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Gendering the Fertility Decline in the Western World

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Gender and Religion Shaping the Pace of the Fertility Decline

A Comparative Analysis of two Swiss Cantons (1860–1930)

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‘Were women present at the demographic transition?’ was the provocative question addressed in 1995 by Alison Mackinnon to historical demographers, reproaching them for their ‘inability to envisage women as active agents in social change’ (Mackinnon, 1995: 222). Ten years later, the question to what extent women were active agents of the first fertility transition is still controversial; but whatever scholars assume to be historically true, there is a growing acceptance of the importance of focusing on women, and more specifically on gender, in explanations of the first demographic transition.

The first part of this paper emphasizes some theoretical and methodological developments in research on the fertility decline. On the one hand, scientists take methodological individualism more seriously: they are aware of the problems aggregation causes and seek to produce as much individual data as possible. On the other hand, studies try to go beyond simple correlations between supposedly causal factors and corresponding fertility outcomes and set out to identify mechanisms through which structures on the macro-level influence private decisions. As a result of these methodological improvements the focus on gender appears as a natural development.

To substantiate these theoretical and methodological remarks, the second part of this article provides some results produced by such an integration of gender into the explanatory mechanisms. More precisely, thanks to this gender perspective, we propose a new interpretation of the well-known Coale conditions for the adoption of fertility control. Subsequently, we focus on the difficulties in finding, constructing and interpreting indicators of gender. In spite of these problems, we hope to be able to show that the integration of gender into the analysis of fertility decline is a scientifically fruitful move.

Gender and the Focus on Individuals

As many contributions to this volume put forward, research on the European fertility decline has to a large extent relied on macro-theoretical analysis, linking the reproductive behaviour to structural changes such as industrialisation and secularisation. This tendency obscures the fact that all reproductive decisions are made at the individual level; nations, provinces, communities, and even households do not decide to procreate and to rear children.

We will not dwell on models that use aggregates only; their shortcomings are well-known. It is more interesting to analyse models that do not seem to use any 'decision-aggregate' and yet fail to take the last step of disaggregation down to individuals. In historical demography, a prominent example is Ansley Coale's model that enumerates three preconditions for the adoption of fertility control. As a reminder, according to this model, fertility control must be 'an acceptable mode of thought and form of behaviour', reduced fertility must be perceived as advantageous, and contraceptive techniques must be known and available (Coale, 1973: 65). Coale's model is consistent with a methodologically individualist approach, as the behaviour under study is considered from the perspective of the individual. Yet Coale, like many scholars before and after him, departs from this consistency when he identifies this *individual*, the basic unit of study, as the *parents*, the *couple* or the *household*. Such a simplification overlooks the fact that the individuals in this unit – husband and wife for example – are endowed with different rights and resources and are, consequently, differently positioned regarding Coale's conditions.

More consistent with methodological individualism, institutional economics provides adequate models that show how property rights, contractual obligations and social norms, shape the distribution of resources inside the household, the bargaining power and the decision-making processes (Pollack, 1985; Folbre, 1996: 135). As husband and wife may not have the same interests and constraints with respect to fertility control, changes in the bargaining power between men and women can be crucial for the adoption and success of contraception. First of all however, such a change in marital bargaining power has to be demonstrated, and the contribution of Alison Mackinnon in this volume points in this direction: 'Did women's bargaining power within partnerships increase in the latter part of the nineteenth century', she asks, 'and if so, what factors made a difference?'

However, the attention to differing interests of husbands and wives and to their bargaining power in fertility decisions is not shared by all theorists of the first fertility transition. Ron Lesthaeghe for example, who produced influential studies especially on Belgian fertility (compare the contribution by Eric Vanhaute and Christa Matthys in this volume), underlines the correlation between fertility decline and the diffusion of the bourgeois model of asymmetrical sexual roles within marriage (Lesthaeghe, 1995: 136). Nevertheless, this finding does not lead him to examine the differing interests and the bargaining power of the spouses. Geoffrey McNicoll in contrast asserts that the more distinctive the roles of husband and wife, the greater the scope for differences in fertility interests, with power relations within the family deciding which interest will prevail (McNicholl, 1994: 207).

The familiar interpretation of the first fertility transition that views this change as a shift from a social to an individual control of reproduction fits in with a consistent disaggregation only at first glance. Before the transition (Lesthaeghe, 1980), fertility control is considered to have been essentially based on the control of marriage, through patriarchal power and community rules, and also on habits and traditions like breastfeeding and cultural norms restraining coital frequency. During the transition, the prevalence of these community and patriarchal rules was eroded by various institutional and economic changes, and the young gained more autonomy regarding marriage and fertility decisions.¹

This model of the emergence of an individual control of reproduction during the first fertility transition does not follow up on its individualistic stand as this *individual*, gender neutral, is again the *couple* and the decision is assumed to be in a hypothetical common, or even consensual, interest. Thus, the differing interests and constraints of men and women regarding birth control during that period remain hidden and scholars do not investigate

1 Recent research discusses this model by criticizing the focus on parity-specific family planning as the single modern form of controlled fertility and by examining other forms of control such as spacing or starting (Van Bavel, 2004). A late age at first marriage for example, generally conceptualized as an institutionalized social constraint, might also reflect a process of individual, conscious choice; therefore the timing of the first transition ought to be reconsidered (Szreter, Garrett, 2000: 52). However, this discussion solely concerns the concept of social control itself. The idea of a shift from a social to an individual control of reproduction during the first transition remains largely intact.

them. Recent research has demonstrated that given the contraceptive means usually available, husbands were able to decide unilaterally about contraception, and indeed generally acted in this way. Given the dominant gender culture, 'respectable' women had to be ignorant about sexual matters (Fisher, 2000; Fischer and Szreter, 2003). Historically, it was only during the second fertility transition (1960–1970) that every individual concerned obtained the publicly accepted rights and the technical means to control his or her fertility (Chaperon, 2004).²

It is not only the adult members of a household who have different interests and rights, the same is true for children, an aspect which is rarely addressed in research. Daughters and sons, or elder and younger children, were not always considered equal in respect to parental expenses, which may have influenced the motivation for fertility control.

The focus on individuals does not imply that each individual is unique, necessarily leaving the researcher bogged down in a chaos of idiosyncrasies. For each individual, the decisions can be modelled by the same mechanism that translates incentives and constraints into behaviour. These incentives and constraints do not vary arbitrarily, their distribution being highly patterned. The following section focuses on such a distribution of incentives and constraints according to sex as a crucial component in the working of mechanisms translating determinants of fertility into individual behaviour.

2 The assertion of an individual control of reproduction during the first fertility transition is also controversial regarding the intervention of the state through explicit fertility policies. This state influence only erodes in the 1950s, not because of its lack of efficiency, but more for ideological reasons. State intervention in reproductive choice was delegitimised by the traumatism of the Nazi eugenics and the political context of anti-communism and anti-totalitarianism; the idea that governments should not interfere with couples' private decisions about fertility then became widespread.

