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Fertility and Culture in Eastern Europe: A Case Study of Riga, Latvia, 1867–1881

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Abstract. Recent research on the secular decline of fertility in historical Europe has focused on cultural explanations in the wake of the European Fertility Project's failure to confirm demographic transition theory. Using the city of Riga in present-day Latvia as a case study, the essay provides initial estimates of nuptiality and fertility for resident language and religious groups in 1867 and 1881, and reviews the prospects of future work. Despite obstacles, Eastern Europe offers researchers an exceptional opportunity to test major cultural and economic hypotheses about the fertility decline because sustained ethnic diversity coexisted with economic development.

Charles Wetherell et Andrejs Plakans. Fécondité et culture en Europe de l'Est: une étude de cas à Riga, Latvie, 1867–1881.

Résumé. Des recherches récentes sur le déclin séculaire de la fécondité en Europe se sont concentrées sur des explications culturelles devant l'échec du Projet Européen sur la Fécondité à confirmer la théorie de la transition démographique. A l'aide de l'exemple de la ville de Riga, située dans l'actuelle Latvie, cet essai fournit des estimations initiales de la nuptialité et de la fécondité pour des groupes linguistiques et religieux présents en 1867 et 1881, et présente des perspectives de recherches futures. En dépit des difficultés, l'Europe de l'Est offre aux chercheurs une opportunité exceptionnelle de tester les principales hypothèses culturelles et économiques du déclin de la fécondité, du fait du maintien d'une diversité ethnique qui coexiste avec le développement économique.

1. Introduction

In the past decade research on fertility in historical Europe has taken a new direction in response to the findings of the European Fertility Project (EFP). The EFP failed to substantiate demographic transition theory (Notestein, 1953), concluding that measurable economic forces associated with industrialization and urbanization were poor predictors of the timing of the secular decline in fertility in Europe from 1860 to 1960. Instead, cultural differences, most clearly observed through region, ethnicity and language, separated fertility regimes (Coale and Watkins, 1986). As new work focused more directly on cultural mechanisms, the once sharp distinction faded between what van de Kaa (1996) calls "economic narratives," which

have couples adapting their fertility to changing economic conditions (Easterlin, 1978; Easterlin and Crimmins, 1985), and "social narratives," which often portray the transition as resulting from a diffusion of new ideas about controlling fertility (Knodel and van de Walle, 1979; Watkins, 1986, 1991). Although serious differences remain (Cleland and Wilson, 1987; Lesthaeghe and Surkyn, 1988; Alter, 1992; Pollak and Watkins, 1993; Greenhalgh, 1995b; Kertzer, 1995), studies advancing culturally grounded explanations of the decline of fertility in Europe now outnumber economic ones (van de Kaa, 1996, p. 396).

Anthropologists, especially, helped to advance cultural explanations (Caldwell, 1976, 1978, 1982; Caldwell and Caldwell, 1987; Greenhalgh, 1990, 1995a). Hammel (1990), for example, argued that older conceptions of culture in existing research, such as that of culture as identifier (ethnicity, religion, class) or culture as context (serfdom, industrialization), do not render culture an effective explanatory variable. By contrast, newer notions that afford individuals agency to change behaviour which is specific to different ethnicities and contexts provide better ways of giving culture explanatory power. With respect to fertility control, therefore, culture might be viewed as the habits of reproduction, discussed and modified over time by individual couples in response to micro-level (the price of grain) and macro-level (urban or rural; agrarian or industrial) conditions, as well as new class-specific values surrounding family limitation, women, education, or childbearing (e.g., Woods, 1987; Garrett, 1990; Gillis, 1992; Szerter, 1996).

Another feature of post-EFP research has been a critical examination of the measures the EFP employed and the development of new and more refined methods. The basic conclusion emerging from research evaluating EFP measures is that they have systematic flaws that can lead to erroneous conclusions. Guinnane et al. (1994), for example, demonstrated that the EFP's principal index of marital fertility, I_g, cannot measure well parity-dependent control nor can changes in I_g over time accurately detect the onset of control. Similar weaknesses in older measures spawned the development of new techniques and measures (Alter, 1988; David et al., 1988; David and Mroz, 1989a, 1989b; David and Sanderson, 1990; Weir, 1993, 1994; Okun, 1994a, 1994b, 1995) which utilize the higher quality individual level data that European states collected in the late nineteenth and twentieth centuries. Thus criticism of EFP methods has helped to create better measures of fertility behaviour in historical Europe.

Among economic demographers, methodological criticism also led to a questioning of the EFP's major finding that economic factors were not central to the decline of fertility in Europe. Critics argue that if the EFP's estimates of the start of the fertility transition are wrong because their measures are flawed, then their conclusion that economic forces were not responsible for the decline may also be wrong (Guinnane et al., 1994). Galloway et al. (1994; cf. Lee et al., 1994), in an analysis of Prussia between 1875 and 1901, identified religion and ethnicity as key indicators of the level of fertility, but poor predictors of its decline. Instead, structural variables such as education, female labour-force participation, and the

growth of reliable financial institutions proved to be better predictors of the decline. In a similar analysis of Slavonia in Croatia in the 18th and 19th centuries, Hammel (1995) came to the same conclusion. He found that only when ethnic or religious designations corresponded closely to different positions in economic and political structures were ethnicity or religion good predictors of fertility behaviour. In sum, although cultural hypotheses are gaining ground in empirical work and theoretical debates, economic demographers continue to advance structural rather than cultural change as the essential cause of the decline of fertility in Europe.

