has influenced and continues to influence demographic behavior in a wide variety of settings. Yet the origins and mechanisms of this religious influence continue to be a subject of debate. To paraphrase Marx, its influence does not operate in circumstances chosen by religious leaders but “under circumstances directly found, given and transmitted from the past” (Marx [1852] 1972: 437). As a result, the effect of religious affiliation on various forms of demographic behavior, including fertility, has not been consistent. Catholicism, the religious faith most often referred to in discussions of this issue, has sometimes been associated with a distinctive demographic regime that includes restricted nuptiality and high rates of marital fertility, while in other circumstances Catholic populations exhibit demographic patterns very similar to their non-Catholic neighbors (McQuillan 2004: 31).

Virtually all of the data we have amassed on fertility differentials by religion refer to transitional or post-transitional societies. Thus, Jewish populations have frequently been identified as “forerunners” of the demographic transition while Catholic communities have often been laggards (Livi Bacci 1986). The interpretation given is that some groups were ready to change their behavior once the advantages of smaller families became apparent and the necessary means of fertility regulation available, while for others, such a change remained outside their “calculus of choice” (Coale 1973). It is hard to arrive at firm conclusions about the evolution of religious influences on fertility, however, because our knowledge of fertility patterns in most religious communities is limited by the time frame for which data are available. Seldom do we have credible data on religious differences in fertility that date back to the seventeenth or even eighteenth centuries. Moreover, the information we do have is limited

and subject to multiple interpretations. For example, differences in the average length of birth intervals could indicate differences in efforts at spacing births but could just as easily reflect differences in patterns of breastfeeding. The analysis in this paper cannot solve such issues, but by using detailed, high-quality data on fertility patterns in Alsace, an area of remarkable religious diversity, I hope to cast some light on the evolution of religious differentials in fertility during a period of far-reaching economic and social change.

## 2. RELIGIOUS DIVERSITY IN ALSACE

Alsace is an especially attractive region in which to examine the interconnections between religious affiliation and demographic behavior because of the diversity of the population and the ample, high quality sources for both demographic analysis and religious history. Strasbourg was one of the major centers of the Reformation, and the city's religious leaders, especially Martin Bucer, played an important role in the development of early Protestant theology. At the same time, religious life was shaped by the doctrinal struggles among the Reformers that produced alternative visions to that proposed by Luther. While Lutheranism established itself as the dominant form of Protestantism in Strasbourg and much of the countryside, the influence of Calvin and other Swiss Reformers led to the formation of a Calvinist community that was especially important in the southern part of the region (Vogler 1994). Despite the success of the Reformation in the province, the majority of the population remained Roman Catholic. In addition, a relatively large Jewish community lived in the region, a significant component of which remained in the villages until well into the nineteenth century (Hyman 1991).

Few regions of Europe possess such abundant and high quality demographic source materials. Parish registers for the great majority of both Catholic and Protestant churches were well maintained and, in many cases, date to the late seventeenth century. Of special significance was the fact that Lutheran pastors baptized children in the first days of life, a practice that allows for a more careful analysis of both fertility and infant mortality than is true for many Protestant communities in the past. France introduced a civil system of registration during the Revolutionary period. This caused a certain degree of confusion (Bernardin 1990), but local officials quickly adapted, and, by the early nineteenth century, highly accurate registers of births, marriages and deaths (including stillbirths) were maintained in virtually all communes. Moreover, manuscript censuses dating from the early nineteenth century are also available and, particularly for the period beginning in 1836, are remarkably complete. Beginning in 1836, censuses were conducted every five years, a practice that was continued under

the German regime that took control of the region following the Treaty of Frankfurt. Especially valuable for the study of religious differences, the censuses included data on the religious affiliation of all members of the population.

### 3. EVIDENCE ON FERTILITY DIFFERENTIALS BY RELIGION

Oddly, in spite of the excellent source materials, there have been few systematic analyses of the demographic history of Alsace. This may be due, in part, to the additional complexity involved in dealing with parish and civil registers written in Latin, French, and German. Some attention has been paid to demographic issues in broader historical studies of the region (e.g. Juillard 1953; Boehler 1995), but, on the whole, our knowledge of the demography of Alsace remains limited. Nevertheless, several broad conclusions appear well founded. First, the region was marked by relatively high fertility and experienced significant population growth in the eighteenth and nineteenth centuries. The INED study of French population patterns (which included only one Alsatian community) identified the Northeast as having the highest fertility in the country (Bideau and Bardet 1988: 366-7). This is supported by a number of local studies of varying detail (Denis 1996; McQuillan 1999b; Wahl 1980). The Princeton studies of the decline of fertility in Europe recorded continuing high levels of fertility well into the nineteenth century (Knodel 1974; Van de Walle 1974).

While fertility rates for the region as a whole were high, there is also evidence of significant demographic differences among the major religious communities. Lutherans had lower rates of marital fertility than Catholics even in the late eighteenth century, and this gap widened in the first half of the nineteenth century (McQuillan 1999b).<sup>1</sup> This paper seeks to expand our knowledge of these differences by using data from a family reconstitution study of five villages in Alsace that covers the period from 1750-1882. The five villages were chosen to represent the economic and religious diversity of the region. Two of the villages included in the study (Avolsheim and Goxwiller) were agricultural communities in which almost all households were involved in farming. Two others (Baldenheim and Mussig) were centers of the rural weaving industry. In these villages, families typically combined domestic industry with involvement in agriculture, though some families were totally dependent on weaving for their livelihood. The weaving was organized on almost classic protoindustrial lines, with an agent or *fabricant* working on behalf of companies located in a nearby town (Sainte-Marie-aux-Mines) visiting the villages regularly to distribute raw materials and to collect the finished product. The fifth community (Husseren-Wesserling) was home to a growing textile factory. Beginning on a small-scale in 1762, the factory grew to be one of the largest in the region, employing over 1200

workers at one point in the nineteenth century (Schmitt 1980). The factory offered work to men, women, and children, and attracted immigrants from other regions of Alsace as well as from Germany and Switzerland. Three of the villages studied were overwhelmingly Catholic (though the industrial town of Husseren-Wesserling had a small Protestant minority), while two others (Baldenheim and Goxwiller) were very largely (at least 85 per cent) Lutheran.<sup>2</sup>

#### 4. RESULTS

Table 1 presents summary measures of marital fertility patterns by religion based on data from the five villages included in the present analysis. Several observations can be briefly noted.<sup>3</sup> First, the marital fertility rates among Catholics were significantly higher than was true for the Lutheran population. Second, even in the latter half of the eighteenth century, fertility was only moderately high in the Lutheran population, a finding that raises the possibility that a minority of Lutheran couples may already have been practicing fertility control. Finally, the fact that marital fertility rates in the prime childbearing years (25-34) were some 25 per cent higher in the Catholic community raises questions about differences in birth spacing. In the analysis that follows, we seek to extend the analysis of these data in an effort to sharpen our understanding of the differences between the two religious communities.

*Table 1. Age-specific marital fertility rates and modified Coale index ( $I_g'$ ) of marital fertility, by religion and period of marriage, Alsace, 1750-1860.*

Marriage Cohort	Catholics						$I_g'$
	20-24	25-29	30-34	35-39	40-44	45-49	
1750-1789	461	475	392	343	201	14	.897
1790-1815	489	472	405	328	182	15	.887
1816-1835	513	452	399	304	162	19	.855
1836-1860	458	455	414	316	160	19	.861
% Change	-0.7	-4.2	+5.6	-7.9	-20.4	+35.7	-4.0
Lutherans							
Marriage Cohort	20-24	25-29	30-34	35-39	40-44	45-49	$I_g'$
1750-1789	422	355	305	232	111	12	.656
1790-1815	381	343	284	210	94	10	.606
1816-1835	346	323	253	189	71	7	.543
1836-1860	450	326	242	155	67	7	.535
% Change	+6.6	-8.2	-20.7	-33.2	-39.6	-41.7	-18.4

We first examine differences in spacing between the two communities. Table 2 presents data on average births intervals for parities two, three, and four by survival status of the previous birth, religion, and marriage cohort. The results point to a slower pace of childbearing in the Lutheran community and suggest that the pattern changed little over the period of time studied here. The differential was greater when the child whose birth began the interval survived, but even in the cases where the interval commenced with a birth resulting in an infant death the average length of the interval was longer among Lutheran couples.

Examining data on birth intervals is enormously complex and inevitably involves problems of selection. In table 3, we extend the analysis of the first three inter-birth intervals by presenting the results of a Cox regression model that allows us to observe more clearly the differences between Catholics and Lutherans. For each interval, we control for a series of factors that might account for the religious differential. These variables include the survival status of the previous child, a dummy variable indicating whether the interval in question is the final interval for the couple, the wife's age at marriage, and the age difference between the spouses. In addition, we focus only on couples without a prenuptial conception and use the interval between marriage and first birth as an indirect measure of the fecundity of the couple.<sup>4</sup> We then also include religious affiliation and two dummy variables which identify the period of time during which the couple was married.

The results for the analysis of the three intervals are remarkably similar. As expected, when the previous child survives infancy, the interval to the next birth is significantly longer. Also as expected, if the interval in question precedes a couple's final birth, the interval is longer. The other control variables are not significantly associated with the length of the intervals, though, as one would expect, a shorter interval between marriage and first birth and a later age at marriage are generally associated with shorter intervals. Controlling for these factors does not account for the religious difference, however; the association between religious affiliation and the length of the interval is strong for each of these three intervals. On the other hand, neither of the dummy variables indicating the marriage cohort to which couples belonged is significantly associated with the length of the intervals, suggesting no clear pattern of change with respect to birth spacing over time.

This analysis provides important insight into the different behavior of couples in the two religious communities. It confirms that the religious difference in the pace of childbearing was not a function of the differences in nuptiality, infant mortality, and completed fertility that characterized the two groups. It also underlines the enduring character of the difference despite the changes that occurred in the demographic patterns of the two communities over

*Table 2. Inter-birth intervals by survival status of previous child, religion, and marriage cohort, Alsace, marriages between 1750 and 1860.*

First Interval (Maximum length = 60 months)

Cohort	Survival status of child			
	Died in infancy		Survived	
	Catholics	Lutherans	Catholics	Lutherans
1750-1789	17.1	18.7	25.9	32.5
1790-1815	17.3	17.5	26.2	32.5
1816-1835	17.9	21.6	26.2	33.7
1836-1860	20.2	19.7	25.6	31.1
Total	18.4	19.0	26.0	32.4
Number of Intervals	206	166	733	706

Second Interval (Maximum length = 60 months)

Cohort	Survival status of child			
	Died in infancy		Survived	
	Catholics	Lutherans	Catholics	Lutherans
1750-1789	18.5	23.5	27.9	34.9
1790-1815	18.1	25.2	28.0	35.1
1816-1835	18.5	20.1	28.4	34.9
1836-1860	20.4	22.4	27.5	34.6
Total	19.1	22.9	28.0	34.7
Number of Intervals	142	115	676	603

Third Interval (Maximum length = 60 months)

Cohort	Survival status of child			
	Died in infancy		Survived	
	Catholics	Lutherans	Catholics	Lutherans
1750-1789	18.4	19.5	30.6	34.7
1790-1815	19.3	25.6	30.7	35.2
1816-1835	18.3	21.6	28.5	35.0
1836-1860	18.7	23.9	30.4	33.8
Total	18.7	22.4	30.0	34.7
Number of Intervals	115	82	585	477

time. Although, as we shall see, there is fairly clear evidence that fertility control was spreading in the Lutheran community as the nineteenth century progressed, the results of this analysis suggest the length of these inter-birth intervals did not vary significantly over time.

In the next phase of the analysis we consider the family-building process by examining the progression of couples to the third, fourth, and fifth births. The analysis consists of a series of logistic regressions, which examine the likelihood of a woman who has reached a given parity going on to have an additional birth. The analysis includes only women for whom we have a marriage certificate, who

*Table 3. Cox regression analysis of the length of inter-birth intervals, Alsace, marriages between 1750 and 1860.*

Covariate	2-3 interval		3-4 interval		4-5 interval	
	exp. (b)	p-value	exp. (b)	p-value	exp. (b)	p-value
Age at marriage	1.00	.966	1.02	.058	1.01	.267
Age difference between spouses	1.00	.881	1.00	.943	1.00	.470
Interval from marriage to first birth	1.00	.175	.99	.110	.99	.147
Survival status of previous child						
Child dies < 1	n/a					
Child survives	.40	< .001	.41	< .001	.34	< .001
Is this the final interval						
Not the final interval	n/a					
Final interval	.54	< .001	.49	< .001	.51	< .001
Marriage cohort						
1750-1789	n/a					
1790-1835	.99	.974	1.03	.712	.97	.688
1836-1860	1.10	.150	1.14	.083	1.10	.275
Religion						
Catholic	n/a					
Lutheran	.60	< .001	.65	< .001	.74	< .001
Number of Marriages	1575		1323		1068	
Chi-square	445.2		348.1		302.4	
Degrees of freedom	8		8		8	
p-value	< .001		< .001		< .001	
Log-likelihood	-9907.5		-8128.4		-6304.2	



were not pregnant at the time of their marriage, and who remained in an intact marriage on their forty-fifth birthday. Seven variables are included in each analysis. The woman's age at marriage is used to account for the obvious issue of the time available to proceed to higher parities. The later one marries, the less time to go on to have additional births. The age difference between spouses and the length of the interval from marriage to first birth are used as indirect measures of fecundity. The mortality experience of the children already born to a couple may influence the transition to later births in at least two ways. First, as we have seen, infant deaths result in shorter inter-birth intervals, and therefore a couple whose previously-born children have died in infancy will have more time to experience additional births. Second, it is possible that couples who have had a better experience with their earlier births may be less motivated to have additional children. Finally, we include two "substantive factors" in our analysis: religious affiliation and an indicator of the marriage cohort to which a couple belonged.

The results of this analysis are presented in Table 4 and are quite consistent across parities. Not surprisingly, a later age at marriage reduces the likelihood of an additional birth. The length of the marriage-first birth interval is also negatively associated with the probability of an additional birth, perhaps indicating a physiological influence. On the other hand, the age difference between spouses is not related to the likelihood of an additional birth. Couples who have lost more children in infancy are more likely to move on to higher parities. It is important to remember, however, that this finding is not proof of a strategy to replace children who have died or to attain a certain number of surviving offspring.

Although the analysis controls for all these factors, religious affiliation is nevertheless strongly associated with the risk of an additional birth. For all three parities, Lutheran couples are less likely to move to the next parity. Finally, for parities three and four, later marriage cohorts are at reduced risk of experiencing an additional birth. In the case of a fifth birth, this is not the case, however. This finding is puzzling but may reflect the fact that women who attain higher parities are a more and more select group who are both physically able and willing to have a large number of children.

The last piece of this analysis looks at the end of childbearing among Catholic and Lutheran couples. One strength of family reconstitution data is that they allow us to observe the complete reproductive careers of couples, including the timing of their last birth. The difficulty, of course, is that the end of childbearing can be influenced by a large number of factors and an earlier age at last birth is not necessarily an indication of deliberate efforts to limit fertility. Nevertheless, by focusing on a select subset of couples, we can gain some

*Table 4. Logistic regression analysis of moving to a higher parity, Alsace, complete marriages, 1750-1860.*

Independent Variables	Third child		Fourth child		Fifth child	
	exp. (b)	p-value	exp. (b)	p-value	exp. (b)	p-value
Age at marriage	.830	< .001	.818	< .001	.842	< .001
Age difference between spouses	.994	.761	.981	.307	.989	.582
Interval from marriage to first birth	.952	< .001	.952	< .001	.968	.013
N. of children who survived infancy	.296	< .001	.580	.002	.672	.007
Marriage cohort						
1750-1789	n/a					
1790-1835	.412	.012	.404	.002	1.009	.974
1836-1860	.308	.002	.234	< .001	.841	.584
Religion						
Catholic	n/a		n/a		n/a	
Lutheran	.267	< .001	.148	< .001	.314	< .001
Number of Marriages	879		796		674	
Chi-square	111.5		126.5		49.0	
Degrees of freedom	7		7		7	
p-value	< .001		< .001		< .001	
Log-likelihood	-219.1		-277.7		-265.3	

insight into changes in the calendar of childbearing over time. Table 5 presents the results of a Cox regression analysis of the variation in age at last birth for a distinct subset of couples.<sup>5</sup> A couple is only included in the analysis if the following conditions are met: there is a marriage certificate for the couple with an exact age for the wife; there is evidence that the marriage was still intact on the wife's forty-fifth birthday; the couple had at least two births and the wife was not pregnant at the time of the marriage; the marriage occurred prior to 1861. We include only those couples with an intact marriage at the time of the wife's forty-fifth birthday to eliminate cases where childbearing ended early due to the death of a spouse. We exclude couples with less than two births to focus on couples who are likely capable of continuing to produce children. In this era, couples who stopped after one birth very likely did so because of a problem connected to the first birth which left the couple unable to have other children. We also exclude those with a premarital birth so that we can use the length of the

interval from marriage to first birth as a proxy for fecundity. Couples who were slow to conceive a first child might also be expected to end childbearing earlier for physiological reasons.<sup>6</sup> Finally, we include only those couples married before 1861. To include those married later would bias the sample since only couples who were older at marriage would reach age forty-five during the period for which we have full data on births and deaths.

Table 5 shows the results for the whole sample using religion as a covariate; it also presents a separate analysis for each religious group. The results for the entire group identify a number of significant covariates. Later age at marriage, as we might have expected, is associated with a later end to childbearing. This could reflect the shorter duration of marriage, a factor that has been associated, for example, with great coital frequency. It could also reflect an effort to compensate for a late start on childbearing. A longer interval from marriage to first birth is associated with an earlier end to childbearing. On the other hand,

*Table 5. Cox regression analysis of age at last birth, Alsace, complete marriages, 1750-1860.*

Covariate	Complete sample		Catholics		Lutherans	
	exp. (b)	p-value	exp. (b)	p-value	exp. (b)	p-value
Age at marriage	.96	< .001	.99	.881	.93	< .001
Age difference between spouses	1.01	.160	1.01	.607	1.01	.146
Interval from marriage to first birth	1.01	.006	1.01	.096	1.01	.048
Marriage cohort						
1750-1789	1.00	n/a	1.00	n/a	1.00	n/a
1790-1815	1.00	.980	1.09	.562	.99	.997
1816-1835	1.17	.116	1.14	.380	1.38	.022
1836-1860	1.35	.003	1.30	.089	1.45	.008
Religion						
Catholic	1.00	n/a	n/a		n/a	
Lutheran	1.60	< .001	n/a		n/a	
Number of marriages	862		401		461	
Chi-square	94.40		6.09		49.87	
Degrees of freedom	7		6		6	
p-value	<.001		.413		< .001	
Log-likelihood	- 4921.0		-2003.9		-2343.6	

the age difference between spouses is not significantly related to age at last birth. Turning to the two substantive factors, we find strong evidence that childbearing ended earlier in the Lutheran population. The analysis also shows that couples married in last cohort, between 1836 and 1860, were at increased risk of ending childbearing at an earlier age.

The separate analyses for the two religious groups add an important twist to these results, however. For the Catholic group, although the direction of the associations between the covariates and age at last birth remains the same, none of the covariates was significantly associated with age at last birth at the .05 probability level. The absence of any significant association between these factors and the end of childbearing provides at least suggestive evidence that deliberate efforts to stop childbearing had not made major inroads in the Catholic community. By contrast, among Lutheran couples, several of the covariates play a significant role. Later marriage was associated with a later end to childbearing, while a longer interval from marriage to first birth was linked to an earlier end to childbearing. Perhaps most importantly, there appear to have been clear differences across marriage cohorts. The coefficients for the last two cohorts are strong and significant. These results certainly suggest that, in the nineteenth century, Lutheran couples were attempting to end childbearing at an earlier age.

## 5. DISCUSSION

A legacy of the Reformation was an Alsatian population divided by religion, a division that helped to shape the politics and culture of the region. Not surprisingly, religion also influenced the demographic patterns of the area. The superb parish and civil registers of the region have allowed us to document and describe these differences. Elsewhere I have shown that the Lutheran community was marked by earlier and more nearly universal marriage and lower rates of infant and child mortality (McQuillan 1999b). These two factors, conducive to a higher rate of natural increase, were offset by lower rates of marital fertility. As a result, the two communities grew at roughly the same pace through most of the time period covered by this study.

In this paper, we have added more detail on the mechanisms that produced a lower fertility rate in the Lutheran community. From the starting point of the analysis in the mid-eighteenth century, the tempo of fertility among Lutheran couples was slower. Intervals between births were longer even after accounting for the lower rate of infant mortality. This slower pace of childbearing was accompanied for couples married in the nineteenth century by an earlier end to childbearing.

Despite their best efforts, demographers have not been able to settle on a formula for dating the beginning of the fertility transition. Nevertheless, there is substantial evidence fertility control was spreading among Lutheran couples as the nineteenth century progressed, while among Catholics fertility changed little prior to the transfer of sovereignty over the area to Germany in 1871. We do not yet have data that would allow us to look in any detail at the last quarter of the nineteenth century, but aggregate data that are available suggest the Catholic community may have made the first steps towards fertility control in this period (Knodel 1974).

There is little doubt, then, that religion was associated with significant differences in fertility in Alsace in the period from 1750 to 1870, differences that appear to have widened during the nineteenth century. Identifying the reasons for these differences is a challenge, however. Family reconstitution studies provide a wealth of descriptive detail on demographic patterns but no insight into the motives of the actors. One wonders, for example, about the reasons for the slower pace of childbearing in the Lutheran communities. Was longer breastfeeding the norm in these communities, and was this also a reason for the lower rate of infant mortality? Or was it related to a longer period of abstinence following a birth? Similarly, we have no direct evidence on the mechanisms or motives that lie behind the decline in average age at last birth among Lutheran couples who married in the nineteenth century. How was this achieved and why did Lutheran women and men come to see this as a desirable path to follow while their Catholic neighbors continued to behave much as their grandparents did in the eighteenth century?

In the last section of this paper, I would like to point to several issues that merit further investigation and that have significance for understanding Protestant/Catholic differences in other settings. One issue concerns the nature of the marriage bond and the roles of husbands and wives. There is no doubt that one of the lasting consequences of the Reformation was a new perspective on marriage. Luther and the other leaders of the Reform elevated the status of marriage in Christian teaching (Ozment 1992), and it is not surprising that the proportion married in Protestant communities usually exceeded the proportion married among Catholics. What is less clear is how Protestant teachings on marriage changed the nature of the marital relationship (Gugerli 1992). Some see the Reformation as having improved not only the reputation of marriage but the status of women as well (Ozment 1983, 1992). This view has been roundly criticized by some feminist historians who see, on the contrary, Protestant views on the family and women as supporting a more authoritarian model of the household and a reduction in the autonomy of women (Roper 1989, 1994; Wiesner 1986). These questions are important and raise issues related to

communication and decision-making among married couples. Were Lutheran wives better positioned to resist a premature resumption of sexual relations after a birth, not necessarily for contraceptive reasons but perhaps to protect their own health and that of their infants? Did Protestantism undermine the notion of the “marital debt” which, in Catholic teaching, viewed a woman’s refusal of sexual relations with her husband as sinful (Hull 1996)? Did a greater emphasis on the husband-wife relationship within the family open the door to fertility control once social and economic conditions changed in favor of smaller families (Gugerli 1992)?

A second, complex issue centers on the link between Protestantism and education. The emphasis on reading the Scriptures was almost certainly associated with greater support for literacy and schooling. In Alsace, literacy rates of Lutherans were higher than those of Catholics (Vogler 1994: 160). What did this stronger investment in literacy mean? Did it make Lutheran couples more open to rational calculation of their material interests, more willing to change their behavior with regard to childbearing as the economic setting changed around them? Or did it influence fertility primarily by weakening the attachment of Lutherans to their faith? There is certainly evidence of declining religious practice among Lutherans in nineteenth century Alsace (Vogler 1994: 232). Put differently, perhaps the question is whether Lutheranism was more accepting of the spread of fertility control or whether the declining role of religion in the lives of Lutherans made religious teachings less of an impediment to new forms of behavior. Greater use of the often abundant records on religious practice in the past might help us to answer this question.

Equally intriguing is the seemingly steadfast resistance of Catholic couples to new forms of behavior within the family. As population grew in the rural communities of nineteenth-century Alsace and land and employment prospects grew scarce, delayed marriage and emigration were the most common responses. We know that Catholicism is not always an obstacle to fertility control. Yet, for the Catholics of Alsace, it is possible to say, with Ansley Coale, that fertility limitation was, until the late nineteenth century, beyond their “calculus of choice.” In Alsace, as was the case in several other settings, the power and influence of the Catholic Church over its followers may have reached its apogee in the nineteenth century. Increasing vocations, a growing role in education, and, in the late nineteenth century, the Church’s critical role in the nationalist struggle all seem to have strengthened its ability to shape the behavior of its adherents (Muller 1986). In contrast to the situation in the Lutheran communities, there is no evidence of declining religious practice. Indeed, as late as 1965, more than 75 per cent of Catholics attended Mass on Sundays, placing Alsace with Brittany as the most faithful regions in France (LeBras and Todd 1981: 368). Understanding

the role of religious institutions in society as well as the place of religious practice in the lives of individuals is crucial if we are to explain religion's influence on demographic behavior.

#### NOTES

<sup>1</sup> In addition to differences in fertility, the Lutheran community was also characterized by earlier and more nearly universal marriage and lower rates of infant and child mortality. For further detail, see McQuillan 1999b.

<sup>2</sup> Unfortunately, there were no Jewish families in these villages and the analysis is thus limited to the Catholic and Lutheran communities.

<sup>3</sup> The Coale index of marital fertility shown here is a modified version designed for use with family reconstitution data (Knodel 1988: 249). The standard population used was taken from the 1851 census of the Bas-Rhin.

<sup>4</sup> Excluding those who were pregnant at marriage eliminates a significant number of cases, especially in the later time period. However, the results of the analysis are nearly identical when we remove this restriction and drop the length of the marriage-first birth interval as an independent variable.

<sup>5</sup> As Van Bavel and Kok (2005b) point out, because age at last birth, the dependent variable in the analysis, is a duration variable, a proportional hazards model is appropriate. Note also that in using this approach rather than a conventional OLS model, the coefficients are measuring the risk of an earlier end to childbearing. Thus, coefficients greater than one indicate a greater risk of a younger age at last birth.

<sup>6</sup> This requirement has the effect of excluding a significant number of couples, especially in the later time period. However, the results are very similar if we include such couples and drop this factor as a covariate in the analysis.

ANNE-FRANÇOISE PRAZ

STATE INSTITUTIONS AS MEDIATORS BETWEEN  
RELIGION AND FERTILITY: A COMPARISON  
OF TWO SWISS REGIONS, 1860-1930<sup>1</sup>

1. INTRODUCTION

How does religion influence the timing, pace and modalities of fertility decline? Many studies account for differentials of fertility according to religious affiliation, yet a full understanding of the mechanisms of this influence is still a matter of debate. The main purpose of this contribution is to highlight the role of state institutions as a mediator between religion and fertility behavior during the first fertility transition (1860-1930). Throughout this period, as we will show, religious norms and values maintained or gained an impact on individual reproductive choices, above all through mechanisms involving state institutions and policies. Values and norms are not demons which jump into people's minds to mould their thoughts and behavior, they have to be implemented and enforced.

We first present some theoretical considerations and explain the importance of state institutions and policies as mechanisms of mediation (part 2). We then describe our comparative sample, and provide some evidence of the impact of religion on the pace of fertility decline (parts 3 and 4). Finally, we try to identify mechanisms of this impact of religion, namely the implementation of state policies that constitute efficient constraints on reproductive behavior (parts 5 to 7). Three examples will be given: school policy, health policy, especially the fight against child mortality, and lastly media policy in form of governmental attitudes towards the diffusion of Neo-Malthusian ideas.

2. OPENING THE "RELIGIOUS BLACK BOX":  
THE ROLE OF STATE INSTITUTIONS AND POLICIES

Research on fertility transition usually makes reference to the three preconditions stated by Ansley J. Coale in his well-known model. As a reminder: fertility control



must be “an acceptable mode of thought and form of behavior”; reduced fertility must be perceived as “advantageous”; contraceptive techniques must be known and available (Coale 1973: 65). Most of the studies implicitly attribute the impact of religion on fertility to the first of Coale’s conditions, which states that reproductive decisions have to be “within the calculus of conscious choice” and that the act of controlling fertility within marriage must be ethically and morally acceptable.

This condition highlights the role that religious norms and values play in reproductive choices (fatalism or human agency in reproduction; contraception prohibited or not), but does not indicate through what mechanism this impact is effected. In our view, for such a mechanism one should rather look to Coale’s second condition – fertility control “must be advantageous in one way or another” – that shows the pervading influence of the cost-benefit calculus. However this concept has been too often understood in a restrictive way, as the impact of narrowly defined economic factors (only direct monetary costs of children), and has been opposed to the impact of cultural factors, especially religious ones. This opposition between economy and culture is misleading and outdated.

On the one hand, the notion of “advantageous” and the cost-benefit concept should be considered in the sense in which modern economics uses them, integrating all kinds of costs: the monetary and opportunity costs of children as well as the moral and information costs of contraception. In stating his model of fertility decline, George Alter gives a concise definition of this enlarged approach: “Couples must weigh the costs and benefits of life with one more child against the costs and benefits of life without another child *plus* the costs of preventing the birth of the next child” (Alter 1992: 15). Such a formulation, which poses the couple as the unit of analysis, should however not lead us to assume a common or even consensual interest between husband and wife and should not exempt us from the need to investigate the differing motivations and constraints of men and women regarding birth control.<sup>2</sup>

On the other hand, religion entails not only moral costs. Besides the moral constraints regarding sexuality, religion produces a large set of norms relative to family relations, rights and duties of children and parents, namely in relation to education and childcare. In this way religion also modifies the monetary and opportunity costs of children.

This cost/benefit model allows us to reformulate the question about fertility and religion in the following terms: how can religion modify the constraints of reproductive choices, namely the cost/benefit balance of children and the costs of contraception? We are thus compelled to look for those features of the social and economic environment that represent costs and benefits. However, it is only after examining the institutional context that we are able to decide if certain features actually constitute costs and benefits. Religious norms, for instance, will not

usually influence the moral costs of contraception unless they are enforced through religious or political institutions (McQuillan 2004). The economic function of children, and thereby their monetary costs, has often been put forward as an explaining factor for the level of fertility; but the same economic environment with the same material opportunities for children's work does not necessarily result in the same incentives; institutional arrangements can impede parents in seizing the economic opportunities at hand and in relying on children's labor.

Recent studies on the political economy of fertility (Kertzer 1995) emphasize the role of state policies. Indeed, during the period of the first fertility transition, state institutions gained importance in regulating family life, compared to religious or other traditional institutions; they took over many tasks that interfere with fertility decisions (education, welfare) and that were traditionally fulfilled by the Churches. These state institutions were much more efficient than the religious ones in modifying the costs we study: they could enforce policies that constrained all families, and not only those who felt a sense of attachment to a religious community. To illustrate this efficiency, S. Ryan Johansson uses a computer metaphor: state policies are a real force able to translate the "cultural software of fertility" – a set of abstract instructions with a strongly ethical character – into "a set of institutionalized incentives real enough to influence the 'voluntary' behavior of the majority" (Johansson 1991: 384). The term "institutions" here does not only refer to the administrative and political apparatus; most importantly it includes the system of rights/duties of individuals, the rewards and sanctions for conventional or against deviant behavior. Johansson focuses not on policies overtly planned to influence fertility, but more on "implicit policies", that influenced the cost-benefit balance of fertility, in modifying the rights/duties of the various categories of individuals. As an example, fertility trends were largely related to school policies that gave more rights to children and consequently increased their costs.

If state institutions were the leading force in shaping the cost/benefit balance of fertility, how did the connection between religion and state work? Two mechanisms can be identified, through which state institutions acted as a mediator between religion and fertility behavior during the period under study. First, the political elites were pervaded by religious values inherited from their education and family tradition; from this "cultural software", they drew the concepts useful to pursue and legitimize their political strategies; religious values were thus reframed and translated into state policies, namely effective constraints shaping reproductive choices. Second, in spite of the secularization, political and religious issues remained tightly interwoven; the governments had to take religious institutions into consideration, either in supporting or combating them. Involved in political struggles, Churches had new opportunities to expose, reframe or consolidate their discourse and influence.

### 3. STUDYING THE FERTILITY TRANSITION IN TWO SWISS CANTONS: CONTEXT AND SAMPLE

Switzerland figures “as a miniature laboratory to study the decline of fertility” (Van de Walle 1977: 1.9): four languages, two religions, and a long historical antagonism between Catholics and Protestants that have reduced the contacts between the different regions and thus upheld heterogeneity. Political organization, based on strong federalism, gives the provinces, named cantons, important powers and autonomy. The cantonal boundaries correspond to former independent states that were homogeneous according to religion (with very few exceptions). For this study, the data were collected in the French-speaking cantons of Vaud (Protestant) and Fribourg (Catholic).

The Protestant canton of Vaud was led by progressive authorities. This government resulted from a radical-democratic revolution (1845) that marginalized the liberal-conservative tendencies, mostly associated with the Church intelligentsia. One of its first acts was to put Church ministers under state control and to lessen their influence in civil institutions (school, administration); they submitted after intense protest. Perceived as hostile to democracy, the ministers lost their prestige among the popular classes, thereby accelerating the decline of religiosity. Following ministers’ reports, this decline is attested around 1900 in the villages we studied, although varying according to social categories and above all to sex. The government also reduced the influence of ministers and parochial structures by reinforcing the power of the local authorities and councils in several domains. However, religious ideologies did not vanish: analysis of the political discourse shows that the government adopted Protestant values, even if they were given a political meaning. Education, intended to enlighten the spirit and promote individual autonomy in Protestant thought, became in political discourse the condition for prosperity and democracy in the canton. Human co-responsibility in God’s creation, in particular parental responsibility for childcare and education (Perrenoud 1974: 983-987) was presented as a civic commitment.

In the Catholic canton of Fribourg, the conservative government – resulting from the failure of a radical-democratic revolution – based its political strategy on a tight connection with the religious structures. To secure the conservative vote within a population mostly dispersed in the countryside and still not reached by the rise of mass-circulation press, it had to organize a permanent and decentralized control on its potential voters. For this purpose, it was crucial to keep a close connection with the Catholic Church, thus permitting the use of the network of parishes, religious associations, and priests and nuns that were present in almost every village, as parish priests, as teachers in the girls’ schools.

The connection between the Catholic Church and the cantonal authorities was not limited to ideology, but pervaded the local institutions, thus permitting a tight control of the population. Fribourg provides in this respect another example of the *verzuiling* system described for Belgium and The Netherlands (Lesthaeghe and Wilson 1986: 272; Van Poppel 1985: 369).

In order to isolate the impact of these institutional differences, we selected two pairs of villages that were almost identical with respect to economic factors. The first pair (Chevroux/Vaud and Portalban-Delley/Fribourg), two neighboring communities situated on the shore of the same lake, maintained an economic structure based on agriculture and fishing. The second pair (Chavornay/Vaud and Broc/Fribourg) simultaneously experienced a similar industrialization process (a chocolate factory). The proportion of the labor force in agriculture dropped dramatically with the setting up of these factories. Between 1860 and 1898 in Chavornay, 70.6 per cent of the male working force was occupied in agriculture (59.9 per cent were land owners), in Broc 68.8 per cent (50.4 per cent land owners). During the period 1898-1930, this proportion dropped to 36.9 per cent in Chavornay, to 28.8 in Broc, and this remaining agricultural sector converted to subcontractors of the factories (milk); 18.8 per cent of the male labor force were engaged as factory workers in Chavornay and 28.8 per cent in Broc; 20.6 per cent in Chavornay and 18.2 per cent in Broc became white collar employees in the factory or in the tertiary sector. These statistics, based on men's occupation at marriage, do not take into account the fact that both factories employed more female than male workers, and that women's participation in the labor market constituted an important change in the household economy; however the proportion of female labor force is difficult to evaluate precisely.

The parochial and civil registers provide the basis for our family reconstitution covering marriages celebrated between 1860 and 1930; data collection has been extended after this date, in order to find all the children of the marriages celebrated till 1930, as well as indications about their survival and their later occupation. To overcome the selectivity and loss of data in family reconstitution studies, and to supplement and check these sources of information, other sources have been consulted (local population registers and censuses). The final dimension of the sample depends on the method of data treatment used and its specific selection criterion. According to the classical family reconstitution method, it is only possible to use 3,501 (56 per cent) of the 6,207 legitimate births collected; if we add to these "completed families" the "achieved" ones<sup>3</sup>, the amount of usable data increases to 4,276 legitimate births (76 per cent). Event history analysis and its more flexible rules of data selection permit us to use 86 per cent of the sample (5,381 legitimate births for 1,848

married and fecund women under observation); we were able to add to the previous sample 1,105 legitimate births of married women whose date of marriage was unknown.