Gender and the Explanations of Fertility Decline

The controversial results of the Princeton Fertility Project³ that aimed to explain the causes for the decline of fertility in Europe have been widely commented upon. It is by now accepted that none of the socioeconomic or demographic variables chosen correlated very well with the timing of the fertility decline. However, variation in marital fertility was often significantly related to 'culture', defined as religion, language, ethnicity or geographical region. The main criticism addressed at this project, besides the level of aggregation chosen, was the kind of explanation adopted. Commentaries put forward that correlations between convenient aggregations of micro-level data are insufficient evidence. They will tell us little or nothing about why the members of various subpopulations began to change their behaviour in order to adapt to any changing economic or cultural factor, roughly defined.

As a result of this failure, emphasis was placed on the selection of more specific indicators of determinants of fertility and the way these determinants impact on individual behaviour in different subpopulations whose environment could be described precisely. But what feature of social structure is relevant, what indicators shall be selected? Such a choice can only be legitimised by an underlying model or explanatory mechanism.

A first step in clarifying underlying mechanisms was the integration in historical demography of economic decision models proposing a general explanation of individual decision-making and permitting the transformation of all types of contextual features into the same kind of 'theoretical money', costs and benefits. Fertility behaviour can thus be considered as responding to cost-benefit incentives. These models overcome the misleading opposition between economy and culture, integrating all kinds of costs: the material costs of children as well as the moral and information costs of contraception. They are also consistent with a methodologically individualist approach, as

3 This project, initiated on the basis of modernization models linking the demographic transition to economic and social development, ended without demonstrating any necessary relationships between economic and social modernization and the onset of fertility limitation. While the project seemed to show a convergence in the timing of fertility limitation within European areas of very different levels of development, important spatial variations, shaped by differences of culture, remained to be explained (Coale and Watkins, 1986).

the costs are not considered from the perspective of an external observer, but from those of the individuals concerned. As Jane Humphries underlines in her article in this volume, the key question for individual decision-making is 'how the men and women involved perceived these costs'. The working-class autobiographies she uses permit us to capture the perceived costs of children to mothers and fathers.

A second step consists of identifying those specific features of the economic and cultural environment that could possibly represent costs and benefits. A third step is however necessary: it is only after examining the institutional context that we are able to decide if those features indeed constitute costs and benefits. The two following examples should illustrate this kind of reasoning, as well as the integration of gender into the process.

The changing economic function of children has often been put forward as an explanatory factor for the decline of fertility. To sustain this assertion, the Princeton Project proposed correlations between the level of fertility and the proportion of the labour force in agriculture or the general level of industrialisation. Unfortunately, these aggregate indicators are useless if we do not specify the features that constitute the costs and benefits of children. Certain types of agriculture rely on children's labour, others do not, so the benefit of children may be very different. Furthermore, parents may rely differently on daughters' and sons' labour. Moreover, a seemingly similar economic environment with similar material opportunities for children's work does not necessarily result in similar incentives. It is further dependent on the institutional context translating these opportunities into effective costs and benefits. For example, state laws and policies or other kinds of institutional regulations may impede parents in seizing the opportunities at hand and in relying on children's labour. The implementation of these regulations may differ in severity depending on whether boys or girls are concerned.

The second example concerns the high costs of contraception, traditionally associated with Catholic doctrine, and therefore the Princeton Project examined the impact of religious affiliation on fertility. However, an explanatory mechanism must go beyond the determination of the religious or political affiliation of individuals and specify which religious norms and values, which elements of the dominant political ideology are capable of modifying the costs under study. Here too, values and norms are often gender specific, making moral costs of contraception different for men and women. Furthermore, these religious norms or the values put forward by various discourses will not influence reproductive

practices if they are not translated into institutional arrangements and enforced through religious or political institutions (McQuillan, 2004).

Recent studies on the political economy of fertility provide interesting insights into this decisive step of the enforcement of norms and values. Such studies analyse the role of the state in regulating fertility through diverse institutional means. During the second part of the nineteenth century, state institutions gained importance in regulating family life, compared to religious or other traditional institutions. The term *institutions* here, does not only refer to the administrative and political apparatus of a society, it includes the system of rights and duties of individuals, as well as the rewards and sanctions for conventional or deviant behaviour. These individual rights are crucial for the distribution of resources and the bargaining power inside the household, factors that are highly relevant for fertility behaviour. To illustrate this role of state policies, 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" behaviour of the majority' (Johansson, 1991: 384).⁴

In shaping individual rights, state institutions and policies assemble individuals into categories, using categorisations already present in the 'cultural software' of each society. The categorisation by sex is historically one of the most pervasive ones. It was a prominent target for state policies during the period of the first fertility transition and an important topic in political discourse that defined suitable behaviour for men and women, leading to concrete measures delineating their respective opportunities. As a result, norms of femininity and masculinity prescribed different behaviours regarding sexuality and contraception; husbands and wives did not have the same rights and duties in marriage; women and men were not subject to the same work legislation; and girls and boys were not considered equal in school policies and in public expenses for education.

⁴ Interestingly, Johansson focuses not on public policies overtly planned to influence fertility – pro-natalist policies generally failed or came too late during the first fertility transition – but more on implicit policies, namely those policies that were not intended by governments to change fertility patterns but nevertheless had an important impact on the costs of children (compulsory education, exclusion of children from the labour market, admission of women into advanced levels of education).

The previous considerations allow us to render our definition of gender more precisely. Gender is not only an individual attribute, but a structuring principle of social life. It is the process as well as the result of an attribution of rights to individuals on the basis of their biological sex. In a given environment of material and technological constraints, this process associates a 'cultural software' (representations about sex differences, norms of masculinity and femininity) with a set of institutional practices that enforce it, resulting in unequal opportunities for women and men regarding the access to the commodities available.

The following part of this article proposes a demonstration of the impact of these differing rights on the pace of fertility decline. More than an ideological concern, this focus on gender inequalities refers to a central social process.

Sample and Data

The data used for this project were collected in the French-speaking cantons of Vaud (VD – Protestant) and Fribourg (FR – Catholic), two neighbouring cantons situated in the Western part of Switzerland. In each canton, two villages have been selected with respect to economic factors, in order to isolate the impact of institutional variables. The first pair of villages (Chavornay/VD and Broc/FR) experienced a similar industrialisation process (the setting up of a chocolate factory near each village) at the same time. The second pair (Chevroux/VD and Portalban-Delley/FR), two neighbouring communities situated on the shore of the same lake, maintained an economic structure based on agriculture and fishing. As the villages in each pair were almost identical with respect to economic factors, their social structure was very similar too. Before 1900, the villages were homogeneous with respect to religious affiliation. Between 1900 and 1914, a very slight religious heterogeneity occurred in the two industrialized villages because of the arrival of workers and managerial staff employed by the chocolate factories, but these all left the villages during the Great War and the post-war crisis. The districts in which the villages were situated were religiously homogeneous too.

During the period under study, 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. The new political forces modified the institutional framework: the influence of Protestant ministers and of parochial structures was lessened and the power of political structures such as local authorities and councils was reinforced.

The institutional framework was very different 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 organisations. 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 organise a permanent and decentralised 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.