While developments signal a promising future for research on historical fertility in Western Europe, the same cannot be said for Eastern Europe for two reasons. First, historical demographic research on Eastern Europe has long lagged behind that on Western Europe. Before the collapse of the Soviet Union in 1989–1991, work on Eastern European populations not produced by Soviet bloc scholars, who were wedded to Marxist paradigms, focused primarily on family history (Lastlett and Wall, 1972; Czap, 1982, 1983; Wall, 1983; Hoch, 1986; Plakans and Wetherell, 1988). Western scholars outside the EFP were simply not conducting fertility research on nineteenth- and early twentieth-century Eastern European populations. Important exceptions exist (Andorka, 1971, 1979; Krūminš, 1993; Galloway et al., 1994; Lee et al., 1994; Hammel, 1993, 1995; Hammel and Wachter, 1996a, 1996b), but most are recent. Entire areas of Eastern Europe – the Baltic States, Poland, the Czech Republic, much of Slovenia, Bosnia, Croatia, Macedonia, and Yugoslavia, as well as Belarus, Ukraine, and Moldova in the western parts of the former Soviet Union – lack demographic histories. In short, there is no body of historical demographic research on Eastern Europe that is remotely comparable to that on Western Europe.

The second reason stems from the first. Because non-EFP researchers did not pursue the historical demography of Eastern Europe, existing sources of data that might be used to study of fertility over time in more than a single region before the twentieth century were not systematically exploited. Scattered community studies exist, but their findings are plagued by questions of representativeness (Czap, 1978, 1982, 1983; Hoch, 1982, 1986; Andorka and Balazs-Kovacs, 1986; Kuklo, 1990; Plakans and Wetherell, 1988, 1992, 1995; Wetherell, Plakans and Wellman, 1994). Galloway's Prussian (Galloway et al., 1994; Lee et al., 1994) and Hammel's Slavonia data (Hammel, 1993, 1995; Hammel and Wachter, 1996a, 1996b) are important exceptions to the generalization that small, particularized data sources underlie Eastern European historical demographic research. Yet if Watkins' (1991) vision of demographic diversity across Western and Eastern Europe in the nineteenth and early twentieth centuries is correct, then the utility of community based studies for understanding broad fertility regimes in Eastern Europe remains questionable.

A related liability in Eastern European demographic research involves the necessity of using older measures on existing data. Because newly developed measures of fertility invariably require individual level data, and because Eastern Europe

suffers from a lack of systematically developed individual level data, historical demographers are currently forced to use older measures that do not meet current standards of acceptable explanatory power. In sum, historical demographers of Eastern Europe face major obstacles. Not only do they need to catch up substantively, but they also need to develop new sources of data that can answer critical demographic questions and deflect methodological criticisms.

Paradoxically, however, historic Eastern Europe may well prove to be an ideal laboratory for exploring competing explanations of the fertility decline because its inhabitants remained ethnically and linguistically diverse while they modernized economically and demographically. The three Russian Baltic provinces of Livland (Livonia), Kurland (Courland), and Estland (Estonia), for example (Figure 1), variously part of Swedish, Polish and Russian empires from the sixteenth to the twentieth centuries, contained nine identifiably distinct ethnic nations – Latvians, Estonians, Lithuanians, Germans, Russians, Jews, Belorussians, Ukrainians, and Livs – that maintained their own traditions and languages well into the twentieth century. Critical political and social transformations also occurred in the nineteenth-century Baltic that fostered immigration, urbanization and industrialization. The abolition of serfdom between 1816 and 1819, the removal of restrictions on geographical movement in the 1830s, and the introduction of private ownership of land by peasants in the 1850s prompted heavy migration to Baltic cities. Between 1806 and 1853, the population of Riga, the metropolitan centre of the nineteenth-century Russian Baltic provinces (Henrikkson, 1986), grew at a modest annual rate of 1.41 percent, from 33,665 to 65,413. In 1867, the city's population had expanded to 102,590, reflecting an annual rate of growth of 3.2 percent. And by 1881, Riga's population had increased to 169,320, at an extremely high rate of growth of 3.5 percent per year (Krastinš, 1978, p. 110).

The EFP also identified the *guberniias* of Estland, Livland, and Kurland among the handful of Russian provinces where the decline in fertility began earlier than in the Empire as a whole: Kurland in 1860–1870, and Estland and Livland both in 1880–1890 (Coale, Anderson and Härm, 1979, p. 157; Coale and Treadway, 1986, pp. 39–40; Coale and Watkins, 1986, Map 1). Thus despite methodological limitations, the Baltic States are a good place to begin to explore the cultural and structural components of fertility in Eastern Europe at the micro-level. We have chosen to use Riga as a case study of both the problems and prospects of such an enterprise.