#### 4. THE LAG OF CATHOLIC FERTILITY: SOME EVIDENCE

Despite these very similar economic conditions, the fertility decline in Catholic villages clearly took place later. Table 1 gives the age-specific marital fertility rates and the total marital fertility rates for the two religious affiliations and for four periods, the industrialization process occurring between the second and the third one.<sup>4</sup> For all periods conflated, the differences between Catholic and Protestant marital fertility rates are rather minimal. Only the observation by

*Table 1. Age-specific marital fertility rates by religious affiliation (completed and achieved families).*

Religious affiliation and periods	Age-specific marital fertility rate						Total	TMFR	Average age of mother at marriage
	15-24	25-29	30-34	35-39	40-44	45-49			
All periods									
Catholics	0.528	0.403	0.286	0.190	0.065	0.005	0.202	7.38	25.19
Protestants	0.584	0.400	0.266	0.151	0.059	0.011	0.194	7.35	24.99
1860-1878									
Catholics	0.563	0.475	0.432	0.298	0.126	0.010	0.264	9.52	26.93
Protestants	0.638	0.458	0.337	0.225	0.110	0.027	0.238	8.96	26.16
1879-1898									
Catholics	0.689	0.571	0.354	0.255	0.097	0.013	0.271	9.90	24.96
Protestants	0.659	0.453	0.313	0.178	0.050	0.012	0.219	8.32	25.07
1899-1914									
Catholics	0.538	0.402	0.277	0.183	0.056	0.004	0.201	7.30	24.78
Protestants	0.558	0.389	0.247	0.128	0.044	0.005	0.182	6.85	24.81
1915-1930									
Catholics	0.450	0.301	0.197	0.112	0.028	0.001	0.144	5.44	24.74
Protestants	0.586	0.300	0.156	0.057	0.024	0.000	0.137	5.62	24.06

Source: Parochial and civil registers of Broc and Portalban-Delley (canton of Fribourg). Parochial and civil registers of Chavornay and Chevroux (canton of Vaud).

periods highlights the lag in the process of decline, especially pronounced in the period 1879-1898: Protestant fertility begins its decline, while Catholic fertility is still increasing.

To measure the impact of religion on fertility more accurately, we turned to a method derived from event history analysis. For the 1,848 married and fecund women under observation, we constituted a file of time sequences of their fertility histories. As the date of marriage is not always known, we take the date of the first birth as the starting point. Each woman's fertility history is divided in time sequences, proceeding from one birth to the next (stillbirths included). When the previous child dies before the next birth, the interval between subsequent births is split into two time sequences, before and after this death; when the interval between two births exceeds two years, it is also split into two parts, before and after the two-year limit (this period is assumed to expose the mother to a reduced risk of conception due to lactation). The date chosen as the ending point is mostly the end of the mother's reproductive life (forty-ninth birthday), otherwise the death of one spouse (if it occurred before the end of the mother's reproductive life) or the out-migration of the family. For the 1,848 married and fecund women under observation, the file finally contains 8,421 time sequences.

The dependent variable is the length of intervals between events in women's fertility histories, and the question asked is the following: given that an event has occurred, what are the covariates of the length of the past interval? According to Van Bavel (2004a: 98), this approach models the speed of subsequent reproduction, not the probability of subsequent fertility. He used that kind of analysis for detecting spacing behavior. In our case, however, as we computed not only the closed intervals between births, but also the last open interval (between the last observed birth and the end of observation), this method rather detects the adoption of stopping behavior. When married couples control their fertility and concentrate the births in the first years of marriage, this last measured interval tends to lengthen, increasing the mean of the intervals calculated for each mother. Therefore, the likelihood of a birth in a shorter time is reduced; this tendency is indicated by values inferior to one in Tables 2 and 3. In contrast, mothers with higher fertility and consequently more and shorter intervals have a higher likelihood of giving birth in a shorter time, attested by the values superior to one; only the coefficients significant at minimum 90 per cent are taken into account.<sup>5</sup>

Table 2 presents a Cox regression model for the length of intervals between events in women's fertility histories, for the same four periods as previously. The purpose is to observe the impact on fertility of the mother's affiliation to *Catholic religion*, compared to affiliation to Protestant religion (the reference

Table 2. Model A: Cox regression of the determinants of fertility by periods.

	1860-1878			1879-1898			1899-1914			1915-1930		
	Mean of percentage distribution of the covariates	Relative risk	P> z	Mean of percentage distribution of the covariates	Relative risk	P> z	Mean of percentage distribution of the covariates	Relative risk	P> z	Mean of percentage distribution of the covariates	Relative risk	P> z
<b>Mother's age at child birth</b>												
25-29 years (reference)	0.20	1.00	ref.	0.21	1.00	ref.	0.25	1.00	ref.	0.27	1.00	ref.
15-19 years	0.01	1.16	0.54	0.02	1.18	0.36	0.02	1.18	0.42	0.03	1.08	0.69
20-24 years	0.11	1.09	0.37	0.10	1.05	0.63	0.13	1.26	0.00	0.16	1.14	0.15
30-34 years	0.25	0.80	0.01	0.24	0.72	0.00	0.26	0.81	0.01	0.28	0.73	0.00
35-39 years	0.19	0.76	0.01	0.19	0.55	0.00	0.16	0.58	0.00	0.16	0.56	0.00
40 years and more	0.17	0.21	0.00	0.15	0.17	0.00	0.09	0.16	0.00	0.06	0.13	0.00
age unknown	0.07	1.01	0.93	0.08	0.73	0.02	0.08	1.28	0.01	0.04	1.30	0.04
<b>Religion</b>												
Catholic	0.34	1.25	0.00	0.37	1.29	0.00	0.51	1.21	0.00	0.58	1.17	0.03
Protestant (reference)	0.66	1.00	ref.	0.63	1.00	ref.	0.49	1.00	ref.	0.42	1.00	ref.
<b>Husband's occupation</b>												
Farmer - land owner (reference)	0.45	1.00	ref.	0.61	1.00	ref.	0.43	1.00	ref.	0.33	1.00	ref.
Day-laborer, unskilled worker	0.13	0.92	0.38	0.16	0.89	0.21	0.16	0.90	0.20	0.12	0.95	0.63
Factory worker	0.01	1.56	0.19	0.01	0.77	0.31	0.17	0.76	0.00	0.30	0.72	0.00
Trade-craftsman, civil servant	0.17	1.17	0.08	0.19	0.76	0.00	0.20	0.85	0.04	0.20	0.76	0.00
Qualified occupation	0.01	1.02	0.95	0.01	0.87	0.58	0.03	0.71	0.05	0.05	0.77	0.11
Occupation unknown	0.23	0.74	0.00	0.01	0.35	0.04	0.00	omitted*		0.00	omitted*	
<b>Birth place of the mother</b>												
The same village (reference)	0.59	1.00	ref.	0.50	1.00	ref.	0.42	1.00	ref.	0.32	1.00	ref.
The same canton	0.35	1.02	0.79	0.39	1.03	0.71	0.43	1.03	0.65	0.53	1.17	0.05
Another canton	0.04	1.13	0.41	0.11	1.20	0.09	0.10	1.10	0.35	0.11	1.04	0.72
Abroad	0.02	1.69	0.01	0.01	0.86	0.73	0.05	0.94	0.61	0.04	0.78	0.25
N. of observations	1804			1848			2520			2249		
Overall p-value	0.00			0.00			0.00			0.00		
Chi-square	153.89			224.21			223.52			176.28		
Degrees of freedom	15			15			14			14		
F-value	5.80			2.26			2.90			3.47		
Log-likelihood	-6729			-6643			-9681			-7035		

Source: Parochial, civil and local population registers of Broc and Portalban-Delley (canton of Fribourg), of Chavornay and Chevroux (canton of Vaud).

category). The model associates the variable religion with three other independent variables (Model A):

- the *women's age* at the beginning of the interval, known to be a major determinant of fertility, is included in the form of five-year age categories;
- the *husband's occupation*, an indicator for the socioeconomic status of the family, is organized into six categories, following the indications given by the birth registers; in case of changing occupation from one birth to the next, we assigned to the husband the occupation most often mentioned;
- the *birth place of the mother* is an indicator for two factors; for the mothers born in the village, the burden of numerous children could be lightened by the help of relatives; these mothers were also more sensitive to the weight of social norms regarding family size and contraception.

The values obtained by the variable *Catholic religion* confirm the results of the age-specific marital fertility rates. The impact of religion on fertility is important in the second period (1879-1898): for Catholic mothers, the intervals between events in their fertility histories are 29 per cent shorter than those of Protestant mothers, indicating a higher fertility; the log-likelihood statistics obtain their highest value for this second period. We also notice the growing importance of the variable *husband's occupation*. During the first two periods, only one category is marked off by fertility behavior significantly lower (value inferior to one) from the farmers' (the reference category). With the setting up of the factory (periods 1899-1914 and 1915-1930) the fertility of three socioeconomic groups becomes significantly lower than that of the farmers, and this is especially the case for the category "factory workers". For the wives of this category, the intervals between events in fertility histories are 24 per cent longer in the period 1899-1914, and 28 per cent longer in 1915-1930, compared to the wives of the farmers.

Table 3 presents a Cox regression for the same dependent variable (the length of intervals between events in mother's fertility histories), but with another distribution of the sample and using another model. To highlight the different paces of fertility decline in the Catholic and Protestant villages, we divided the sample into two sub-categories determined by religion, and each sub-category into two periods (before and after industrialization).

The set of covariates in Model B includes the same variables as Model A, with the exception of course of the variable *religion*, and adding three new independent variables:

- the dummy variable *bridal pregnancy* is set to one when the first child was conceived less than eight months before marriage; in such a case, one can infer that the couple did not use or succeed in the use of a birth-control practice (especially withdrawal) to avoid premarital pregnancy; we are



Table 3. Model B: Cox regression of the determinants of fertility by religion.

	Catholics 1860-1898			Catholics 1899-1930		
	Mean of percentage distribution of the covariates	Relative risk	P> z	Mean of percentage distribution of the covariates	Relative risk	P> z
<b>Mother's age at child birth</b>						
25-29 years (reference)	0.18	1.00	ref.	0.25	1.00	ref.
15-19 years	0.02	1.03	0.90	0.02	1.04	0.82
20-24 years	0.11	0.99	0.95	0.15	1.10	0.26
30-34 years	0.24	0.73	0.00	0.27	0.80	0.00
35-39 years	0.20	0.60	0.00	0.17	0.56	0.00
40 years and more	0.17	0.16	0.00	0.08	0.12	0.00
age unknown	0.08	0.69	0.01	0.06	1.12	0.30
<b>Husband's occupation</b>						
Farmer - land owner (reference)	0.51	1.00	ref.	0.31	1.00	ref.
Day-laborer, unskilled worker	0.22	0.83	0.03	0.16	0.85	0.06
Factory worker	0.02	0.78	0.34	0.30	0.69	0.00
Trade-craftsman, civil servant	0.14	0.77	0.02	0.18	0.77	0.00
Qualified occupation	0.01	0.88	0.64	0.04	0.74	0.07
Occupation unknown	0.11	0.74	0.05	0.00	omitted*	
<b>Birth place of the mother</b>						
The same village (reference)	0.52	1.00	ref.	0.28	1.00	ref.
The same canton	0.42	1.10	0.19	0.60	1.03	0.61
Another canton	0.05	1.14	0.45	0.05	1.02	0.86
Abroad	0.01	1.33	0.32	0.06	0.94	0.64
<b>Bridal pregnancy</b>	0.07	1.12	0.30	0.08	1.15	0.18
<b>Previous child dead</b>	0.09	1.60	0.00	0.04	1.78	0.00
<b>Real output*</b>		1.07	0.28		0.76	0.00
N. of observations	1489			2705		
Overall p-value	0.00			0.00		
Chi-square	179.24			329.12		
Degrees of freedom	17			16		
F-value	6.98			7.88		
Log-likelihood	-5664			-9614		

\* Time-series of real output are generally only available since the years 1930. Felix Andrist (see Andrist, Anderson, and Williams 2000) elaborated such a time-series for Switzerland, going back to the middle of nineteenth century. We are grateful to him for giving us access to this supplementary time-series.

Source: Parochial, civil and local population registers of Broc and Portalban-Delley (canton of Fribourg), of Chavornay and Chevroux (canton of Vaud).

Table 3. Model B (Continued).

	Protestants 1860-1898			Protestants 1899-1930		
	Mean of percentage distribution of the covariates	Relative risk	P> z	Mean of percentage distribution of the covariates	Relative risk	P> z
<b>Mother's age at child birth</b>						
25-29 years (reference)	0.22	1.00	ref.	0.29	1.00	ref.
15-19 years	0.02	1.25	0.27	0.02	0.97	0.89
20-24 years	0.10	1.10	0.31	0.15	1.21	0.04
30-34 years	0.25	0.76	0.00	0.28	0.73	0.00
35-39 years	0.18	0.67	0.00	0.14	0.57	0.00
40 years and more	0.16	0.20	0.00	0.06	0.19	0.00
age unknown	0.08	0.98	0.87	0.06	1.39	0.00
<b>Father's occupation</b>						
Farmer - land owner (reference)	0.55	1.00	ref.	0.45	1.00	ref.
Day-laborer, unskilled worker	0.10	0.96	0.64	0.11	1.05	0.64
Factory worker	0.00	1.12	0.73	0.17	0.88	0.18
Trade-craftsman, civil servant	0.20	1.03	0.70	0.23	0.91	0.29
Qualified occupation	0.01	0.86	0.54	0.04	0.85	0.36
Occupation unknown	0.13	0.66	0.10	0.00	omitted*	
<b>Birth place of the mother</b>						
The same village (reference)	0.56	1.00	ref.	0.47	1.00	ref.
The same canton	0.34	0.96	0.53	0.35	1.15	0.06
Another canton	0.09	1.14	0.19	0.16	1.09	0.39
Abroad	0.01	1.54	0.04	0.02	0.91	0.63
<b>Bridal pregnancy</b>	0.08	1.20	0.05	0.08	1.33	0.01
<b>Previous child dead</b>	0.06	1.97	0.00	0.03	2.07	0.00
<b>Real output*</b>		0.90	0.09		0.80	0.00
N. of observations	2210			2017		
Overall p-value	0.00			0.00		
Chi-square	248.8			226.88		
Degrees of freedom	17			16		
F-value	6.64			6.20		
Log-likelihood	-7931			-6807		

\* See table 3., first part.

Source: Parochial, civil and local population registers of Broc and Portalban-Delley (canton of Fribourg), of Chavornay and Chevroux (canton of Vaud).

- then allowed to suppose that this lack of information or experience would expose the mother to a higher risk of fertility within marriage;
- the dummy variable *previous child dead* is set to one during the first two years of a birth interval if the preceding child died in infancy; if the preceding child survived to its first birthday or if the time since the last birth is greater than two years, this covariate is set to zero; an infant death should be associated with higher fertility, as the contraceptive effect of breastfeeding is reduced (Alter and Oris 1999); the death of the previous child could also induce a replacement effect, parents being inclined to replace the lost child;
  - fertility behavior is supposed to react to changing economic conditions; in the absence of a local indicators of economic development, we introduced an estimation of the Swiss *real output* as a time-series with a negative gap of two years; this indicator of the volume of the national economy is of course not a perfect indicator for the level of economic activity in our villages; however, the bias for our sample is small, as for two of our villages, the most populated ones, the relative importance of the various economic sectors is very similar to that of the national economy.

The results presented in Table 3 show that Catholic and Protestant fertility behavior reacted differently to these explanatory variables, and we will only comment on the most interesting results. On the Catholic side, the variable *husband's occupation* has an important effect on fertility. In the first period, two groups are marked off by a fertility behavior significantly different from the farmers'; in the second period, this is the case for the fertility of all the socioeconomic groups. This evolution could indicate that the cost-benefit balance of children is not modified at the same time and with the same intensity for each socioeconomic category. On the Protestant side, astonishingly, no social category is marked off by fertility significantly different to that of the farmers, neither during the first nor the second period.<sup>6</sup> This striking result – invisible when the religious groups are conflated (Table 2, Model A) – could suggest that the effective constraints modifying fertility decisions applied to all Protestant families, whatever their social status. The nature of such homogeneous constraints cannot then be socioeconomic, but institutional, and will be explored more closely later.

Catholic and Protestant fertility also reacted differently to changing economic conditions (*real output*). For Catholic mothers, no significant effect is perceptible in the first period; in the second though, the intervals between events in their fertility histories are 24 per cent longer, indicating a lower fertility, when the real output increases. On the Protestant side, the association between growing real output and lower fertility is already perceptible in the first period.

The variable *bridal pregnancy* obtains a significant result for Protestant mothers only: when their first child was conceived before marriage, the intervals between events in their reproductive life are 20 or 33 per cent shorter, this denoting a higher fertility. These results attest to a correlation between premarital and marital control of fertility, and the following interpretation can be suggested: when couples did not succeed in controlling their fertility before marriage, this lack of familiarity with contraception exposes the women to a higher risk of marital fertility. The behavior of these couples is significantly different from that of the couples who did not experience a bridal pregnancy; either these couples were more familiar with contraception or they did not have sex before marriage. This latter hypothesis is nevertheless less plausible, given the toleration of premarital sexuality between brides and grooms attested to for the Protestant villages by various sources; controlling fertility was however important in order to achieve more autonomy for deciding about the date of marriage.

What happened in the Catholic villages? Despite the social stigmatization of premarital sexual activity and its strict prohibition by pastoral care, the levels of illegitimacy and bridal pregnancy reveal its existence. The incidence of premarital sexuality is more accurately measured when one calculates the percentage of illegitimate births and bridal pregnancies considering only the first births, but including all the women, married and unmarried. In Broc, in the period before industrialization (1860-1898), 29 per cent of all first births were illegitimate ones and 18 per cent were bridal pregnancies; with the setting up of the factory (1899-1930) the proportions were reversed (18 per cent of illegitimate births and 29 per cent of bridal pregnancies). In the non-industrialized village of Delley-Portalban, the proportion of illegitimate births decreased from one period to the next (34 to 16 per cent) whilst the proportion of bridal pregnancies remained similar (36 to 31 per cent). According to the answers given in the *Quaesitae*, a questionnaire that the parish priests had to fill out and send to the bishop every seven years, “onanism” and “malthusianism” – namely withdrawal and contraception in general – were practiced to avoid illegitimate births and premarital pregnancies.<sup>7</sup> Nevertheless, the regression analysis does not indicate a relation between premarital and marital contraceptive practices for Catholic couples. Either these contraceptive techniques were not widespread, or the motivation to use premarital contraceptive techniques within marriage was lacking, because the incentives for adopting such a behavior were not strong and above all not pervasive enough to obtain a significant result.

All these results attest to different paces of the fertility transition according to religious appurtenance, and to a lag of Catholic fertility decline. How can we explain such an influence of religion? We turn now to three explaining mechanisms, which demonstrate the role played by state policies.

## 5. GENDER, FERTILITY TRANSITION AND SCHOOL POLICY

In a pioneering article, John Caldwell argued that “the primary determinant of the timing of the onset of the fertility transition is the effect of mass education on the family economy” (Caldwell 1980: 225). Education not only reduces a child’s potential for work, thereby increasing the costs of children, it also speeds up changes in norms and values regarding the child as a future rather than a present producer. W. Penn Handwerker modified this hypothesis in so far as “fertility transition does not follow from the onset of mass education, but from the conjunction of mass education with changes in opportunity structure that increasingly rewards educationally acquired skills and perspectives” (Handwerker 1986: 402). Inversely, a lesser investment in children’s education and their early entering into the labor force support high fertility by creating income transfers from older to younger children (Alter 1988: 171); as the decision to limit family size was primarily a decision to avert later birth and was more likely to occur at the same time the oldest children were able to work, the economic motivation for smaller families was reduced if these children already contributed to the family budget.

The religious and political diversity of our sample permits us to test the following hypothesis. The Protestant canton of Vaud produced a more encouraging attitude regarding education and more severe laws implementing regular school attendance. Cantonal differences in discourses and policies should be mostly perceptible in the gender-based access to instruction and namely in a greater discrimination against girls in the Catholic canton of Fribourg. Finally, institutional incentives for parental investment in education and the ensuing increase in the costs of children influenced the pace of fertility decline.

In order to test this hypothesis, we first analyzed the official discourse on education and the school policies of the two cantons, focusing especially on gender differences. Next, we observed the impact of these discourses and policies on parents’ effective investment in the education of children in the four villages. Administrative sources at cantonal and village levels (pupil listings, school attendance statistics and correspondence) provide indications about the school career of children living in our four villages. They have been completed by assumptions based on the subsequent professions of the children at marriage or death. For the 5,042 legitimate children who survived until age 15, we managed to reconstitute the school career of 2,353 of them (1,333 boys and 1,020 girls). Fortunately, the missing data are concentrated in the generations born before 1880, when both the processes of fertility decline and implementation of compulsory schooling were in their initial phase.

A content analysis of educational periodicals and of school manuals<sup>8</sup> provides a first confirmation of our hypothesis by showing the striking gender differences regarding the importance of education, moreover reinforced by religious visions of the status of knowledge and of gender roles.

In the canton of Vaud, the school reading book glorified the fight against ignorance, seen as a hindrance to historical progress. According to the Protestant educational periodicals, both men and women have to develop the intellectual capacities God has given them, for their own spiritual enlightenment and for the social improvement of civic virtues. Knowledge is especially important for women, the mothers of future citizens. Even though their future social role would keep them inside the home, this was not considered a reason for limiting the scope of their spirits. The school reading book presented the mother characters as playing an important role in children's schooling: the mother was checking the homework, the exercise books, etc.

In the Catholic educational periodicals, girls' education was described as having a unique objective: becoming skilled and pious housekeepers. The two discredited figures of the coquettish woman and the learned woman induced the idea that knowledge is vanity for women and that too learned a woman represents a danger for family and society. The girls' school program, according to their social destiny, had to make a large place for housekeeping and needlework, limiting the study in other disciplines to the most basic skills. In the school reading book, the exemplary mother never worried about school and homework, but taught her child to pray and only recommended that he or she obey the teacher, who was God's representative. Women's religiosity and sentiments were intended to impede the drift to secularization.

These opposite visions influenced school policies. The official publications<sup>9</sup> of the canton of Vaud justified compulsory school attendance in the name of progress and democracy. Parents who neglected children's education were blamed for not fulfilling their social commitments. When referring to pupils, the texts always used generic terms (youth, children) without specifying a special category, even girls. The cantonal government implemented compulsory schooling efficiently. Parents could not take their children out of school for work before they reached the legal age of sixteen. Post-primary education for girls and boys was fostered by decentralization of secondary and professional schools. But in spite of the promotion of universality of education, gender equality was not always guaranteed, as the school policy was a controversial theme and generated many conflicts, with parents, cantonal and communal authorities opposing each other; the latter represented the interests of the parents, often eager to allocate more of their children's time to family work. Careful analysis of such conflicts interestingly shows that compromises were made on girls'

Table 4. Model C: Logistic regression of the chance of attending post-primary school.

	All children			Catholic children only			Protestant children only		
	Mean of percentage distribution of the covariates	Relative risk	P> z	Mean of percentage distribution of the covariates	Relative risk	P> z	Mean of percentage distribution of the covariates	Relative risk	P> z
<b>Sex</b>									
Male	0.57	3.29	0.00	0.52	4.75	0.00	0.62	2.45	0.00
Female (reference)	0.43	1.00	ref.	0.48	1.00	ref.	0.38	1.00	ref.
<b>Religion</b>									
Catholic	0.51	0.76	0.01						
Protestant (reference)	0.49	1.00	ref.						
<b>Father's occupation</b>									
Farmer - land owner (reference)	0.58	1.00	ref.	0.53	1.00	ref.	0.63	1.00	ref.
Day-laborer, unskilled worker	0.14	1.17	0.33	0.19	1.47	0.06	0.09	0.84	0.51
Factory worker	0.09	1.95	0.00	0.13	2.37	0.00	0.05	1.43	0.24
Trade-craftsman, civil servant	0.16	2.80	0.00	0.13	2.75	0.00	0.19	2.82	0.00
Qualified occupation	0.02	12.30	0.00	0.02	20.68	0.00	0.02	7.95	0.00
Occupation unknown	0.02	1.51	0.20	0.01	0.50	0.52	0.04	1.72	0.12
<b>Birth order</b>									
Eldest of 4 children or more	0.20	0.78	0.06	0.20	0.76	0.18	0.19	0.78	0.18
<b>Death of one parent</b>									
	0.17	1.08	0.55	0.16	1.12	0.37	0.19	1.01	0.96
N. of observations	2353			1193			1160		
Overall p-value	0.00			0.00			0.00		
Chi-square	258.7			162.4			98.64		
Degrees of freedom	9			8			8		
F-value	31.91			23.14			13.43		
Log-likelihood	-1179			-533			-636.7		

Source: Parochial, civil and local population registers of Broc, Portalan-Delley, Chavornay and Chevroux; pupil listings, school attendance statistics, minutes of the school commission in the villages, official correspondence at the village and canton level.

education: in the year 1906 for example, communal authorities were allowed to fix the girl's age of liberation from compulsory school one year earlier than for boys; this decision, taken every year by the local council, had a collective effect for all the girls in the commune. However, as the influence of low-class family heads was reduced in these councils, a majority in favor of an earlier liberation for girls was not often obtained (in less than 10 per cent of the 388 communes and never in our villages for the period 1906-1930).

In Fribourg, the importance of popular instruction was more associated with the formation of peasant male elites than with the democratization of knowledge. In the official publications, education was not considered as an end in itself, but always justified according to particular purposes of potential beneficiaries, specified by sex or social class. A real tolerance was perceptible when parents did not send their children to school regularly, the conservative government supporting the traditional family morality of duties and obedience to the parents. Consequently, the control and repression of school absenteeism did not follow a regular and determinate path, responding more to occasional incentives generated by political debates. The gender differences were already implied in the school structures, mostly segregated by sexes; the cantonal state provided post-primary public – and free – schools for boys only, whilst leaving girls' post-primary education to religious and private educational institutes that only rich families could afford. Above all, the school system permitted many exceptions in school attendance for teenagers, especially for girls, whom parents often took out of school before the legal age.

What was the impact of these differences on parental investment in education? To measure this investment, two data files have been constituted, according to Caldwell's model which states that the costs of education entail two separable components.

First, education induces monetary costs, whose level was very different at the primary or the post-primary school. Primary school in the village was free, with school material mostly paid for by the state, thereby reducing the expenses to suitable clothes for going to school. But if the child attended a post-primary school, parents' expenses increased dramatically because of fees, books, travel, meals outside the home, sometimes boarding expenses. The first data file includes the 2,353 children whose school career has been reconstituted. A dummy variable is set to one if the child has attended a post-primary school.<sup>10</sup> Using a logistic regression, the model measures the impact of five independent variables on a child's chance of attending a post-primary school (Table 4, Model C). While post-primary school attendance is the dependant variable, the model integrates the following covariates: the *sex*, the *religious affiliation*, the *father's occupation* as an indicator of the socioeconomic status of the family, the *birth*



Table 5. Model D: Cox regression of the risk of leaving school earlier.

	All children			Catholic children only			Protestant children only		
	Mean of percentage distribution of the covariates	Relative risk	P> z	Mean of percentage distribution of the covariates	Relative risk	P> z	Mean of percentage distribution of the covariates	Relative risk	P> z
<b>Sex</b>									
Male	0.67	0.51	0.00	0.70	0.38	0.00	0.64	0.84	0.01
Female (reference)	0.33	1.00	ref.	0.30			0.36		
<b>Religion</b>									
Catholic	0.43	1.67	0.00						
Protestant (reference)	0.57	1.00	ref.						
<b>Father's occupation</b>									
Farmer - land owner (reference)	0.55	1.00	ref.	0.49	1.00	ref.	0.60	1.00	ref.
Day-laborer, unskilled worker	0.13	0.93	0.27	0.19	0.89	0.14	0.08	1.02	0.89
Factory worker	0.09	0.94	0.39	0.14	0.95	0.57	0.05	0.94	0.65
Trade-craftsman, civil servant	0.18	0.84	0.00	0.14	0.84	0.06	0.21	0.81	0.01
Qualified occupation	0.02	0.61	0.00	0.03	0.63	0.05	0.02	0.65	0.06
Occupation unknown	0.03	0.95	0.73	0.01	1.20	0.56	0.04	0.88	0.44
<b>Birth order</b>									
Eldest of 4 children or more	0.18	1.09	0.09	0.19	1.12	0.12	0.19	1.04	0.59
<b>Death of one parent</b>									
N. of observations	6940			3156			3784		
Overall p-value	0.00			0.00			0.01		
Chi-square	344.26			239.7			19.98		
Degrees of freedom	9			8			8		
F-value	11.73			14.66			2.3		
Log-likelihood	-1686			-7613			-774		

Source: Parochial, civil and local population registers of Broc, Portalban-Delley, Chavornay and Chevroux; pupil listings, school attendance statistics, minutes of the school commission in the villages, official correspondence at the village and canton level.

*order* (a dummy variable is set to one when the child is the eldest of four children or more) and the *death of one parent* (a dummy variable is set to one when the child experienced this event before the age of thirteen).

The results show that for the whole sample, boys see their chance of attending post-primary school multiplied by 3.29, compared to girls (Table 4). Such a gender difference will not surprise any education historian. But when we divide the sample into two sub-categories determined by religion, the variable *male sex* multiplies this chance “only” by 2.45 in the Protestant canton of Vaud, compared to 4.75 in the Catholic canton of Fribourg. Another interesting point is the comparative impact of the variable *father’s occupation*. A child’s chance of attending post-primary school increases as the position of his/her family on the social scale rises, compared to the reference category of farmers, but social differences are more pronounced on the Catholic side. Such a result could attest to the more egalitarian character of the school system in the canton of Vaud.

Education also entails opportunity costs in reducing child availability for work. The most important conflicts between parents and authorities concern teenagers, whom parents wanted to remove from school, to use their help at home or their earnings to complete the household budget. In allowing their child to complete compulsory primary school, parents thus made an economic sacrifice; and a more significant sacrifice when the child attended a post-primary school that meant one, two or more years without working.

The second file is constituted by time sequences of children’s school career between the age of thirteen (where the respective school systems permitted the first school leaves) and eighteen (as very few children pursued their studies beyond this point). The starting point is the beginning of the school year for the year in which the child reaches the age of thirteen; school began in spring in both cantons, and 1<sup>st</sup> April has always been chosen arbitrarily. Children could either leave school just before the summer holidays or at the end of the school year; according to the date of this event, the end of the time sequence is 30<sup>th</sup> June or 30<sup>th</sup> March of the following year. After this date, children could attend school for an additional year; in that case, a new time sequence is added, this sequence ending three or twelve months later according to the date of leaving school. The date of the definitive school leaving is the ending point. For the 2,353 children under observation, this second file finally includes 6,940 time sequences.

Table 5 presents a Cox regression of the risk of leaving school (Table 5, Model D). The dependent variable is the length of the school career between age thirteen and eighteen, and the model includes the same independent variables as previously. Which factors modify the risk of leaving school earlier? When we apply the model to the whole sample, the variable *male sex* reduces this risk by 49 per cent. The variable *Catholic religion* increases it by 67 per cent. When we

observe gender discrimination by religious group, we see that the impact of the variable *male sex* is much stronger in the Catholic sample. For Catholic boys, the risk of leaving school earlier is reduced by 62 per cent, compared to Catholic girls; among all variables, the sex is the more determinant one. For Protestant children, the relative risk difference between girls and boys goes down to 16 per cent; for these children, the variable father's occupation has a more important impact on the risk of leaving school.

These two regressions show that Protestant parents incurred substantial opportunity and monetary costs for the education of their children. Following the second of Coale's conditions, we can assume that the growing costs of children in Protestant families constituted an important incentive to practice birth control. Actually, the most important decline of fertility in the Protestant villages occurred in the last twenty years of the nineteenth century, which corresponded with the implementation of compulsory schooling in the canton. School policy obviously constitutes a homogeneous institutional constraint modifying fertility and that should explain the striking result observed above for Protestant families (Table 4), when no social category was marked off by fertility behavior significantly different from that of the farmers.<sup>11</sup>

In contrast, Catholic parents avoided considerable education costs, above all by discriminating against their daughters. The relation between this gender discrimination and the motivation for birth control is twofold. For young parents, the lack of strong incentives to send their children to school and the anticipation that they could avoid a great part of the costs of education reduced the need for birth control. For older parents, the motivation for averting later births was less imperative when the oldest girls contributed early to the family budget. At this moment of the family cycle, the possibility of discriminating against the girls was used as a strategy to reduce the overall costs of children and to assure at least the education of the boys, thus making effective the gender discrimination permitted by the school system. In the Catholic villages, we identified two dominant strategies which made use of the economic function of girls for the family, to the detriment of their schooling. In the industrialized village many older girls left school early to look after the housekeeping and the younger children, thus permitting to their mothers to work in the factory. In the peasant village, girls were sent away as servants before completing compulsory schooling, thus reducing the costs of children by a strategy sometimes called "*ex-post facto* family planning" (Szreter and Garrett 2000).

If such an interpretation applies, we should be able to demonstrate that girls' educational careers were more influenced than boys' by family composition. To evaluate more precisely the impact of family size on girls' chances of prolonged education, we add a numeric variable that indicates for each child the number

and the sex of his/her older and younger siblings. When we apply the model separately to Catholic boys and Catholic girls, this numeric variable has a significant effect for Catholic girls only. The risk of leaving school is reduced for them by 8 per cent per older brother, 8 per cent per older sister, but this risk is increased by 7 per cent per younger brother (less significant result for the number of younger sisters). The more younger brothers a Catholic girl had, the earlier she left school: if she had three younger brothers for example, her risk of leaving school increased by 21 per cent, with respect to a Catholic girl who had no younger brother (Table 6).

Finally, the existence of gender discrimination in access to education could attest to the validity of Handwerker's rewriting of Caldwell's model. When mass

*Table 6. The relative risk of leaving school earlier for Catholic girls.*

Variables	Mean of percentage distribution of the covariates	Relative risk	P> z
<b>Economic variables</b>			
<b>Village</b>			
Non-industrialized	0.45	1.21	0.03
Industrialized village (reference)	0.55	1.00	<i>ref.</i>
<b>Father's occupation</b>			
Farmer - land owner (reference)	0.53	1.00	<i>ref.</i>
Day-laborer, unskilled worker	0.21	0.96	0.68
Factory worker	0.10	1.28	0.11
Trade-craftsman, civil servant	0.13	0.92	0.51
Qualified occupation	0.01	0.92	0.86
Occupation unknown	0.01	1.08	0.87
<b>Family variables</b>			
Eldest of 4 children or more	0.22	0.85	0.17
<b>Siblings (numeric variable)</b>			
Number of elder brothers		0.92	0.06
Number of younger brothers		1.07	0.07
Number of elder sisters		0.92	0.04
Number of younger sisters		1.07	0.12
<b>Death of one parent</b>	0.15	1.14	0.25
N. of observations	1156		
Overall p-value	0.02		
Chi-square	23.56		
Degrees of freedom	12		
F-value	1.26		
Log-likelihood	-3		

Source: Parochial, civil and local population registers of Broc, Portalban-Delley, Chavornay and Chevroux; pupil listings, school attendance statistics, minutes of the school commission in the villages, official correspondence at the village and canton level.

education is enforced by cultural discourse and severe school policy, the Caldwell model works, whatever the economic incentives are. But when this institutional frame is weaker, the changes in opportunity structure that reward educationally acquired skills play a more important role. In our two cantons qualified job opportunities emerged mostly for boys, and therefore parents were more encouraged to invest into the education of their male offspring. Moreover, the persistence of numerous unqualified jobs for girls (domesticity, jobs in the chocolate factories) constituted an incentive to take the girls out of school so they could contribute to the family budget.

This example of school policy illustrates how state institutions and policies, guided by religious values, produced efficient constraints that modified the costs of children, thus influencing fertility choices. We will now present two additional examples, which are of a more exploratory character, due to the difficulty of empirical verification.

## 6. THE FIGHT AGAINST INFANT MORTALITY

Relations between fertility decline and infant and/or child mortality are not unidirectional. Fertility decline improves the survival of children, since less numerous children receive more parental attention. But inversely, a significant decrease in infant and child mortality accelerates the adoption of birth control, a high number of surviving children weighing heavily on the family budget; another effect of an infant death is to terminate the fertility reducing effects of breastfeeding. The positive results obtained by the variable *previous child dead* in Table 3 show that infant mortality was correlated with higher fertility.

At the end of the nineteenth century, infant mortality (0-1 year) in Fribourg was one of the highest in Switzerland, possibly holding up the generalization of fertility control. This result has been attributed to the defectiveness of health policy (Bosson 2002: 104-125). During the period under study, health policy varied greatly, as did school policy, according to the canton. These health policies were the result of diverse political priorities, influenced by the religious environment. For the government of the canton of Vaud, the Protestant idea of human co-responsibility in God's creation found a political expression in the vision of the population as a wealth, a human capital not to be wasted. The fight against infant and child mortality, first justified by the *conservation des enfants* was associated, at the turn of the century, with the fear of depopulation. In Catholic thinking and pastoral discourse by contrast, the death of children had to be accepted as God's will and even to be recognized as a divine mercy, because dead children intercede in heaven on families' behalf. As the purpose of Catholic marriage was "to give saints to the Church and elected to Heaven",<sup>12</sup> the gravity

of the loss of children, and consequently of parental or state responsibility for their survival, was mitigated.

These attitudes towards mortality induced different interests for demographic trends and influenced the development of the statistical apparatus, important for the implementation of an effective health policy. The Swiss federal statistics office, established in 1860 by the central government, struggled to obtain precise and unified data from the cantons (Busset 1995: 7-28) even after the 1876 federal law on registry office had imposed standardized procedures for the sampling of births, marriages and deaths.

In the canton of Vaud, this sampling was conducted from 1850 by the Health council on the basis of data taken down by the registry office, secularized since 1835. The annual cantonal report presented the population data in the chapter concerning health policy, stressing the scale of population growth and voicing a concern for mortality. The Vaud statistical office was founded in 1860, the second one in a Swiss canton. The Health office, founded in 1886, had a statistical department which published medical statistics and organized inquiries. In 1887 and 1889, its two first inquiries explored the prevalence and origins of puerperal fever and gastroenteritis in the canton, following scientific criteria.