A first data base gives information about the changing quantity of children. It includes all births, deaths and marriages taken from the parochial and civil registers of our four villages as far as they relate to marriages celebrated between 1860 and 1930.⁵ The actual dimension of the sample used depends on the method of data treatment and its specific selection criteria. Following classical family reconstitution methods, it is possible to use 3,501 (56 percent) of the 6,207 legitimate births collected. If we add to these 'completed families' the 'achieved' families⁶, the amount of usable data climbs to 4,276 legitimate births (76 percent). Event history analysis and its more flexible rules of data selection permits us to use 86 percent of the data base, producing a total sample of 5,381 legitimate births for 1848 married and fecund women under observation.

5 In order to supplement and check these sources of information, heterogeneous and discontinuous sources were consulted, such as local population registers (continuous registers) and censuses. After linking births, marriages and deaths, the final database (all villages conflated) contains 13,076 individuals.

6 Following Lebouté (Lebouté, 1988: 358), we keep in the sample the 'achieved families', which are families in which one of the parents dies and/or families who leave the village before the woman has reached age 50, but for which we do know the date of the parents' marriage. Event history analysis permits us to keep in the sample even the legitimate births for which we do not know the date of the parents' marriage.

A second data base documents the changing quality of children, namely the investment in education. Administrative sources at cantonal and village levels (pupil listings, school attendance statistics and correspondence of the school authorities) provide direct information about the school career of the children in the sample. For children for whom this type of direct information was not available, the educational variable was constructed on the basis of the subsequent professions of these children at marriage or death (indirect information). Among the 5,042 legitimate children who survived until age fifteen, we managed to reconstitute the school career of 2,353 of them (1,333 boys and 1,020 girls); about one third of these school careers was reconstituted on the basis of indirect information.⁷

Besides these quantitative data, qualitative material was used to document the 'cultural software' of fertility (religious literature, political discourse, newspapers, educational periodicals and school manuals), as well as state policies and their implementation (official publications, legislations, correspondence between cantonal and local authorities).

Re-interpreting Coale's Conditions: The Motivation for Fertility Control

Coale's model demands that research on fertility first ascertains the existence of a motivation (economic advantage) for fertility control, and secondly, the 'thinkability' or moral acceptability of such behaviour. In the following, we will demonstrate that this motivation and this moral acceptability both adopt gender-specific forms and, moreover, that these forms differ according to the political and religious context.

Our first hypothesis specifies Coale's condition of economic advantage by using Caldwell's model of the effect of mass education as the primary deter-

7 The comparison of the direct with the indirect information has given a good fit. The few professions for which this fit was unstable have not been taken into consideration. Fortunately, missing data (children for which direct or reliable indirect information are missing) 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.

minant of the onset of the fertility transition. Education not only increases the costs of children in reducing a child's potential for work in the labour market or in the household, it also speeds up changes in norms and values regarding the child as a future rather than a present producer (Caldwell, 1980: 225). However, the norms and values regarding the quality and quantity of children, able to shape the motivation for birth control, can be very different, as attested by our Swiss cantons.

In the Protestant canton of Vaud, the government was keen to weaken the influence of religious institutions. Nonetheless, religious ideologies did not vanish: analysis of the dominant political discourse shows that the government adopted the Protestant values regarding fertility, giving them a political varnish. The education of children, intended to enlighten the spirit and promote individual autonomy in Protestant thought, was seen as a necessary condition for prosperity and democracy. Human co-responsibility in God's creation, in particular parental responsibility for child care and education (Perrenoud, 1974: 983–987), became a civic commitment of parents. According to educational periodicals, both men and women had to develop the intellectual capacities God had given them. Knowledge was considered important for women, the mothers of future citizens.

The importance of education in Protestant culture, and moreover its relevance for women, is attested for in other studies. In Norway for example, according to Ida Blom elsewhere in this volume, girls' education was seen as increasingly important by middle-class parents, and they consented to pay high fees for private schools, the public system being considered less reputable. In our Protestant setting by contrast, the public system was considered efficient. As primary schools were free and post-primary education was relatively affordable even for working-class parents, the class differential in access to education was less pronounced.

In the canton of Vaud, the Protestant views on education were efficiently implemented by a school policy that strictly enforced school attendance for both boys and girls. Parents were not allowed to take their children out of school before they reached the legal age of sixteen. Co-education was the rule until that age, and post-primary education for girls and boys was fostered by decentralisation of secondary or professional schools. This school policy constitutes a perfect example of the implicit fertility policies described by Johansson (see footnote 3). In defending the rights to education of all children, daughters and sons, the state significantly increased their costs for parents and, following

the second of Coale's conditions, these growing costs constituted an important incentive to practice birth control.

To investigate why the integration of gender in such an explanatory mechanism can be crucial for an understanding of the pace of the fertility decline, we compared the 'cultural software of fertility' of both cantons, as well as their respective school policies. In the conservative Catholic culture of Fribourg, knowledge was considered as potentially dangerous, a source of the sin of pride or of rebellion against the established authorities. The opinion voiced in the Catholic educational periodicals was clear-cut: education for girls was necessary to prepare them for their task as skilled and pious housekeepers, but the two deterring figures of the coquettish female and the learned woman underlined the idea that knowledge was vanity for women and a danger to family and society. The girls' school programme, according to their social destiny, had to make ample room for housekeeping and needlework, but limiting the study of other disciplines to the most basic skills. School policies in Fribourg were sharply gender biased. The control and repression of school absenteeism did not follow a regular and determinate path, particularly not for girls. Educational structures were mostly segregated by sex; 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 school-leaving age.⁸

Finally, what was the impact of these different discourses and policies on actual parental investment in education? We will only give here the final results of an analysis developed elsewhere.⁹ Through a multivariate analysis of children's educational careers, we were able to demonstrate the importance of the religious and political context for the level of parental investment in education according to the sex of the child. Using a logistic regression, we first measured the factors that modify a child's chance of attending post-primary school or

8 In the canton of Vaud, according to the cantonal school laws of 1865 and 1889, the legal school-leaving age for girls and boys was 16. In Fribourg, the cantonal school law of 1884 stipulated the same school-leaving age, but when parents wanted to take a child out of school one year earlier, a special request had to be made for boys only.

9 Praz, 2003 and 2006.

not, which signified important monetary costs for the parents. The variable *sex male* multiplies this chance 'only' by 2.45 in the Protestant canton of Vaud, compared to 4.75 in the Catholic canton of Fribourg (see table 1). Second, we constituted a file of time sequences of children's educational careers between the ages of thirteen and eighteen. Using a Cox-regression, we then measured the impact of the same factors on the risk of leaving school. The time spent at school indicates the opportunity costs parents incurred, because the longer the child attends school, the later he or she contributes to the family budget. The same result emerges: for Catholic boys, the risk of leaving school earlier is reduced by 62 percent, compared to Catholic girls; for Protestant children, the relative risk difference between girls and boys goes down to 16 percent (see table 2).

Table 1. The Relative Risk of Attending Post-primary School for the Children of Broc and Delley-Portalban (Fribourg), Chavornay and Chevroux (Vaud)

Variables	All children N = 2353 Prob > chi2 = 0 Relative risk P > z		Catholic children N = 1193 Prob > chi2 = 0 Relative risk P > z		Protestant children N = 1160 Prob > chi2 = 0 Relative risk P > z	
Sex male (reference: female)	3.29 1.00	0.00 ref.	4.75 1.00	0.00 ref.	2.45 1.00	0.00 ref.
Religion Catholic (reference: Protestant)	0.76 1.00	0.01 ref.				
Father's occupation (ref. farmer – land owner)	1.00 1.17 1.95 2.80 12.30 1.51	ref. 0.33 0.00 0.00 0.00 0.20	1.00 1.47 2.37 2.75 20.68 0.50	ref. 0.06 0.00 0.00 0.00 0.52	1.00 0.84 1.43 2.82 7.95 1.72	ref. 0.51 0.24 0.00 0.00 0.12
Birth order eldest of 4 children or more	0.77	0.06	0.76	0.17	0.78	0.17
Death of either parent	1.08	0.55	1.21	0.37	1.01	0.95

Note: bold printed rates are significant at minimum 90%.

Table 2. The Relative Risk of Leaving School Earlier for the Children of Broc and Delley-Portalban (Fribourg), Chavornay and Chevroux (Vaud)

Variables	All children N = 6940 Prob > chi2 = 0		Catholic children N = 3156 Prob > chi2 = 0.01		Protestant children N = 3784 Prob > chi2 = 0	
	Relative risk	P > z	Relative risk	P > z	Relative risk	P > z
Sex male (reference: female)	0.51 <i>1.00</i>	0.00 <i>ref.</i>	0.38 <i>1.00</i>	0.00 <i>ref.</i>	0.84 <i>1.00</i>	0.01 <i>ref.</i>
Religion Catholic (reference: Protestant)	1.67 <i>1.00</i>	0.00 <i>ref.</i>				
Father's occupation (ref. farmer – land owner)	<i>1.00</i>	<i>ref.</i>	<i>1.00</i>	<i>ref.</i>	<i>1.00</i>	<i>ref.</i>
day-labourer, unskilled worker	0.93	0.27	0.89	0.13	1.02	0.87
Factory worker	0.93	0.35	0.94	0.49	0.94	0.66
trade-craftsman, civil servant	0.84	0.00	0.84	0.05	0.81	0.01
skilled occupation	0.61	0.00	0.63	0.05	0.66	0.07
occupation unknown	0.92	0.58	1.15	0.66	0.89	0.46
Birth order						
eldest of 4 children or more	1.10	0.07	1.12	0.11	1.04	0.61
Death of either parent	1.02	0.68	1.02	0.83	1.01	0.85

Note: bold printed rates are significant at minimum 90%.

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 may 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, the period of the implementation of compulsory schooling in the canton. In contrast, Catholic parents avoided considerable education costs, above all by discriminating against their girls. For Catholic families birth control was thus less imperative. A further analysis – not presented here – shows that the number of sons and

daughters already born into the family has a significant impact on the risk of leaving school for further children, but for Catholic girls only.

This example demonstrates that the integration of gender in the model of fertility decisions allows us to provide a new explanation for the lag in Catholic fertility, generally attributed to the doctrinal norms against contraception. This latter explanation is problematic, as the implementation of Catholic sexual morality was not effective at the period under study (1860–1930).¹⁰ The situation is however very different from the late 1920s onwards, the period studied by Marloes Schoonheim (2005), who rightly points to the influence of Catholic pastoral care on the late fertility decline in the Netherlands. Catholic norms regarding reproduction were strongly implemented among Catholic women, not only through discourse but also through intrusive controls and dissuasive punishments.

Beside the above explanatory mechanism based on the costs of children's education, we would like to point out that there are other ways to integrate gender in explanations referring to education, as some studies in this book testify to. A classical procedure is to use the mother's educational attainment as an explanatory variable. A higher level of women's education is generally correlated with lower fertility. Angélique Janssens (see elsewhere in this volume) reminds us of the various interpretations given for this relationship. Astonishingly, in her own study she met with the opposite outcome: more educated women had higher fertility, a result very significant in the Dutch Catholic town of Tilburg. Our research in the Catholic setting of Fribourg suggests the following interpretation: the fact that most girls attended church-run Catholic schools may have placed severe limits on the impact of education in shaping modern values and aspirations.¹¹ The group of higher educated women in her sample includes a considerable proportion of teachers, a group quite specifically supposed to transmit Catholic norms and values, a task for which their education will have given them an ideologically charged preparation. In Alison Mackinnon's research on South

10 Indeed around 1900, the Catholic Church preferred not to recall the faithful to the proper paths of sexual morality in order to avoid conflicts that might initiate or accelerate the secularisation process (Sevegrand, 1995; Servais, 2001). In Fribourg, the Catholic Church expressed no clear warning against contraception before the late 1920s.

11 This observation is also made by Danielle Gauvreau and Peter Gossage, in their study on the fertility transition in Québec (Gauvreau and Gossage, 2001: 169).

Australia (a Protestant setting), the results match the usual interpretation, with a slight modification: rather than the woman's level of education, it is her total years in school attendance that happens to have a significant impact on the number of children she ultimately had. As a last example, the study of Spanish fertility decline by Paul Baizán and Enriqueta Camps introduces an interesting factor in the multivariate analysis of fertility: not only the mother's educational achievement, but also the level of education attained by her own mother, and to a lesser extent also by her father, modifies the fertility outcome.

Re-interpreting Coale's Conditions: The Moral Acceptance of Birth Control

Our second hypothesis concerns Coale's condition of the moral acceptability of birth control, which we assume to have been shaped (to a large extent) by state policies. In supporting or combating traditional religious institutions, according to their political stance, state institutions and policies either enforced traditional norms on sexuality or strove to establish new rules. This process was shaped by gender, resulting in differing rights for husbands and wives regarding sexual behaviour and access to contraception and in unequal bargaining power in fertility decisions. This specific gender bias clearly differs according to a community's 'cultural software' and to its institutional setting.

Recent studies emphasize that the existence of a public debate on birth control sped up the diffusion 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). At the beginning of the twentieth century, the neo-Malthusian movement was very active in the French-speaking parts of Switzerland through conferences advocating birth-control, through the publication of books, periodicals and brochures providing contraceptive advice, and through advertisements for contraceptive devices in the mainstream press.

In Fribourg, a severe repression ensured that silence was maintained on sexual issues. For the conservative government, this repression was prima-

rily motivated by political and electoral goals. The authorities fought neo-Malthusianism, as this ideology was thought to weaken the credibility and influence of the Catholic Church, their best ally. This policy reinforced the Catholic pastoral strategy of keeping the topic of sexuality under wraps. This strategy of silence was not at all intended by the government to influence fertility patterns, yet the implicit effects were clear. Due to state support of the Catholic Church, the traditional Catholic family morality went unchallenged. Pastoral care, as our examination of the Swiss Catholic literature of the period demonstrates, glorified families with numerous children (Praz, 2003 and 2005). The oral testimonies we collected attest to the fact that mothers of large families were congratulated by the priests who promised them heavenly rewards. The religious discourse promoted a fatalist conception of family size. In sermons, pastoral bishop's letters and edifying brochures, parents were invited to accept 'with pleasure and gratitude all the children that God might well give them' and to trust in Providence for providing the necessary means to bring them up.