The Fribourg cantonal statistics office was founded as late as 1895. The federal government had to prompt the canton many times to obtain population data, a priest's task until 1876, when the registry office was secularized in all Switzerland. In 1867, the cantonal government protested officially against the obligation of sampling infant deaths detailed by months for the first year of life, disapproving of "such a luxury of information".<sup>13</sup> The population data published between 1860 and 1876 in the cantonal annual report reveal that the government was more interested in statistics as an indicator of moral behavior than of public health. Besides the absolute number of births, marriages and deaths, the only rate given was the rate of illegitimate births. After 1876, when the population tables were provided by the Swiss federal statistics office, which did not distinguish between legitimate and illegitimate births, the report still gave this rate of illegitimacy, adding a rate of suicides (since 1883) and a rate of divorces detailed by districts (1884). But the issue of infant mortality remained invisible in these cantonal data; the first infant mortality rate only appears in the 1899 report.

In order to notably improve child survival, health policy measures have to be conceived and implemented so as to reach the neediest (Lee and Vögele 2001: 65-96). In the canton of Vaud, the government led a consistent health policy that stressed the careful medical training and the strict control of midwives, considered quite rightly the most efficient mediators for diffusing information about infant care and feeding. From 1882, all midwives had to attend a complete

course at the maternity hospital for one year. The 1886 health law strengthened their obligations; sanitary controls, namely water supply, were also reinforced. The Protestant Church contributed to this health policy by emphasizing social and hygienic issues in its publications, with a noticeable interest in the socioeconomic conditions of the working classes; their improvement was considered as a duty of the Church. Moreover, the ministers' spouses participated in the spreading of hygienic principles, by giving conferences in the parishes and providing advice to the women assembled every week at charity needlework meetings.

In Fribourg, the government ordered occasional measures that regularly missed their target (hygienic brochures for example), neglecting the most efficient one, the training of midwives, whose shortage and lack of medical education remained a recurrent problem until 1922, when the first midwives' school opened in the maternity hospital. Religious associations and parishes did not function as intermediaries for hygienic advice – and there were no priests' spouses! Asked in the *Quaesitae* about how parents fulfilled their duties, the parish priests stressed the lack of good example and the neglect of religious education but never even mentioned parental responsibility for the health of children.

The impact of health policies is perceptible in the child mortality trends of our villages. Levels of infant mortality (0-1 year) decrease significantly for the Vaud villages after 1886, the date of the new health law, whilst remaining high in Fribourg (Table 7). The difference is especially noticeable for the two neighboring villages situated on the shore of the same lake (Delley-Portalban/Fribourg, Chevroux/Vaud), characterized by the same local economy (farming and fishing) and the same unfavorable environmental conditions (humidity).

*Table 7. Infant mortality rates by villages and periods (per 1000 live births) and number of live births (in brackets).*

	1860-1885	1886-1907	1908-1930
Broc/Fribourg	137.4 (371)	131.0 (519)	64.8 (1187)
Delley-Portalban/Fribourg	154.7 (407)	188.5 (366)	92.8 (366)
Chevroux/Vaud	171.4 (441)	167.0 (425)	59.5 (235)
Chavornay/Vaud	131.0 (664)	90.7 (573)	79.4 (680)

Source: Parochial and civil registers of Broc, Portalban-Delley, Chavornay and Chevroux.

To examine more accurately the impact of health policy on infant mortality, we turn to event history analysis, using the theoretical framework and the model developed by Oris, Derosas and Breschi (2004). Postulating that causalities of health and death change very rapidly at the beginning of life, they propose a segmentation of the infant life into different stages: the ten first days of life, from the tenth day to six months, from six months to one year and from 1 to 4 years. We applied this model to our sample, and we will just point to an interesting result, without developing an analysis that would deserve a separate essay. For the villages studied, the impact of health policy should be most perceptible in the second stage (before six months) when most of the children were weaned; inappropriate infant feeding or lack of hygienic principles and infrastructure then expose the child to the risk of gastroenteritis; therefore, in the absence of an efficient health policy, infant mortality should remain highly sensitive to seasonality, as this risk is especially pronounced during summer. To test this hypothesis, we use a Cox regression of the probability of dying during this second stage of life. The same model is applied separately to Protestant and Catholic children for the period 1899-1930, where respective health policies were implemented (Table 8). In the Catholic canton of Fribourg only, infant mortality remains very sensitive to seasonality, whilst the same effect is not significant for the villages in the Protestant canton of Vaud (moreover, the values of chi-square and log-likelihood indicate a weak fit of the model).

To be sure, the complex relations between fertility and infant and/or child mortality (Reher 1999: 12-14) would need a more careful analysis. These first results encourage exploring more closely the relation between religion and the implementation of an efficient health policy against infant mortality.

## 7. THE POLITICAL REACTION AGAINST NEO-MALTHUSIANISM

Recent studies emphasize that the existence of a public debate on birth control speeds up the generalization of contraceptive practices by diminishing the weight of taboos relative to sexuality and, consequently, the moral costs of contraception (Caldwell 1999; Szreter 1996: 410-411; Fisher 2000a). At the beginning of the twentieth century, the neo-Malthusian movement was very active in French-speaking Switzerland: conferences advocating birth-control, books, periodicals and brochures providing contraceptive advice, advertisements for contraceptive devices in the mainstream press. In our two cantons, these activities were either repressed or tolerated. These media policies were not explicitly intended to modify fertility at all, they responded more to political objectives in the narrow electoral sense; however, one has to consider their implicit effects (Johansson 1991: 380). Our hypothesis is that these policies, to



Table 8. Cox regression of the risk of infant mortality between 10 days and 6 months.

	Fribourg 1899-1930			Vaud 1899-1930		
	Mean of percentage distribution of the covariates	Relative risk	P> z	Mean of percentage distribution of the covariates	Relative risk	P> z
<b>Child's sex</b>						
Male	0.52	0.76	0.26	0.52	1.17	0.64
Female (reference)	0.48	1.00	<i>ref.</i>	0.48	1.00	<i>ref.</i>
<b>Mother's age at child birth</b>						
25-29 years (reference)	0.27	1.00	<i>ref.</i>	0.27	1.00	<i>ref.</i>
15-19 years	0.02	1.33	0.79	0.02	0.00	1.00
20-24 years	0.17	1.42	0.37	0.18	1.93	0.25
30-34 years	0.21	1.35	0.38	0.20	1.31	0.64
35-39 years	0.13	0.61	0.32	0.11	2.28	0.20
40 years and more	0.04	0.45	0.32	0.04	0.90	0.93
age unknown	0.16	1.58	0.33	0.17	2.96	0.11
<b>Mother factory worker</b>	0.22	2.25	0.02	0.07	2.51	0.09
<b>Father's occupation</b>						
Farmer - land owner (reference)	0.29	1.00	<i>ref.</i>	0.42	1.00	<i>ref.</i>
Day-laborer, unskilled worker	0.18	0.80	0.54	0.11	0.52	0.32
Factory worker	0.28	0.48	0.07	0.18	1.33	0.53
Trade-craftsman, civil servant	0.20	0.68	0.36	0.25	0.52	0.22
Qualified occupation	0.05	0.26	0.20	0.04	1.53	0.59
Occupation unknown	0.00	<i>omitted</i>		0.00	0.00	1.00
<b>Presence of enlarged family</b>						
Both parents born in the village (reference)	0.14	1.00	<i>ref.</i>	0.22	1.00	<i>ref.</i>
Only the mother born in the village	0.10	1.04	0.92	0.19	1.08	0.92
Only the father born in the village	0.23	0.39	0.02	0.33	2.14	0.19
No parent born in the village	0.53	0.68	0.32	0.27	2.49	0.20
<b>Siblings</b>						
Number of elder brothers		1.32	0.00		0.98	0.88
Number of younger brothers		0.95	0.61		1.02	0.88
Number of elder sisters		1.00	0.99		1.18	0.13
Number of younger sisters		1.08	0.42		1.29	0.06
<b>Previous birth interval and child survival</b>						
More than two years and alive (reference)	0.31	1.00	<i>ref.</i>	0.32	1.00	<i>ref.</i>
First-born	0.32	0.98	0.96	0.33	0.59	0.34
Less than two years and alive	0.35	1.17	0.61	0.34	1.44	0.36
Less than two years and dead	0.01	0.00	1.00	0.01	0.00	1.00
More than two years and dead	0.00	<i>omitted</i>		0.00	<i>omitted</i>	
<b>Village</b>						
Non-industrialized	0.25	1.10	0.75	0.30	0.97	0.94
Industrialized village (reference)	0.75	1.00	<i>ref.</i>	0.70	1.00	<i>ref.</i>
<b>Seasonality</b>						
July-August-September (reference)	0.25	1.00	<i>ref.</i>	0.27	1.00	<i>ref.</i>
January-February-March	0.26	0.56	0.08	0.26	0.96	0.94
April-May-June	0.24	0.82	0.53	0.26	1.44	0.43
October-November-December	0.25	0.54	0.06	0.21	1.48	0.39
<b>Real output</b>						
N. of observations	2520			2249		
Overall p-value	0.00			0.00		
Chi-square	223.52			176.28		
Degrees of freedom	14			14		
F-value	2.90			3.47		
Log-likelihood	-9681			-7035		

Source: Parochial and civil registers of Broc, Portalban-Delley, Chavornay and Chevroux.

the extent they tolerated or not this public debate, favored traditional norms concerning sexuality, especially religious ones, or permitted the establishment of new rules. In both cantons, public policies shaped the “moral acceptability” of contraception, according to the first of Coale’s conditions.

In Fribourg, a severe repression maintained silence on these sexual issues. Conferences were not allowed, policemen were ordered to inspect book-shops and newspaper-stalls regularly to seize all neo-Malthusian publications. To implement this repression, administrative measures were preferred to legislative modifications that would have needed approval by the cantonal parliament and could thus have provoked public discussion. For the conservative government, this political repression of the birth control debate was primarily motivated by political and electoral goals. The authorities felt it was very appropriate to fight against neo-Malthusianism, an ideology that could weaken the credibility and influence of the Catholic Church, their best ally.

The political repression of the birth control debate followed and reinforced Catholic pastoral strategy. Indeed, around 1900 the Catholic Church preferred not to recall the faithful to the paths of sexual morality, in order to avoid conflicts that might have initiated or accelerated the secularization process (Sèvegrand 1995; Servais 2001). Later, when the hushing up of the growing debate became impossible or inefficient, the Catholic Church changed its strategy. In the early twenties, the pastoral letters of the bishop of Fribourg recalled, in very clear warning and no longer only in allusive terms, that contraception was a mortal sin. Simultaneously, the cantonal authorities changed from hidden to open repression: the cantonal Penal Code adopted in 1924 prohibited explicitly the advertising and selling of contraceptives. As a consequence of this repression, the information and moral costs of contraception remained high in Fribourg. Due to the state support of the Catholic Church, traditional Catholic morality was upheld.

In the canton of Vaud, the governmental reaction against neo-Malthusianism, motivated by political strategies, also interacted with the religious doctrine. As attested by the correspondence between the cantonal government and local councils, the dominant political elite (Radical-democratic Party) considered neo-Malthusianism to be morally shocking and socially dangerous; access to contraception was especially dreaded for the lower classes, whose presumed lack of morality could thus be enhanced, thereby threatening the health and morality of the whole community. Inclined to repress these ideas, the cantonal authorities declined however to do so for political reasons. The repression could have been exploited by the socialist opposition to argue that the Radical-democratic Party was no longer the champion of democratic values (freedom of speech and association).<sup>14</sup> As a result of this political tolerance, a great debate spread through the mainstream press and through religious, medical and philanthropist

periodicals around 1900. Most of these writings were clearly opposed to or sharply critical of neo-Malthusianism; but for the first time in the canton, it was possible to evoke sexual issues in a decent and respectable way and to diffuse information to a wide public.

Following the Protestant pastoral care principal, ministers declined to intervene in the sexual morality of married couples and remained generally discreet about these issues.<sup>15</sup> But around 1900, the existence of a public discussion forced them to give their opinion... and to reveal their divergences: some ministers were strongly opposed to neo-Malthusianism, others recognized the social necessity of birth control, the importance of parental responsibility, stressing nevertheless that this control must remain the husband's responsibility in order to preserve the wife's dignity and innocence. For the first time however, sexual morality was debated by the Protestant elite in media other than theological treatises, and doctrinal divergences came to light, reinforcing the traditional Protestant idea that sexuality is a matter of individual morality. A content analysis of this discourse reveals that insistence on individual responsibility for sexuality. More exactly the idea of the husband's responsibility rallied a wide consensus including Protestant ministers, political elites of diverse ideological tendencies and feminist leaders. While the rights of wives to sexual and contraceptive information were generally denied, the rights of husbands were favored, but not considered to be unlimited: in respect of his paternal responsibilities, the health of his wife, the well-being and the better future of his children, the husband had to restrict his sexual pleasure and practice birth control. Consequently, thanks to the state policy that tolerated the spread of this public discourse, the "moral acceptability" of birth control increased; at the same time, parents – more especially fathers – of large families risked becoming stigmatized as irresponsible.

Data at our disposal do not enable us to measure the costs of contraception implied by these various cantonal policies. Not only should we study in detail the effective diffusion of neo-Malthusian ideas, especially in the villages of our sample, and correlate the number of articles and publications with fertility trends; a more relevant problem would be to confirm the impact of such ideas on reproductive behavior (Gauvreau and Gossage 2001: 375-395). Oral history is no longer possible to connect the discourses with testimonies of contemporaries and testimonies in written sources are sparse and often not reliable enough.

## 8. CONCLUSION

In order to have a lasting influence on fertility decisions, religious norms and values must be enforced by institutions so as to be transformed into effective costs for the families. During the period of the first fertility transition, it was the state institutions and policies that played a central role in this transformation process, as they gained importance in regulating family life. In spite of the beginning of a secularization process, political and religious issues remained tightly interwoven. In the Protestant canton of Vaud, although government and Church were in conflict, state discourses and institutions remained pervaded by religious values, though used for political purposes. In the co-operating context of the Catholic canton of Fribourg, religious norms and values gained in effectiveness, since they were implemented and enforced through state institutions.

In this paper we have provided three examples of such a mechanism. For two of them, health policy and media policy, the scarcity of data or the indicator problems do not permit us to go much further than the hypothetical level; these examples nevertheless deserve to be explored in other experimental settings. For school policy, however, we hope to have succeeded in presenting a good demonstration, namely a measure of this religious impact on the cost of children at the individual level. At the same time, this example shows that the integration of gender as an explanatory variable permits us to construct and test new hypotheses for differentials of fertility according to religious affiliation. Especially in relation with religion, gender plays a striking role.

## NOTES

<sup>1</sup> The author wishes to thank the editors Frans van Poppel and Renzo Derosas for their careful reading and their constructive comments. For the creation of the data files and their exploitation with event history analysis, the assistance of Michel Oris was invaluable. We are also grateful to George Alter and Jan van Bavel for their help in checking the technical sections of the text.

<sup>2</sup> A recent collective book (Janssens 2006) addresses in detail this particular disaggregation problem and discusses more generally the integration of gender in the study of the first fertility transition.

<sup>3</sup> The families in which one of the parents dies or who leave the village before the woman has reached age 50, but for which we know the date of the parents' marriage (Leboutte 1988: 358).

<sup>4</sup> During the two first periods, the villages were completely homogeneous with respect to religious affiliation. In the third period, a very slight religious heterogeneity occurred in the two industrialized villages because of the arrival of a few workers and managerial staff in the factories. These families, identified by baptism registers, left the villages during the post-war crisis.

<sup>5</sup> For event history analysis of fertility based on intervals between events in women's reproductive lives, see Van Bavel (2004a), Alter (1988: 25-35, 175), Gutmann and Alter (1993: 160-163), Alter and Oris (1999: 12-14) and Neven (2003: 38-45, 399-408).

<sup>6</sup> However, when the Protestant sample is divided into four periods instead of two, the “trade-craftsmen and civil servant” category is marked off by fertility slightly but significantly lower for the period 1860-1878. But this differentiation process does not carry on, contrasting with what we observe in the Catholic sample.

<sup>7</sup> *Archives de l'évêché de Fribourg*. We find the first mention of premarital “onanism” in the 1908 report for Portalban-Delley, and only in the 1928 report for Broc. The suspicion that “onanism” also concerns married couples only appears in the 1915 report for Portalban-Delley and in the 1935 report for Broc; this astonishingly late mention, given the generalization of contraception in this village, leads us to take these testimonies with caution.

<sup>8</sup> We selected all articles containing the topic gender in the *Bulletin pédagogique*, published in Fribourg since 1872, and in two corresponding periodicals for the canton of Vaud, that merged during the period: *L'Ecole*, published in Lausanne between 1873 and 1901, and *L'Éducateur*, an educational periodical distributed in French-speaking protestant Switzerland and published from 1866. For the school manuals, our content analysis concentrated on two reading books, one published in Fribourg, the other in Vaud, and used for children of the age of 8-12 from around 1900 until the end of the twenties.

<sup>9</sup> We explored the following sources: annual reports of the cantonal governments, messages presenting the school laws, correspondence between cantonal and local administrations. Our content analysis systematically compiled the terms and phrases supporting the arguments in favor of the necessity of education and regular school attendance.

<sup>10</sup> We managed to ascertain for 576 children the attendance at the following post-primary schools: *apprentissages* (professional training for which a course of study with classes and exams existed in the canton during the period), *école normale* (for future primary school teachers), *école secondaire* (one or two years after primary school, in various courses of study – general, commercial, science/arts), *collège* or *lycée* (science/art course of study).

<sup>11</sup> In their study of the Canadian fertility transition, Gauvreau and Gossage use the same correlation between education, Protestantism and lower fertility: a higher level of children's school attendance has a significant and negative effect on fertility levels in the Protestant province of Ontario, although not in Catholic Quebec (Gauvreau and Gossage, 2001). However, the gender difference was not explored.

<sup>12</sup> “(...) ayez l'intention de réaliser la fin principale du mariage: l'intention de donner des saints à l'Église et des élus au ciel en recevant avec joie et reconnaissance tous les enfants qu'il plaira à Dieu de vous donner.” Abbé Etienne Descloux, *Préparation au mariage – Conseils à la jeunesse*, Fribourg 1907, p. 36.

<sup>13</sup> *Compte-rendu de l'administration du Conseil d'Etat du canton de Fribourg*, 1867, p. 31 (minutes of the government of the canton of Fribourg).

<sup>14</sup> After 1918, when a climate of fierce anti-communism reduced the attraction of socialism, and when patriotic and populationist ideas gained in importance, the same political forces adopted repressive measures against the neo-Malthusian movement.

<sup>15</sup> “A vous parler franchement, je me suis plus d'une fois occupé de la mortalité de mes paroissiens, à laquelle un pasteur vigilant peut quelque chose; mais jamais des causes de leur fécondité auxquelles il ne peut rien. Vous devez savoir d'ailleurs que nous autres ministres protestants, ne nous permettons point de pénétrer dans les mystères du sanctuaire conjugal.” Sir Francis d'Ivernois, “Enquête sur les causes patentes ou occultes de la faible proportion des naissances à Montreux/Vaud”, *Bibliothèque universelle*, Genève, mai 1837, p. 10.

RENZO DEROSAS

BETWEEN IDENTITY AND ASSIMILATION:  
JEWISH FERTILITY IN  
NINETEENTH-CENTURY VENICE<sup>1</sup>

1. INTRODUCTION

Jewish fertility has been a favorite subject of studies regarding the religious determinants of demographic behavior in the past, and continues to be so today. A long-standing tradition has contrasted the fertility of Western- and Central-European Jews with that of the majority populations among whom they lived, showing that the Jews practiced fertility control significantly earlier than the members of other social groupings or religious affiliations. To some extent, my study departs from this approach. Its main concern is not – or not primarily – about fertility differentials between Jewish and non-Jewish populations, but rather about intra-Jewish differentials. Unfortunately, such a viewpoint is usually lacking in historical studies of Jewish fertility. I will show that intra-Jewish differences could be much larger than inter-religious ones, and argue that taking them into account provides a fundamental clue to disentangling the distinctive position of European Jews in the history of fertility transition.

As a case study I will focus on the Jewish community of Venice, analyzed in the twenty years spanning from 1850 to 1869. Such a time period is constrained by the availability of the city population register, which provides the basic information used for this study. Fortunately, however, it also coincides with a period which fits quite well with the approach I intend to follow. As elsewhere in Europe, in the nineteenth century the Venetian Jews experienced a process of dramatic transformation, which eventually led – after three centuries of harshly imposed segregation – to almost full integration with the Catholic majority. Around the middle of the century, however, such a process was still underway: while some Jews were already assimilated to the non-Jewish majority, many others still clung to their traditional culture, values, and habits.

Comparing the fertility of “assimilated” and “non-assimilated” Jews, I will argue that such a process, besides other relevant socioeconomic and cultural implications for the Venetian Jews, had also a significant impact on their reproductive behavior.

This chapter is organized as follows. First I summarize the prevailing hypotheses about the Jewish anticipation of fertility control (section 2). Then I outline the aim and object of this study (section 3). Section 4 describes the source material, the data and the variables used. Section 5 carries out descriptive analyses of marital fertility in the population under study. In section 6 I turn to an event-history approach to fertility differentials, using proportional hazards semi-parametric regression models. Finally, I interpret the results obtained in the light of the transformation of Venetian Jewry in the nineteenth century (section 7) and set them in a wider perspective (section 8).

## 2. WHY (AND WHEN) THE JEWS PRACTICED FERTILITY CONTROL

From the late-nineteenth century, scholars highlighted that US and Western-European Jews displayed remarkably lower birth rates and smaller families than the non-Jewish populations among whom they lived (Billings 1889; Livi 1920; Bachi 1931). Several further studies, covering other areas and extending to the pre-modern period (see, for example, Goldscheider 1967; Knodel 1974; Ritterband 1981a; Livi Bacci 1986), widely confirmed such a feature of Jewish demography. The sole important exception was that of nineteenth-century France, where the Jews did not appear to play any leading role in the overall process of fertility reduction (Hyman 1981).

Although there is widespread agreement that the Jews practiced fertility control before the rest of the European population, the opinions on why they did so are not as unanimous. Following Goldscheider’s classic analysis (1971), I will gather the interpretations of Jewish exceptionality under three main headings: the “particularized theology hypothesis”, the “characteristics hypothesis”, and the “minority group status hypothesis.”

The “particularized theology” approach holds that particular church doctrines or religious ideologies have a direct impact on birth control, contraceptive usage, and norms of family size (Goldscheider 1971: 272). Are there rules and values in Judaism which make the adoption of fertility limitations more likely than in other religions? Opinions on this issue are controversial. On the one hand, Judaism appears as favorable to high fertility as most other religious ideologies. Marriage is a primary Jewish duty and procreation a fundamental biblical command. The family has a basic role in all aspects of Jewish life, and children are regarded as

a divine trust. Childlessness is considered a reason for deep grief, and fecundity the greatest of blessings. In order to pay its debt, each Jewish couple should have at least a son and a daughter both able to procreate, assuring the replacement of generations. Besides reproduction, there is no moral stigma on sexuality and a proper frequency of sexual intercourse is recommended as a marital duty (Feldman 1968; Kaufman 1992; Bok 1981).

On the other hand, there are religious rules in Judaism whose observance can have a negative effect on fecundability. Family purity regulations affect the fertility of women whose cycles differ from normal length, implying a waste of 50 to 60 per cent of all cycles. However, such an effect is likely to be compensated by the concentration of sexual intercourse in fecund days by women with regular cycles (Bachi 1976: 31; Della Pergola 1983: 208-214). Another factor concerns breastfeeding, which is strongly recommended until the second year of life (Bok 1981: 109), and was widely practiced by Jewish mothers in the past (Woodbury 1926: 75-120; Marks 1994: 67-70; Schellekens and Van Poppel in this volume), contributing to reduce infant mortality and make birth intervals longer. Furthermore, though contraception itself is forbidden, this prohibition concerns men but not women, who – under certain conditions and in proper ways – can try to avoid pregnancies which might be dangerous for their health. In his detailed analysis of the fertility consequences of Jewish religious norms, Bok (1981: 77) concludes prudentially that some norms could indeed have encouraged family limitation, but that the social conditions and the political constraints which characterized Jewish life were more important to that purpose. Empirical evidence is not conclusive in this regard either. A positive correlation between religious commitment and high fertility is confirmed by Hyman's (1981: 88) finding that among nineteenth-century French Jews the religious traditionalists, such as rabbis and cantors, had significantly larger families than their fellow coreligionists. Studies on US Jews in the mid-twentieth century provided contrasting results as far as religiosity is concerned (Goldscheider 1967: 205-206).

To most scholars, the “characteristics hypothesis” seems to offer a more convincing framework to explain the lower fertility of European Jews. According to the “characteristics hypothesis”, the fertility differentials of religious subgroups merely reflect their prevailing socioeconomic features (Goldscheider 1971: 272-273). After controlling for socioeconomic differences, religious differentials should consequently disappear (Anderson 1986). Ritterband (1981b: 8-12) included occupation, education, income, urban dwelling, residential mobility, and lower infant mortality among the determinants of lower Jewish fertility. Indeed, Western- and Central-European Jews retained overall better socioeconomic status, higher education, and larger income than their



Gentile neighbors. They were also more urbanized, and had notably lower infant mortality rates. In his well-known study on social-groups forerunners of fertility control in Europe, Livi Bacci (1986) followed a similar line, associating the Jews with the aristocratic elites and urban populations in general. For all of these groups he suggested that lower mortality, better social conditions, and urban dwelling accounted for lower fertility. However, as Ritterband (1981b: 11-12) acknowledged, the social characteristics approach is inconsistent with a significant body of empirical data, while "it is not at all clear that reduced family size is a socially determined phenomenon". Similarly, Goldscheider (1967) noticed strong inconsistencies in the relationship between social status and fertility among US Jews before and after World War II.

In contrast with the two approaches mentioned above, considered "superficial" and "inadequate", Goldscheider (1971: 270-298) stressed the need to take into account "the total content of social organization", of which the particularized theology is just a part. The social status of the communities under study in particular should be carefully considered. Goldscheider argued that the minority group status plays a relevant role in shaping the fertility of religious groups: since high fertility represents an obstacle to full integration into the majority, a tendency to assimilation should be associated with lower fertility, while persistent separation from the majority should result in higher fertility to ensure group preservation. Group identification and segregation also imply a greater commitment to religious ideology and a stronger social control of the respect of religious norms. Further elaborating along this line, McQuillan (2004) stressed that, in order to be effective, religious norms need to be enforced by some coercive power and supported by a strong sense of attachment to the community.

The "minority group status hypothesis" has given rise to a lively debate among social demographers and inspired several analyses of the reproductive behavior of ethnic or religious minorities (Sly 1970; Kennedy 1973; Roberts and Lee 1974; Ritchey 1975; Johnson 1979; Johnson and Nishida 1980; St. John 1982; Johnson and Burton 1989; Johnson 1993; Knodel, Gray, Sriwatcharin, and Peracca 1999). Goldscheider himself used this approach to explain fertility differentials among US Jews in the twentieth century (Goldscheider 1971; Goldscheider and Uhlenberg 1969), but I am not aware of empirical validations of this theory with reference to Jewish populations in earlier times. To some extent, Ritterband (1981b: 6-8) gets close to such a viewpoint, associating the growing secularization and assimilation of the European Jews in the nineteenth century with the abandonment of traditional religious prescriptions and the adoption of new values and ideals which eventually led to a preference for smaller families. This sounds, however, more like an argument against the particularized theology approach than one supporting the minority group status hypothesis. Failing to

relate fertility behavior directly to the acculturation process, Ritterband himself admitted that the reason why assimilated Jews had *lower* fertility than the majority – rather than the *same* fertility – remains unexplained. With reference to the position of German Jews, Knodel (1974: 140) went in an opposite direction, arguing that it was the structural isolation of the Jews – rather than their acculturation – which made the diffusion of new ideas about family size and family limitations spread faster and independently from the rest of German society.

It should also be noticed that the three hypotheses mentioned above entail different viewpoints as far as the timing of fertility decline is concerned. The “particularized theology” and the “characteristics” approaches are less prescriptive in this respect, since they basically outline the conditions for new ideas and behaviors to spread in specific subgroups rather than concern the mechanisms actually triggering the process of change. Since such a process is ultimately exogenous, what matters is “how much earlier” – rather than “when” – it started. On the contrary, the “minority group status hypothesis” expects the lower fertility of specific Jewish subgroups to be closely associated with the process of Jewish assimilation, whose pace and paths varied greatly throughout Europe and America.

Unfortunately, the data available do not allow us to clarify the timing of Jewish fertility decline as precisely as we would desire. Certainly it did not start and develop simultaneously throughout Europe and the rest of the world. Della Pergola (1983: 231) noticed that it took at least two centuries for the fertility transition to involve all Jewish communities. The Italian Jews seem to have been the first to reduce their birth rates significantly, starting as early as the end of the seventeenth century. It is not clear, however, whether this depended on nuptiality restrictions, or on some form of fertility control, or on both. Some authors (Toaff 1990: 288-289; Della Pergola 1997: 919; Favero and Trivellato 2004: 38) argued that the Italian Jews effectively practiced marital fertility control from the beginning of the eighteenth century if not earlier. Other scholars stressed the constraints imposed on marriage by the ecological restrictions of ghettos, and located the start of generalized fertility control around the end of the eighteenth and the beginning of the nineteenth century (Livi 1920: 76; Bachi and Della Pergola 1984: 178-179; Livi Bacci 1986: 190-192). However, in the communities of Rome, the largest and the poorest of Italian Jewry (Bachi and Della Pergola 1984), and Pitigliano, a small town in the Tuscan countryside (Livi Bacci 1978), fertility rates remained remarkably high until 1870 at least. Elsewhere in Europe the process of fertility reduction took place even later. Goldstein (1981) showed that the Jews of the German village of Nonnenweier maintained higher levels of fertility than non-Jews until 1880. Incidentally, she noticed that the subsequent

drastic drop coincided with the overall process of emancipation of German Jews. In the study published in this volume, Schellekens and Van Poppel show that in the Hague Jewish marital fertility was above the average until 1880, and only slightly below, though still higher than the Protestants, afterwards. As for the American Jews, those who immigrated in the late-eighteenth and early-nineteenth centuries had larger families and higher marital fertility than the non-Jewish population (Cohen 1981).

### 3. AIM AND OBJECT OF THIS STUDY

The aim of this study is to test empirically whether there were differences in the fertility of Jews and Catholics in mid-nineteenth-century Venice, and whether such differences are better explained by the “particularized theology hypothesis,” the “characteristics hypothesis,” or the “minority group status hypothesis.” The analysis concerns a non-random sample of the Venetian population, including the entire Jewish community on the one hand, and the inhabitants of four Venetian parishes on the other hand.

The Jewish community of Venice was one of the most ancient and relatively prosperous of the Italian Diaspora. As is well known, the first ghetto in Jewish history was established in Venice in 1516, the name itself coming from the German pronunciation of the Italian word “getto” (jet, cast), as the place was called after a foundry previously located in the area destined to Jewish seclusion. The community reached a peak of about 2,500 members around 1630, and progressively declined in the eighteenth century, shrinking to 1,500 in 1790 (Favero and Trivellato 2004). After the end of the aristocratic regime in 1797 and the consequent Jewish emancipation, the community experienced a sustained growth, which contrasted remarkably with the dramatic fall of the Venetian population. According to the city census, 2,415 Jews lived in Venice in 1869. The overall city population was under 126,000 inhabitants; before 1797 there had been around 140,000 inhabitants and this number collapsed precipitously after the end of the aristocratic regime and the loss of independence, reaching a low of 93,000 in 1838. The population trend mirrored the general conditions of the Venetian economy and society: indeed, the first half of the nineteenth century was the direst period of the city’s history (Derosas 2002). In 1865 Venice appeared as “a gloomy and dejected city” to the eyes of the American writer William D. Howells ([1866] 2001), who spent four years there as US consul.

Shortly after the end of the segregation, many Jews abandoned the Ghetto moving to more comfortable areas. Map 1 displays the distribution of Jewish dwellings in 1869, according to the address reported in the census records.

*Map 1. Distribution of Jewish dwellings in Venice, 1869.*



Source: 1869 census (my elaboration).

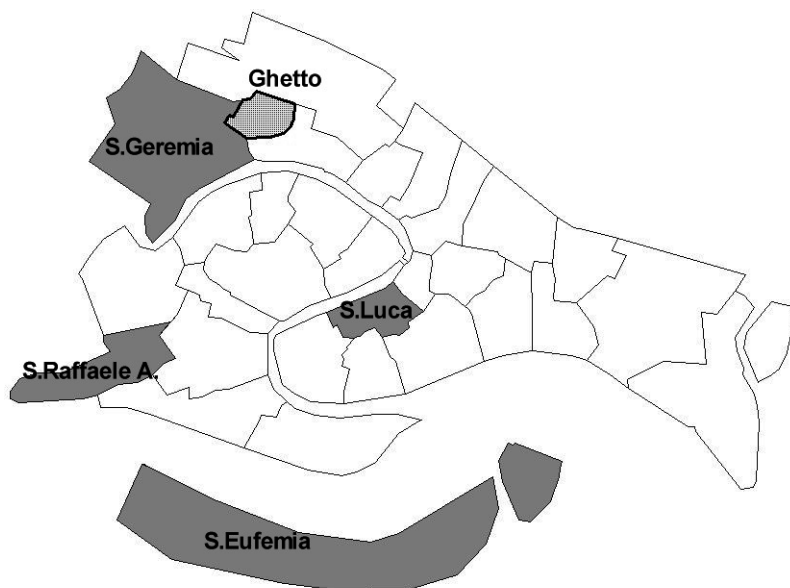
Clearly, the Ghetto area, in the upper part of the map, still had the highest concentration of Jews, with about one third of the community dwelling there. Some other families had left the Ghetto, but only to move to its immediate outskirts, no more than a few blocks away. Roughly another third lived in the parishes of the city center, in the St. Mark's and Rialto areas. The others scattered around the main streets heading from the Ghetto to the center. In the rest of the city the Jews were completely absent. Indeed their residential choices were quite selective; however, there does not seem to be any tendency to concentrate in "Jewish" blocks of neighboring dwellings, as was suggested by previous studies on this issue (Calabi 2001; Levis Sullam 2001). It is also interesting to notice that most of these choices were of a rather definitive nature. The population register reports some 1,400 changes of address of Jewish families from 1850 to 1869, only seven per cent of which involved a return to the Ghetto, while nine per cent went in the opposite direction; 58 per cent concerned moves outside the Ghetto and the remaining 26 per cent moves inside the Ghetto.

To a large extent, the distribution of Jewish dwellings followed a social gradient. The richest families were the first to abandon the Ghetto, moving to palaces located in the central parishes or along the Grand Canal, which they bought from the impoverished Venetian aristocracy as soon as they were allowed to have real estate of their own (Derosas 1987). On the other hand, with only a few exceptions, only the poorest members of the community remained "in the high dirty houses and low dirty lanes" of the Ghetto, to use Howells' ([1866]

2001) words. Elsewhere social composition was rather mixed, with a prevalence of members of the petty bourgeoisie and the middle class. The Venetian Jews used to distinguish themselves between “upper Jews” (*ebrei de su*), i.e. the very rich, and “lower Jews” (*ebrei de zo*), the poor. Such a sharp distinction was deeply rooted in the collective conscience and is still alive nowadays, although it no longer really makes much sense. Even in the mid-nineteenth century, however, such a picture of the community’s social structure was quite inaccurate. Between the two extremes of the bankers and great landowners on the one hand, and the day-laborers and poor supported by the community’s welfare institutions on the other hand, the whole range of the social scale was represented, including factory workers, artisans, shopkeepers, employees, and professionals. Indeed, the largest occupational groups listed in the 1869 census were tradesmen and retailers, brokers, peddlers, and workers in some glass factories located nearby the Ghetto. Most Jewish women were housewives or had no occupation. Literacy was exceptionally high: 82 per cent of the males and 77 per cent of the females could read or write. The percentages for the whole city were 58 and 44 respectively.

The population sample also includes the inhabitants of the four parishes of San Luca, San Geremia, San Raffaele Arcangelo, and Santa Eufemia, whose location is displayed in Map 2.

*Map 2. The study areas: Parish and Ghetto boundaries.*



In 1869 the four parishes had 15,825 inhabitants (Jews excluded). With the 2,415 Jews, the population under study covers about 15 per cent of the total population, and includes all social ladders. San Luca was one of the richest parishes of the city, inhabited by members of the elites, civil servants, employees, artists, artisans, and servants, especially female. San Geremia included a part of the Ghetto in its territory and was rather a working-class parish. Men were mostly employed in glass factories, at the railway station, or as butchers in the communal slaughterhouse; women worked in glass factories, as milliners or servants. Sant'Angelo Raffaele was the poorest parish of the city, inhabited by fishermen, boatmen, porters, and day laborers. Women worked as bead-stringers, seamstresses, hat-makers, or in a large tobacco-factory located nearby. Only 21 per cent of the males and 17 per cent of the females could read or write, the lowest percentages in the city. Finally, Santa Eufemia, on the island of Giudecca, was a very poor parish too, though slightly better off than San Raffaele Arcangelo; its inhabitants were porters, hemp and leather workers, and boatmen. Forty per cent of the female population was employed, mostly as hemp hacklers, bead-stringers, hat- and glove-makers, and servants.