This fatalism weighed heavily on women, if we take into account the concept of 'marital debt', namely the obligation of the spouses not to deny sexual gratification to their partner. As Isabel Hull put forward, this may have been one of the few elements of Catholic theology promoting coital frequency (Hull, 1996: 12; McQuillan, 2004: 29). However, Hull is not right in asserting that this obligation was surprisingly egalitarian in insisting that the debt was to be honoured by both husbands and wives. In his careful analysis of theological discourse, Flandrin underlines that norms of femininity made it impossible for a woman to express her sexual desire (Flandrin, 1981: 128–129). Consequently, to honour the marital debt, the husband had the delicate 'duty' to guess his wife's desire and 'must' take the initiative in sexual matters. Such a husband's 'duty' must have been a great burden for men in Fribourg as girls' education, according to educational periodicals, gave the highest priority to moral behaviour, stressing obedience, innocence and purity. Sexual taboos were thus particularly severe for women and our female witnesses stressed their total ignorance of sexual matters before marriage, an element that weakened their bargaining power in fertility decisions.

This analysis of qualitative material shows that the Catholic 'cultural software of fertility' in the canton of Fribourg supported the husband's right to marital sexuality and frequent sexual intercourse, thus sustaining high levels of fertility. This right was not tempered by any other element able to modify

the norms of masculinity and fatherhood, for example the emphasis on the father's responsibility for the wellbeing of his family members. Fatherhood was more associated with male authority and the obedience of children and wives. These features are important, as recent research demonstrates that the husband's cooperation was crucial in the first fertility decline. In supporting Catholic doctrine through educational structures and through the repression of alternative ideologies, state policies reinforced the traditional inequality between husband and wife in sexual matters.

In the Protestant canton of Vaud, the state institutions did not follow this strategy of silence. As attested by official correspondence, the dominant political elite (Radical-democratic Party) considered neo-Malthusianism morally shocking and socially dangerous, but feared that the repression would be exploited by the socialist opposition to argue that the Radical-democratic Party was no longer the champion of democratic values. As a result of this political tolerance, an animated debate spread through the mainstream press and through religious, medical and philanthropic periodicals.

Analysis of the public debate about contraception between 1900 and 1918 in the canton of Vaud shows a redefinition of morality making clear segregations on the basis of sex and social class. While the criterion of social class remained controversial depending on the political ideology of the protagonists, the criterion of sex rallied a wide consensus. Access to and use of contraceptive means were considered unthinkable for women of all social classes, yet only problematic for certain categories of men (bachelors, workers), this latter delineation being a matter of controversy. Some examples may illustrate this process.

The public debate revealed divergences between Protestant ministers, some strongly opposed to neo-Malthusianism, others recognising the social necessity of birth control and stressing the importance of parental responsibility for the wellbeing and the education of children, a traditional feature of Protestant doctrine (Perrenoud, 1974). However, all progressive ministers shared the same conviction that this control must remain the husband's responsibility in order to preserve the wife's dignity and innocence.

That a doctor should advise men on the methods that concern them is acceptable. But what woman would not be disgusted by these methods [...] Will the modesty of a real woman, a young married woman for example, accommodate procedures such as these? Will she not feel that it diminishes love, to lose her self-respect, her dignity as a spouse and a mother, to lower herself to such practices?¹²

Political authorities similarly strove to keep women ignorant in matters concerning sexuality and contraception. In an official report to the cantonal authorities, the President of the Council of Lausanne (the capital) expressed concerns about the presence of women in neo-Malthusian lectures, fearing that such information could pose a threat to the necessary containment of women's sexuality in marriage and therefore to the social order at large. One of these lectures was considered particularly worrying, because it was given by a woman leader of the French neo-Malthusian movement, who dealt with the subordination of women in marriage.

In pleading the cause of the subordinate situation which married women find themselves in, Miss Roussel at the same time instructs unmarried women how to maintain intimate relations with men *which nothing obliges them to do*, and to free themselves from the natural consequences of their acts, which is an indirect way of prompting young people into debauchery.¹³

The political elites were not only afraid of women gaining access to knowledge about birth control, but they were also reluctant to spread this information to the lower classes, whose presumed lack of morality could thus be enhanced, threatening the health and morality of the whole community. Challenging this discourse, socialist newspapers campaigned for access to contraceptives for the working classes, not without implying that husbands should be in charge of birth control. The rhetoric of these articles explicitly addressed a masculine reader. Emphasis was given to the father's responsibility for the wellbeing of his children and wife, while the latter was described more as a passive victim than an active partner in fertility decisions.

12 *L'Essor*, 15 October 1905 and 12 January 1907. Original text: 'Que le médecin conseille aux hommes le moyen qui les concerne, passe encore. Mais quelle est la femme qui ne soit pas prise de dégoût devant ces moyens [...] Est-ce que la pudeur d'une femme vraiment femme, d'une jeune mariée par exemple, s'accommodera de pareils procédés? Ne sentira-t-elle pas que c'est abaisser l'amour, perdre le respect d'elle-même, sa dignité d'épouse et de mère, que de s'abaisser à de telles pratiques?'

13 Archive of the canton of Vaud, CV, K VIII b, 10 January 1907, Report written by Mr Van Muyden, the president of the Council of Lausanne, to the cantonal authorities. Original text: 'En plaidant la cause de la situation subordonnée où se trouve la femme mariée, Mlle Roussel instruit du même coup les femmes non mariées des moyens d'entretenir avec les hommes des rapports intimes *auxquels rien ne les y oblige*, et de s'affranchir des conséquences naturelles de leurs actes, ce qui est une façon indirecte d'exciter la jeunesse à la débauche.' (The italics are ours. For more developments about Nelly Roussel, see Accampo, 2003).

Do not make any more children than your terrible state of galley-slave will allow you to feed. Do you not see that your wife is worn out and depressed by the suffering and fatigue brought on by an uninterrupted and endless series of pregnancies and breastfeeding. [...] come over to neo-Malthusianism which will teach you to respect your companion, to love your household which science will teach you to people according to your means [...].¹⁴

When Margarete Faas-Hardegger (1882–1963), the first female secretary engaged by the Swiss Federation of Trade Unions, suggested to organise informative meetings about contraception for working women, she was met with absolute refusal by the direction of the Federation. In speaking and writing about sexual issues and in advocating contraceptive rights for women, Margarete Faas-Hardegger was a rare exception. Most feminists and most women engaged in philanthropic associations either kept silent about the topic, according to the dominant norms of respectable femininity, or shared the opinion that contraceptive means were totally unsuitable for women, injuring their sensibility and threatening their dignity.

Where does this insurmountable aversion to preventive practices experienced by so many women come from [...] even those who would have need of them? [...] These chaste hearts associate something inexpressible and sacred with the simultaneous and total giving of love by which two beings and two lives merge in an unreserved abandon for a higher end. To intervene in this supreme and mysterious accord, to denature that impulse, to trouble it with a conflict of contradictory interests is a profanation to their sense of intimacy.¹⁵

A wide consensus in this public debate about neo-Malthusianism denied women the rights to sexual and contraceptive information and thus reinforced the legitimacy of the husband's unilateral actions in these matters. However, men's rights were not unlimited. The husband had to restrict his sexual pleasure

14 *La Voix du Peuple*, No 15, 1908. Original text: 'Ne fais pas plus d'enfants que ta terrible condition de galérien ne te permet d'en nourrir. Ne vois-tu pas que ta femme se consume et se déprime dans les souffrances et les fatigues d'une suite ininterrompue de gestations et d'allaitements sans fin. [...] viens au néo-malthusianisme qui t'apprendra à respecter ta compagne, à aimer ton foyer que la science t'apprendra à peupler selon tes moyens [...].'

15 Emma Pieczynska, *Revue de morale sociale*, 1901. Original text: 'D'où vient l'insurmountable aversion qu'éprouvent contre les pratiques préventives tant de femmes [...] même celles qui en auraient besoin? [...] Quelque chose d'ineffable et de sacré s'associe pour ces coeurs chastes au don d'amour total et simultané par lequel deux êtres et deux vies se confondent dans un abandon sans réserve à des fins supérieures. Intervenir dans ce suprême et mystérieux accord, dénaturer cet élan, le troubler par un conflit d'intérêts contradictoires, c'est, à leur sens intime, une profanation.'

and practice birth control, with respect to his paternal responsibilities. These entailed the wellbeing of his children and their chances of social advancement, as well as the health of his wife, a topic particularly prominent in feminist, philanthropic and medical discourses. The argument of health, a concern that rallied a large agreement, authorized not only the mention of sexual issues in a decent and respectable way, but also allowed 'bourgeois' feminists to express an astonishingly vehement denunciation of the 'sexual exploitation of women in marriage'.¹⁶ Moderation of masculine sexual desire appeared therefore as a public health necessity.

As in Fribourg, state policies in the canton of Vaud were important in defining the rights of women and men regarding fertility decisions: both media policies, with its emphasis on freedom of speech, and health policies, stressing the importance of information about sexual matters in order to avoid the spread of venereal diseases, had implicit effects on fertility.¹⁷ They diminished the weight of taboos relating to sexuality and, consequently, the moral costs of contraception. They also contributed to changing norms of masculinity by challenging the husband's unlimited prerogatives in marital sexuality. Thus, the motivation of wives and husbands to use birth control gradually became more convergent.

Trying to Capture Gender

Recent research shows the importance of changing norms of masculinity and femininity, and of the social roles and power relations they involved, for the explanation of the pace of fertility decline (Fisher, 2000; Fisher and Szreter,

16 '[...] une indignation grandissante sur les prérogatives que s'arroge la sensualité masculine sur la liberté, la santé et toute la destinée de la femme. Le rôle d'instrument de plaisir auquel tout leur sexe est réduit commence à se révéler aux femmes sous son vrai caractère, odieux quel que soit son déguisement [...] le devoir conjugal, tel que l'interprète encore l'opinion courante, octroie à l'époux sur sa compagne un droit de propriétaire.' Emma Pieczynska, *Revue de morale sociale*, 1901.

17 In Fribourg, even while facing a significant increase in the incidence of venereal diseases at the end of the First World War, the authorities renounced to organize informative meetings, fearing the public evocation of such a topic.

2003). These studies highlight the increasing interest of qualitative sources for demographers. Such material is considered particularly apt to capture these gender norms, as many contributions in this volume also attest to. Based on a corpus of 500 letters sent to a Swedish organisation working for sexual enlightenment, Sofia Kling's study shows how the individual experiences of child-bearing and the changing norms of motherhood and fatherhood according to social class modify the perception of the ideal family size. British working-class autobiographies are used by Jane Humphries to explore the economic roles of husbands, wives and children, and their implication for family dynamics and the gendered motivation for birth control. Ida Blom investigates a variety of women's journals to capture women's – and sometime men's – views about a range of topics related to fertility and gender roles.

While qualitative sources like publications, official reports and correspondence provide interesting insights in the gender norms diffused by the elites, personal testimonies (letters, autobiographies, oral history) give important clues to what extent these norms were shared by individual men and women of different social categories. However, the simple existence of certain norms in various discourses and testimonies is not a demonstration of their impact on fertility. The challenge consists in identifying the mechanism translating these norms into effective constraints shaping reproductive decisions, and we showed the crucial role of institutions in this process. They modify the rights and duties of individuals, formally as in the case of school legislation, or informally as in the case of implicit contracts between family members. After identifying the mechanism, the last step consists of testing this mechanism on demographic results using adequate indicators of gender.¹⁸

What indicator might be suitable? As gender is not simply an attribute of individuals but a social categorisation, the introduction of a variable *sex* in a statistical analysis is not sufficient when this variable is not associated with an appropriate social variable. It is only this association that permits us to capture gender. In the attempt to overcome the biological in order to capture

18 This procedure can also help us to formulate and test hypotheses about the impact of norms on reproductive behaviour, even when we lack written or oral testimonies to document the micro-social practices and the integration of norms by individuals. Since such documents are rather rare and since the last potential witnesses will shortly be leaving us, it is all the more necessary to imagine research methods using the historical material still available.

the social, the relation between sex and gender may be considered as similar to the difference made in demography between age and generation.¹⁹

To test the first hypothesis presented above, the impact of gendered costs of education on the pace of fertility decline, we combined the sex variable with religious appurtenance and with indicators of parental investment in education. To test the second hypothesis, namely the gendered rights in sexuality and the changing norms of masculinity that might favour the convergence of the motivation of couples to use birth control, we had to find indicators of the bargaining power of spouses, or indicators of the husband taking responsibility for contraception. These indicators could then be used as independent variables in a regression analysis.

To measure more accurately the impact of different variables on fertility, we turned to a method derived from event history analysis. For the 1848 married and fecund women under observation, we constituted a file of time sequences of their fertility histories, between the birth of the first child and the end of the mother's reproductive career (or in other case the death of her spouse or the out-migration of the family). The dependent variable is the length of the interval between births. As we computed not only the closed intervals between births, but also the final open interval (between the last observed birth and the end of observation), this method detects the adoption of stopping behaviour rather than the overall level of fertility. When married couples control their fertility and concentrate births in the first years of marriage, the final interval tends to lengthen, thereby increasing the mean of all intervals calculated for each mother. Therefore, the likelihood for another birth to occur is reduced; this tendency is indicated by values inferior to 1 in table 3. In contrast, mothers with higher fertility and consequently shorter intervals have a higher likelihood of giving another birth, attested by values superior to 1.²⁰

19 Such methodological work would preclude the tendency, sometimes denounced, to reduce women to biological variables (essentially mother's age) and to assign economic and social variables to men only (Watkins, 1993: 559–60; Mackinnon, 1995: 223; Andro, 2003: 49, and Janssens in this volume).