Table 1 displays the socioeconomic status of the four parishes under study and the Jewish community, as it results from the individual records of the 1869 census.

Occupations have been grouped following different criteria. As far as males are concerned, the grouping reflects both the average income and its regularity. The lowest level includes unskilled workers apparently without fixed employment, such as day laborers, fishermen, boatmen, and porters. Factory workers are supposed to be semi-skilled and to enjoy their salary on a more regular basis: they include workers in the tobacco factory, in glass factories, in hemp and leather factories, in the railway or in the communal slaughterhouse. The third group includes artisans, retailers, peddlers of different kinds, low-rank employees. The "middle class" group ranges from the members of the lower bourgeoisie, clerks, teachers, to officers, civil servants, landowners, bankers, nobles.

As for female occupations, a slightly different criterion has been followed, associating probable income levels with working conditions, in order to distinguish whether work was carried out at home or outside. The rationale for such a subdivision is that home activities were probably less conflicting with childbearing, and should therefore have a different impact on fertility. Unfortunately, we know very little about the economic organization of the time, so that it is usually hard to distinguish between independent craftsmanship, piece work at home, or factory work. In any case, factory workers include mostly women employed in the tobacco factory, in glass factories, or in hemp factories.

*Table 1. The study areas in 1869: SES and literacy by religion, parish and sex.*

	S.Angelo Raffaele	S.Eufe- mia*	S.Gere- mia	S.Luca	Ghetto Jews	Other Jews	Catholics	Jews
<b>Males</b>								
Day laborers	33.9	27.9	18.9	6.9	5.2	0.9	20.4	2.5
Factory workers	23.9	31.4	33.9	21.8	21.3	3.5	28.1	10.0
Artisans, Shopkeepers	9.2	5.4	15.1	36.4	31.8	34.8	18.1	33.7
Middle class, Elite	1.2	0.7	1.9	11.0	2.9	24.1	3.9	16.4
Unknown	31.8	34.6	30.3	23.9	38.8	36.7	29.4	37.5
N	1715	535	2801	1683	446	771	6734	1217
<b>Females</b>								
Factory workers	22.2	17.9	5.6	0.9	3.8	0.1	9.4	1.5
Piecemeal workers	13.0	14.1	9.7	12.6	9.5	5.2	11.7	6.8
Servants	3.9	5.9	6.5	17.4	2.0	1.1	8.8	1.4
Retailers	1.9	2.8	2.2	3.9	2.7	2.7	2.7	2.7
Middle class, Elite	1.7	0.3	2.1	9.4	2.9	16.2	3.9	11.1
Housewives, Unknown	57.2	58.9	73.9	55.8	79.2	74.7	63.5	76.4
N	1812	574	2857	2014	451	736	7257	1187
<b>% Literate</b>								
Males	21.7	37.2	47.6	77.5	68.6	88.6	47.7	81.3
Females	14.6	22.6	25.1	61.5	63.0	83.4	32.4	75.7

\* Part of the census records regarding Santa Eufemia are missing.

Source: my elaboration from the 1869 city census.

Piecemeal work concerns mostly bead-stringing, which was at the time the main female occupation. I include in this group also jobs like sewing, embroidering, hat- and glove-making. Service is a self-standing group, and includes also washing, cooking, ironing, and so on. Retailers include a wide variety of street sellers, who delivered all kind of goods, from fresh water to bread, milk, meat, vegetables, as well as artisans. In the same way as for males, the “middle class” group is a rather heterogeneous mix of professions, like teachers, artists, shop managers, and social-status denominations, such as well-to-do, nobles, landowners. Finally, the group of housewives also includes the large number of cases where no occupation is reported. These criteria are maintained throughout the paper.

As is evident from table 1, there were rather strong socioeconomic differences between Catholics and Jews. Among the latter, the members of the petty bourgeoisie and especially of the middle class and the elite were much more numerous, whereas day laborers and factory workers were the majority

among the Catholics. Furthermore, female occupation was more widespread among the Catholics than among the Jews. Very few Jewish women worked in factories, and even fewer as servants. Differences in literacy were also impressive, the percentage of Jews able to write being twice that of their Catholic counterparts. However, there were even more dramatic differences inside each religious subgroup: the socioeconomic gap separating the rich parish of San Luca from the wretched areas of Sant'Angelo Raffaele or Santa Eufemia was as large as that dividing the Jews of the city center from their coreligionists still dwelling in the Ghetto. At the end, this makes up a rather balanced composition of both the Catholic and the Jewish samples. San Luca and San Geremia were inhabited by Catholics and Jews, sharing roughly the same socioeconomic features. In Sant'Angelo Raffaele and Santa Eufemia there were no Jews, as there were no Catholics in the Ghetto. Their inhabitants were all very poor. The rest of the Jews living outside the Ghetto were mostly members of the petty bourgeoisie and the lower middle class. Even though there is no perfect balance between Jews and Catholics, it will be possible to carry out a comparison including all social levels for both the religious groups.

#### 4. SOURCE MATERIALS, DATA AND VARIABLES

The data used for this analysis are mostly drawn from the local population register, established in 1850 and kept updated until 1869. Overall, the dataset includes about 31,200 individuals, whose life course has been observed for spells of different length from 1850 to 1869. The total person-years are about 316,000, with 10,160 births and 7,850 deaths observed.

The population register is actually based upon unbound household forms, reporting the address and the composition of each household as well as their variations along time. For each member of the household the following details are reported: name and surname of the individual and of his or her parents; sex; marital status; religion; place and date of birth (or age at registration); date of immigration; profession; date of entry; date, cause of exit, new address, and name of the spouse in case of exit for marriage. Any change was to be reported within three days from its occurrence, and defaults were heavily fined. Nevertheless, some information may be missing or incorrect. Whenever possible, the population register data have been integrated and corrected using information provided by other source materials, namely the parish registers of baptisms, burials, and marriages; the similar registers kept by the Jewish community; the city census of 1869. A careful cross-check carried out between these different source materials through systematic nominal record linkage guarantees the accuracy and the reliability of the data used.



In particular, the marriage and birth registers have been used to find the date of marriage of couples who married before they were recorded in the population register. The Catholic marriage registers – unfortunately not the Jewish ones – also report the signature of the spouses, when they are able to sign, or alternatively a cross when they are not. The 1869 census records include information about the capacity to read and write of each individual listed. Though a signature is not necessarily proof of literacy, I considered it as such, provided the census did not state the contrary.

Sometimes the population register omitted the registration of children who died shortly after birth. The birth registers allow us to deal satisfactorily with this problem. They also report cases of stillbirths and miscarriages, though it is not clear how systematically they do it. Although this is quite unusual in fertility studies, I decided to include them in my analysis for two reasons: because this makes the analysis of inter-birth spacing more precise, and because otherwise their omission might have biased the comparison between Jews and Catholics. Indeed, there are reasons to suspect that they adopted different methods of registration of stillbirths as well as neonatal deaths. On the one hand, as is well known, Catholics tended to have their children baptized even though they were actually stillbirths or even miscarriages, in the hope of saving their souls. On the other hand, it was recently argued (Snel and Van Straten 2004) that some Jewish registers could have disguised as stillbirths or miscarriages cases of infant deaths occurring shortly after birth. Indeed, in the Venetian case the miscarriage/live-births ratio of the Jews was 89 per cent higher than that of the Catholics, while Jewish fetal mortality was 23 per cent higher (Derosas 2003), suggesting that either Jewish registrations were more complete, as I firmly believe (Derosas 2004), or that some cases of neonatal mortality were actually recorded as miscarriages. In both cases, including stillbirths and miscarriages should somehow balance the (probable) Catholic under-registration of neonatal deaths with the (supposed) Jewish over-registration of miscarriages and stillbirths. As we shall see, this does not affect significantly inter-religious differences and even less, as is obvious, intra-Jewish differences.

Another problematic issue concerns living arrangements and pre-marital fertility. Not only were pre-marital conceptions quite frequent, representing 6.3 per cent of all births and 38 per cent of first births. A certain number – 1.7 per cent of all births and 10.2 per cent of first births – concerned children born before marriage and later legitimized by their parents' marriage. In some cases two or more children were born before marriage took place. Such children were registered in the household form of one of their parents, while the name of the other was normally reported though he/she was not listed among the household members. Only at the time of marriage, frequently shortly before the second or

even the third child's birth, the whole family was gathered in the same household form; however, it might be suspected that some kind of premarital cohabitation was already going on. The question is how to deal with such situations. Conforming to a formal definition of legitimate fertility would require excluding such cases from the analysis. However, this would relegate a relevant component of the reproductive behavior in the shade of "hidden demography", to use Livi Bacci's (1990) expression, ignoring the fact that premarital fertility was often a phase of, or a precondition for, subsequent marital fertility. In order to have a more realistic picture of the conditions affecting fertility behavior, I decided to include the full fertility-history of these couples in the hazard models, including also their premarital phase, even though the beginning of the latter cannot be documented. In fact, since the hazard models concern only the birth intervals following the first birth observed, it is not necessary to know when these couples actually started their cohabitation. The only assumption is that, after the birth of their first child, the parents lived together though they were not yet married. As for illegitimate births, that is the births of children whose parents never married, they are excluded from this study.

## 5. DESCRIPTIVE ANALYSES OF MARITAL FERTILITY

We can now turn to the specific focus of this study. I will first present some descriptive measures of marital fertility, and then turn to hazards models. The main questions I address are:

- Are there differences between Jewish and Catholic marital fertility ("particularized theology hypothesis")?
- Are such differences related to socioeconomic conditions ("characteristics hypothesis")?
- Are there differences between the fertility of the Jews who dwelt in the Ghetto and that of their coreligionists who had abandoned it ("minority group status hypothesis")?
- Do such differences concern starting, spacing, or stopping?

The rationale for using the location of Jewish dwellings as a test of the "minority group status hypothesis" is the assumption that the Jews who had left the Ghetto were eager to integrate into the majority, whereas those who remained in the Ghetto were more traditionalistic and maintained a strong cultural identity and social separation from the surrounding society. These assumptions will be further qualified below.

Table 2 displays the age-specific marital fertility rates (ASMFR), total marital fertility rates (TMFR), and Coale and Trussell's  $M$  and  $m$ , broken down by religion, husbands' SES, and wives' SES. The TMFR is the hypothetical

*Table 2. Age-specific and total marital fertility rates by religion and socioeconomic status.*

	20-24	25-29	30-34	35-39	40-44	45-49	TMFR <sub>20</sub>	TMFR <sub>25</sub>	<i>M</i>	<i>m</i>	Person-years
<b>Religion</b>											
Catholics	0.490	0.400	0.324	0.234	0.108	0.013	7.84 (8.18)	5.39 (5.57)	0.881 (0.771)	0.347 (0.367)	34071
Jews	0.433	0.351	0.271	0.212	0.089	0.015	6.85 (7.53)	4.69 (5.21)	1.209 (1.066)	0.377 (0.282)	5204
<b>Jews</b>											
Ghetto Jews	0.486	0.432	0.348	0.316	0.140	0.023	8.72 (9.49)	6.29 (6.90)	0.652 (0.575)	0.134 (-0.049)	1651
Other Jews	0.414	0.316	0.228	0.157	0.065	0.011	5.96 (6.38)	3.88 (4.22)	1.247 (1.138)	0.581 (0.556)	3552
<b>Husband's socioeconomic status</b>											
Day laborers	0.510	0.424	0.351	0.260	0.123	0.012	8.40 (8.57)	5.85 (5.97)	0.747 (0.697)	0.281 (0.267)	12276
Factory workers	0.501	0.401	0.326	0.255	0.113	0.015	8.06 (8.24)	5.55 (5.70)	0.834 (0.787)	0.307 (0.294)	13528
Artisans, Shopkeepers	0.451	0.370	0.297	0.199	0.088	0.012	7.08 (7.31)	4.83 (4.99)	1.038 (0.987)	0.440 (0.419)	10892
Middle class, Elite	0.408	0.313	0.161	0.099	0.063	0.012	5.27 (5.40)	3.24 (3.31)	1.101 (1.058)	0.708 (0.684)	2220
<b>Wife's socioeconomic status</b>											
Factory workers	0.540	0.455	0.367	0.264	0.127	0.009	8.81 (9.25)	6.11 (6.36)	0.625 (0.541)	0.313 (0.330)	5389
Piecemeal workers	0.539	0.434	0.369	0.291	0.163	0.022	9.08 (9.49)	6.39 (6.65)	0.520 (0.443)	0.128 (0.143)	10193
Servants	0.456	0.396	0.316	0.213	0.100	0.009	7.45 (7.96)	5.17 (5.48)	0.980 (0.814)	0.373 (0.389)	2292
Retailers	0.538	0.439	0.326	0.224	0.098	0.010	8.17 (9.07)	5.48 (5.90)	0.735 (0.598)	0.489 (0.540)	1242
Middle class, Elite	0.424	0.302	0.194	0.136	0.052	0.005	5.56 (5.87)	3.44 (3.67)	1.176 (1.085)	0.744 (0.760)	1601
Housewives, Unknown	0.422	0.344	0.275	0.198	0.080	0.011	6.65 (6.97)	4.54 (4.72)	1.199 (1.083)	0.432 (0.431)	18556

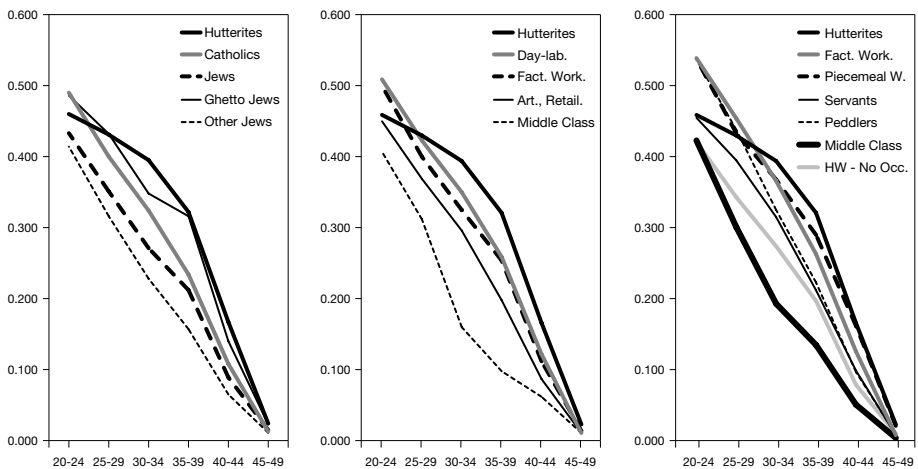
Values in brackets are computed including stillbirths and miscarriages. *M* and *m* are computed with the method proposed by Coale and Trussell (1978) for the age-groups 20-24 to 40-44.

Source: Population register.

number of children which a woman married at the index age (here 20 and 25) can expect to have with a given pattern of ASMFR.  $M$  and  $m$  are two parameters developed by Coale and Trussell to measure the degree to which a population follows the “natural” (i.e. parity-independent) fertility pattern, empirically identified by the Hutterite fertility:  $M$  is a scale factor while  $m$  measures the degree to which parity-dependent fertility control is practiced. The first concerns the level of the curve of ASMFR, the second the shape of the curve itself. TMFR,  $M$  and  $m$  are both computed considering only live births and including also stillbirths and miscarriages.

The main results can be summarized in a few remarks. All subgroups fall short of the natural fertility patterns, showing that some kind of fertility control was carried out. It is only at the age-group 20-24 that some groups display higher rates than the natural fertility pattern, due to the frequency of premarital conceptions mentioned above. The degree of fertility control varies, however, in a wide range. Interestingly enough, religion is only a minor factor of variation. Indeed, Jewish fertility is only slightly lower than that of Catholics. Yet such a comparison is clearly misleading, averaging two opposite extremes in the Jewish group: on the one hand, the fertility of the Ghetto Jews is higher than that of the Catholics ( $TMFR_{25} = 6.29$ ); on the other hand, the rates of the Jews dwelling outside the Ghetto are much lower ( $TMFR_{25} = 3.88$ ). The parameter  $m$  is lowest among the Jews of the Ghetto (0.134), whose ASFRs closely follow the natural fertility pattern, but much higher among the other Jews (0.581) than among the

Figure 1. Age-specific marital fertility rates by religion, husband's socioeconomic status and wife's socioeconomic status.



Source: Population register.

Catholics (0.347). If stillbirths are included, for the Ghetto Jews  $m$  falls just below 0, indicating that marital fertility is higher than natural fertility as age advances.

To some extent, however, these religious differences could simply reflect a social gradient in reproductive behavior. Indeed, there were also remarkable differences in fertility according to SES. As far as the husbands' condition is concerned, all measures and parameters – ASMR, TMFR,  $M$ ,  $m$  – closely follow the social scale, ranging from the highest levels of the day laborers (TMFR<sub>20</sub> = 8.40) to the lowest of the middle class (TMFR<sub>20</sub> = 5.27). In the case of wives, the correspondence is less straightforward but is coherent with what one would expect: those women whose occupations were probably less disturbed by a childbirth, such as the sewers or the bead stringers, had the highest birth rates, while those who might lose their job as a consequence of a pregnancy, like the servants, had much lower rates. However the minimum was again attained by the members of the middle class.

I turn now to a different perspective, partitioning reproductive behavior into its components of starting, spacing and stopping. Starting is measured through the average age at marriage and the mean length of the first-birth interval; spacing through the mean interval separating the succeeding births; stopping through the mean age at the last birth. McDonald (1984) combined these measures in a formula giving the number of children ever born (CEB) in couples with completed marital fertility as a combination of starting, spacing and stopping. The equation is the following:

$$CEB = s \cdot \left( 1 + \frac{l - m - f}{i} \right)$$

where

$s$  = the proportion of the group who have at least one child;

$l$  = the mean age at last birth of the wife;

$m$  = the mean age at marriage among women who ever have a birth;

$f$  = the mean length of the interval between marriage and first birth;

$i$  = the mean length of inter-birth intervals (McDonald 1984: 25).

If childless couples are excluded,  $s$  is set to 1. The other parameters of McDonald's equation, broken down as usual by religion and SES, are shown in table 3.

It is interesting to note that the dramatic differences in marital fertility rates shown above almost disappear once the average components of the reproductive

Table 3. *McDonald's parameters of starting, spacing and stopping.*

	m (years)	N	f (months)	N	i (months)	N	l (years)	N	CEB	
Religion										
Catholics	24.90	1245	9.35	1228	25.77 (25.43)	6106	41.52	349	8.38	(8.51)
Jews	23.61	233	13.58	186	26.22 (25.17)	892	40.04	74	8.00	(8.62)
Jews										
Ghetto Jews	24.77	84	11.44	71	25.44 (24.17)	369	40.52	31	7.98	(8.68)
Other Jews	22.96	149	14.90	115	26.77 (25.88)	523	39.70	43	7.95	(8.51)
Husband's socioeconomic status										
Day laborers	24.89	440	7.45	435	25.90 (25.50)	2387	41.08	149	8.21	(8.37)
Factory workers	24.73	538	9.75	536	25.93 (25.49)	2611	41.55	128	8.41	(8.60)
Artisans, Shopkeepers	24.23	391	12.22	385	25.50 (25.05)	1753	41.69	86	8.74	(8.88)
Middle class, Elite	25.10	51	16.22	48	25.91 (25.66)	221	42.77	12	8.56	(8.55)
Wife's socioeconomic status										
Factory workers	24.89	314	8.52	308	25.38 (24.99)	1322	41.28	37	8.41	(8.55)
Piecemeal workers	24.51	439	7.58	437	26.14 (25.58)	2342	42.24	121	8.85	(9.05)
Servants	27.31	92	8.02	90	25.52 (25.16)	368	41.98	18	7.58	(7.71)
Retailers	24.83	28	6.03	28	25.28 (24.44)	211	39.61	16	7.78	(8.01)
Middle class, Elite	24.16	57	17.08	53	27.19 (26.88)	190	41.71	4	8.12	(7.19)
Housewives, Unknown	24.30	503	12.58	497	25.74 (25.44)	2565	41.02	183	8.31	(8.48)

Values in brackets are computed including stillbirths and miscarriages.

Source: Population register.

course are taken into account. Whereas, for instance, the  $TMFR_{25}$  ranges from 3.2 to 6.4, the number of children ever born (CEB) at most ranges from 7.6 to 8.9, though the variability of each component can be larger than that. The largest differences concern the first-birth intervals, clearly reflecting the frequency of premarital conceptions among the members of the working classes, but their impact on total fertility is small. There are also rather large differences in the mother's age at last birth, though the small number of observations for some categories suggests we should take them cautiously. The Jews, especially those living outside the Ghetto, married rather early, around 23. This contrasts sharply with the mean age at marriage for the wives of the middle class, which is about 25 though including several Jewish women in their ranks. Among female occupations all marriages take place at 24 on average, with the relevant exception of servants, who follow the typical pattern of the servant life course, marrying after 27. As for inter-birth intervals, their variations are quite small, all gathering in 25-26 months. The only exception concerns the women of the middle class and the elite, whose average interval reaches 27 months.

Turning to Catholics and Jews, they attain almost the same number of children ever born, although such an outcome derives from different combinations of starting, spacing and stopping. On average, the Jews started earlier by almost one year but also stopped one year and a half earlier, and had slightly longer birth intervals. If stillbirths and miscarriages were included, however, these differences would reduce to nothing. Rather unexpectedly, also intra-Jewish differences appear quite small, with the Ghetto Jews starting and stopping later and having slightly shorter birth intervals.

## 6. EVENT HISTORY MODELS OF FERTILITY

Useful as they are, the two analyses carried out in the previous section do not provide conclusive answers to the four questions proposed above. The only point which seems convincingly achieved concerns the absence of significant differences between Jewish and Catholic fertility. The hypothetical number of children ever born computed using McDonald's model are substantially the same. As for the age-specific and total marital fertility rates, they are slightly lower for the Jews than for the Catholics. However, the Jewish rates are quite misleading, averaging two opposite extremes, one much higher and the other much lower than the overall Catholic levels. This seems enough to reject the "particularized theology hypothesis", but leaves open the question whether the intra-Jewish differences were mostly due to the underlying socioeconomic differences or rather reflected a diverging process of acculturation involving the two Jewish subgroups.

In order to disentangle the competing or concurring effects of socioeconomic status and cultural integration, we need to leave bivariate distributions and turn to a multivariate approach, taking into account at the same time the socioeconomic and religious determinants of fertility, as well as other components which have not been considered thus far, though playing a relevant role in shaping overall reproductive behavior. To this purpose I will use a Cox proportional hazards model, that is a duration model which allows us to obtain estimates of the covariates of interest while leaving the particular form of the duration dependency unspecified (Box-Steffensmeier and Jones 2004).

The Cox regression is used here to model the hazard rate of a conception. A conception is assumed to take place nine months before childbirth or before the date of registration of a stillbirth or a miscarriage, though in this case the interval was probably shorter. The population at risk is restricted to married women or unmarried women who are supposed to be cohabiting with the men they later married, provided that they had at least one childbirth observed. The intervals considered are those following the first birth observed; they start three months

after each childbirth, to allow for the restart of ovulation, and have a maximum length of five years, after which they are censored.

The following variables are included in the analysis: mother's age; marriage duration; composition of surviving children; survival status of the latest child; socioeconomic condition and literacy of both parents; religious affiliation.

- Woman's age influences fertility in two main ways: it affects some proximate determinants of natural fertility, such as fecundity and sterility (Trussell and Wilson 1985), but can also be related to deliberate fertility control. Age is included in the model as five-year age groups.
- Marriage duration, or age at marriage, has been shown to influence fertility of pre-transitional populations, through a variety of mechanisms which include secondary sterility associated with parity, declining coital frequency, age difference among the spouses, and even parity-dependent fertility control (Page 1977; for a discussion see Van Bavel 2003). Marriage duration is represented in the model as ten-year duration groups.
- The previous reproductive history of a couple is likely to influence its further choices and decisions. Crude parity, that is the number of children ever born, mostly influences secondary sterility. Unfortunately such information is unknown for a large number of the women included in the analysis, whose marital life started before 1850. I decided therefore to drop crude parity from the models. On the other hand, the attitudes of a couple towards a prospective new child were more influenced by their surviving children than by their children ever born. Such an attitude was probably related not only to the number of surviving children but also to their sex composition. In the model, net parity is summarized by four categories: no surviving children; one or more sons and no daughters; one or more daughters and no sons; both son(s) and daughter(s).
- The survival of the latest child can also have an impact on a further conception. Breastfeeding tends to delay the return of ovulation, while its premature interruption shortens post-partum amenorrhea, exposing the mother to the risk of a new pregnancy (Preston 1978; Santow 1987). On the other hand, the death of a child can also trigger a replacement effect, pushing the parents to substitute the deceased child with a newborn (Taylor, Newman, and Kelly 1976; Knodel 1982). In order to distinguish between these different effects of infant mortality, the covariate regarding the survival status of the latest born is expressed by three categories: the child died during lactation, assumed here to last 8 months; the child died after lactation, at the age of 8 months or more; the child is alive.

To this set of demographic variables, a second set of socioeconomic and cultural variables is added. They concern socioeconomic condition, literacy, and



religious affiliation of the spouses, defined according to the criteria mentioned above. It should be noted that information about literacy is probably biased by the fact that Jewish marriage registers do not include the signature of the spouses. As a consequence, the Jews are over-represented in the “unknown” category. Religion is represented alternatively considering all Jews together or distinguishing between the Jews of the Ghetto and the others.

I estimated five different models. The first is the basic model, including all covariates but religion. Its purpose is to test whether there were socioeconomic and cultural differences in fertility, or more precisely in the hazard rates of a conception, after controlling for the demographic covariates included in the model. It is also useful for a comparison with the other models, allowing us to test whether adding a new covariate significantly improves the overall fit and whether there are changes in the previous estimates which could be due to the presence of interaction effects. The second model adds religion, simply distinguishing between Catholics and Jews. It is therefore a way of testing both the “particularized theology” and the “characteristics” hypotheses. The third model drops such a dichotomy to introduce intra-Jewish differences, that is distinguishing between Ghetto Jews and the rest of the Jewish community dwelling outside the Ghetto. Its aim is to test the “minority group status hypothesis.” There are finally two further models, one concerning fertility until the age of 35, the other restricted to the later age brackets.

To simplify, I call “early fertility” that concerning the first segment of the reproductive course, and “late fertility” the other. The underlying hypothesis is that early fertility is more revealing of possible deliberate birth spacing, whereas late fertility should be affected by stopping choices, or at least by a mix of stopping and spacing behaviors. Indeed, modeling stopping behavior is a complex issue from a theoretical and technical point of view (see, for instance, the chapters by Kok and Van Bavel, and by McQuillan, in this volume). My assumption is that in most cases stopping is more an *ex-post* acknowledgement than the result of an *ex-ante* decision, and that therefore any sharp distinction between stopping and late-fertility spacing can hardly be established. Focusing on late fertility, however, can be a useful way to highlight different attitudes towards stopping itself.

Table 4 displays the results of the regressions for the five models. The first column shows the proportional distribution of all covariates. This is the same in models 1 to 3 and changes slightly in models 4 and 5: the latter distributions, however, are omitted. The other columns concern the exponentiated coefficients and the related p-values. For each model some overall statistics are also reported, such as the number of events (births) and the woman-years observed, the overall  $\chi^2$  test of the model, the degrees of freedom, and the maximum log-likelihood

Table 4. Cox regression analysis of inter-birth intervals, Venice 1850-1869.

Covariates	Proportion	Model 1		Model 2		Model 3		Model 4		Model 5	
		exp. (b)	p-value	exp. (b)	p-value	exp. (b)	p-value	exp. (b)	p-value	exp. (b)	p-value
<b>Wife's age</b>											
< 25	0.14	1.000		1.000		1.000		1.000			n.i.
25 - 30	0.25	0.847	0.000	0.847	0.000	0.842	0.000	0.845	0.000		n.i.
30 - 35	0.27	0.691	0.000	0.691	0.000	0.684	0.000	0.676	0.000		n.i.
35 - 40	0.21	0.583	0.000	0.583	0.000	0.576	0.000		n.i.	1.000	
40 - 45	0.11	0.310	0.000	0.309	0.000	0.304	0.000		n.i.	0.512	0.000
45 +	0.03	0.083	0.000	0.083	0.000	0.081	0.000		n.i.	0.131	0.000
<b>Marriage duration</b>											
< 10 years	0.57	1.000	ref.	1.000	ref.	1.000	ref.		n.i.	1.000	ref.
10 to 20 years	0.30	0.912	0.007	0.912	0.007	0.914	0.009		n.i.	0.900	0.075
20 + years	0.06	0.658	0.000	0.658	0.000	0.660	0.000		n.i.	0.643	0.000
Unknown	0.07	0.802	0.000	0.802	0.000	0.813	0.000		n.i.	0.831	0.045
<b>Surviving children</b>											
None	0.05	1.000	ref.	1.000	ref.	1.000	ref.	1.000	ref.	1.000	ref.
Only son(s)	0.20	1.065	0.251	1.065	0.250	1.066	0.242	1.057	0.364	1.204	0.181
Only daughter(s)	0.21	1.055	0.327	1.055	0.326	1.057	0.308	1.047	0.447	1.185	0.213
Both	0.54	0.977	0.669	0.977	0.672	0.981	0.728	0.915	0.156	1.242	0.105
<b>Survival status previous child</b>											
Alive	0.79	1.000	ref.	1.000	ref.	1.000	ref.	1.000	ref.	1.000	ref.
Dead < 8 months	0.16	1.645	0.000	1.645	0.000	1.653	0.000	1.659	0.000	1.642	0.000
Dead > 8 months	0.05	1.415	0.000	1.415	0.000	1.417	0.000	1.506	0.000	1.253	0.005
<b>Husband's socioeconomic status</b>											
Day laborer	0.33	1.000	ref.	1.000	ref.	1.000	ref.	1.000	ref.	1.000	ref.
Factory worker	0.38	0.976	0.418	0.976	0.417	0.975	0.387	0.959	0.233	1.021	0.704
Shopkeeper, Artisan	0.25	0.953	0.183	0.954	0.197	0.972	0.436	0.974	0.535	0.983	0.803
Middle class	0.03	0.961	0.607	0.962	0.623	1.030	0.715	0.977	0.803	1.124	0.463
Unknown	0.01	1.023	0.889	1.024	0.883	1.093	0.581	1.107	0.590	0.887	0.699
<b>Wife's socioeconomic status</b>											
Factory worker	0.19	1.000	ref.	1.000	ref.	1.000	ref.	1.000	ref.	1.000	ref.
Piecemeal worker	0.34	1.059	0.103	1.059	0.104	1.058	0.111	1.043	0.306	1.109	0.150
Servant	0.05	1.106	0.095	1.106	0.095	1.101	0.111	1.149	0.048	0.993	0.955
Peddler, Artisan	0.03	1.124	0.125	1.125	0.124	1.115	0.153	1.117	0.219	1.070	0.641
Middle class	0.03	0.842	0.046	0.843	0.048	0.865	0.094	0.886	0.223	0.800	0.227
Housew., Unknown	0.36	1.066	0.094	1.066	0.097	1.065	0.105	1.024	0.599	1.132	0.106
<b>Husband's literacy</b>											
Illiterate	0.36	1.000	ref.	1.000	ref.	1.000	ref.	1.000	ref.	1.000	ref.
Literate	0.41	1.065	0.054	1.065	0.054	1.067	0.048	1.074	0.067	1.045	0.471
Unknown	0.23	0.859	0.000	0.859	0.000	0.856	0.000	0.838	0.000	0.886	0.097
<b>Wife's literacy</b>											
Illiterate	0.43	1.000	ref.	1.000	ref.	1.000	ref.	1.000	ref.	1.000	ref.
Literate	0.23	1.014	0.698	1.015	0.689	1.012	0.747	1.016	0.724	1.014	0.848
Unknown	0.34	1.055	0.124	1.055	0.127	1.059	0.098	1.072	0.096	1.017	0.789
<b>Religion (a)</b>											
Catholic	0.88		n.i.	1.000	ref.		n.i.		n.i.		n.i.
Jew	0.12		n.i.	0.996	0.920		n.i.		n.i.		n.i.
<b>Religion (b)</b>											
Catholic	0.88		n.i.		n.i.	1.000	ref.	1.000	ref.	1.000	ref.
Ghetto Jew	0.05		n.i.		n.i.	1.195	0.002	1.155	0.035	1.316	0.008
Other Jew	0.07		n.i.		n.i.	0.868	0.008	0.864	0.016	0.862	0.208
Events		7067		7067		7067		5099		1968	
Woman-Years		14820		14820		14820		8564		6256	
Overall $\chi^2$ Test of Model		1566.22	0.000	1566.23	0.000	1586.73	0.000	437.39	0.000	521.63	0.000
Degrees of Freedom		26		27		28		22		25	
Max Log-likelihood		-58253.38		-58253.37		-58243.12		-40063.21		-14168.5	
-2* diff(M.L.L.)				0.02	0.888	20.56	0.000				

statistics. Models 2 and 3 also report the difference with the maximum log-likelihood of model 1. The increase in the maximum log-likelihood is used to test the statistical significance of the covariate: the value is multiplied by two and chi-square distributed under the zero hypothesis that the first model is the correct one. In other words, we test whether the covariate added improves significantly the overall fit of the model.

All models show that the demographic factors heavily influence the hazard rates in the expected direction. They also remain remarkably constant, showing that the ways of considering religion do not influence their effect at all. There are only two points worth stressing here. The first is that, to some extent unexpectedly, the composition of the surviving children does not seem to have any effect on further fertility. However, this might depend on the way the factor is categorized, possibly not properly fitting the parental attitudes towards the desired family size and composition. Other solutions, for instance taking into account the number and age of the surviving children, might give different results. The second point is about the survival status of the latest child, whose coefficients change remarkably according to the mother's age considered. More precisely, in all models the death of the child during its first eight months of life raises the risk of a new conception by 64 to 66 per cent, most probably an involuntary consequence of the return of ovulation. If the child dies after weaning there is a significant increase in the risk of a new conception, too. However, such an effect is different in the two segments of the mother's life course: it is quite strong below the age of 35 (+51 per cent), and still important but much smaller (+25 per cent) when the mother is older. If this can be interpreted as a kind of replacement effect, it seems to suggest that the desire to replace the deceased child was much stronger when parents were still young than towards the end of their reproductive course.

Socioeconomic conditions do not seem to play any significant role in shaping hazard rates. This is rather unexpected, since it clearly contrasts with the previous analysis of marital fertility rates. The only partial exception concerns the case of middle-class and elite women, whose coefficients are significantly lower by 16 per cent than the reference category of factory workers. However, this coefficient too loses statistical significance once the distinction between Jewish subgroups is introduced into the model. Results concerning literacy are as inconclusive, though they are probably related to the quality of the information available. Not only is the ability to sign quite a poor proxy for literacy, but this information is also missing for a large part of the sample, both male and female. In the women's case, no effect is apparent. As for "literate" husbands, they have a slightly higher coefficient than the illiterates, which is contrary to expectations. Unfortunately, a much stronger effect concerns the "unknown" category, suggesting we should avoid further speculations on this issue.

We can now turn to the main interest of this analysis. Model 2 compares the hazard rates of Catholics and Jews. There is definitely no difference between the two groups. The difference in the maximum log-likelihood also shows that the covariate is not statistically significant. On the other hand, the coefficients estimated in model 1 are not modified once religion is added in model 2, suggesting that there is no interaction between socioeconomic conditions and religion. In fact this is confirmed by a model including interaction terms, which is not shown here. In conclusion, this leads to the rejection of both the “particularized theology” and the “characteristics hypothesis.” Neither religious affiliation in itself, nor socioeconomic conditions, nor any interaction between the two, have a significant effect on fertility, as it is expressed by the hazard rates of a conception.

The situation changes dramatically once we distinguish between the Jews living inside the Ghetto and the Jews dwelling outside. As the maximum log-likelihood shows, the covariate is statistically significant. The coefficients for the two Jewish groups are both significant ( $p$ -value  $< 0.01$ ). The relative risk of a new conception for the Jews of the Ghetto is 19.5 per cent higher than that of the Catholics. On the other hand, the other members of the Jewish community have a lower risk than the Catholics by 13.2 per cent. The relative difference between the two Jewish subgroups is therefore about 38 per cent. It should also be noticed again that there is no significant evidence of any interaction between religion and socioeconomic conditions.

Models 4 and 5 highlight a further interesting aspect, showing that intra-Jewish differences vary with regard to the two phases in the reproductive course labeled here as “early” and “late” fertility. In fact, in the “early fertility” phase, the gap separating the two Jewish groups is slightly smaller than the overall estimates of model 3. On the contrary, at older ages the difference widens dramatically, due to the rise of the Ghetto Jews, whose relative risk scores a 31.6 per cent above the reference category. On the other hand, the Jews outside the Ghetto maintain their relative position unchanged, but the  $p$ -value is no longer significant. This suggests that the lower fertility of the Jews who had abandoned the Ghetto depended mostly on deliberate spacing in the first phase of their marital course; on the other hand, the higher fertility of their coreligionists in the Ghetto depended primarily on higher reproductive intensity at older ages, which probably also led to later stopping, although fertility in the first phase of the life course was also significantly higher than the rest of the population. Either way, these results seem to validate the “minority group status hypothesis”, which associates higher fertility to segregation, and lower fertility to cultural assimilation and social integration. Thus far I have assumed that the residential choices of Venetian Jews reflected their different attitudes about the relationship with the Gentile society. The next section further qualifies this assumption.

## 7. THE VENETIAN JEWS BETWEEN IDENTITY AND ASSIMILATION

The process of emancipation of Western- and Central-European Jewry started in the late eighteenth century and took more than a century to be fully implemented. The paths and timing of emancipation throughout Europe were different, reflecting the particular political, juridical and socioeconomic conditions of the countries where Jewish minorities existed (Birnbaum and Katznelson 1995), but their final outcome was everywhere a full acknowledgement of the civil and political rights for Jews. To emancipation, contemporaries associated terms like naturalization, reform, regeneration, civic betterment, amalgamation, nationalization, stressing that the equality of Jews before the law necessarily went hand-in-hand with their social and cultural assimilation. Though recent studies have stressed that emancipation did not lead inevitably and passively to assimilation (Rozenblit 1983; Sorkin 1987; Frankel and Zipperstein 1992), the early and middle decades of the nineteenth century were indeed a period of unprecedented accommodation and communal disintegration for European Jewry (Katz 1978).

For the Venetian Jews this process started abruptly in 1797, when the arrival of the French troops put an end to the aristocratic regime. The heavy gates giving access to the Ghetto were knocked down and burnt by a jubilant mob led by two Jewish members of the provisional government. The segregation of the Jews was denounced as one of the most detestable crimes of the past government, and the new Municipality proposed to rename the whole quarter “Riunione” (reunion), to stress the new spirit of unity and fraternity between all citizens, regardless of their religious affiliations (Ottolenghi 1930-1931a; Romanelli 1988: 19-25). The Municipality lasted only few months and the project was soon abandoned, but Jewish segregation was never restored. The Austrians, who – apart from the Napoleonic parenthesis (1806-1814) – governed Venice till 1866, maintained the policy of substantial equality and supported Jewish integration introduced by the Tolerance Edict of Joseph II in 1781. All distinctive signs were abolished; the use of Hebrew was allowed only in religious ceremonies; the Jews were encouraged to attend public schools and universities and were subject to military conscription. Most importantly, they could practice all kinds of economic activities and professions. The exceptions were all public offices, notary offices, and pharmacies: these were interdictions that the Jews barely endured and unsuccessfully tried to cancel, fuelling their deep hostility towards the Austrian regime (Berengo 1987). Full emancipation came only when Venice joined the Kingdom of Italy in 1866.

Indeed, the full adhesion to the cause of national *Risorgimento* was a peculiar tract of Jewish emancipation in Italy (Segre 1995; see also a reappraisal in

Bernardini 1996). In Venice, members of the Jewish community were among the most enthusiastic exponents of the short experience of the democratic Municipality in 1797. The revolution of 1848-1849 had the unconditioned support of the Jewish community and of its rabbi Abraham Lattes. Some of the most authoritative exponents of the Cabinet were Jewish, and the richest Jewish families generously supported the Republic (Nunes Vais 1961; Ottolenghi 1930-1931b; Luzzatto Voghera 2002). Daniele Manin himself, the popular president of the Venetian Republic, was the grandchild of a converted Jew (Lepscky Mueller 2005). And several representatives of the Venetian provinces elected to the Parliament of the new Kingdom of Italy were Jewish.

The role played by Venetian Jews in economic and social life was even greater than in the political arena. Their rise into the city elite was astonishingly rapid and extensive: in a few years they became the greatest landowners of the region, using part of the wealth accumulated with banking, insurance and international trade to buy the church properties alienated by the Napoleonic regime as well as the assets of the indebted aristocracy, while keeping their dominance in financial and commercial activities (Derosas 1987). The first president of the Chamber of Commerce was a Jew, probably one of the richest persons of his times.

Although these representatives of the Jewish elite were the most apparent examples of the new position of Jews in Venetian society, one should not disregard the contribution of many members of the middle class, particularly professionals like physicians and lawyers as well as scientists and intellectuals, who took an active part in the most important institutions of the city and in social and public life in general (Luzzatto Voghera 2002). Nor, at a lower social level, should the role of the hundreds who abandoned their traditional jobs of peddlers, especially rag-and-bone-men – the most frequent occupation in the eighteenth-century Ghetto (Luzzatto 1956; Berengo 1989) – to undertake more “modern” or common jobs such as factory workers or shopkeepers, be understated. In all cases, they made a resolute choice towards integration into, or at least intense interaction with, Gentile society.

On the contrary, the Ghetto society gave a strong impression of persistent separateness. Théophile Gautier ([1852]1902), who visited Venice around the mid of the century, gave the following description of a walk through the Ghetto:

Everything had a strange, sullen, and mysterious aspect. Weird and furtive figures glided silently along the walls with a timid air. These figures were not of the Venetian type. The curved noses, eyes like coals in the midst of a greenish pallor, slender jaws, pointed chins, all betokened a different race. The rags which covered them, scanty, pitiable, glazed with dirt, had a special

sordidness and denoted cupidity rather than poverty [...]. The lanes narrowed more and more; the houses towered like Babels of dog kennels placed one above the other [...]. Several of these houses were nine stories high, nine zones of rags, of ordure, and unclean industries. All the maladies and forgotten leprosy of the Orient seemed to be eating away these many walls; the dampness speckled them with black spots like those of gangrene [...]. Not a single line preserved the perpendicular; everything was out of plumb; one story leaned inward and another bulged out; the bleared windows, blind in one eye, or squinting, did not possess a single whole pane. Plasters of paper dressed the wounds of the glass; hideously dirty mattresses were trying to dry in the sun on the ledge of the black and gaping casements [...]. Finally we came out upon a quite extensive Campo, passably paved, in the middle of which yawned the mouth of a stone cistern. At one of the corners rose an edifice of a more human architectural aspect, the door of which was surmounted by an inscription sculptured in Oriental lettering, which we recognized as Hebrew characters. The mystery was explained. This fetid and purulent quarter, this aquatic Court of Miracles was indeed the Ghetto, the Jewry of Venice, which has preserved the characteristic sordidness of the Middle Ages. Probably if one were to penetrate into those cracked and rotten houses streaked with filthy ooze, one would find there, even as in the ancient Jewrys, Rebeccas and Rachels of an orientally radiant beauty, rigid with gold and precious stones as a Hindoo idol, seated upon the most precious Smyrna rugs, in the midst of dishes of gold and of incalculable riches amassed by paternal avarice; for the poverty of the Jew is only on the outside.

Indeed, as Levis Sullam (2001: 226-230) noted, this passage is imbued with that peculiar variant of anti-Semitism defined as *orientalism* (Said 1978): in literary and tourist imagery, the Ghetto represented an exotic surplus, a Jewish Orient in an oriental Venice. And certainly there were other quarters of the city, equally wretched and exotic in their own right to foreigners' eyes, which could have been described in rather similar terms (Derosas 2002). Nevertheless, the specificity of Ghetto conditions could not be understated. Another novelist, William D. Howells ([1866] 2001), at the time American consul in Venice, received an identical impact as Gauthier from a visit to the Ghetto in 1861, though his feelings towards the Jews were definitely more sympathetic than the French writer. "There was not a touch of anything wholesome, or pleasant, or attractive, to relieve the noisomeness of the Ghetto", he complained, and decided to leave the quarter as soon as possible, after a short visit to a Synagogue. Where Gauthier described the "maladies and leprosy" corrupting the walls, Howells associated the unhealthy conditions of the Ghetto with the "grim and dismal

plagues” which in the past, in his opinion, originated “out of those hideous streets, and passed the marble bounds of patrician palaces, and brought to the bedside of the rich and proud the filthy misery of the Ghetto turned to poison.” He found it difficult to understand “why any class of Jews should still remain in the Ghetto, but it is certain...that they do remain there in great numbers”, adding ironically: “it may be that the impurity of the place and the atmosphere is conducive to purity of race.”

Indeed the purity of race, to put it in Howells’ terms, was out of the question, since mixed marriages were practically non extant and conversions relatively rare. But there was no doubt that the preservation of cultural identity could be better safeguarded by residence in the Ghetto: daily life, kids games, school attendance, a shared idiom (Fortis and Zolli 1979), religious ceremonies, traditional festivities, welfare organization, communal institutions, were all organized in a perspective of self-containment and persistent seclusion. They were the singular components of the life of the *hasèr*, from the Hebrew *hatzer*, as the Venetian Jews prefer to call the Ghetto, that is the *courtyard* where Jewish life peacefully unrolled, as in the untroubled interior of a house (Levis Sullam 2001: 239). As a Venetian Jew remembers in his lively memories of Ghetto life (Pardo 1965), even at the beginning of the twentieth century, the Jewish children looked with open hostility at the few Catholic children whose families inhabited in the Ghetto, and never admitted them to their games.

Of course, dwelling outside the Ghetto did not mean necessarily severing all relationships with and involvement in communal life. On the contrary, the government of community institutions and the financial support of its welfare organizations were entirely entrusted to the members of the Jewish elite, who shared little with Ghetto life but were extremely interested in its survival as a basic condition for the preservation of their own identity as secularized Jews. Each side was necessary for the survival of the other: as an essay written by the young socialist and philosopher Alessandro Levi denounced in 1904, there was in the Ghetto a kind of “ecclesiastic proletariat”, a group of poor Jews who made their living attending the religious ceremonies for which a minimum number of adult males was required (*minian*). The article pointed to the obtuse and miserable way of life into which these *minianists* were constrained by the interest of the community (Levis Sullam 2001: 238-239).

Thanks to the persistent vitality of Ghetto life, the “other” Jews could safely undertake the path of increasing integration and acculturation, which in some cases ultimately led to full assimilation and even conversion. Religiosity turned into a private family matter, mostly entrusted to female care, which acculturated Jews did not like to display in their social life. As was to be expected, in the daily clash with the needs of a society patterned according to different rules, the



observance of religious norms was destined to be increasingly overcome: one could not avoid a dinner of the Chamber of Commerce because *kosherut* was not observed, or desert a meeting of the bank board because it was held on Saturday. To such accommodations probably contributed the peculiar attitude towards the reforms carried out by German Judaism. The Venetian Jews, as well as the Italian Jews in general, preferred to remain faithful to tradition, but – similar in this respect to Catholics – underneath their formal respect lay a substantial neglect of religion (Luzzatto Voghera 1998). Interestingly enough, the clergy who denounced the presence of the first Jews among their parishioners, did not complain about their peculiar religiosity, but rather about their open agnosticism and scandalous atheism, and warned about the “corrupting influence” and the “unavoidable infection” brought by these “contagious hosts” (Bertoli and Tramontin 1971).

## 8. CONCLUSIONS

In this study I have assumed the existence of a sharp distinction dividing the Jewish community of Venice around the middle of the nineteenth century. On the one hand, there were the Jews who still lived in the Ghetto; on the other hand, there were those who had abandoned it, moving to other areas of the city. Needless to say, this is a rather rough classification. Some of these families moved just a few blocks away, and could reach the Ghetto in a few minutes’ walk. A few returned to the Ghetto after a temporary residence outside. Even when the residential choice was definitive, the relationship with the community could be kept alive, and the observance of rules and ceremonies respected. Nevertheless, those who moved from their old neighborhood made a dramatic break, the importance of which should not be understated. A few of them may have known that their immense richness represented a shield strong enough to protect them and safeguard their identity, while the doors of the social and political elites were kept wide open for them. But the majority of the Jews probably felt that their acceptance in society and their aspirations to social mobility passed through some kind of attenuation or dissimulation of their cultural and religious peculiarities.

Goldscheider (1971: 297) pointed out three conditions for the insecurities of minority group membership to depress fertility below majority levels: when 1) acculturation occurs in conjunction with the desire for acculturation; 2) equalization of social and economic characteristics occur and social and economic mobility is desired; 3) no pro-natalist ideology is associated with the minority group and the resort to contraception is not discouraged. I have tried to show that the Jews who were quickly integrating into Venetian society met all

these conditions. During their process of acculturation they had to cope with feelings of relative marginality, competition, and social insecurity, and tended to counteract some of their disadvantages by limiting fertility. In Goldscheider's words (1971: 296), they translated "the 'goals' of social mobility for themselves and their children into 'means' that include family size limitation." On the other hand, the part of the Jewish community which refused or did not feel a strong desire for acculturation had higher fertility than the majority. Both sizes of the coin, it could be said, are consistent with the "minority group status hypothesis."

Goldscheider (1971: 295) stressed that "minority group status and fertility must be considered within a dynamic framework of sociocultural change", because "the relationship of minority group status and fertility operates within the particularized, but changing, social situation of minority groups." Unfortunately, most studies of Jewish fertility in the past lack the depth of historical analysis. They tend to understate the sociocultural differentiations inside local Jewries, and to ignore the specific, locally determined historical processes which gave rise to such differentiations. As a consequence, the ability of the Jews to reduce fertility and anticipate birth control became a kind of meta-historical feature, a general rule which can be simply confirmed or rejected in empirical cases without really trying to explain it. One of the major values of the "minority group status hypothesis" is that it restitutes the study of Jewish fertility to the specificity of historical analysis.

#### NOTES

<sup>1</sup> Acknowledgements: This work would not have been possible without the invaluable help of Michela Tombel, who assisted me in the collection and control of data from population and parish registers. Francesco Contò, of the University Institute of Architecture in Venice (IUAV), helped me in the elaboration of the maps included in the text. Maurizio Calligaro, Venice city manager, Sergio Barizza and Monica Donaglio, past and current directors of the communal archive, kindly facilitated my work with the population register. My thanks to Walter and Barbara Kahn for their help and friendship. I dedicate this work to the memory of Marino Berengo, who taught me the love of differences.

PATRICIA THORNTON AND SHERRY OLSON

## THE RELIGIOUS CLAIM ON BABIES IN NINETEENTH-CENTURY MONTREAL<sup>1</sup>

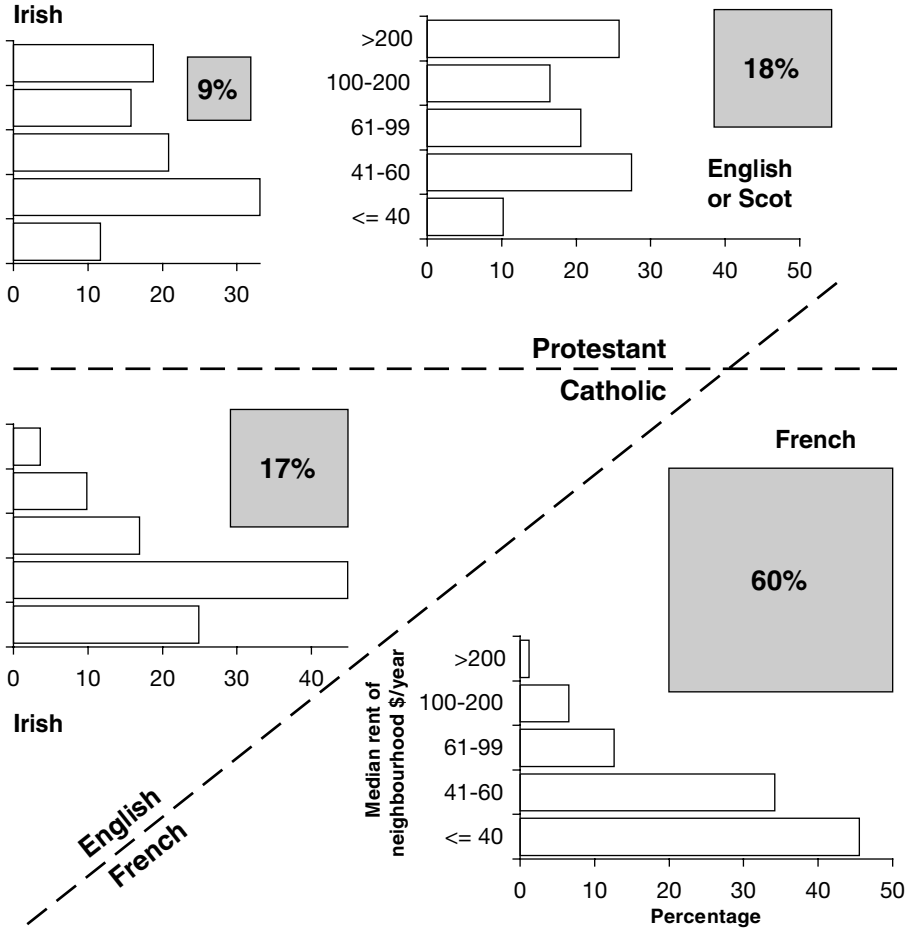
### 1. INTRODUCTION

Studies of fertility in nineteenth and early-twentieth century Canada have consistently reported what McInnis (2000: 388) calls “two fertility cultures”: one characteristic of Quebec, predominantly French-speaking and Catholic, the other in the rest of Canada, largely English-speaking and Protestant. To disentangle the effects of religion, language and culture, Montreal offers a useful laboratory. In 1880 the city presented a composition unusual in North America: a city of 175,000 people partitioned among three self-conscious communities: Anglo-Protestant, Irish Catholic, and French Canadian. As Canada’s manufacturing metropolis, Montreal concentrated head offices of banks, railways and steamboat lines, the country’s great locomotive shops, sugar refineries, and mechanized shoe factories. Society was advancing into print culture and initiating mass schooling as a means of processing its future workers. Figure 1 represents the relative sizes of the several communities. Politics were polarized by Anglo-Protestants and French Catholics, but tensions recurred also between Irish Protestants and Irish Catholics, between Catholics of French and Irish origins, and on occasion between aggressively “Orange” or evangelical Protestants and an older upper-class Protestant “establishment.”

An initial venture into differentials of infant mortality ca. 1860 forced us to examine the role of culture in local demographic behavior and, as a result of scholarly neglect, to pay close attention to the religious allegiances of the Montreal Irish.<sup>2</sup> As we studied successive cohorts of infants and their families, each analysis showed that cultural community played a more powerful role than economic factors and population density. French Catholic infants were a third more likely to die than either Irish Catholic or Anglo-Protestant babies. Catholics of Irish origin differed from those of French origins in other ways as well, and, on occasion, resembled the Protestant population. The questions raised

called for a larger sample, inclusion of a wider array of family formation strategies, and attention to the timing of industrialization. Montreal had, by 1880, achieved a steam power revolution and “mushroom growth”: the city had doubled in size in the previous 20 years, as French Canadians moved in from surrounding villages. Economic assets remained heavily concentrated in the

Figure 1. Cultural composition of Montreal 1880.



The four communities are differentiated by language, religion, and national origin. For each, the square is proportional to its share of the urban population, and the pyramid reflects the distribution of purchasing power within that community. Source: Municipal tax rolls, median annual rent for dwellings aggregated by twinned block faces

hands of the Protestant community: one-quarter of householders holding half the property and collecting half the rents. Higher-than-expected marital fertility of Protestants raised questions about the implications of their economic advantage. These debates, like broader-ranging debates over the fertility decline in Europe, have often been couched in terms of an economic versus a cultural explanation.<sup>3</sup>

All three groups perceived themselves as minorities, hemmed in by the others, and all three had well-developed institutions and articulate political ambitions at municipal, provincial and federal levels. We need therefore to take into account a political dimension: a politics of competition for resources and a politics of culture. The infant mortality studies led us to acknowledge systemic differences among the three communities, to inquire into systemic change, and into the means by which the integrity of these distinctive systems was maintained. The Montreal case is an anomaly in North America, but this is precisely the kind of situation which allows us to probe the dynamics.

The research strategy is opportunistic: we combine a newly available nominal census of 1881 with data from parish registers to model the probabilities of a married woman giving birth in a particular year. For nineteenth-century Canada this is the first attempt to calculate standard fertility measures by matching actual births to their mothers in the census. Most studies of fertility in nineteenth-century North America have had to rely on census calculations of child-woman ratios (or own-children methods). As Danielle Gauvreau points out in this volume, it is virtually impossible to adjust these ratios fully for mortality, so greatly did infant and child mortality vary among economic and cultural groups and among neighbourhoods.<sup>4</sup> All of the factors of interest to us as local determinants of fertility were also determinants of juvenile mortality. Offered the census in digital form, and knowing the high quality of vital records available, we seized the opportunity to observe the actual fertility “performance” of couples. The year 1880 situates us on the cusp of the “fertility transition”, but subsequent to an “industrial revolution” (Lewis 2000). Because the Canadian census reports religious affiliation, birthplace and ethnic origin; and a municipal tax on space provides a sound specification for economic status, we can uncouple these effects.

Using the newly available “100 per cent” data for 1881, we can now confirm that religious difference alone does not “explain” differences in marital fertility in terms of the conventional age-adjusted measures, nor differences in “stopping” behavior. These are the terms in which the fertility transition has generally been discussed. That perspective seems to us too narrow, and we propose to expand the terms in two ways. First, we extend our interpretation of fertility to embrace all the behaviors that affect rates of reproduction of the community (cf. McQuillan 1999b). Second, we consider religious affiliation as

one point of reference among many in the construction of individual and group identities. If we thus expand both terms -fertility and identity- we will discover the pertinence of the religious allegiances and institutions that policed group boundaries. With this line of argument in mind, we begin with a short account of the samples and methods of analysis. We review the local evidence for the impact of distinctive *start-up* behaviors on differential reproductive rates, and from a set of logistic regressions we demonstrate the impact of economic and cultural variables on entering into marriage and on having a baby. We follow this with a discussion of the various ways in which religious differences may have contributed to the persistence of distinct demographic regimes and the stubborn coexistence, in a single city, of distinct understandings of family, distinct expectations of married life, and distinct aspirations of being grown-up.

## 2. SOURCES AND METHODS

Soundings of three birth cohorts (3,000-4,000 infants each) provided reliable infant mortality rates and, from timing of the next birth, circumstantial evidence for fertility differences by ethnicity (Thornton and Olson 1997). But short-term observations could not untangle the effects on reproduction rates. To project the impacts of group behaviors on net reproduction, we would have to reconstitute the life and death experiences of an entire population. We would need a full working model of population dynamics -a miniature Montreal- and we would have to find a parsimonious way to sample. By selecting twelve surnames, we created such a miniature as a running sample for full reconstitution of 1300 families 1840-1919.<sup>5</sup> This yielded 130 to 370 families at any given moment, about one half of one per cent of the urban population. The choice of names was stratified to ensure representation for the three major cultural groups, and they can be weighted to represent the whole (96 per cent of the population).

From the miniature we extracted two panels for event history analysis, each panel consisting of all the people who could be brought under systematic observation in the course of a decade, one set for the 1860s, the other for the 1890s.<sup>6</sup> Exercising tight control over these subsets, we compared the three communities over a generation, extracted life tables and synthetic fertility rates. Cross-examination of various sources, independently collected, made it possible to obtain unbiased and uncensored estimates of the dynamics of the macro system: changes in structure of the three populations, rates of in- and out-migration, reproduction rates, and rates of social mobility.<sup>7</sup> French Canadian infants had a fifty-fifty chance of living to a marriageable age compared to a 75 per cent chance for English-speaking infants.<sup>8</sup> Of couples married at 20, only half would live out their potential fecundity by surviving together to age 50.

Each of these effects would have an impact on reproductive rates.<sup>9</sup> The three cultural communities differed in their demographic behavior; and their differences persisted from one generation to the next. The most powerful difference -with consequences throughout the demographic régime- lay in timing of marriages, essentially the start-up phase of fertility.

Those little panels provided hypotheses for the present analysis, but the small sizes of the samples -a few hundred families at any given moment- prevented simultaneous consideration of the independent effects of religious affiliation, national origin, and economic status. So we went back to the vaults for another sample, to focus entirely on a census enumeration day, 4 April 1881, at which an entire population was recorded. We selected all the mothers and “potential mothers” (women 15-49) reported for Montreal and its suburbs, with the related information on each woman’s age, marital status, employment, religion, birthplace, ethnic origin, and the occupation of her husband or her father. We completed collection of a full-year birth cohort (all births 1 April 1879 - 31 March 1880). Deaths of infants, collected in a previous exercise, were matched to the births, and the 7,517 births were then matched to families recorded in the

*Table 1. Characteristics of households in sample of births.*

<i>Sample size and match rates</i>		French Canadian	Irish Catholic	Anglo Protestant	All
Number of births	N	5333	1079	1105	7517
Matched to the census	N	4139	838	893	5870
Matched to the census	%	77.6	77.7	80.8	78.1
Family matched to the tax roll	N	2780	698	794	4272
Family matched to the tax roll	%	52.2	64.8	71.9	56.9
Address matched to the tax roll or estimated in suburbs	%	84.0	85.6	93.1	85.6
<i>Annual dwelling rent \$/year *</i>					
High	≥100	10.8	12.8	40.9	16.7
Medium	41-99	49.6	64.5	51.1	52.3
Low	≤40	39.6	22.8	7.9	31.0

\* Cross tabulation is based on the 4272 births whose addresses are “known”: matched to tax roll assessment for the same family.

Source: Manuscript Census of Canada, 1881 (100%: revised from NAPP); Municipal water tax roll; Registers of Baptisms, (ANQ).

census. Infants who survived would have been one year old at the census date.<sup>10</sup> We successfully matched 78 per cent, succeeding even in cases where the infant or mother did not survive to the census date (30 per cent of infants, 1 per cent of mothers).<sup>11</sup> There was no significant difference in census match rate among the three communities (Table 1).

Families were matched to the municipal tax roll as well, since its rental valuations provide an excellent indicator for living standard, and, when aggregated for each strip of row houses, an indicator for status and quality of a family's immediate habitat.<sup>12</sup> As shown in Figure 1, that indicator shows off the substantial differences of purchasing power among the several cultural communities. We have the household's own rent reported for well over half the families with a baby, reasonable estimates for one quarter more; and for four out of five women 15-49 in the census.<sup>13</sup> In the absence of population registers such as are available for Stockholm, Tilleur, or Venice, we had to invest considerable labor in matching, and we drew on other sources (cemetery records and city directories) to confirm addresses, identities, deaths and continued presences.

Using the full year of birth records, and assuming the families matched to the census were effectively in residence in the city from the birth to the census date,<sup>14</sup> we developed the classic measures of marital fertility for five-year age sets, and derived synthetic fertility rates (see Table 4 and Figure 2). In calculation of fertility rates, the numerator is a birth event during the 12-month span from 1 April 1879 through 31 March 1880. Here we made two modest adjustments. The first removed stillbirths, and the second inflated numbers of births by the census matching rate. This has little effect on the relative rates or on the shapes of the curves, but ensures that the absolute values can be compared with studies in other cities. More critical were adjustments to overcome problems of age heaping. For estimates of age at first marriage we smoothed the data by using a five-year running mean. For the regression models employing individual data, we adopted "offbeat" age classes centered on the year susceptible to rounding: 23-27 for the marriage models, for the fertility models 18-22 ... 42-47.

In the models of marital fertility, a birth event during the 12-month span is the dependent variable, and we estimated the effects of characteristics of the wife and her household on the probability of a birth: her religious affiliation, birthplace and economic status. We wanted to re-visit our ethnic categories, disentangle religion and country-of-origin, and uncover any biases that might be introduced by their aggregation into three groups.<sup>15</sup> We targeted women 23-47 years of age, where numbers of births per woman are relatively robust. Twins were treated as a single birth event with respect to the mother; and we retained all women matched to census and tax roll (including stillbirths), since the major



independent variables showed no apparent bias in this respect, nor with respect to finding rates. The sources offered no satisfactory clue to the educational status of individual women aged 17 or older.<sup>16</sup>

In a second set of models, being ever-married at the time of the census is treated as the dependent variable, and we estimated effects of cultural and status variables for women 23-27 inclusive.<sup>17</sup> We gave priority to factors we could not control in the earlier, smaller samples: differences of economic status and differences between Quebec-born women and newcomers. As a result, we can now confirm, in a multivariate framework, the independent effect of economic status on both the likelihood of being married and the likelihood of giving birth.

### 3. A BROADER VIEW OF FERTILITY: STARTING, SPACING, AND STOPPING

The all-too-small surname panels had pointed us to the importance of start-up of marital fertility. Overall fertility was declining, falling in the generation between the 1860s and the 1890s by 23 per cent among French Canadians, 26 per cent among Irish Catholics, 36 per cent among Protestants.<sup>18</sup> The decline was primarily a function of falling nuptiality, rather like what Carter, Ransom and Sutch (2004) describe for rural US populations over the course of the nineteenth century. The role of nuptiality in the fertility transition was somewhat neglected until recently, but declining nuptiality seems to have characterized its earliest stages in Australia (Caldwell 1999), the US (Hacker 2003; Haines 2000) and Canada (McInnis 2000; Gee 1979). In northwest Europe, fertility was kept well below its biological maximum by relatively late marriage, and a reduction in marital fertility was, as a result, the only way in which decline in overall fertility could be expressed. In the "New World", however, women were marrying in their early 20s, and there was a great deal of room for maneuver by applying the Old-World strategy of postponing marriage.

The differences in overall fertility between groups in Montreal were also a function of an age-at-marriage gap, essentially the French Canadian head start in marrying young. For Protestant women, the age-specific curves of marital fertility had led us to speculate on initiation of both spacing and stopping behaviors, but the more substantial differentials of natural increase seem to arise from timing of marriages. This suggests that factors surrounding marriage were a prime means of "managing" fertility, a view consistent with observations of Mroz and Weir (2004) for France prior to the Revolution. The panels also revealed that urban French Canadians were most severely affected by a harsh winnowing of infant and child deaths. Despite early marriage and high fertility, they had only 20 per cent more children than required for replacement, and the

Irish Catholic replacement rate was even more fragile. Contrary to popular belief, the Protestant community, in terms of sheer natural increase, was growing faster than the French Canadian community. Since *initiation* of marital fertility had so strong an effect on differential reproduction rates, we would have to model nuptiality as well as marital fertility.

From the new evidence for 1880, we can be more precise, and more confident of the differences for both nuptiality and fertility. For the census population of women 15-49, we estimated singulate age at first marriage, proportions married, and Coale's index of proportion married (Table 2).<sup>19</sup> French Canadian women were marrying much earlier than Irish Catholics or Anglo-Protestants, and the gap (three years between median values) had a large impact on overall fertility. In 1881 the impact of the proportion married was such that it reduced overall French Canadian fertility to about 60 per cent of what it would be if all women were married and experiencing natural fertility (Hutterite 1920s), compared with 47 per cent for Irish Catholics and 54 per cent for Protestants. The split was not along religious lines, since Catholics of French and Irish origins were farthest apart. Between 1881 and 1901, age at first marriage would rise in all three groups, and proportions ever-married would fall, but the gap between French Canadians and the others remained as large.

*Table 2. Census estimates of female nuptiality, Montreal 1881 and 1901.*

	1881			1901		
Number of women 15-29	17268	5239	6394	1545	316	622
<i>Age at first marriage</i>						
Singulate mean age at marriage	24.2	27.0	26.0	25.8	27.3	28.2
Indirect mean	22.9	25.9	25.2	23.7	26.9	26.0
<i>Proportion single at age (%)</i>						
20-24	58.3	76.9	74.2	62.0	89.2	79.1
45-54	12.2	13.0	12.5	8.9	19.4	13.1
<i>I<sub>m</sub> Coale's index of proportion married</i>	.603	.466	.543	.548	.396	.450

Source: Manuscript Census of Canada (100%), 1881. Ages smoothed by five-year running means.

If religion was not a strong determinant, what other factors might influence the marriage timetable? Let us take a narrower window, and use as our criterion the percentage of women who, at ages 23-27, were still single: 40 per cent of French Canadians, 52 per cent of Anglo Protestants, 58 per cent of Irish

Table 3. Percentage of women single at ages 23-27, by cultural community, ethnic origin and religion.

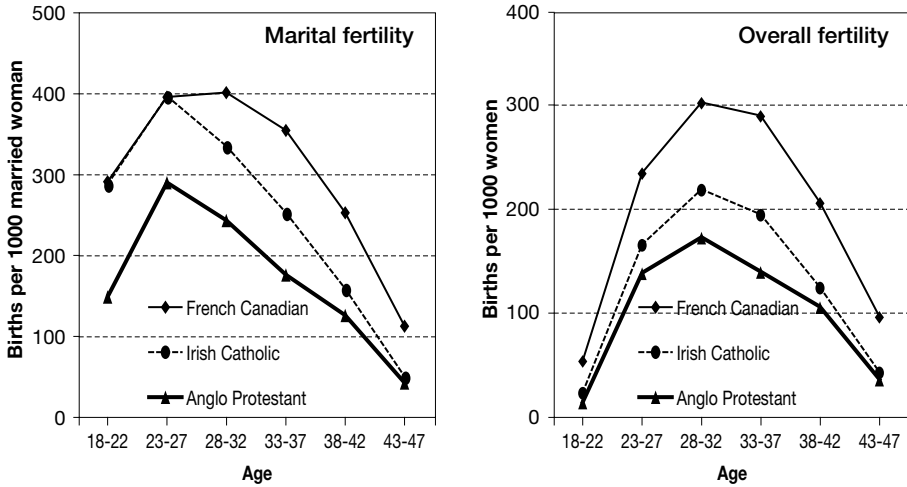
	N	%	N	%	N	%
<i>Cultural community</i>						
French Canadian	5463	40.0				
Irish Catholic	1696	57.8				
Protestant	2224	52.2				
<i>Ethnic origin</i>						
			<i>Protestant</i>		<i>Catholic</i>	
French	5525	39.9	59	39.0	5463	40.0
English	932	43.5	821	44.7	106	36.8
Irish	1882	57.3	503	57.0	1381	57.5
Scottish	855	64.6	716	61.2	140	82.1
<i>Religion</i>						
Catholic	7153	44.2				
Methodist	367	45.8				
Other Protestant	294	48.3				
Anglicans	835	48.6				
Presbyterian	718	61.7				
Jewish	30	36.7				

Source: Manuscript Census of Canada (100%). Excludes rural districts and religious institutional populations, many of whom came from outside Montreal.

Catholics (Table 3). The divide is not along the religious cleavage, but is strongly related to country of origin. Women of French origin (at least four generations in Quebec) married youngest, 40 per cent of them still single.<sup>20</sup> By comparison, 44 per cent of women reporting origins in England were still single at ages 23-27, 57 per cent for Ireland, 65 per cent for Scotland. Among women from England, Protestants were much more likely to be single; among Scots, Catholics; and among the Irish we see no difference between Protestants and Catholics. In other words, cultural norms associated with a country of origin had an impact stronger than religious affiliation on age at marriage. Scots and Irish women, in particular, displayed decidedly different timing of marriage regardless of their religious affiliations.

The differences in nuptiality had a substantial effect on overall fertility. As shown in Figure 2 (right panel) and Table 4, overall fertility among Irish Catholics was only 65 per cent of that of French Canadians; among Protestants 50 per cent. As we might expect, later marriage was making a very large

Figure 2. Age-specific fertility by cultural community.



Source: Births (état civil, nécrologie and Protestant cemetery records) matched to mothers in 100 complete 1881 manuscript census. Rates adjusted for live births only and proportion of births matched to their mothers in each cultural community.

Table 4. Adjusted total fertility rates by cultural community, Montreal 1880.

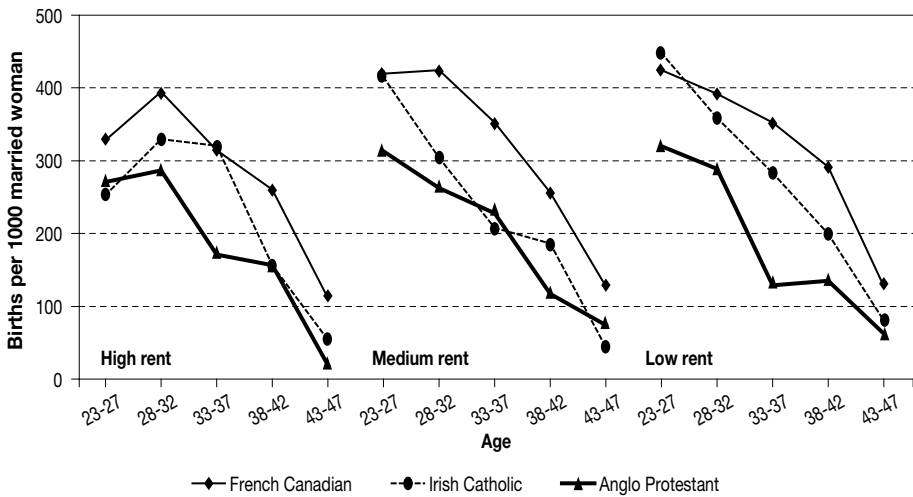
	French Canadian	Irish Catholic	Anglo Protestant	All
Total marital fertility rate (18-47)	9.0	7.4	5.1	7.9
Total fertility rate (18-47)	5.9	3.8	3.0	4.8
Marital fertility as a proportion of French Canadian				
18-37	100	82	56	
38+	100	59	49	
Overall fertility as a proportion of French Canadian				
18-37	100	65	51	
38+	100	58	50	

Source: Parish Registers; Manuscript Census of Canada, 1881. Baptisms were matched to mothers in the Census. Rates were adjusted to exclude stillbirths, then inflated in each cultural community live births based on the proportion matched to the census.

difference to Irish Catholic rates. If we look more closely at marital fertility (left panel of the figure), the differential between the Catholic groups is smaller. French Canadian women were bearing six children on average, and the curve shows the convex shape typical of a natural fertility régime. Irish Catholic women were bearing close to four children, Protestant women three, and for neither of the English-speaking groups do we see that convexity.

Protestants, we infer, must have been controlling fertility within marriage to a considerable extent by 1880, and the rapid drop-off in fertility with age is indicative of “family limitation” : at ages 18-37 two-thirds the French Canadian rate, at ages over 37 less than half the French Canadian rate. Among Irish Catholics, young women in early stages of family formation (age 23-27) were having more births, but their marital fertility fell rapidly with age, so that the differences between their rates and French Canadian rates are attributable entirely to women over 35. In other words, Catholics of French origin were not controlling fertility through either starting or stopping behavior; Irish Catholics were relying on starting strategies, and Protestants were controlling fertility throughout their married lives. One could argue that where fertility was effectively controlled within marriage - by whatever means - recourse to starting strategies was unnecessary.