20 For technical details on the event history approach to fertility: George Alter (Alter, 1988: 175 and 1998: 25–35), George Alter and Myron P. Gutmann (Alter and Gutmann, 1993: 160–163), George Alter and Michel Oris (Alter and Oris, 1999: 12–14).

Table 3. Hazard Model of the Determinants of Fertility by Religion and Period of Observation (All Villages)

Catholics	1860–1898 N = 1489 Prob > chi2 = 0		1899–1930 N = 2705 Prob > chi2 = 0	
	Relative risk	P > z	Relative risk	P > z
Mother's age at child birth (reference: 25–29 years)				
15–19 years	1.04	0.87	0.99	0.96
20–24 years	0.99	0.95	1.13	0.14
30–34 years	0.75	0.00	0.77	0.00
35–39 years	0.61	0.00	0.55	0.00
40 years and more	0.17	0.00	0.12	0.00
age unknown	1.05	0.83	1.55	0.13
Mother's occupation				
Factory worker	no factory		0.84	0.02
Father's occupation (reference: farmer, land owner)				
day-labourer, unskilled worker	0.82	0.02	0.90	0.18
Factory worker	0.78	0.35	0.72	0.00
trade-craftsman, civil servant	0.80	0.05	0.78	0.00
skilled occupation	0.85	0.56	0.71	0.03
occupation unknown	0.78	0.11	omitted	
Bridal pregnancy	1.08	0.50	1.14	0.21
Previous child dead	1.59	0.00	1.92	0.00
Age difference between spouses (reference: husband 5 or more years older)				
same age or husband less than 2 years older	1.01	0.93	0.98	0.81
husband between 2 and 5 years older	1.20	0.05	0.95	0.55
wife older than husband	1.07	0.52	1.13	0.11
age difference unknown	0.72	0.06	0.73	0.27

Table 3.
(continued)

Protestants	1860–1898 N = 2210 Prob > chi2 = 0		1899–1930 N = 2017 Prob > chi2 = 0	
	Relative risk	P > z	Relative risk	P > z
Mother's age at child birth (reference: 25–29 years)				
15–19 years	1.34	0.14	0.93	0.77
20–24 years	1.14	0.16	1.20	0.06
30–34 years	0.77	0.00	0.72	0.00
35–39 years	0.67	0.00	0.55	0.00
40 years and more	0.21	0.00	0.19	0.00
age unknown	1.43	0.03	1.53	0.12
Mother's occupation				
Factory worker	no factory		1.09	0.49
Father's occupation (reference: farmer, land owner)				
day-labourer, unskilled worker	0.98	0.82	1.02	0.88
Factory worker	1.17	0.63	0.82	0.05
trade-craftsman, civil servant	1.06	0.44	0.92	0.31
skilled occupation	0.83	0.44	0.77	0.13
occupation unknown	0.74	0.02	omitted	
Bridal pregnancy	1.15	0.11	1.32	0.01
Previous child dead	2.00	0.00	2.21	0.00
Age difference between spouses (reference: husband 5 or more years older)				
same age or husband less than 2 years older	0.88	0.23	0.94	0.57
husband between 2 and 5 years older	0.95	0.61	0.91	0.31
wife older than husband	1.16	0.08	1.01	0.91
age difference unknown	0.70	0.01	0.92	0.76

Note: bold printed rates are significant at minimum 90%.

Among the usual independent variables (*mother's age, husband's occupation* as indicator of socioeconomic category), we integrated some variables able to capture the bargaining power of the spouses. A first idea was to observe the effect on fertility of a factor often associated with marital bargaining power in the research literature, namely the *age difference between spouses*. It is assumed that the older the husband is as compared to his wife, the more significant his bargaining power will be. We might thus suppose that women with an older husband have higher fertility levels, as in these marriages wives were less able to impose their preference for a smaller family size. Moreover, such an effect should be more perceptible in the Catholic sample than in the Protestant one, where the motivations of husband and wife to use birth control were more convergent. Unfortunately, the results do not confirm this hypothesis and the values obtained are difficult to interpret (see table 3).

We were luckier with our second indicator for women's bargaining power in fertility decisions, namely their participation in the labour market. In her contribution elsewhere in this volume, Angélique Janssens reminds us of Diana Gittins' argument, suggesting that contraceptive knowledge was acquired and exchanged on shop floors and within factory walls. Our female witnesses in the Catholic villages actually reported that contacts with other women in the factory were the only way to gather some information about contraception. Janssens also put forward that the co-working of husband and wife in industry engendered the emergence of common goals and of a common language concerning family formation and the desired number of children. Another consideration is also plausible: if women's wages were indispensable for the family budget, wives could argue that an additional child would force them to leave the labour market.

A first difficulty lies in the identification of working women in the historical source material. Based on workers' lists found in the archives of the chocolate factories and women's occupational entries at marriage in the civil registers, a certain number of mothers could be identified as being factory workers. However, we lack reliable information for other types of women's waged occupations which may have had a similar impact on their bargaining power.

We may assume that Catholic and Protestant working mothers, experiencing the same working conditions – the two factories belonged to the same company and offered similar wages and social benefits – had a similar interest in birth control, given the heavy burden of numerous children on top of paid

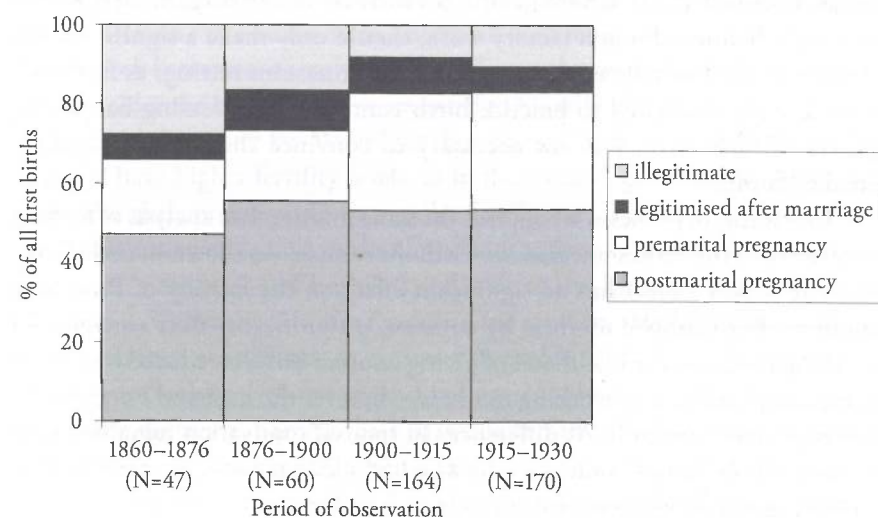
work. Interests of Catholic and Protestant husbands may differ though, if we assume that Protestant men had integrated the changing norms of masculinity as described above. Consequently, an increase in the bargaining power of women, obtained through factory work, should only make a significant difference in the Catholic environment. In the Protestant setting, as husbands were already motivated to practice birth control, the increasing bargaining power of their wives was not necessary to convince them of the need for smaller families.