Figure 3. Age-specific marital fertility by rent level and cultural community.



Source: Births (état civil, nécrologie and Protestant cemetery records) matched to mothers in the complete 1881 manuscript census. Assessed rental value of dwelling in water tax roll.

How did economic status affect those marital fertility rates? Figure 3 displays, for each cultural community, the age-specific marital fertility rates by rent levels; and in each, fertility is inversely correlated with economic status: roughly one child fewer as one moves from high to medium to lowest economic status group. The differential is most apparent for the wealthiest. The rather small group of wealthy French Canadians were, by 1880, showing signs of parity-specific fertility behavior. Table 5 displays synthetic age standardized marital fertility rates by economic status in each cultural community. Whatever the economic status of the household, the French Canadian wife 23-47 was bearing one to two children more than the Irish Catholic wife: in the high-rent group, for example, 7.0 French, 5.5 Irish, 4.5 Protestant. These gradients support the contention that among French Canadians a "fertility transition" had commenced in the high-status group, while for Irish Catholics "transitional" behavior had spread to the large majority, leaving only the low-rent group close to the French Canadian level of fertility. In the low-rent group, Protestant mothers averaged two children fewer than Irish Catholic mothers, 3.5 fewer than French Canadian mothers.

*Table 5. Total fertility rates for married women ages 23-47, Montreal 1880 by mothers' age, dwelling rent level, and cultural community.*

Rent class (\$/year)	French Canadian	Irish Catholic	Anglo Protestant	All
High ≥ 125	7.0	5.5	4.5	5.3
Medium 60-124	7.8	5.7	4.9	6.5
Low < 60	7.9	6.8	4.6	7.3
Married women N	7779	2387	3507	13673
Births N	2496	609	682	3787

Source: Manuscript Census of Canada, 1881 (100%); Dwelling rent (known and suburban estimated rents only; excludes servants and boarders, females living in institutions and rural areas of the Island of Montreal).

Let us turn now to the formal logistic regression models, inspecting first the models of marital fertility. For married women 23-47, the likelihood of giving birth decreased, of course, with age, and the effect is significant after the age group 27-32 (Table 6). Irish Catholics had lower marital fertility (the odds of giving birth were 86 per cent of those for French Canadians), Protestants lower still (60 per cent). For mothers born outside Quebec the odds were reduced (77 per cent), and all of those effects are significant at the .001 level or better. On

Table 6. Logistic regression models predicting a birth, all married women aged 23-47, births April 1 1879-March 31 1880, Models 1 and 2.

<i>Model 1</i>				<i>Model 2</i>			
<i>Cultural community</i>				<i>English-speaking only</i>			
Covariates	Column %	Odds ratio	<i>p</i>	Covariates	Column %	Odds ratio	<i>p</i>
<i>Age</i>				<i>Age</i>			
22-27	23.0	1.000	.000	22-27	20.9	1.000	.000
28-32	25.5	.955	.317	28-32	24.7	.947	.241
33-37	20.0	.759	.000	33-37	19.4	.757	.000
38-42	18.3	.611	.000	38-42	21.8	.511	.000
43-47	13.2	.178	.000	43-47	13.6	.175	.000
<i>Cultural community</i>				<i>Religion</i>			
French Canadian	60.7	1.000	.000	Catholic	42.4	1.000	.000
Irish Catholic	16.0	.861	.010	Anglican	24.2	.985	.000
Anglo Protestant	23.3	.598	.000	Methodist	9.8	.629	.000
				Presbyterian	16.9	.851	.077
				Other Protestant	6.7	.518	.000
<i>Nativity</i>				<i>Nativity</i>			
Born in Quebec	75.5	1.000		Born in Quebec	41.3	1.000	
Born outside Quebec	24.7	.768	.000	Born outside Quebec	58.7	.805	.001
<i>Economic status \$/year *</i>				<i>Economic status \$/year *</i>			
Low < 40	13.9	1.000	.000	Low < 40	16.5	1.000	.047
Md.Low 40-59	42.8	1.167	.003	Medium 40-99	55.1	1.077	.396
Medium 60-99	27.2	1.010	.818	High ≥ 100	28.5	.892	.266
High ≥ 100	16.1	.986	.901				
<i>Summary</i>				<i>Summary</i>			
Married women N	17278			Married women N	6283		
Births N	4827			Births N	1376		
Overall Chi-square	1086.5			Overall Chi-square	410.86		
Degrees of freedom	10			Degrees of freedom	11		
Overall p-value	.000			Overall p-value	.000		
-2 Log-likelihood	19388.1			-2 Log-likelihood	6194.59		

\* Economic status based upon the median rent of the street segment on which mothers lived. It includes only known city addresses and suburban estimated streets based on the municipal tax roll; it excludes rents of boarders and servants living in households in uncharacteristically high rent streets (mostly single). Institutional and rural populations on the Island of Montreal are also excluded.

the other hand, the effect of economic status, once we have controlled for cultural community and nativity, is not significant except possibly for the lowest economic groups.<sup>21</sup>

Naturally, we explored a wider array of models. If “cultural community” is disaggregated into separate components of religion and language, the overall gain in explanatory power is trivial. The religion variable reduced the odds of bearing a child to 70 per cent among Protestants relative to Catholics; the linguistic affiliation showed a smaller effect, with a lower level of significance. For the heterogeneous English-speaking population, it is worth looking deeper into the effects of birthplace and religious denomination as shown in Model 2. We again find no effect of economic status, but lower fertility for women born outside Quebec. This suggests that Quebec really did have a different culture of childbearing relative to other parts of North America (as argued by McInnis 2000), and that the “Quebec model” extended to English-speaking Montrealers. By separating the Protestant women into the various denominations we discover that Anglicans (the largest group) were almost as likely to bear a child as Irish Catholic mothers, and the much reduced odds for Protestants are associated with the more fundamentalist groups: Methodists, Congregationalists, Lutherans, and to a lesser extent Presbyterians.

The regression models for probability of being married took us by surprise (Table 7). The census pool of women, and our success at matching 80 per cent to rental values from the tax roll, have enabled us, for the first time, to distinguish cultural and economic effects on marriage propensity. We excluded from the analysis the 200 boarders in large establishments and 858 live-in servants, for whom neither an address nor occupation of household head reflects the woman’s own economic status. Their exclusion reduces the economic effect substantially, but we believe the adjustment is sound, since most servants came from relatively modest families and were serving in high-rent households. Few women-servants were married; and compared to the population as a whole they were more often Protestant (38 per cent) Irish or Scots (56 per cent) and born outside Quebec (42 per cent) with only 29 per cent belonging to the French Catholic majority.<sup>22</sup>

At ages 23 to 27, as we anticipated from the crude figures, French Canadian women were much more likely to have married. When we controlled for other factors, religion *per se* had no effect on the probability of their being married. The relatively low percentage of Anglo-Protestants who were married is entirely accounted for by their wealth combined with the larger share born outside Quebec (50 per cent) and the substantial share of Irish or Scots origin. Over half of Protestant women belonged to the high-rent category (42 per cent), compared with 7 per cent of French Canadians, 15 per cent of Irish Catholics.



Table 7. Logistic regression models predicting a woman is married, women aged 23-27 at census of April 1 1881.

<i>Model 5</i>				<i>Model 6</i>			
<i>Cultural community</i>				<i>Religion and Origin</i>			
Covariates	Column %	Odds ratio	<i>p</i>	Covariates	Column %	Odds ratio	<i>p</i>
<i>Cultural community</i>				<i>Origin</i>			
French Canadian	60.7	1.000	.000	French	62.7	1.000	.000
Irish Catholic	16.2	.598	.000	English	10.0	.941	.528
Anglo Protestant	23.1	.741	.000	Irish	19.1	.578	.000
				Scottish	8.2	.585	.000
<i>Nativity</i>				<i>Nativity</i>			
Born in Quebec	83.7			Born in Quebec	84.5		
Born outside Quebec	16.3	1.747	.000	Born outside Quebec	15.5	1.657	.000
<i>Economic status (\$/year)*</i>				<i>Economic status (\$/year)*</i>			
Low < 40	30.4		.000	Low < 40	30.9		.000
Medium 40-99	52.9	.642	.000	Medium 40-99	53.0	.650	.000
High ≥ 100	16.7	.532	.000	High ≥ 100	16.1	.551	.000
<i>Summary</i>				<i>Summary</i>			
Women 23-27 N	6834			Women 23-27 N	6689		
Per cent married	59.4			Per cent married	59.3		
Overall Chi-square	181.9			Overall Chi-square	199.6		
Deg. of freedom	5			Degrees of freedom	6		
Overall p-value	.000			Overall p-value	.000		
-2 Log-likelihood	9050.9			-2 Log-likelihood	8841.8		

\* Median rent of street (excludes live-in servants).

Conversely, very few Protestant women belonged to the lowest-rent group (9 per cent), 41 per cent of French Canadians, 22 per cent of Irish Catholics. The effect is apparent in a cross-tabulation of percentages ever-married by cultural community and economic status group (Table 8), although the association is far from perfectly consistent. The wealthiest neighborhoods (median rent \$300 or higher) were exclusively Anglo-Protestant, with only one-third married at ages 23-27. Origin and nativity also played a role. Women born outside Quebec were two-thirds more likely to have married, and this suggests that Quebeckers were more often manipulating age at marriage as a means of controlling fertility. Experiments with alternative models for the English-speaking population

uncovered the heterogeneity of the Protestant community. Treating them as a single cultural community masks statistically significant differences based on their birthplaces, national origins, and religious denominations. Anglicans, for example, were marrying as young as French Canadians, while Irish and Scots women aged 23-27 were only a little more than half as likely to be married.

*Table 8. Proportion ever-married of 23-27 year-olds by cultural community and economic status.*

Rent level	\$/year	French Canadians		Irish Catholics		Anglo Protestants		All	
		N	%	N	%	N	%	N	%
Very high	≥ 300	10		15		137		38.7	
High	100-299	297	60.3	151	52.4	531	49.3	1141	51.4
Medium	60-99	1154	54.0	351	49.3	505	64.0	2010	55.7
Low	41-60	992	62.2	353	47.9	263	58.9	1608	58.5
Very low	≤ 40	1698	69.4	239	61.1	141	61.7	2078	67.9
All rent classes		4151	62.7	1109	51.8	1578	55.8	6837	59.5

To summarize the empirical evidence from the 1880 population, we confirmed the overall coherence of the three identity groups, subject to considerable nuance for the Protestants. The logistic regressions demonstrated that marriage and fertility were influenced by a multiplicity of identity factors, one of which was the religious divide between Catholic and Protestant. Marital fertility was lowest for Anglo-Protestants, and somewhat lower for Irish relative to French Catholics. At all ages, all three groups of women showed reductions relative to a “natural fertility” régime; and in all three groups, the effect of economic status on marital fertility was weak. Among French Canadians, a small set of wealthy families showed signs of limitation; among Irish Catholics and Protestants the effect reached wider. Religion *per se* had no effect on the proportion ever-married at ages 23-27. Instead economic status proved much more important in determining the proportions married, and, as a consequence, the sizable differences in overall fertility. After controlling for economic status and religion, still other aspects of culture intervened, notably “ethnic origin” and “nativity”. The Quebec “culture of fertility” is characterized by late marriage and high marital fertility.

#### 4. A BROADER VIEW OF “CULTURAL” REFERENTS

With the empirical evidence for the several independent effects, we are now equipped to take a broader view of what makes up a “cultural package”. Religious affiliation, language, country of origin, social class; all can be conceived as dimensions of a personal identity, with multiple sources of feedback to the individual’s self-image. In the interactions of social groups, they functioned as an array of reference points. In Montreal, religious and linguistic references resonated strongly in the print media and institutional structures, but an individual employed numerous other reference points as part of his “social radar” (Hale 2002) : the family name, for example, gender, identification with a craft or profession, a political club, a village of origin, a “respectable class”, or the generation of “elders”. Each referent, shared with other people, embodied an ideal of morality and excellence: members were asserting a claim to be judged by the standards of their own group. Reference points shifted over time: A particular reference point like being a Mason or a Daughter of Mary might have a different valence at different moments in life. An ideal of motherhood was doubtless transformed by the experience, and by further roles as godmother or grandmother. Some references were “thickened” as the individual coped with new situations, encountered acceptance or hostility, and accumulated a stock of narratives and a personal capital of affection or respect (Chandra and Laitin 2002).

The economic and the religious are often introduced into interpretations of the demographic transition, and they proved to be reference points salient in our local demographic models. They are widely recognized in the literature of identity formation, and in the portrayal of Montreal by social historians (Linteau 1998). We propose taking a step farther toward understanding the interplay of the two, by recognizing their political potency.

##### *Economic expectations*

In a culturally segmented economy, members of the three groups entertained somewhat different expectations, inflected by resources of their families and their experience as domestics, union members, property owners, or employers. Their expectations were gendered, and the great differences in risks and opportunities would produce different perspectives for a man or a woman, with respect to a move, a marriage, or a next child. The migrant’s options, as well as economic cycles, restructured expectations of successive cohorts. “The process cannot shake free of its history” (Guinnane et al. 2004: 4), and start-up effects were concentrated in a narrow window, at that life stage of assertion of independence. Aspirations for moving up were achieved or thwarted by events

over a short span of life : the young man's options for schooling or learning a trade were determined in most cases by age 12 or 13, while the young woman's options for "marrying up" were often available at 16 or 17, and could readily be postponed to age 30.

For working-class household heads (and specifically laborers), rents did not improve with age.<sup>23</sup> Among men of higher occupational status, rents rose with age, and one might postulate that marriages were postponed in anticipation of a desired level of achievement. This effect might be formidable among Irish Catholic young people who in 1880 were making a leap of occupational status relative to their immigrant parents: In the first generation 40 per cent of men were labourers, in the second virtually none.<sup>24</sup>

For both men and women, access to jobs, by providing exposure to other cultural communities, implied different experiences of "modernity" and differential absorption of "citized" ways like vaccination, fashion, team sports, vaudeville, and novelty stores.<sup>25</sup> Of Irish Catholics, nearly one-quarter were, at ages 15-29, living in households dominated by another group: as nursemaid or coachman in a Protestant home, or as a hotel clerk, eating-house cook, or dining car waiter. Irish Catholic women left home earlier, and a greater experience of independent living framed their expectations, so that many of them entered into marriage contracts where the husband gave his wife ownership of a "set" of walnut furnishings purchased for the flat, and committed himself to maintain a life insurance policy payable to her.

Despite the *statistically* independent effects of cultural and economic variables in the model, we do not see cultural and economic factors as *alternative* explanations of the coherent patterns of behavior in the three groups. Economic incentives were reinforcing what seem to be "cultural" choices. Individuals and couples were experiencing these as joint constraints, in some cases advancing the timetable of marriage and marital fertility, in other cases postponing it.

### *Religious loyalties*

The impact of religious affiliation can best be interpreted as a process of boundary maintenance. As a null hypothesis (somewhat extreme!) let us imagine for a moment that religious values were largely shared and had little direct influence on sexual practices. Religious affiliation nevertheless operated as a defining component of identity. In nineteenth-century Montreal, all three communities were obsessed with policing the boundaries, and their spiritual leaders were working vigorously to keep their sheep in the fold and mark all the lambs. As Kevin McQuillan has pointed out (2004), the Catholic Church in Quebec had by 1880 the power to standardize practice among its clergy, prescribe texts in schools, drive newspapers to extinction, and exert moral

discipline through the confessional and control of access to sacraments of baptism and burial “in holy ground”. The Protestant churches, despite their denominational differences, had created their own school system, an articulate clerical voice, a vociferous press, their own hospitals, orphanage and reformatory. In 1880 they were mobilizing to build their own insane asylum on grounds that the nuns managing the Saint-Jean-de-Dieu asylum were baptizing Protestant inmates with “weak minds” and “religious manias”. Both Catholic and Protestant clergy vigorously opposed marriage across the boundary between them.

But our twentieth-century experience may not be a reliable guide to ecclesiastical priorities of the late nineteenth century. Bishop Bourget (in office 1840-1879) achieved in large measure his vision of a landscape of conformity to Rome. He gave orders about minute details: imposed the Roman collar on his Sulpician priests and obliged the Sisters of Charity to adopt the genuflection instead of their traditional curtsy. He prescribed humiliation for those living “en concubinage”, asserted pressure for temperance, inveighed against décolleté fashions, the hoopskirt and bustle. He demanded a patently “canonical age” for the servant in the presbytery, and chastised laymen seen at funerals of their Protestant colleagues. He arrayed his young Zouaves in uniform, photographed and paraded them through the streets (Hardy 1975). All of these were matters in public view, symbolizing loyalty to the person and authority of the Bishop of Rome. Rome, meanwhile, was concerned with political ideologies and expropriations of ecclesiastical properties, as revolutions in Europe dislodged ecclesiastical influence. But we see no evidence that suggests much interference with what went on in the four-posters of properly married couples. The clerical objective, at every level in the hierarchy, was to muster the church militant.

Catholics of Irish origins were more likely to resist enrollment. Father Dowd, the firm-minded pastor of St Patrick’s (in office 1849-1891), devoted immense effort to fencing his Irish parishioners, bringing the young men’s literary and political societies under clerical watch, and evicting Irish Protestants from the St Patrick’s Society which in an earlier generation had functioned as an inclusive benevolent organization (Trigger 2001). In Bishop Bourget’s elaborately staged displays of Catholic solidarity, Father Dowd ensured separate structures for young men of French and Irish origins, despite the handicap this introduced by dividing the working class in its struggle for employee rights. Bishop Bourget, in response to the bite of the Protestant weekly, *The Witness*, had created a newspaper for French-speaking Catholics; he found it necessary to create another (*The True Witness*) for his English-speaking Catholics.

Cross-religion choices of a marriage partner were more frequent among the Irish-born, and the tolerance of Irish families on this point was extensive enough

that by 1900 nearly one quarter showed some sign of religious mixing in the family history.<sup>26</sup> We infer greater resistance on the part of the Irish (relative to the French) to clerical interference in family affairs. First, given the longstanding scarcity of priests in Ireland, their villages of origin were long accustomed to celebrating marriages without presence of a priest, and Irish Catholics in Canada were well aware of the nature of the sacrament as mutually conferred. Since clergy were scarce on the Canadian mission frontier as well, Quebec bishops tolerated these practices in the Townships colonized by Irish settlers (Gagnon 1993). Only when Irish couples moved into Montreal did they meet a clergy insistent upon re-marriage by a priest with attendant embarrassment or harassment as a condition of the baptism of a next child. Second, the flow of Irish immigrants included a high proportion of single women, self-selected for independence and ambition. Cases of “mixed religion” arose mainly from the choices of Irish Catholic women; the sex ratio favored their out-marriage, and marrying a Protestant usually meant “marrying up.”<sup>27</sup> Third, the maturity of Irish couples favored a more assertive attitude. Attainment of legal age cut through resistance from parents, and the woman in her twenties was better prepared to assert herself, with implications for control of her fertility as well as her marriage options.

Consistent with our null hypothesis of shared values, all three communities shared a notion of “family” as a fundamental value: “Blood is thicker than water”; kinship structured relations of trust and imposed rigorous social obligations. Despite the agreement on a common rhetoric, the three communities held distinct conceptions of family, arising, we suspect, from the way the several populations were formed. The French Canadian population, established in the Montreal region since the seventeenth century, with virtually no new arrivals after 1760, had developed a dense thicket of kinship. Its ramification was useful to employment, travel and commerce, and distant spurs could be invoked, renewed, and groomed, so that the French Canadian community as a whole was a spreading, growing community of kinship. On the other hand, for most people originating from Ireland, Scotland or England, trans-Atlantic migrations of the nineteenth century had truncated the network. One-third of the parents of the non-French infants in our sample were immigrants, hence their smaller clutches of grandparents and cousins. People wrote letters, remitted funds to bring mum, took in or hired an immigrant nephew... but their local networks were smaller, rarely extending beyond the canonical fourth degree.

What empirical evidence can we supply for that assertion? First, the *tutelles* (guardianship records of Superior Court) provide systematic evidence that Protestant and Irish Catholic families found it more difficult to bring forward the full cast specified by the law: nine male relatives, representing both sides of the

family. The “family councils” who advised the court on guardianships were features of the customary law (*la Coutume de Paris*) that had for centuries regulated marriage and inheritance in Normandy and the Ile-de-France. A second type of evidence emerges from parish records: of the two or three sponsors at a Protestant baptism, rather few were close relatives. Irish Catholics sometimes chose a favorite sister or brother as godparent to their child, but diversity of practice was considerable, and neighboring families affirmed or created pseudo-kin through what the church called “spiritual kinship” (cf. Fine 1995). In contrast, French Canadians included a higher proportion of married couples as godparents, gave precedence to grandparents of the child, and seized such occasions to cement into the *parenté* the betrothed of the baby’s young uncle or aunt.<sup>28</sup>

Their different conceptions of the family network implied a different kind of management of marriage. Since marriage was a lifetime commitment (agreed-upon by all three groups), it was important to the community to try to ensure viable choices. But there were alternative ways to do this. A strategy characteristic of the English-speaking groups was to demand a certain maturity prior to the decision. We might think of it as the “three little pigs” model: Go out into the world, seek your fortune, see the world, save your pennies, learn a trade, test yourself and your ideals, outwit the wolf, and find the right person. In an alternative view, more characteristic of the French Canadian community, a powerful and extended family network generated and supervised opportunities for early pairing-up, confident of integrating the spouse, nurturing a very young couple, and providing its own mechanisms of conflict resolution.<sup>29</sup>

### *Political potency*

Awareness of minority status invited a politics of coalition and a constant reappraisal of one’s own situation. When in 1877 the headlines shouted “An inoffensive Orangeman murdered”, Irish origins suddenly became more compelling. This murder occurred in the wake of another: an Irish Catholic dock hand “progged” by a sentry. The inquests heard testimony of numerous male youths.<sup>30</sup> It is particularly in adolescence that youth explored new self-images, provoked by physiological changes and self-awareness: the voice, the bosom or the mustache, reinforced by the bun, the bustle or the collar, invoked new features of identity. One’s peers, as well as family and neighbors, provided feedback to interpret what it meant to grow up (Erikson 1967; Hubert 2002). The funeral procession of the young Orangeman brought out innumerable organizations, responding to the demand that every Protestant fall into line and put on orange ribbons: the Protestant Workingmen of Point St Charles, the Orange Lodge, members of the St Georges, St Andrews, Irish Protestant and

German societies, and the Prince of Wales Regiment. The issue reappeared a year later as a “right to walk” protest, and the city hired 500 “specials”, three-quarters Irish Catholics, who fomented further excitement. In the wake of that dispute, a civil suit was brought, and over the entire month of October 1879, the story was daily embellished and rehearsed in the courtroom, in the press, in the drawing-rooms and kitchens, lanes and taverns of Montreal.

Violence, both symbolic and physical, punctuated the process of boundary-keeping. Where cues are readily accessible -the accent, the medal, the badge, or the uniform- there is a demonstrated tendency to resort to them in situations of uncertainty, where the stakes are high, and where action is urgent or perilous.<sup>31</sup> The tolling bell, the smell of gunpowder, the “roaring” of a group of adolescents, or the volley of stones invited recourse to grossly simplified cues. The vexed politics of “the Irish question” 3000 miles away gave, again and again, salience to religious differences in Montreal and at the same time ensured the vigorous mobilizing power of all that was “Irish.” It was in adolescence that individuals discovered the ideological complexity of “difference” (Erikson 1967), sometimes rebelling against parental or culture-group restraints, or risking interactions which their parents considered damaging to group identity, above all marriage outside the group. It is likely that sporadic violence, as in 1877, sharpened perceptions of social boundaries (Barth 1969; Blok 2000) and thereby served to reinforce religious loyalty of the young and cement endogamy.

## 5. CONCLUSION

If we think of fertility as the full complement of practices which affected reproduction of a community, we have to consider the political implications: the ability of a community to muster votes, acquire resources, generate employment, maintain its institutions, and take care of its own. In the nineteenth-century context, nuptiality, as the start-up of fertility, was a prime regulator in the demographic régime, and key differences among the communities present in Montreal lay in their conceptions of choice and age at marriage. We have seen that these differences were strongly influenced by country of origin -Ireland, England, Scotland, or western France- and that the recency of the trans-Atlantic move affected the extent of the kinship network in which the individual or couple was marshaled. We have seen also that economic success and economic aspirations were exerting a strong impact on marrying and some impact on having a next child.

At the same time, since all these people were “getting and spending”, making their way in an expanding and aggressive urban economy, they were tapping into an information network where ideas percolated, generating an infinite number of



new strategies. This is where we find ourselves uncomfortable with the terms employed in much that has been written about the demographic transition. Indeed, the rapid decline of fertility after age 30, as we observe it in 1880 among Protestant women, Irish Catholics and the wealthiest of French Canadians, might be interpreted as “family limitation.” Delayed marriage, as observed among the city’s Irish Catholics, is often described as “Malthusian”, and the high marital fertility we see among French Canadians would be described as “traditional.” It strikes us that in the New World where nuptiality was originally so much lower than in Europe, the rise in age at marriage was actually novel and “modern” behavior. Delayed age at marriage seems to have been most pronounced in cities, and in Montreal it was the wealthiest who were postponing marriage and practicing “modern” family limitation. Industrialization transformed family formation in different ways for different groups. It afforded white-collar, professional and even some skilled manual workers positive advantages for delaying marriage to give them time to acquire education, experience and capital. There was no such advantage for the urban manual worker, but both sets of people were “rational.”<sup>32</sup>

Terms such as “traditional” and “modern” imply assumptions about motivation. Is this perhaps an unwise leap? Consider these three women: by their early marriages and numerous offspring, they exemplify “traditional” behavior, yet we find them making singularly “modern” decisions. Noémia, formally “emancipated” at 17, used her inheritance to furnish capital for a venture selling pianos. Challenging the management of her mother’s estate by her stepfather, she obtained a curator for her 14-year-old brother; and at 18 she married and placed her capital elsewhere.<sup>33</sup> Adèle and her husband in 1882 signed a marriage contract specifying that the sewing machine was hers, and each of them would contribute to the household expenses “selon ses revenus.” Their understanding was entirely different from the contracts her father and uncles had written. Mathilde, at 40, operator of a successful shop, was one of the women who had a baby in 1879, her eighth. (The baby died.) The father was her second husband, a molder, and by the time of the census he had abandoned her, and she was suing for support. A few months later, discovering that she had a heart disease, Mathilde deeded her shop and life insurance policy to her eldest son (by the first husband) on condition that he arrange for her a sung funeral Mass and take responsibility for his half-brothers and sisters, to make sure all of them would receive a first class education. Two were already at the Collège de Montréal, and he should support the wish of any one of them to make a professional career.<sup>34</sup>

Religion remained nevertheless a key reference point for personal identity, thick with associations, explicitly value-laden. Religious loyalty was an unmistakable ingredient in the three recipes for “us” and “them.” Codified rules

for interactions between groups ensured a degree of insulation, with rather formal negotiations among leadership elements. Even when group behaviors shifted (e.g. toward later marriage), the insider-outsider distinctions were maintained. Ritual confirmed loyalties from cradle to grave; and the pageant of Sundays and holy days affirmed identities at nested scales: the nuclear family, the extended family, the congregation or denomination, the lines of Reform and Counter-Reform, and a global view of Christendom and order versus the alien and heathen.

The religious institutions themselves were rooted in a larger system of social referencing. Language differences, by slicing the communications network, affected expectations of livelihoods, living standards, and participation in political debate.<sup>35</sup> The Catholic hierarchy in Montreal adapted by reinforcing the linguistic “fences” and duplicating its networks of communication. Confessional organization of schooling raised the linguistic barriers higher. Among Protestants, the financial and locational decisions of a church congregation reinforced differences of social status (Trigger 2002), and denominational loyalties “thickened” the country-of-birth reference points. All of these elements were politically potent. In the heat of any political uproar, all points of allegiance were pressure points which could mobilize a community.<sup>36</sup> Religious affiliation was a button which could be pressed, a murmur that could be renewed, a banner that could be flourished, to realign allegiances and maximize support. In a political economy of “three minorities”, religious rivalry promoted a closing of ranks among Protestants, weaned Irish Protestants from their Catholic congeners, and ultimately strengthened the tripartite structure.

#### NOTES

<sup>1</sup> The research, in collaboration with Danielle Gauvreau, is supported by the Social Science and Humanities Research Council of Canada. We are grateful to Lisa Dillon (Université de Montréal) whose team supplied the digital version of the 1881 Census; to Robert Sweeny (Memorial University of Newfoundland) for his contributions to digital versions of the municipal tax roll of 1880 and city directory; and to several other collaborators in the joint effort *MAP, Montréal l'avenir du passé*. We are indebted also to Jean-Claude Robert, Mary MacKinnon, the Montreal History Group, the Canadian Families Project, and the Centre interuniversitaire d'études québécoises (CIEQ) Laval-Trois-Rivières, the Parishes of Note Dame and Saint Patrick's, the Hospital Sisters of Saint-Joseph (Hôtel-Dieu), Cimetière Notre-Dame-des-Neiges, the Mount Royal Cemetery Company, Research assistant Caroline Sauriol and numerous archivists.

<sup>2</sup> One-fifth Protestant, four-fifths Catholic. Our initial concerns were to test for bias on recovery due to delay of baptism and discover how theologies of baptism might affect reporting and interpretation of “live birth”.

<sup>3</sup> See for example Foley and Guinnane (1999), Kertzer (1995), Alter (1992). Lesthaeghe (1977) pointed clearly to the role of religion and language in the fertility transition. More explicit about the political dimension are Keneally (1998) and Marston (1998).

<sup>4</sup> See also Williams and Galley (1995). Own-child estimates for the younger women, <35, are also affected by differences in the timing of marriage, adding to the local difficulties of applying the method.

<sup>5</sup> To take advantage of indexes, the twelve names all begin with letter B or R (see Bardet 1983). For the entire span 1840-1919, and for 26 Catholic parishes (by 1900) and 100 Protestant churches, every reference was collected to any of the 12 names, including all variant spellings. We also collected information from six nominative censuses, annual city directories, tax rolls at five-year intervals, and notarized acts such as leases, marriage contracts, wills and guardianships. Each source was sampled independently.

<sup>6</sup> From a starting line at the census of January 1861, we explored what happened to each person in a decade. The finish line was the census of April 1871, and we made use of all available evidence to capture the full suite of events over the intervening ten years. We repeated the exercise for the start census of April 1891 to the end census of April 1901. Where the census is used to close an observation, censoring is *non-informative*, and no bias should result. For discussion of this issue, see Gutmann and Alter 1993; Alter 1999.

<sup>7</sup> Despite turnover, we achieved levels of supervision between 80 and 90 per cent of each group.

<sup>8</sup> In the 1890s panel 43 per cent of French Canadian offspring died before the age of five, of Irish Catholic 24 per cent, of Protestant offspring 20 per cent.

<sup>9</sup> Aggregate tables for the 1860s and 1890s are appended in Olson and Thornton 2001, and subsets for the three cultural communities (the two sexes combined) are available from the authors.

<sup>10</sup> In fact only 41 per cent were reported as one year old; 56 per cent were recorded as 2 years old, and a handful (<0.2 per cent) as 0 or 3 years old. Tests showed more accurate specifications at older ages (six months plus or minus), except for the 5-year heaping and occasional exaggeration of age of a very old person. We used burial registers of churches and cemeteries to capture deaths of the unbaptized. Ten per cent of births (850) were illegitimate and have been excluded.

<sup>11</sup> The magnificent new digital source has, of course, some limitations. Familiar ambiguities which arise from interactions between census takers and illiterate respondents, or from our own transcriptions from handwriting, are compounded in the bilingual environment of Montreal. The ten-year digitizing operation (organized by the Latter Day Saints and volunteers from family history societies) introduced massive misapprehensions of French Canadian names, so that record-matching requires rather more imagination and patience than usual. Once a match is found, it is secure, as we used several pieces of information for each of several persons in the household. Lisa Dillon's team imposed order on several key variables: they verified page references to the originals (microfilmed) and to geographic divisions; they verified ages reported and added codes for birthplace and occupation (see <http://prdh3.demo.umontreal.ca/Dillon>). Data on schooling, however, was not consistently transcribed.

<sup>12</sup> Some weaknesses of the census are compensated by use of the tax rolls. Although the 1881 Census of Canada is considered an advance over earlier ones (Curtis 2000), it contains no street addresses, no information about income or wealth, and no explicit designation of relationships among members of a household. Municipal tax rolls, however, identify every occupant family with a street address, cadastral lot number (one of ten thousand lots), landlord, and household rent. The rental value (*la taxe locative*) was uniformly applied to owner-occupants, tenants and businesses; it shows near-perfect correlation with market rent and floor area of the dwelling.

<sup>13</sup> The distribution of rents where a birth was matched to the census correspond well with the tax roll but not with the full array of census families. The challenge lies in capturing rental values from suburban municipalities where house-numbering was less systematic and rate books have not all survived for the right year. Of births matched to a census record, and of women 15-49 in the census, we have precisely matched rents for 70 per cent of those living within the city limits of Montreal, for only 13 per cent of those living in the suburbs. Since most suburban families were living in working-class terrace housing, we assigned the median rent in the street of residence: Saint-Jean-

Baptiste (north end), Saint-Henri, Sainte-Cunégonde (west end), Saint-Gabriel (to the south) and Hochelaga (east end). Experience with these records shows that the values are stable from year to year, and distributions for “street segments” (twinned block-faces) are very homogeneous. The result is a reliable indicator of economic status for 78 per cent of households. Rural suburbs were formally excluded: Côte Saint-Paul, Notre Dame de Grâce, Côte Saint-Antoine, Côte des Neiges, Pointe aux Trembles, Rivière des Prairies, Sault aux Récollets, Verdun, Côte de la Visitation, and one rural division of Saint-Laurent.

<sup>14</sup> They were not necessarily living at the same address throughout. Because most Montrealers rented their dwellings on a one-year lease, with a May 1 moving day, we matched census families of 4 April 1881 to addresses in tax rolls compiled in June 1880. From small-panel data we know that most moves were within the same parish (often the same block) and within the same narrow horizon of purchasing power (Gilliland 1998). Out-migration from the city was low, under 10 per cent in a decade, or less than one per cent a year.

<sup>15</sup> To assign cultural community categories, we characterized each individual in terms of a combination of religion, birthplace, and “ethnic origin”, a variable inquiring about the place from which the paternal ancestor first arrived in Canada. The Canadian census does not employ the distinction made in the US census between “foreign-born” and “foreign stock.” Excluded from the analysis 1480 females aged 15-49 (2.7 per cent) who were living in large boarding houses, hotels and institutions, the largest being nuns (728); along with a few illegible or blank records.

<sup>16</sup> We returned to the original microfilm for school attendance, a variable not systematically entered into the initial digital version. Since most people had left school by age 13 (almost all by age 17), observations of school attendance are not commensurable for older mothers (with several children 7-12), younger mothers (no children of school age), and young women living with their parents and school-age siblings. For this reason schooling has not been included in the logistic regressions.

<sup>17</sup> The marriage models are not affected by rates of matching to parish data, but they are affected by the proportion of women who could be matched to the tax roll.

<sup>18</sup> Gauvreau and Gossage (2001), using child-woman ratios derived from the 1901 census, found Protestant marital fertility 24 per cent lower than French Canadian in Montréal and Québec City. Results for French Canadians in Montreal are consistent with our French Canadian panel for 1901; and Thornton and Gauvreau report (forthcoming) their attempt to reconcile these findings.

<sup>19</sup> The singulate mean age at marriage is an estimate of the mean number of years lived by a cohort of women before a first marriage. The statistic is calculated from the proportions of singles in successive age groups. The underlying assumption is that the change in the proportion single from age  $X$  to age  $X+1$  is a good estimate for the birth cohort, of those who married at that age. Assuming that no woman dies between her fifteenth and fifty-fifth birthday, the algorithm computes the mean age at marriage of women who married before age 50 (Hajnal 1953). Coale’s index of the proportion married is a measure of the impact of marriage rates on the total number of births to a woman if she married by age 20 and experienced, to age 50, Hutterite levels of marital fertility (Coale and Watkins 1986).

<sup>20</sup> Women in the small Jewish group also married very young (39 per cent still single).

<sup>21</sup> In the regression analysis we used median rent of the local neighborhood rather than the actual dwelling rent, since it made no difference to the results and allowed us to use a much larger number of cases. There were 440 of these micro-neighborhoods, each a twinned block-face or segment of street between two major cross streets.

<sup>22</sup> All of those characteristics prove to be associated with later marriage, except for their in-migrant status. Excluding them from the model inflates the effect of nativity (born outside Quebec) on likelihood of being married.

<sup>23</sup> This would be consistent with what Green and MacKinnon (2001) observe for 1900: a steep rise in working men’s incomes with each year of age to about 25, flat thereafter.

<sup>24</sup> Among Irish Catholic men, intergenerational advance accounts for a steady decline, at every census, in the percentage of common laborers: 47.5 per cent in 1842, 46 in 1861, 36 in 1871, 29 in 1881, 14 in 1891. The decline, observed in the panels of the miniature, tracks the entry of younger cohorts to household headship. By 1891 the 100 men named Ryan were about equally divided between Irish-born fathers and their Canadian-born sons. French Canadians showed a comparable upward mobility in the second generation in the city (Thornton and Olson 2002). The effect cannot be easily discerned in the census at large, as we cannot distinguish those arriving from rural villages. In 1901, when the census does make the distinction, about one third of French Canadian men and women reported rural birthplaces. Of French Canadians married in Montreal in 1899, nearly half had parents buried or still living in villages of the region.

<sup>25</sup> See Carter, Ransom and Sutch 2004 on the increased rate of savings, a factor pertinent among the Irish of Montreal.

<sup>26</sup> This is based on the small surname sample, and we are likely to underestimate, since we would miss some marriages across the border or before a Protestant minister outside the city.

<sup>27</sup> In 1881 there were only 66 Irish Catholic males for every 100 females aged 23-27, compared to 81 for French Canadians and 76 for Protestants.

<sup>28</sup> In the surname samples, 31 per cent of godparents to French Canadian infants bore the family name of the mother or father, 26 per cent of godparents to Irish Catholic infants. The estimates are founded on “miniature” samples of baptisms 1871-1890.

<sup>29</sup> Such mechanisms are observed in handling of apprenticeships: understandings within the extended family were rarely formalized before a notary (Burgess 1986).

<sup>30</sup> *Montreal Star* 12 July 1877, *Daily Witness* October 1879 *passim*.

<sup>31</sup> Hale 2002; Chandra and Laitin 2002; Blok 2000. The psychological argument rests on the human need to make decisions despite limited information, and, as a consequence, discomfort in a situation of ambiguity. For identity formation in Quebec, see Collard 1999; Hubert 2002. An analogous case of prolonged conflict between French Canadians and Protestants is the smallpox epidemic of 1885, concurrent with military expedition to the Northwest and the trial and hanging of Louis Riel, leader of the Métis people, Catholic and French-speaking. For a balanced and relatively serene account, see Farley, Keating and Keel 1987; for demographic implications, Thornton and Olson 2001; and for the virulence of “racialized” narratives, the news items cited by Bliss 1991.

<sup>32</sup> Gossage (1999) found the same thing in Saint-Hyacinthe, Quebec. He argues an increasing tension between two sets of forces affecting marriage. The conservative influence of the institutional and ideological structures of the Catholic Church, in place for generations, persisted, while industrialization transformed the economic and social realities that informed and conditioned family formation.

<sup>33</sup> The curator in this case, from her mother’s side of the family, was only 23. Tutelles 2 November 1878, 1 February 1879, 3 December 1880, 14 March 1881; act of Bédard 28 January, 10 and 11 March 1880, 3 December 1880, 7 November 1881, 7 December 1881.

<sup>34</sup> Act of Bédard 17 April 1882.

<sup>35</sup> French was the dominant language of the provincial legislature, English in the Confederation Parliament. Municipal government was partitioned by ward politics; tradition alternated the mayoralty between “French” and “English”, and a retiring fireman or constable was “traditionally” replaced from his own identity group, “French”, “Protestant” or “Irish.”

<sup>36</sup> Similar pressures can be observed in the creation of “national” parishes in US cities (Dolan 1975).

DANIELLE GAUVREAU

RELIGIOUS DIVERSITY AND THE ONSET  
OF THE FERTILITY TRANSITION:  
CANADA, 1870-1900<sup>1</sup>

1. INTRODUCTION

Canada, as McInnis (2000: 388) has pointed out, is “an intriguing laboratory” in which to test hypotheses about the determinants of fertility. Between 1871 and 1901, industrialization and rapid urbanization created a classic situation in which we can expect the onset of a fertility decline. Inclusion of a question on religion makes the Canadian census, unlike the US census, suitable for an exploration of religion as a factor in the fertility decline. This is the goal of this paper, which focuses on how married couples came to consciously limit the size of their family.

McInnis contributed in a significant way to our knowledge of the fertility situation prior to 1900. From his work and others, we know that fertility was probably declining during the 1860s, notably in Ontarian regions, in urban areas, among Protestant groups and non-francophone populations. A more detailed portrait is difficult to assemble. In the province of Quebec, parish registers have been used to study fertility patterns in the Saguenay region (Bouchard and Roy 1991), in the small industrializing city of Saint-Hyacinthe (Gossage 1999), and in Montreal, the Canadian metropolis (Olson and Thornton 2001). These studies tend to confirm the late onset of the fertility decline in Quebec, even more delayed in rural Quebec, the existence of cultural differentials, and the role of industrialization and urbanization in the transition. Less systematic work in other provinces partially contributes to our knowledge of this period. Particularly relevant to our study is Moore’s work on three Ontario cities in 1861 and 1881. Using micro-level data from the two censuses, he was able to unveil a significant impact of religion, with religious groups “arrayed along a scale from Catholics to Methodists”, the latter being more likely to have reduced their fertility by 1881 (Moore 1990: 40).

When compared with Hacker's new estimates for the United States (2003), the Canadian trends toward decline do not look very different. His figures suggest that marital fertility decline in the United States may not have begun before the second half of the nineteenth century. Religious differentials are more difficult to tackle due to the absence of a question on religion in the American census, and various results are not always easily reconciled (Hacker 1999; Gutmann and Fliess 1993; Parkerson and Parkerson 1988). The Canadian case can therefore serve as a useful point of observation for testing hypotheses concerning the influence of religion on fertility in the New World.

Of three main approaches to the problem, the "characteristics hypothesis" suggests that religious fertility differentials arise from the different structural positions of religious groups in various societies. This proposition must be taken seriously and can usually be verified by carefully controlling for a variety of factors likely to play confounding roles. Second, the approach known as the "particularized theology hypothesis" refers to values inherent in religious systems. Their influence can be exerted directly, through values aimed at controlling various proximate determinants of fertility, or indirectly, through moral positions on topics such as parental authority and the respective roles of men and women (McQuillan 2004: 25-26). Most authors agree that it is not until well into the twentieth century that the Protestant and Catholic churches began expounding explicit and divergent positions on contraception (see Lynch in this volume).<sup>2</sup> This does not preclude a more indirect role of religion during the same period. Such a role has often been tied to key concepts like modernity, secularization, and rationality, but their effects have not yet produced fully satisfactory explanations. For example, it is likely that all actors behaved rationally, meaning that they behaved according to what they perceived as the most reasonable option, even when facing religious matters (Stark and Finke 2000: 39). But what shaped their perceptions? This leads us to the third main approach: examination of the concrete conditions, social, economic, and political, in which religion may be affecting fertility (McQuillan 2004). As McQuillan pointed out, where groups share a territory and experience conflictual relations, religious affiliation is likely to become a "central component of identity" and may therefore exert a greater impact on behaviour, including demographic behaviours.

Canada is a good example of religious pluralism. In various parts of the country the several religious groups occurred in different proportions, with different histories of settlement, and more and less contention among them. New sources make this an appropriate moment for a re-examination of the onset of a Canadian fertility transition. The nominal census for 1901 was released about a decade ago and a five per cent digital sample constructed by the Canadian

Families Project. Combined with an earlier sample constructed from the 1871 census by M. Ornstein and G. Darroch (1986), this dataset allows us to perform household-level analyses and compare fertility patterns at two critical points a generation apart. Since religion was not the sole differentiating factor, it cannot be treated in isolation, and I shall try to marshal the evidence to show how other dimensions of group identities inflected the course of fertility decline.

## 2. CANADA AT THE END OF THE NINETEENTH CENTURY

A country of the New World, Canada cannot be understood without references to its rather short history of European settlement. Canada was peopled in that phase of colonization that brought thousands and thousands from Europe to the Americas. The process was initiated during the seventeenth century and the policy of allowing only Catholics to settle in New France gave a distinct identity to this rather small enclave in North America. This feature became particularly important when the colony came under British jurisdiction in 1765. The population then amounted to about 70,000 people whose rate of natural increase was quite high in a rural context of favourable conditions (Charbonneau, Desjardins, Légaré, and Denis 2000).

The situation changed dramatically as immigrants arrived from the United States (Loyalists) and, to a greater extent, from England, Scotland, and Ireland. As is the case for the United States, the history of Canada is marked by political turmoil and an important east-west movement by which new provinces progressively developed.<sup>3</sup> In 1867, Canada was created as a Confederation of the four provinces of Nova Scotia, New Brunswick, Quebec, and Ontario. From that moment, Canadian history was shaped by new economic forces and industrial policy; a commitment to cultural pluralism, and political efforts to define this new “Canadian” entity. The provinces covered in the two censuses form the basis for analysis, although by 1901 new “Territories” had been recognized on the frontier, and three new provinces had joined the “Dominion”: Prince Edward Island, Manitoba, and British Columbia.

The Canadian population at the end of the nineteenth century was more rural than urban, and more so in Nova Scotia and New Brunswick (see Tables 3 and 4). Quebec was largely composed of a French Catholic population (80 per cent), with a Protestant minority of English, Irish, and Scottish origins. Most French Catholics were descendants of French settlers who arrived in the seventeenth and eighteenth centuries. Proportionately more of them were born and resided in rural areas but they were also affected by moves to towns and cities. As in Ireland, the Irish of Canada were divided between Catholics and Protestants, which added to the ethno-religious complexity of the population. Many were the



children of immigrants who arrived in the aftermath of the great famines of the 1830s and 1840s, but some were more recent migrants. Quebec Protestants, whose proportion of immigrants was larger, were also more likely to belong to upper classes, as attested by their occupational distribution.

In the other provinces, the population was largely Protestant and Anglophone, but cannot be thought of as homogeneous. In Ontario, Methodists formed the largest Protestant denomination, with a significant minority of German origin, Lutheran for the most part, and the proportion of foreign-born was higher than in any other province.<sup>4</sup> Anglicans more often lived in urban areas and formed a significant portion of the Ontarian elite. In New Brunswick Baptists were the leading Protestant denomination while Catholics (French and Irish) amounted to more than a third of the population. Those of French origin were Acadian for the most part. As its name suggests, Nova Scotia had a large concentration of Scots, both Presbyterian and Catholic, and a sizable share of its working population were fishermen. By 1901, the level of literacy achieved was high everywhere but slightly lower for French Catholics in most provinces. The lowest proportions of children attending school at ages 7-14 are found in the two more rural provinces. In Ontario, French Catholics and Lutherans also register somewhat lower percentages of children attending school.

This brief account shows that religion was not the sole differentiating factor: a variety of other social dimensions contributed to forging individual and collective identities. Among them were ethnicity, language, migration experience and habitat. Religious affiliation was entwined with these other facets of experience, as well as with schooling and occupation. As a consequence, one cannot expect that belonging to a particular religion carried precisely the same meanings for people in various parts of the country. French Catholics in Quebec, for example, may have perceived their religion as a vivid reminder of their minority status in a context dominated by the British group, while the experience of the Irish was coloured by tensions in Ireland, and that of the Anglicans in urban Ontario by their ties to the powerful British Empire. I shall return to this in the following analyses.

### 3. THE PROBLEM OF MEASUREMENT

The analyses in this paper are based on data from 1871 and 1901 Canadian censuses. Nationwide registration of vital statistics was implemented only in 1921; and only in 1941 did the census introduce questions on marriage dates and numbers of children ever born.<sup>5</sup> Given these limitations, there is potential in mining nominative household micro-data. The two samples will allow me to perform micro-level analyses at two points in time, covering a period when

Canadian fertility is known to have declined. This, I hope, will contribute to better document the fertility patterns at each date and, by contrasting the two, shed light on factors that contributed to the changes.

The sample for 1901<sup>6</sup> contains information on residents of 5 per cent of all the recorded dwellings, which amounts to 265,286 individuals (Sager, Thompson, and Trottier 1997). The information is rich with respect to ethno-religious characteristics, schooling, occupation, and employees' earnings. The structure of the 1871 sample is more complex, in response to specific goals of the two researchers who designed it in the 1970s (Ornstein and Darroch 1986).<sup>7</sup> A "main sample" is stratified on the rural-urban dimension to ensure enough cases from the growing urban minority. An additional "ethnic sample" was designed to over-sample the British minority in Quebec, the French minority in the three other provinces, and the German minority in counties where people of these origins accounted for more than 15 per cent.<sup>8</sup> The numbers of women aged 15 to 50 in the two sub-samples amount to 5,574 and 2,124 respectively.

Although the samples had different geographic coverage, I have restricted the analysis, the tables and comparative interpretation to the four provinces covered in both censuses. Let me say a little about the problems of comparability. First, although questions were not always phrased in the same way, they are close enough to allow comparison. For example, there is no question in 1871 pertaining to an individual's mother tongue, but both censuses include a question on ethnic origin which can be used to define sub-groups. The census-taking operation of 1871 was considerably improved over earlier censuses (Curtis 2000), and there is no reason to think that under-enumeration is a serious handicap to the use we are making of it. Principles behind the constitution of the two samples were similar; all the information was carefully transcribed and coded using a comparable logic. Both operations were carefully monitored, using a large array of validation procedures to test the quality of the information.

The fertility measure used in this paper is based on the own-children method. Children under the age of five were linked to their mother<sup>9</sup> and "marital" child-woman ratios were computed for age categories of mothers. Compared to more standard fertility measures, the method suffers from obvious limitations: it captures only the surviving children; it is affected by problems of enumeration and by precision of age declarations; and in order to estimate overall fertility levels, it requires adjustments for the proportion of women who were married. Here is how I have addressed these problems. First, I made adjustments for infant and child mortality whenever possible when comparing fertility measures. This is a risky procedure in a context where we know that significant differentials existed between ethno-religious groups and rural or urban areas (Thornton, Olson, and Thach 1988; Thornton and Olson 2001; McInnis 2000).

Second, the problems of under-enumeration and of age declaration have been investigated in the context of the Quebec province where the precision of parish registers allowed us to confront the census declarations with a second source. That test yielded very satisfactory results for 1901 (Gauvreau, Gossage, and Gingras 2000) and satisfactory results for 1871 (Gauvreau, Gervais, and Gossage, forthcoming). Finally, I will make no attempt to derive measures of overall fertility since the finally immediate goal, in the comparative framework of this volume, is to reach a better understanding of how married couples came to limit family size.

In the end, I analyze “age-specific marital child-woman ratios.” These are not the conventional indicators of fertility levels, but will nevertheless allow reasonable comparisons between 1871 and 1901. It is a strategy, probably the sole strategy available, for exploiting individual and household data and taking into account competing factors of social identity. As shown by recent efforts to measure fertility differentials with the own-children method, it is difficult to treat more than one factor at a time, and even more difficult to get appropriate information that deals with the differential nature of the limitations discussed above (Cicali and De Santis 2002). By limiting the number of adjustments, we avoid introducing errors to what is already an imperfect situation, and we remain closer to the actual situation couples were facing when they had to decide whether they would try to avoid a next birth. It will be necessary, in reporting fertility trends (in the next section) to consider further implications of the method, and the possible impacts of local differences in infant mortality.

#### 4. RELIGION AND FERTILITY: THE NEW EVIDENCE

Married women aged 15 to 50 in 1871 had, on average, fewer than 1.00 child under the age of five in urban areas, 1.20 in rural areas. The mean was usually higher for Catholics than Protestants, but varied by province. In urban areas, Ontario women had fewer children than others. Before going any further with comparisons of this kind, we need to consider infant and child mortality, which are known to be affected by significant differentials. Using mortality rates for rural and urban areas by province provided by McInnis for 1891 (2000: 403) and mortality rates for the three ethno-religious groups of Montreal provided by Olson and Thornton (2001: 201),<sup>10</sup> I have applied tentative corrections to the numbers (Table 1). The results suggest two things. First, the adjustment causes the apparent urban/rural differential to disappear, except in Ontario and, to some extent, in Quebec. Second, the difference already noted in Quebec between Catholics and Protestants is increased. In urban areas of Quebec, where it is possible to distinguish Catholics of Irish origin from those of French origin, no difference is found in the numbers of children under five.

*Table 1. Child-woman ratios adjusted for infant and child mortality by province and habitat, 1871 and 1901.*

Province	1871		1901	
	Rural	Urban	Rural	Urban
Ontario	1.27	1.11	0.96	0.74
Quebec	FC 1.42	FC 1.31	FC 1.36	FC 1.31
		IC 1.30		IC 1.00
		AP 1.11		AP 0.85
New Brunswick	1.29	1.25	1.05	0.88
Nova Scotia	1.25	1.25	0.98	1.00

Source: 1871 Census sample constructed by Ornstein and Darroch (1986) and CFP sample of 1901 Census. These figures are for the total population, except when mentioned otherwise (Quebec): FC = French Catholics; IC = Irish Catholics; and AP = Anglo-Protestants.

By 1901, the numbers of children under five are lower in every group except French Canadian Catholics. Differentials between Catholics and Protestants appear more pronounced, with Protestant denominations like the Methodists, Baptists, and Presbyterians at the forefront of the decline. The urban/rural differential has also widened. These results are not affected by adjustments for infant and child mortality. In Nova Scotia and New Brunswick, however, corrections attenuate the urban/rural differential; and in urban Quebec a decided difference, not found in 1871, appears between Catholics of French and Irish origins.

The fertility declines observed between 1871 and 1901 are summarized in Table 2 for all groups and settings with sufficient numbers, along with information concerning their starting levels in 1871. We see once again that French-Canadian Catholic couples did not follow the same path towards lower fertility, regardless of whether they lived in Quebec or elsewhere. For Catholics of Irish origin, however, decline was substantial in both urban Quebec and urban Ontario (20 per cent). The same is true for Catholics in rural Nova Scotia, mostly of Scottish origin (16 per cent), and for Catholics in urban New Brunswick to a lesser extent (10 per cent). Although we do not see a decrease in rural Ontario, the level for Irish Catholics was not very different from other Catholic groups living in rural areas in 1901.

Among Protestants, groups who were already showing lower fertility in 1871, display further decline by 1901. Protestant women residing in urban Ontario all

belong to this group, as well as Methodists and Presbyterians in rural Ontario and Nova Scotia, Anglicans in Ontario, and Protestants of English origin in Quebec. In 1901, fertility levels were certainly lower in urban areas, but decreases are impressive for most Protestant groups in rural Canada, to the exception of Anglicans in rural New Brunswick and Nova Scotia. Where Protestants of Irish origin can be distinguished, the starting point was higher but

*Table 2. 1871-1901 child-woman ratios by ethno-religious group, province, and habitat.*

Ethno-religious group	Province and habitat	Child-woman ratios in 1871	Child-woman ratios in 1901	Per cent decline
Anglicans - Irish origin	Ontario rural	1.31	0.80	39
Presbyterians	Ontario rural	1.15	0.77	33
Methodists	Ontario rural	1.11	0.75	32
Presbyterians	Ontario urban	0.88	0.61	31
Protestants - English origin	Quebec rural	1.03	0.74	28
Anglicans - English origin	Ontario rural	1.09	0.79	28
Protestants	Quebec urban	0.98	0.71	28
Presbyterians	Nova Scotia rural	1.10	0.79	28
Methodists	Ontario urban	0.86	0.64	26
Anglicans	Ontario urban	0.90	0.67	26
Presbyterians	New Brunswick rural	1.26	0.96	24
Catholics - Irish origin	Quebec urban	1.03	0.81	21
Baptists	Nova Scotia rural	1.07	0.85	21
Catholics - Irish origin	Ontario urban	0.98	0.79	19
Methodists	Nova Scotia rural	1.05	0.86	18
Baptists	New Brunswick rural	1.15	0.95	17
Catholics	Nova Scotia rural	1.28	1.07	16
Catholics	New Brunswick urban	1.12	1.01	10
Anglicans	Nova Scotia rural	1.07	1.00	7
Anglicans	New Brunswick rural	1.05	1.01	4
Catholics	New Brunswick rural	1.24	1.23	1
Catholics - French origin	Quebec urban	0.97	0.96	1
Catholics	Quebec rural	1.28	1.28	0
Catholics - Irish origin	Ontario rural	1.04	1.11	-7

Source: 1871 Census sample constructed by Ornstein and Darroch (1986) and CFP sample of 1901 Census. Figures for 1901 were age-standardized for comparison with 1871.

the decrease was more pronounced. This was also the case in Ontario. The overall picture in both rural and urban settings is a decline affecting all ethno-religious groups but French-Canadian Catholics who continue to display the largest numbers of children.

The next analytical step is an attempt to model the fertility patterns observed in 1871 and 1901 respectively. One objective of this attempt is to test the “characteristics hypothesis” stating that religion affects fertility through structural differences inherent to various religious groups. If this hypothesis proves to be right, then the role of religion would disappear when controlling for the effect of other cultural, social or economic factors. But if the role of religion remains significant, then it will be possible to start disentangling its effect from that of these other factors.

For each census, I carry out two separate analyses, one on married women aged 30 to 39, the other on women aged 40 to 49. In the absence of direct information on marriage patterns, exclusion of women in their twenties offers greater control over the problem of recent marriages and censoring at the beginning of the observation period (Thornton and Gauvreau 2003). I chose to perform distinct analyses on women at the end of their reproductive life (40 to 49) in order to introduce a variable related to school attendance for older children in the family, which can be applied only to women who have children old enough to attend school (7-14). The variable has been included in our analyses despite this problem because of its importance in the literature concerning the fertility transition, and the fact that it has rarely been tested with historical data.

The dependent variable is defined as the number of under-five children who are living with their mother for the purpose of multivariable analysis of variance and OLS regression modelling.<sup>11</sup> In the case of women aged 40 to 49, the dependent variable is more appropriately defined in terms of having (or not) a child under the age of 5, and logistic regression was used to model fertility. All independent variables are defined in Appendix 1; and Tables 3 and 4 provide basic information on the numbers of women in each category of the independent variables, and the mean number of their children under five. To avoid the differential impacts of infant mortality on the inevitably crude measure of fertility, separate analyses were performed on the two main religious groups (Catholics and Protestants),<sup>12</sup> and on women residing in urban and rural areas.

The decision to run separate analyses is supported by preliminary studies performed on all women aged 30-39 in 1871. They pointed to significant differences between women residing in urban and rural areas. Another significant difference concerns Methodist women who had significantly less children than Catholics. As reported in Table 5, age stands out as the sole factor

*Table 3. Number of married women aged 30-49 and mean number of children aged less than 5 according to various characteristics, 1871.*

Characteristic	Ontario		Quebec		New Brunswick		Nova Scotia	
	N	Mean	N	Mean	N	Mean	N	Mean
<b>Age</b>								
30-39	788	1.27	490	1.39	351	1.25	395	1.32
40-49	551	0.60	420	0.67	242	0.71	288	0.58
<b>Religion</b>								
Catholic	237	1.03	752	1.06	176	1.14	153	1.17
Anglican	321	1.00	64	1.04	101	0.88	108	1.02
Presbyterian	290	1.01			87	1.10	185	0.98
Methodist	352	0.95			60	0.75	82	0.81
Baptist	70	0.97			160	1.05	137	0.98
Lutheran & others	66	1.01						
<b>Habitat</b>								
Rural	792	1.08	500	1.20	438	1.05	503	1.06
Urban	548	0.88	410	0.89	156	0.97	180	0.88
<b>Ethno-religious group</b>								
French	40	0.99	645	1.07	79	1.26	47	0.99
English	386	0.94	79	1.02	195	0.94	232	0.99
Irish Catholic	177	0.99	95	1.06	94	1.11	64	1.26
Irish Protestant	319	1.09	40	1.07	115	1.00	63	0.94
Scottish	261	1.00	41	1.14	87	0.85	201	1.01
German	105	1.06					56	0.97
<b>Birthplace</b>								
Canada	529	1.12	752	1.08	474	1.07	589	1.02
Outside of Canada	809	0.92	158	0.95	120	0.88	94	0.97
<b>Occupational category</b>								
Merchants/manufacturers/ professionals/white collars	205	0.94	147	1.11	73	0.79	85	0.81
Artisans	329	0.92	192	0.87	102	1.02	132	0.91
Laborers	226	0.97	199	0.96	111	1.06	160	1.01
Farmers	535	1.09	339	1.22	299	1.08	298	1.10
<b>Literacy</b>								
Low	185	0.87	388	1.11	128	1.01	169	1.04
High	1155	1.02	522	1.02	466	1.03	515	1.00

Source: 1871 Sample constituted by Ornstein and Darroch (1986). Weighted cases to yield correct interprovincial and urban-rural comparisons. Groups with less than 40 cases have not been included in the table.

*Table 4. Number of women and mean number of children aged less than 5 according to various characteristics, 1901.*

Characteristic	Ontario		Quebec		New Brunswick		Nova Scotia	
	N	Mean	N	Mean	N	Mean	N	Mean
<b>Age</b>								
30-39	5383	0.90	3569	1.36	728	1.17	985	1.08
40-49	4145	0.35	2848	0.61	592	0.49	772	0.43
<b>Religion</b>								
Catholic	1491	0.98	5477	1.09	476	1.12	312	0.87
Anglican	1523	0.62	329	0.64	154	0.75	238	0.76
Presbyterian	2149	0.61	249	0.65	142	0.63	397	0.85
Methodist	3180	0.58	190	0.65	160	0.71	252	0.69
Baptist	599	0.56			351	0.74	371	0.70
Lutheran	202	0.83						
<b>Habitat</b>								
Large city	1599	0.58	1530	0.73	175	0.62	157	0.65
Middle-range city	975	0.54	402	0.83	70	0.64	128	0.77
Small city	1321	0.57	566	0.99	155	0.64	221	0.75
Rural	5633	0.73	3919	1.18	920	0.96	1251	0.82
<b>Ethno-religious group</b>								
French	604	1.10	5145	1.11	336	1.18	162	0.85
English	3076	0.57	481	0.64	451	0.73	685	0.73
Irish Catholic	672	0.86	240	0.82	134	0.86	93	0.78
Irish Protestant	2021	0.62	173	0.77	150	0.68	78	0.86
Scottish	1720	0.63	213	0.76	185	0.72	524	0.87
German	938	0.70	49	0.67			160	0.73
<b>Birthplace</b>								
Canada - Rural	5901	0.69	4877	1.10	1011	0.90	1318	0.80
Canada - Urban	1679	0.63	1073	0.82	190	0.68	293	0.75
Outside of Canada	1609	0.59	382	0.70	58	0.90	69	0.86
<b>Occupational category</b>								
Merchants, professionals I	761	0.56	415	0.88	67	0.66	111	0.68
Merchants, professionals II	695	0.57	336	0.81	73	0.71	91	0.73
White collars	281	0.53	231	0.82				
Artisans I	664	0.65	477	0.97	83	0.72	323	0.82
Artisans II	1904	0.63	1111	0.91	234	0.77	418	0.83
Laborers	1086	0.73	854	0.99	166	0.96	132	0.73
Farmers	3691	0.74	2521	1.22	603	0.98	585	0.83
<b>Literacy</b>								
Low	308	0.80	682	0.93	124	1.13	137	0.78
High	9026	0.64	5316	1.05	1111	0.82	1547	0.79
<b>Children's schooling</b>								
Low	2919	0.82	2220	1.18	675	1.02	870	0.93
High	3453	0.65	2496	1.16	267	0.74	355	0.76

Source: CFP 5% sample of 1901 census.



*Table 5. Least squares regression estimates on number of children < 5 for women aged 30 to 39, 1871.*

Variable	Protestant women		Catholic women		Women in urban areas		Women in rural areas	
	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value
<b>Age (covariate)</b>	-.05	.00	-.04	.00	-.07	.00	-.05	.00
<b>Province</b>								
Ontario	Reference		Reference		Reference		Reference	
Quebec	.23	.02	.22	.11	-.03	.81	.26	.01
New Brunswick	-.11	.27	.02	.90	-.17	.23	-.02	.84
Nova Scotia	-.01	.94	.13	.51	-.15	.29	.14	.17
<b>Religion</b>								
Anglican	Reference							
Presbyterian	-.04	.55						
Methodist	-.31	.00						
Baptist	-.16	.09						
<b>Habitat</b>								
Rural	Reference		Reference					
Urban	-.19	.02	-.27	.03				
<b>Ethno-religious group</b>								
French			Reference		Reference		Reference	
English					.01	.97	-.14	.23
Irish Catholic			.07	.55	.34	.02	-.05	.72
Irish Protestant					.04	.82	.17	.15
Scottish					.09	.58	-.10	.41
<b>Birthplace</b>								
Canada					Reference		Reference	
Outside of Canada					-.08	.37	.13	.07
<b>Occupational category</b>								
Merchants/manufacturers/ professionals/white collars	Reference		Reference		Reference		Reference	
Artisans	.06	.52	-.08	.63	-.25	.01	.12	.35
Laborers	.16	.11	-.01	.94	.12	.24	.22	.07
Farmers	.35	.00	.08	.62			.31	.00
Number of women	1200		651		646		1083	
Adjusted R <sup>2</sup>	.07		.03		.05		.05	

*Table 6. Odds ratios for the probability of having a child < 5 for women aged 40-49, 1871.*

Variable	Protestant women		Catholic women		Women in urban areas		Women in rural areas	
	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value
<b>Age</b> (covariate)	0.79	.00	0.82	.00	0.80	.00	0.80	.00
<b>Province</b>								
Ontario	Reference		Reference		Reference		Reference	
Quebec	0.81	.47	2.44	.02	0.83	.60	1.26	.39
New Brunswick	0.84	.45	2.93	.01	0.82	.59	1.22	.40
Nova Scotia	0.65	.05	1.63	.29	0.46	.05	0.99	.95
<b>Religion</b>								
Anglican	Reference							
Presbyterian	1.16	.46						
Methodist	0.97	.89						
Baptist	1.23	.38						
Lutheran & others	1.18	.77						
<b>Habitat</b>								
Rural	Reference		Reference					
Urban	0.75	.15	1.07	.81				
<b>Ethno-religious group</b>								
French			Reference		Reference		Reference	
English					1.37	.53	0.98	.95
Irish Catholic			3.31	.01	1.27	.63	0.71	.34
Irish Protestant					1.39	.53	0.90	.74
Scottish					2.08	.19	0.94	.83
<b>Literacy</b>								
Low	Reference		Reference		Reference		Reference	
High	1.40	.13	0.64	.03	0.94	.84	0.91	.62
<b>Birthplace</b>								
Outside of Canada	Reference		Reference		Reference		Reference	
Canada	1.27	.20	4.78	.00	2.54	.00	1.08	.72
<b>Occupational category</b>								
Merchants/manufacturers/ professionals/white collars	Reference		Reference		Reference		Reference	
Artisans	1.26	.36	0.98	.99	1.17	.55	1.05	.89
Laborers	1.54	.12	0.82	.56	0.95	.85	1.34	.39
Farmers	1.39	.19	1.65	.16			1.46	.19
Number of women	860		523		453		826	
Chi-square	99.58		85.11		53.12		88.81	
Degrees of freedom	14		11		12		13	
p-value	.00		.00		.00		.00	
Log-likelihood	-541.71		-319.37		-276.14		-531.23	

significant in all four models, confirming its importance for shaping fertility. Of the four sub-groups, Protestant women were most affected by other factors. Methodist women had fewer children than Anglican women; Protestant women in Quebec had more children than those in other provinces; and Protestant women living in urban areas had fewer children than those in rural areas, farmers' wives more than the wives of merchants and professionals.<sup>13</sup> Of Catholic women, only those living in urban areas had fewer children than rural women; in urban areas, Catholic women of Irish origin had significantly more children than those of French origin. In rural areas, Quebec women had more children than women residing in other provinces, and farmers' wives more than the wives of merchants and professionals.

Women in their forties might be expected to use stopping rather than spacing strategies, but their fertility appears even less contrasted than for younger women (Table 6). Age shows the expected negative impact on the probability of having at least one child under the age of five. Catholic women seem to be the group most affected by the other factors: women residing in Quebec and New Brunswick were more likely than Catholics in Ontario to have young children, and the same is true for Catholics of Irish origin and women born in Canada (as opposed to Europe). This is also the case for women living in urban areas. Catholic women are the only group where literacy showed a negative impact on the presence of young children.

In sum, fertility patterns in 1871 do not show great differences, consistent with the hypothesis that the country was just entering the first phase of a fertility decline. If we ignore the differences that might arise from infant mortality differentials, we see Methodist women at the forefront, especially among younger women, more likely to exhibit spacing strategies. At the high end of the fertility spectrum were Irish Catholic women living in urban areas (as compared with French Catholics in the same areas), native-born women (as compared with immigrant women), and farmers' wives (as compared with other occupational categories in rural areas). In three specific contexts, Quebec showed significantly higher fertility levels in 1871: Protestant women, rural women in their thirties, and Catholic women in their forties. It will be important to see whether these patterns reappear in 1901.

Efforts to model the 1901 fertility patterns yield a wider array of differentiating factors, a result consistent with the diverging paths of the several sub-groups. The general models clearly indicate that Catholic women had more children than Protestants.<sup>14</sup> Table 7 (women 30-39) and Table 8 (women 40-49) suggest that it is useful to move beyond the traditional divide between Protestants and Catholics in order to understand the dynamics of fertility within each group, and within rural and urban *milieux*.

Table 7. Least squares regression estimates on number of children < 5 for women aged 30 to 39, 1901.

Variable	Protestant		Catholic		Women in		Women in	
	women		women		urban areas		rural areas	
	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value
<b>Age</b> (covariate)	-.05	.00	-.04	.00	-.05	.00	-.04	.00
<b>Province</b>								
Ontario	Reference		Reference		Reference		Reference	
Quebec	.10	.04	-.06	.31	.06	.17	.17	.00
New Brunswick	.21	.00	-.05	.52	.11	.14	.17	.00
Nova Scotia	.24	.00	-.14	.15	.12	.07	.18	.00
<b>Religion</b>								
Anglican	Reference				Reference		Reference	
Presbyterian	.02	.56			-.06	.31	.06	.23
Methodist	-.08	.02			-.15	.01	-.05	.32
Baptist	-.12	.01			-.10	.18	-.09	.15
Lutheran	.16	.07			.03	.83	.17	.17
Catholic					.34	.00	.51	.00
<b>Habitat</b>								
Urban - Large	Reference		Reference		Reference			
Urban - Medium	.04	.37	.06	.41	.06	.18		
Urban - Small	.06	.19	.29	.00	.15	.00		
Rural	.22	.00	.40	.00				
<b>Ethnicity</b>								
French			Reference					
Irish			-.22	.00				
Other			-.20	.11				
<b>Birthplace</b>								
Outside Canada	Reference		Reference		Reference		Reference	
Canada - Rural	-.12	.00	.00	.98	-.02	.64	-.12	.03
Canada - Urban	-.02	.72	.02	.85	.03	.52	-.12	.13
<b>Occupational category</b>								
Merchants, professionals I	Reference		Reference		Reference		Reference	
Merchants, professionals II	.06	.29	.01	.92	.01	.83	.10	.31
White collars	-.03	.68	-.01	.96	-.02	.74	-.03	.82
Artisans I	.06	.27	.02	.83	.08	.24	.04	.60
Artisans II	.11	.02	.00	.97	.07	.14	.06	.41
Laborers	.15	.01	.04	.60	.12	.04	.13	.11
Farmers	.21	.00	.11	.18			.17	.02
<b>N</b>	5396		3962		3542		5800	
<b>Adjusted R<sup>2</sup></b>	.05		.05		.08		.10	

*Table 8. Odds ratios for the probability of having a child < 5 for women aged 40-49, 1901.*

Variable	Protestant women		Catholic women		Women in urban areas		Women in rural areas	
	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value
<b>Age (covariate)</b>	0.78	.00	0.75	.00	0.79	.00	0.76	.00
<b>Province</b>								
Ontario	Reference		Reference		Reference		Reference	
Quebec	1.27	.18	0.93	.65	1.07	.68	1.36	.01
New Brunswick	1.19	.28	1.13	.62	0.64	.13	1.47	.01
Nova Scotia	1.30	.07	0.97	.90	0.88	.61	1.32	.06
<b>Religion</b>								
Anglican	Reference				Reference		Reference	
Presbyterian	0.84	.17			0.70	.08	0.96	.81
Methodist	0.84	.16			0.88	.52	0.87	.34
Baptist	1.00	1.00			1.08	.79	0.99	.97
Lutheran	0.84	.84			1.07	.92	1.31	.43
Catholic					1.64	.01	1.96	.00
<b>Habitat</b>								
Urban - Large	Reference		Reference		Reference			
Urban - Medium	0.93	.71	0.85	.46	0.96	.79		
Urban - Small	1.16	.42	1.03	.89	1.07	.62		
Rural	1.25	.18	1.47	.03				
<b>Ethnicity</b>								
French			Reference					
Irish			0.74	.06				
<b>Birthplace</b>								
Outside Canada	Reference		Reference		Reference		Reference	
Canada - Rural	0.87	.30	1.66	.07	0.97	.87	1.00	.97
Canada - Urban	0.71	.03	1.48	.18	0.82	.23	0.81	.37
<b>Occupational category</b>								
Merchants, professionals I	Reference		Reference		Reference		Reference	
Merchants, professionals II	0.99	.98	0.90	.72	0.88	.54	0.89	.72
White collars	0.55	.12	0.95	.88	0.82	.47	0.63	.50
Artisans I	1.23	.35	1.40	.18	1.15	.53	1.26	.34
Artisans II	0.98	.92	0.79	.29	0.85	.34	0.94	.77
Laborers	1.24	.34	0.95	.81	1.22	.33	0.89	.61
Farmers	1.27	.21	1.36	.16			1.18	.41
<b>Schooling</b>								
Low	Reference		Reference		Reference		Reference	
High	0.69	.00	0.80	.02	0.79	.04	0.74	.00
<b>Literacy</b>								
Low	Reference		Reference		Reference		Reference	
High	1.25	.49	1.22	.15	1.62	.05	0.99	.97
Number of women	2735		2141		1755		3361	
Chi-square	322.63		369.49		193.75		575.58	
Degrees of freedom	21		18		20		19	
p-value	.00		.00		.00		.00	
Log-likelihood	-1559.00		-1299.26		-991.21		-2020.46	

In addition to the age factor, present everywhere as in 1871, fertility levels for urban women aged 30-39 are significantly affected by religious differences. Catholic and Methodist women's position fall on opposite sides of the Anglicans: Catholic women because they have more children and Methodists because they have fewer. Among Catholic women, those of Irish origin had fewer than those of French origin. To be living in large or middle-range cities is associated with lower fertility, but this result must be interpreted with caution given the lack of detailed data regarding infant mortality rates in each type of urban setting. Contrary to what prevailed in 1871, fertility patterns in rural areas are more diverse in 1901. Even in the rural setting, Protestant women had fewer children; women born in rural Canada had fewer than newcomers; wives of farmers had more children than other occupational categories; and Ontario stood out as the province with lowest fertility levels.