To test this hypothesis, we applied the same multivariate analysis of fertility separately to the Protestant and the Catholic sample. As shown in table 3, the variable *factory worker* has no significant effect on the fertility of Protestant mothers. For Catholic mothers by contrast, a significant effect emerges: for working mothers, the likelihood of giving another birth is reduced by 16 percent, compared to non-working mothers, whatever the husband's occupation (variable under control). As differences in spousal motivation remained high in the Catholic sample, only mothers who had a leverage to better impose their interest in family size were able to reduce their fertility.

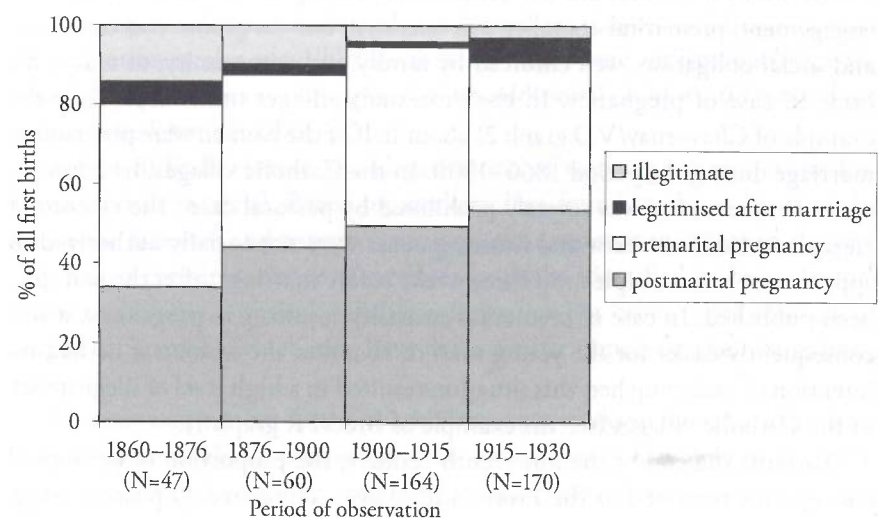
The last test concerns the differing norms of masculinity in the two cultural environments. The Protestant emphasis on masculine responsibility in sexuality, contrasting with Catholic taboos allowing masculine 'irresponsibility', is in line with longstanding norms, already perceptible before the fertility transition. In the Protestant environment, following the traditional custom of engagement, premarital sexuality was tolerated, but the groom had the moral and social obligation, well enforced by family and community, to marry his bride in case of pregnancy. In the Protestant villages under study (see the example of Chavornay/VD graph 2) about half of the women were pregnant at marriage during the period 1860–1900. In the Catholic villages, by contrast, premarital sexuality was severely prohibited by pastoral care. The custom of engagement did not exist and future spouses were not socially authorized to appear overtly as a couple until three weeks before marriage, after the bans had been published. In case of premarital sexuality resulting in pregnancy, it was consequently easier for the young man to abandon the woman if he had no intention of marrying her; this situation resulted in a high level of illegitimacy in the Catholic villages (see the example of Broc/FR graph 1).

Towards the end of the nineteenth century, the proportion of prenuptial conceptions regressed in the Protestant villages, compared to post-marriage conceptions. Attributing this phenomenon to a decrease in premarital sexual-

Graph 1. Distribution of First Births According to the Child's Status by Period of Observation – Broc, Canton of Fribourg



Graph 2. Distribution of First Births According to the Child's Status by Period of Observation – Chavornay, Canton of Vaud



ity is less plausible than assuming a better familiarity of the young couples with contraception, especially withdrawal. In this case, the emphasis on masculine responsibility in sexual matters could have incited the grooms to practice birth control in premarital sexuality in order to achieve more autonomy for deciding about the date of marriage. We may also assume that when couples already succeeded in controlling their fertility before marriage, they were better able to control it within marriage. Consequently, for couples who did *not* experience a premarital conception – such a conception would indicate a failure of the groom's contraceptive experience or sense of responsibility – the mother will be exposed to a lower risk of giving birth. By contrast, premarital conception should be associated with higher fertility within marriage.

To test this hypothesis, we introduced a dummy variable called *bridal pregnancy*, which was set to one when the first child was conceived before marriage. However, this variable only obtained a significant result for Protestant mothers: when their first child was conceived before marriage, they had a higher likelihood of giving another birth. The result is quasi significant for the first period, more pronounced and very significant in the second, indicating a better familiarity with contraception, and/or a growing intention to reduce fertility (see table 3). The postulated correlation between premarital and marital control of fertility is thus attested.

What happened in the Catholic villages? 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 them within marriage was lacking, because the incentives for adopting such behaviour were not strong and above all not pervasive enough to obtain a significant result. As the responsibility for contraception rests with men, the Catholic 'cultural software' that encourages a high coital frequency without stressing men's responsibility for the number of children can explain this result. However, it is obvious that this hypothesis is difficult to test rigorously.

Conclusion

There are good reasons for integrating gender as a causal factor into explanations of the demographic transition. The application of certain fundamental methodological requirements, such as the focus on individuals as decision-makers, and the emphasis on mechanisms through which structures on a macro-level influence 'private' decisions, makes this integration of gender unavoidable. When investigating the impact of social structures, of norms and values, and their implementation into incentives and constraints for individuals, we have to take into account the sex of these individuals – not only because of the biological characteristics of men and women already well examined in demography – but foremost because of their different and asymmetrical social positions.

By using different components of the gender system this article shows that it is necessary to reconsider the content of the three preconditions for the adoption of fertility control, as stated by Ansley Coale. On the one hand, the integration of gender implies looking at the way in which institutional practices attribute different rights and duties to women and men, resulting in unequal opportunities and power relations. The second of Coale's conditions stipulates that reduced fertility must be perceived as advantageous, and therefore the changing costs of children have to be considered. As the interests of mothers and fathers differ, so do their respective cost-benefit balances with respect to children; moreover, the costs and benefits of daughters and sons are not identical, as our analysis of the costs of education has demonstrated.

On the other hand, the integration of gender involves looking at the cultural software, namely the gendered norms regarding sexuality and parenthood. Following the first of Coale's conditions, fertility control must be 'an acceptable mode of thought and form of behaviour'. Beside the religious norms generally used in research as an indicator of this acceptability, the gendered norms governing sexuality and procreation have to be taken into account. In the Protestant sample analysed here, the use of contraception by women was considered unacceptable whilst the discourse stressed responsible fatherhood, thereby implicitly encouraging male control of fertility. Consequently, the still little explored impact of changing norms of masculinity and fatherhood deserves more attention. Moreover, the third of Coale's conditions asks that we specify the information available about and the access to contraceptive

devices. As the initiative of contraception was quite unthinkable for women, men's access to contraceptive devices and information was decisive.

I hope that my models for the integration of gender have demonstrated that this is a fruitful enterprise. The systematic data necessary to include gender in research on the fertility decline may be difficult to produce and to interpret. However, if many researchers apply this approach, progress in operationalisation and formulation of testable hypotheses could be swift. It is furthermore easily conceivable that many already established demographic data bases could provide interesting new insights when analysed by theories that integrate a gender perspective.

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