Notwithstanding the fact that Protestant women as a whole had fewer children than Catholic women, the group appears quite heterogeneous, especially for women in their thirties. Methodist and Baptist women had fewer than women of other Protestant denominations. Women residing in Ontario and those residing in cities had fewer children. Protestant women born outside had more children than women born in rural Canada. Occupational differentials show farmers, labourers, and artisans working in factories with more children than merchants and professionals.<sup>15</sup> Overall, the model is complex and certainly demonstrates the need for further research on the details of fertility decline in English Canada.

The model for Catholic women is less contrasted, which I am inclined to interpret as a consequence of the high fertility levels still observed for this group. The only significant differences affect Catholic women of Irish origin, who had decidedly fewer children than French Catholic women (see Thornton and Olson in this volume). For reasons already discussed, the urban/rural differential is more questionable.

Some of the differences already noted for women aged 30-39 also apply to women aged 40-49. For example, similar religious differences affected women residing in urban or rural areas; women living in rural areas of Ontario had fewer children than those in other provinces; and, among Catholics, women of Irish origin were close to having fewer children than those of French origin ( $p = .06$ ). The new variable for schooling turns out to be a significant factor in all four models tested.<sup>16</sup> Defined in reference to the proportion of older children attending school on a permanent basis and used only for older women, in all four models schooling had a negative impact on the probability of having at least one young child. This first evidence yet compiled on impact of schooling in Canada suggests the logic of increased investment in offspring, present to some extent in all groups studied here.

## 5. INTERPRETING THE EVIDENCE

There is no doubt that there was a significant fertility decline in Canada during the last decades of the nineteenth century. The trends reported here amply demonstrate this fact and confirm what McInnis (2000) inferred from aggregate data for 1861 and 1891. Was the decline already on its way in 1871? It is difficult to say, but 1871 figures suggest that some groups of women, in particular Methodists and women living in urban Ontario, as early as the 1860s, had begun to limit family size by widening birth intervals. But the paths followed by couples to limit the size of their family during the last decades of the nineteenth century were decidedly diverse and complex, and religion did contribute to shaping their contours.

Despite the limitations, micro-level data from the 1871 and 1901 Canadian censuses offered an opportunity to investigate this vexed issue in a pluralist context. The interactions of the several factors is of special interest, distinctive in each province. Overall, the characteristics hypothesis accounts for some of the differences, but it does not rule out the role of religion in explaining the fertility decline. In Canada, as in many other countries, we see a different pace, much earlier and more marked for Protestants. Other differences affect subsets of Protestants and, among Catholics, we distinguish groups on the basis of ethnic origins.

Catholics, especially French Catholics, remained almost untouched by the decline in 1901. Even when living in the cities, where economic transformations can be seen as a strong incentive for limitation, Catholics of French origin did not show obvious signs of decline and had significantly more children than Catholics of Irish origin. Other writers have examined the ways in which the Catholic Church, over the late nineteenth century, became an instrument for constructing a new version of French-Canadian ethnic nationalism.<sup>17</sup> In this context, clergy, elites and politicians of various stripes were all openly celebrating the large French Canadian family (Gossage and Gauvreau 1999). Until 1960 “the Church was successful in exerting a near monopoly on the symbolic universe such that even secular community events invariably involved a religious dimension” (McQuillan 2004: 34). This left little room for Catholics to adopt contraceptive behaviour. Specific political circumstances, such as conflict over Catholic and French-language schools, in one province after another, contributed to strengthening the position of each group, confirming that political turmoil could very well contribute to emphasizing “social identities” and have an impact on fertility behaviour (see Benz in this volume).

The presence in large numbers of two groups of Catholics, of French and Irish origins, makes it possible to “unhitch” the religious factor as a statistical

effect. The two groups display a different evolution over the thirty years. What meaning should we attach to these differences? For various reasons (see Thornton and Olson in this volume), Catholics of Irish origin were more likely to resist Catholic enrolment than Catholics of French origin. An important factor was their minority situation and the complexity of their political alliances: close to the French through their religion and to the Protestant through their common language. Additional analyses not reported here indicate that Irish Catholic women had significantly more children than Irish Protestant women, which attests to the strength of the religious factor, even within a particular national origin.

How then did religious affiliation assert its effect on fertility? To say that English Canada was a more secular society than French Canada does not fully resolve the issues of Catholic versus Protestant behaviours: “One of the persistent obstacles facing English Canadian social history is the misplaced belief that we are *de facto* a more secular society...” (Christie and Gauvreau 2003: 29). We have seen that Anglican women had more children, and a partial explanation may lie in the fact that Anglicans had a more structured religion than other denominations, a religion of order as opposed to a religion of experience, which might have made less room for personal consciousness and agency (Choquette 2003; Westfall 1990). Methodists, on the other hand, are described as having had “a relatively easy adjustment to modernity” (Airhart 1992: 39) and their position on family limitation was certainly not coercive, as illustrated by this quotation from a 1893 Methodist newspaper:

...in marriage no woman can be absolute mistress of herself. Neither should her husband be absolute master of her. There must be mutual concessions. But her right to limit the number of her own offspring should be unquestioned. Even those who value a woman solely for her parental functions must admit that she who has but four children can give them three times the amount of attention and of mothering than she who has twelve.<sup>18</sup>

In Canada during the last decades of the nineteenth century, educational structures were developing rapidly, especially in the cities and the two most industrialized provinces. As in other places (see Praz and McQuillan in this volume), schools were usually structured as religious institutions whose educational content was embedded in a web of religious values and beliefs (Airhart 1995; Lalou 1993). Schooling also had an important socioeconomic dimension since parents who sent their children to school had to renounce their contribution to the family economy, in the form of either work or cash. By 1901 the fertility decline was well on its way in many groups, and children’s schooling was clearly associated with lower fertility for all groups including Catholics, net



of the effect of other cultural or economic factors. This result gives credit to Caldwell's thesis (1982) that investment in children's education was indeed a central element of the fertility decline.

Many individuals and families in Canada at the end of the nineteenth century had vivid memories of places they had left either in Europe or in the Canadian countryside. Although this factor did not have a consistent statistical impact on fertility, results suggest that individual accounts of immigrants' fertility mirror the overall trend observed at the national level. McInnis' figures for 1861 (2000: 392, 410) clearly indicate that the two provinces of Ontario and Quebec had higher marital fertility than the countries of origin of most Canadian immigrants. By 1891, Ontario had lower marital fertility rates than these countries. The micro-level analyses of 1871 and 1901 data also suggest that immigrant women went from a situation of relatively lower to relatively higher marital fertility, relative to Canadian-born. On the other hand, women born in rural Canada who migrated to an urban setting had no more children than city-born women. Migrants from the countryside must have adapted rapidly to their new circumstances, or may have formed a "selected" sub-group, already inclined to adopt an urban way of life.

The urban way of life was usually associated with having fewer children, especially in 1901, although the differences observed in this study have to be interpreted with care given the awkward interference of infant mortality differentials with the fertility measure. The same comment applies to occupational differentials involving farmers' wives, whose higher fertility persisted among women living in rural areas. Such results are nonetheless consistent with the idea that aspirations of urban couples were transformed by new economic forces such as the expansion of wage labour, the development of the service sector and of clerical occupations. These changes obviously affected men but also single women, who were no longer confined to working as domestic servants.

The Canadian literature on the fertility decline usually points to Quebec as the noticeable exception – the latecomer. The new micro data highlights at least one other intriguing exception: the early decline in the province of Ontario.<sup>19</sup> As McInnis pointed out (2000), the fertility decline in Ontario did follow a path of its own, as compared with other provinces. From the household data, we see the Ontario advance as led by Protestant women and women residing in rural areas. Ontario was an important locus for the development of capitalism in Canada. Although Quebec also played such a role to a certain extent, it was not as widespread and was tempered by the expression of French Catholic nationalism. In Quebec, mechanization and industrial employment were highly concentrated in one city, Montreal, and most other towns were much smaller. In Ontario,

industrial development was more widespread and entrepreneurial values may have more easily merged with Protestant values (Westfall 1990). Of the four provinces studied here, Ontario is also the province where more people reported recent migration to the New World, which may have contributed to shape their adaptability to the new economic conditions.

## 6. CONCLUDING REMARKS

New micro evidence from nominal census samples for 1871 and 1901 has confirmed a significant fertility decline in Canada over this period. Religion, I have shown, was a central element, but groups of differing national origins, placed in different situations – urban or rural, majority or minority, Ontario or Quebec – were following different pathways, responding to “modernity” at different rates, and perhaps employing different means. These results, I hope, will help us move beyond the dichotomies of Catholic versus Protestant, and French versus English, that have long dominated the narratives of fertility in Canada. There is more to be learned from the Canadian experience of the decline, starting with how it was shaped by the unique histories of the various religious and ethnic communities whose positions varied greatly in the economic and political arena.

There is also more to be learned by sharing our observations on the role of religion on fertility in a variety of contexts. Crucial to both historical demographers and social historians, the explicit question on religion, and the comparative framing, have inspired us to dig deeper in order to propose more refined accounts of communities’ experiences of the fertility decline. As a result, we have uncovered more similarities in the role of religion during the fertility transition: the emergence of religious differentials during the early phase, the diversity of behaviors among “Protestant” communities and within the Catholic group, and the wide array of factors that inflected or mediated the impacts of religious affiliation. While no common explanation covers the whole variety of situations examined in this book, the similarities amply demonstrate the importance of analyzing the “concrete conditions under which religion operates” (McQuillan 2004) and addressing the politics of identity as it impinges on the very personal family formation decisions of couples.

## APPENDIX 1 VARIABLES USED IN THE MODELS: A BRIEF OVERVIEW

**Religion** is defined as the religion of the married woman in the sample. The information is pretty detailed, including for example the names of subsets of Methodists or Baptists. This detailed information has been grouped into broader categories which are basically the same in 1871 and 1901. Results would be similar if we were to use the father's religion, since the level of religious homogamy is fairly high in all religious groups. In 1871, for example, at least 95 per cent of Catholic women in each province were married to a man who was also Catholic. The percentages are slightly lower in some of the smaller Protestant denominations, whose reduced numbers limited the probability of marrying within the group. Yet, the percentages are rarely lower than 80 per cent. Exogamy is more apparent than real, since some of these marriages are between groups known to be relatively close, for example Methodists and Baptists.

**Ethnic origin:** Ethnic origin of the married woman as reported, traced on the father's side in case of mixed origin. The information is comparable in 1871 and 1901 despite the label "race" in 1901. The detailed information available has been grouped into broader categories for the purpose of our analyses.

**Province:** Province of residence of the mother.

**Birth place:** Country where the mother was born. The information is comparable in 1871 and 1901. In 1901, the Canadian-born were asked whether they were born in a city or in the countryside.

**Literacy:** Constructed variable based on two census questions aimed at measuring whether the mother is able to read and able to write. We treated the woman as literate if she could do both. The questions remained unchanged in 1901, but literacy levels had increased tremendously.

**Schooling:** Constructed at the family level, schooling is defined as "high" where at least 75 per cent of children aged 7 to 14 were attending school. This variable can be estimated only for families with at least one child aged 7 to 14. The problems are reduced by performed analysis on older women only (40-49), more likely to have children in that age category.

**Habitat:** Rural or urban character of the place where the married woman lives. This variable changed significantly between 1871 and 1901. We acknowledged this by adopting a more elaborate definition for 1901, which takes into account the size of the city (less than 5,000, 5,000 to 19,999, 20,000 and over). The two definitions are not strictly comparable. The 1901 definition available in the CFP database matches the 1951 census definition which defines as urban any municipality with at least 1,000 inhabitants while the 1871 definition of "urban" uses a different threshold of 3,000. It is unlikely that the 1871-1901 comparison

will be affected, but rural differences may be artificially widened by the change. **Occupational category:** Based on the occupation declared by the husband of the married woman, grouped into broader categories. We have used the scheme defined by the CFP group following principles developed by Darroch and Ornstein for the 1871 census. When pertinent, additional information available in 1901 regarding the “position” of the occupation (employer, employee, or own means) was used to distinguish categories of workers who were exerting more control over their work and the work of others (labelled I in Table 5). For artisans, for example, the additional information allows us, at least imperfectly, to distinguish those working in an independent shop (I) from those working in a factory (II).

#### NOTES

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<sup>2</sup> As a matter of fact, it is the State that most vigorously expressed opposition to family limitation. As in several other countries, a law was passed in 1892 in Canada to ban the use of contraception and make illegal the diffusion of information about it (McLaren and McLaren 1986).

<sup>3</sup> Since the economy did not develop at the same pace as in the US, this was a period of an important emigration from Canada. (For example: McInnis 2000; Ramirez 2001)

<sup>4</sup> As one can expect in a “younger” province. The difference is even more striking in 1871: only 37 per cent of urban Ontarians were Canadian-born, 59 per cent of rural Ontarians.

<sup>5</sup> For the nineteenth century, parish register data is excellent for Catholics, imperfect for Protestant denominations, and the Catholic data is not universally available throughout the country.

<sup>6</sup> The sample was made available to all researchers in the year 2001. As a member of the Canadian Families Project, I was able to work with previous versions of the sample, as early as 1997 (see Gauvreau and Gossage 2001).

<sup>7</sup> Ornstein and Darroch were particularly interested in studying social mobility and migration patterns.

<sup>8</sup> I employed the main sample to establish provincial estimates, keeping separate the urban and the rural areas, which differed in significant ways. All the following analyses are based on the main sample only.

<sup>9</sup> The 1901 census reports the individual’s relationship to the head of the household, which makes it easier to determine the links between children and mothers. There is no such question in 1871, but probable links were established by Ornstein and Darroch using a series of logical and probabilistic algorithms.

<sup>10</sup> With so little change between the two censuses, I feel justified in applying the same rates indistinctly to 1871 and 1901 measures. Equivalent information is not available for all religious groups in all provinces and all settings, so that I cannot apply corrections at a more detailed level.

<sup>11</sup> This represents 95 per cent of all children in this age category. The range of the dependent

variable goes from 0 to 5. A test with an ordered logit model, instead of the linear regression model, yielded very similar results.

<sup>12</sup> This is consistent with a recommendation formulated by Goldscheider (1971: 277).

<sup>13</sup> There is no further difference when the first occupational category is taken as the reference category (not all results are shown here).

<sup>14</sup> Results not shown here, valid for both categories of women aged 30-39 and 40-49. One must bear in mind the survival rates, to the advantage of Protestants, and Irish Catholics to a lesser extent. This means that the observed differences are minimal.

<sup>15</sup> All occupational categories except laborers have fewer children than farmers (results not shown here).

<sup>16</sup> The variable was not used in 1871 because it did not seem as reliable as 1901 information.

<sup>17</sup> See, for example, Christie and Gauvreau (2003), and Hardy (1999).

<sup>18</sup> *Christian Guardian*, June 21 1893, 396. We thank Lynne Marks, our colleague from the CFP, for having pointed out this excerpt. This line of interpretation recalls the difference between Orthodox and Liberal Protestants in Holland, as shown by Kok and Van Bavel in this volume.

<sup>19</sup> There is a third one, in my view, in the Western province of British Columbia in 1901: fertility levels were as low as in Ontario, with little variation among sub-groups (Gossage and Gauvreau, forthcoming 2006).

DAVID I. KERTZER

## RELIGION AND THE DECLINE OF FERTILITY: CONCLUSIONS<sup>1</sup>

The attention paid to religion in explaining fertility decline has been something of a bellwether of theoretical fashion in demography over the past half century. In what became the dominant paradigm by mid-twentieth century, linked to modernization theory, the explanation for fertility decline was to be found in the historic transition that removed childbearing from the religious domain of moral strictures passed down and enforced from on high and into the domain of individual or couple conscious choice. As later reformulated, this was conceptualized as the movement toward a context where fertility decisions could be made by couples based on the calculus of conscious choice, a kind of cost-benefit accounting. In at least some very influential versions of this theoretical framework, once this transformation took place – a key part of the modernization process – religion ceased to be of any interest, aside from explaining some exotic minority groups that could be conceived of as holdovers from the pre-modern era. The focus shifted entirely to economic and demographic factors, linked in part to state policies and institutions, that marked the environment in which couples, or individuals, made their choices of what was in their own interest.

In the United States and Europe, interest in religion in explaining fertility behavior was also affected by a contemporary empirical observation. It had long been noted that, in a variety of national contexts, Roman Catholics had higher fertility than Protestants and Jews. This was presumed to be linked to the Catholic Church's more strongly anti-contraceptive and anti-family planning teachings and the influence that this continued to have on Catholics. Given this difference, it was hard for demographers not to deal with religion when they tried to explain fertility decline. But by the 1970s in both North America and Europe this difference had already been effaced or was in any case rapidly diminishing. The need to examine religion in explaining fertility trends seemed to lose its rationale.

By the 1990s, ironically, interest in the Catholic-Protestant fertility disjunction made a rather dramatic return to the demographic world when something totally unexpected took place. Now the Western countries marked by the lowest fertility were, remarkably, places where the Roman Catholic Church had been strongest, not only in terms of the proportion of the population who were Catholic, but in terms of the institutional strength of the Church. Most notable here were Italy – home of the Vatican – and Spain. By the early 1990s these two countries had arguably the lowest fertility in the world. This development could be read theoretically in two very different ways. From one perspective, it could be seen as vindication of those whose theoretical paradigm had little place for religion. If Italy and Spain had such low fertility, it was thought, it must be for reasons having to do with economic, demographic, or institutional forces there. Clearly, such scholars could argue, religion was playing no role. But from another perspective, the totally unanticipated development represented a challenge to demographic theory, one that led demographers to pay new attention to religion, even if the focus became on explaining the conditions in which religion would lose its power to influence fertility.

McQuillan (2004), who recently raised the issue of the impact that the “end of Catholic fertility” (Westoff and Jones 1979) had in diminishing demographers’ interest in religion, notes two other sources in explaining the recent rise in attention paid to religion in demographic theorizing. One stems from the theoretical lessons taken from the ambitious Princeton historical project that examined patterns of fertility decline at the provincial level throughout Europe (Coale and Watkins 1986). The other stems from theorizing about the “second demographic transition” (Van de Kaa 1987, 2001, 2004; Lesthaeghe and Surkyn 1998; Lesthaeghe and Willems 1999), that is the downward shift in fertility from more or less replacement levels to very low, subreplacement levels. What both of these have in common is dissatisfaction with economic theories in explaining fertility decline and a call for more serious demographic attention to the role of culture (Kertzer 1995, 1997). Clearly, with a shift of focus from more traditionally conceived economic and demographic variables toward “culture,” however defined, the need to look seriously at religion becomes clear.

In her chapter in this volume, Katherine Lynch refers to this change in perspective as a movement in focus among demographic analysts toward the “cultural dimensions” of fertility and away from a modernization model. This movement is clearly evident in the chapters of this book, but it could be argued that it is much stronger among those working, as these authors are, in historical demography than among those working on contemporary demographic behavior. Historical demographers have long been, if not historians themselves, immersed in historical sources and – although with exceptions – sensitive to the

historiographic imperatives to provide full cultural context in explaining behavior. The level of such contextual detail provided in this book is, in fact, far from typical of much demographic literature on fertility.

Lynch's call to move away from a disembodied study of fertility to a more nuanced study of reproduction echoes a call made by Greenhalgh (1995) for demography to move to a focus on the "culture of reproduction." The idea is to go beyond "variables" that come in neat packages to understand the mental world and social and political context in which decisions to bear children – or, to put the matter in less volitional terms, behaviors leading to childbearing – are made. In dealing with religion, one basic tenet of such a shift, seen throughout this book, is a movement away from dealing with religion simply by pigeon-holing individuals – or geographical units – into crude religious categories (Roman Catholic, Protestant, Jewish, Muslim, etc.). What it meant, for example, to be Protestant differed greatly depending not only on denomination, and even subdenomination, but on time and place. To be serious about investigating the relationship between religion and fertility means having to deal with these complexities, and so to deal with shifting social, cultural, and political relationships.

If we are to better understand historical fertility behavior and the historic decline in fertility this means doing real history and not some kind of highly stylized historical narrative. It means understanding what religious figures actually taught with regard to behavior linked in some way to fertility, how this differed from time to time, from place to place, from group to group, how much influence and social control these religious specialists exerted, and all this in a larger changing context of social interaction, political control, and cultural meaning.

This approach demands that the analytical categories employed not be taken for granted and not be reified. If there are reasons to move from a focus on fertility to one on reproduction, there is even more reason to be conscious of the culturally constructed nature of "religion" as a variable in demographic research and explanation. "Religion" is not the product of an analytical toolkit, but the appropriation by analysts of a folk category found primarily in Western society. The notion that there is something called "religion" which differs from "politics," "economics," "family," etc., is crucial to virtually all demographic explanation, but this assumption itself needs to be examined critically.

A recent study of demographic behavior in Ghana (Adongo, Phillips, and Binka 1998) points out that the people under study had no word that could be translated as "religion" in their own language. Anthropologists have reported similar findings from places on various continents. The notion of a supernatural world sharply distinct from a natural world is far from a cultural universal, as is



the notion that there is a separate institutional domain defined by a peculiar identification of such supernatural beliefs and that has a distinctive organizational structure, ritual and ideological specialists, etc. One of the advantages of rendering our western common sense category of religion problematic is that it allows us to frame our theories in a more sophisticated way. In speaking of “religion” just what do we have in mind? Are we speaking of a particular kind of western institution – and hence the kind of influence that such institutions exert and the conditions under which they exert such influence? Or are we speaking of particular kinds of belief systems, in which case it is not clear why theoretically our interest should be circumscribed by named, separate, institutional actors.

This same kind of analytical decomposition is required as we try to reconceptualize the relationship between “culture” and the various analytical categories with which it has been contrasted and which are to be somehow jointly employed in developing explanations for fertility behavior. In her chapter on fertility decline in Switzerland, Anne-Françoise Praz makes a related point in writing that the opposition between economy and culture is “misleading and outdated.” Here we are confronted with a fundamental theoretical issue that social scientists are still struggling with, and which remains something of a point of contestation in demography. How are we to conceptualize culture? When calling for more consideration of the cultural dimension in demographic explanation what do we mean?

Religion offers an instructive example of both the complexities of dealing with culture analytically and the importance of employing more sophisticated cultural theory in linking religion to fertility. In fact, when demographers working in the Princeton historical fertility project failed to find the anticipated links between the timing of the fertility decline and the economic (e.g., industrialization), demographic (e.g., decline in child mortality; urbanization), and social (e.g., increased literacy) variables hypothesized by modernization theory to account for it, they pointed to the need to explore the impact of cultural forces. But exactly how this cultural dimension was to be employed in demographic research has never been adequately theorized. Admitting the crudeness of the approach, a number of demographers (Anderson 1986) looked at what they took in practice as proxies for cultural difference: region itself and language, and tried to introduce these into their equations.

In this context one might ask: should religion be thought of as part of the cultural domain? From one perspective, the answer is clearly positive. If religion is not part of culture, what is? Yet on further examination the theoretical complexities of using religion as a category, and opposing it to other domains – such as the political – becomes clear, and in doing so shows the more general analytical problem in opposing the cultural to other domains.

In their chapter on nineteenth-century Montreal, Patricia Thornton and Sherry Olson argue that Quebec had a different “culture of childbearing” than the rest of North America. But in highlighting the cultural dimension, they urge that cultural factors not be cast in opposition to economic factors, and hence that cultural and economic forces not be conceived of as offering alternative models to explain fertility behavior. Instead, they argue that we should think in terms of what makes up a “cultural package.” Of particular importance to Thornton and Olson’s concept of this cultural package are people’s identification with various social units that together contribute to people’s sense of personal identity. This involves religious institutions, but also membership in a language community, gender, political groups, and also economic groupings such as those identifying with a profession or a craft. From this perspective, for an analyst to place an individual in an economic category is not necessarily to be engaged in a form of economic analysis separate from cultural analysis. The implications of that placement for the person’s behavior, in other words, are very much cultural. The person’s view of the world and of himself or herself is enmeshed in a complex symbolic system in which the individual’s economic role and place in the stratification system play important parts.

In addition to highlighting the economic sphere, the chapters in this volume emphasize the importance of the political dimension. The political enters into a consideration of the link between religion and fertility in a variety of ways. Partly this involves the importance of taking the role of state power seriously, not only insofar as it is directed specifically at fertility behavior – either in pushing family planning programs or, as is more common now in the west, pushing pronatalist measures – but insofar as state policy may have indirect or unintended consequences on fertility. The political dimension not only involves state actors, but also a variety of social groupings whose identity may influence their fertility behavior. Lynch, in considering just such a link, refers to situations in which fertility is employed by people as a form of political mobilization linked to certain kinds of identity processes. Rather than explain high fertility behavior of certain religious groups as due to their greater “traditionalism,” in this perspective their fertility is very much to be understood in terms of contemporary cultural-political processes and contestation. High fertility among Muslim Palestinians as well as among ultra-Orthodox Israelis could be viewed in this way, as Calvin Goldscheider points out.

In considering the ways in which the state mediates between religion and fertility, Praz points out that both direct and indirect effects can be discerned. In some cases, religious actors lobby state authorities to enact policies that would affect reproduction directly or indirectly. The first example that comes to mind is the lobbying of various Christian churches for anti-abortion legislation.

Examples of religious institutions lobbying against the sale of condoms can also be found. Such lobbying also involves such state programs as tax breaks for childbearing, provision of public childcare facilities, and maternity benefits. But as Praz notes, there are also more indirect routes through which religion can have an impact on state action. She notes, in particular, the extent to which political elites may themselves be immersed in religious perspectives and institutions, which independently affect their decision-making. She also notes that political actors may seek to act in ways they think will win the favor of religious actors even in the absence of any direct campaign by those religious institutions to influence state policy.

Consideration of these complex relations returns us to the question of how “culture” is to be conceptualized in explaining demographic behavior, and the all too common fallacy of opposing the cultural dimension to the economic or political dimension. Consider for a moment the proposition that the pattern of fertility found in Europe today is a product of the availability of public daycare for small children. According to this argument, where couples (or women) have available such daycare facilities they are more likely to have children. Neither culture in general, nor religion in particular, would appear to be needed to understand this relationship. Yet such an approach conceals more than it enlightens. Far from showing why culture is not needed in explaining fertility variation, it is an example of why culture is crucial. The political decision to create such daycare centers, and have them paid for by public funds, is not some product of the “political” sphere separate from the “cultural” sphere, but very much a product of cultural processes. These processes, which certainly involve religious institutions, actors, and worldviews, determine the timing of offering daycare programs and their nature. Of course, such economic behavior as a rise in the proportion of women in the labor force has an impact on such public policy, but of course women’s participation in the labor force cannot itself be conceptualized as a purely “economic” factor, for the decision of women to enter the labor force is itself immersed in a thick cultural system of meaning and norms.

In moving beyond an earlier, theoretically limited, view of the link between religion and fertility as the product of religious theology regarding reproductive matters, many of the chapters in this book acknowledge the impact of Calvin Goldscheider’s (1971) pioneering work. Goldscheider was critical of an approach that proceeded by dividing populations into broad religious categories, compared the fertility rates found in each, and then sought to determine whether these differences were spurious – by controlling for socioeconomic and demographic differences among them – and attributed any remaining differences to differences in each religion’s theological position on fertility and birth control. Instead, he

argued, much more attention needed to be paid to the social-political context in which religious groups acted and to the social-political mechanisms that offered religious institutions greater or lesser social control. Religious communities that saw themselves as embattled minorities, for example, could be influenced to either maximize or minimize fertility depending on the particulars of the context.

Goldscheider further develops this approach in his chapter in this book, arguing that in understanding the impact of religion on fertility a key lies in understanding the ways in which religions define and promote “family values.” Here insofar as theology is influential, it is less theology dealing directly with fertility than with models of proper family life and, in particular, gender role differentiation. He thus explains, for example, continuing high fertility in the Muslim Middle East by the nature of family values and segregated gender roles found in these societies and influenced by local interpretations of Islam.

In his recent overview of the literature on the link between religion and fertility, McQuillan builds on Goldscheider’s 1971 model, highlighting the importance for scholars to examine the extent, in any given case, to which religious institutions have not only the means to communicate their values to people, but mechanisms in place to “promote compliance and punish noncompliance” (McQuillan 2004: 32). Such an approach, McQuillan argues, allows us to understand many of the most striking historical cases of the religion-fertility connection, ranging from Quebec and Ireland, with their high fertility to contemporary Iran with its surprisingly (to many demographers) declining fertility. In each of these cases religious institutions are seen to have great influence in determining fertility behavior, linked to the strength of their social control mechanisms.

Among those in this volume to build on Goldscheider’s tri-partite model is Renzo Derosas, who in his investigation of the Jews of Venice shows the inadequacy of linking the decline in fertility among European Jews to any presumed theological particularity. The key observation made – like a number of the works reported in this book based on painstaking work reconstructing thousands of individual life histories from the past – is that the Jews who remained segregated in Venice’s ghetto were relatively slow to show any fertility decline, while the Jews who had moved out – even controlling for their socioeconomic characteristics – were among the earliest Venetians to limit their births. Derosas uses this case to show the crucial role played by social milieu in explaining the link between religion and fertility.

Patricia Thornton and Sherry Olson similarly use this tri-partite model in their examination of nineteenth-century Canadian fertility. Comparable to Derosas’s distinction between the Jews inside and outside of the ghetto is their observation of significantly higher fertility among the French Catholics

compared to Irish Catholics in Quebec. Again, controlling for socioeconomic and demographic characteristics, we see that the theology associated with a religion – in this case Roman Catholicism – cannot alone account for the impact that religion has on those who identify with it. Danielle Gauvreau reaches similar conclusions for late nineteenth century Canada, similarly using this tripartite model, highlighting the key role played by the politics of identity and by the concrete social-political conditions in order to understand the influence that religion has on fertility. Jan Kok and Jan Van Bavel, employing this tri-partite approach, likewise observed differences in fertility behavior between members of the same religious group who lived in rural and in urban areas. They note the historical pattern of continuing high fertility of rural Dutch Catholics compared to the earlier decline of fertility among Catholics in Dutch cities, attributing it not to any difference in Church religious teachings with respect to fertility in rural and urban areas, but to the greater ability of Church institutions to enforce conformity to its teachings in the countryside.

Stressing the importance of social-political context and the power of religious institutions to compel conformity to its teachings does not mean that no attention need be given to religious ideology *per se* with respect to fertility. This is illustrated in McQuillan's own chapter in this book, which employs family reconstitution methods to examine a series of villages in Alsace from 1750 to 1882. He finds what might be termed the classic pattern of persistently higher fertility among Catholics, a pattern that he found to be remarkably persistent over this long stretch of time. In interpreting this behavior, he relies on an older explanation that links Protestantism to literacy through its emphasis on an unmediated relation to the divine available through reading the Bible. This increasing literacy among the Lutherans, he argues, could have led them to become "more open to rational calculation of their material interests." But even this traditional approach to the Catholic-Protestant historical fertility divide can be cast in terms of a social milieu rather than a theological perspective. McQuillan makes this clear by posing a question: can falling Lutheran fertility compared to stable Catholic fertility be best understood as linked to differences in religious teachings regarding fertility or is the difference explainable more through the declining influence that the church played in the lives of Lutherans compared to Catholics in the same area?

In contrast to the Alsatian Protestant-Catholic fertility differential found to have antedated the modern fertility decline, Jona Schellekens and Frans Van Poppel, using Dutch population registers to compare fertility among different religious groups, found no evidence of fertility differentials between Dutch Reformed and Roman Catholics until the fertility decline began later in the nineteenth century. There too they were able to eliminate differences in

socioeconomic or demographic characteristics as the reason for the earlier decline in fertility among the Dutch Reformed, although their approach did not allow them to determine whether the differential timing can best be attributed to theological/doctrinal changes in Dutch Reformed teachings, to a relative weakening of the ability of the Dutch Reformed church to compel obedience of its teachings, or to other contextual forces.

In studies of the role of religion in Europe's historic fertility decline, quite a bit of attention has been paid to the Jews. Most influential was work to come out of the Princeton historical fertility project, most notably Massimo Livi Bacci's (1986) assertion that Jews could be considered as one of the forerunners of the European fertility decline. One of the contributions to be found in the chapters of this book is offering further insight into the complexities of understanding changes in Jewish fertility. Schellekens and Van Poppel make clear that if Jews were forerunners of the fertility decline, they were not forerunners everywhere, for they found no evidence in support of this trend in the Netherlands. Just what it was about the Jews that could have made them forerunners is a matter of some controversy. It is not easy to see what direct aspect of Jewish theology would account for this behavior. Some have cited more indirect forces, such as Jews' presumed greater concentration on hygiene and literacy and hence possible earlier decline in infant and child mortality.

Among the factors sometimes cited to explain the presumed link is the very density of social interaction and communication within local Jewish populations, which, seen from a theoretical perspective that highlights the importance of networks in hastening or slowing the flow of cultural innovation, could account for a more rapid spread of the idea of family planning. Ernst Benz, examining the situation in Baden, identifies this effect, but argues that it did not result in an earlier onset of the fertility decline but just the reverse. Isolated from the larger population, the tight-knit Jewish community was slow to be affected by ideas that had been generated outside it. However, he argues, once those ideas did begin to filter into the Jewish community, the greater density of the network led to their more rapid spread and hence a more rapid pace of fertility decline.

By contrast with these approaches, which tend to treat Jewish communities as unitary, Derosas's examination of the Jews of Venice points out why it is also crucial to distinguish internal differentiation in social networks. As discussed above, in this case he found that it was not the Jews in what might be considered the densest regions of the Jewish network – that found in the Venetian ghetto – who began limiting fertility early, but those who were not as firmly enmeshed in it, those who lived in primarily Catholic neighborhoods and presumably were more open to non-Jewish influences and more eager to achieve social success as defined by that outside world.

In stressing the need to understand the culture of reproduction and hence its full historical context, Goldscheider, Derosas, and other of this book's authors demonstrate why pigeon-holing people under a single religious label – common practice in demographic research – often conceals more than it reveals. Part of the problem is one that has already been discussed, namely the need to understand the institutional and social-political context in which religious identity and institutions exert their influence at the local level. But part of the problem regards the nature of the individual level religious data that are available. When individual-level data on religious affiliation are not obtainable, communities known to differ in the religious affiliations of their residents may be used, but at the risk of committing the ecological fallacy (assuming in this case that differences in fertility between two such communities result from differences in their religious composition) (Haan 2005). But as a number of the book's authors point out, even when analysts have data on the religious affiliation of individuals, and individual data on fertility, they may not have the information they need to link fertility to religion.

It is difficult for historical demographers dealing with other societies to feel anything other than envy for scholars working in modern Dutch history, given the vast individual-level longitudinal data available through the Dutch population register. But as Kok and Van Bavel point out in their chapter, getting at religious identity in the Netherlands is not so simple. Even when individual-level religious affiliation can be determined – through supplementary data sources – this, they argue, is not enough for it does not reveal how strongly individuals actually felt this identity and this allegiance. In their chapter they use religiously mixed marriages and bridal pregnancy as their measures of attenuated religious attachment, although each proxy has obvious limits. Perhaps most ambitious of all in this regard is Benz's chapter, where he uses the names of petitioners on two rival petitions in Switzerland in 1869, one identified with the conservative clerical party and one with its opponents, to compare fertility behavior of conservative Catholics with their religious foes (mainly Protestant). Strikingly, because unexpected, he found no significant fertility difference between them.

Finally, a word about one aspect of the link between religion and fertility that has been little explored in this volume but that the theoretical perspectives developed here can help elucidate. The causal arrow in studies of religion and fertility not only in this book but among demographers and historians in general has pointed almost entirely in a single direction. But in addition to posing the question of what impact religion and changes in religion have had on fertility, it is also worth asking what impact changes in fertility have had on religion and religious institutions. Especially in light of a new emphasis on agency in social

theory, it is worth posing this question. Institutions not only influence individual behavior but individual behavior influences institutions. Studies of this sort are rare, but an example is offered by the recent attempt of Caltabianco, Dalla Zuanna, and Rosina (2005) to determine the nature of the relationship between religion and the age at which people first experience sexual intercourse. Rather than take the standard approach of assuming a one-way causal model – and hence doing a multivariate analysis in which religious affiliation or religiosity is among the independent variables and age of sexual initiation the dependent variable, they look at the possibility that the relationship works both ways. Using data gathered from Italian and Polish university students they indeed find evidence not only that regular churchgoers tend to postpone sexual intercourse compared to those who are not so religiously identified, but that beginning sexual relations before marriage leads regular churchgoers to stop going to church as often.

In short, many exciting strands of research on the nexus linking religion to fertility remain to be pursued. It is clear from the innovative work found in this book that as scholars move ahead to plumb the nature of this relationship, they will be placing it in a very different, more complex, but richer theoretical context than that which characterized work on this topic in the past.

#### NOTES

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