Our preliminary exploration of fertility and culture in the Riga does three things. First, it serves as an introduction to some of the problematic evidence that historical demographers of Eastern Europe will need to confront and exploit. It reveals the weaknesses of existing data but also the analytic possibilities that better data might afford. Second, it provides basic measures of nuptiality and fertility among resident national and religious groups in Riga in 1867 and 1881 that can serve as initial points of reference for future work. As one might expect, fertility differed among national and religious groups, but not always in predictable

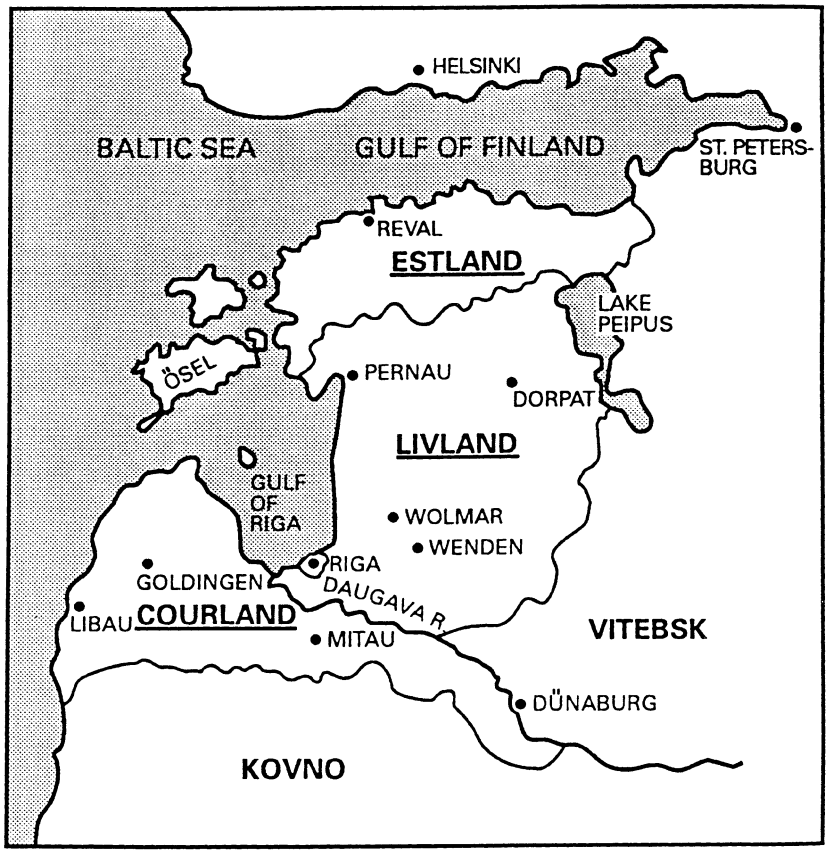

Figure 1. The Russian Baltic Provinces about 1850.

Source: Plakans, 1995, p. 62. Used with permission of the Hoover Institution Press.
Note: Place names are from the mid-nineteenth century. Modern equivalents: Estland + Northern Livland = Estonia; Southern Livland + Courland + Western Vitebsk = Latvia; Kovno = Lithuania; Ösel = Saaremaa; Reval = Tallinn; Pernau = Pärnu; Dorpat = Tartu; Wolmar = Valmiera; Wenden = Cēsis; Dünaburg = Daugavpils; Mitau = Jelgava; Goldingen = Kuldīga; Libau = Liepāja.

ways. Nuptiality conformed to a Western European marriage pattern rather than an Eastern European one (Hajnal, 1965, 1982), confirming work which argues that the dynamics governing nuptiality were different in urban areas (Lynch, 1991) but also raising questions about the analytical utility of Hajnal's line between eastern and western European populations. Third and finally, it explores the structural context of fertility and nuptiality in the Baltic context. In the process, we reflect, from the viewpoint of historians interested in a particular area, on the problems that the exercise as a whole presents in terms of sources and methodologies. Our larger purpose is to raise issues and explore evidence that may ultimately lead to a fuller understanding of the fertility transition in Eastern Europe, rather than

to offer any definitive interpretation. The state of historical demographic research on Eastern Europe and the available data do not currently allow more. However, further study of fertility in the nineteenth-century Baltic area may help to refine our understanding of the cultural and structural determinants of fertility and the fertility transition in Eastern Europe.

2. Data and measures

2.1. DATA

The data we employ are from two censuses taken in 1867 and 1881 (von Jung Stilling, 1869, 1883–85). Local and provincial administration in the three Russian Baltic provinces of Livland, Kurland, and Estland was entirely in the hands of the three Baltic noble corporations (*Ritterschaften*), each of which had organized a bureau to gather statistical information on the provincial population and economy. These committees became very active in the middle decades of the century, so that the Baltic provinces tended to be better documented statistically than other regions of the Russian Empire.

The Livland Statistical Committee conducted the 1867 census only for nine Livland cities (including Riga), and not the countryside. In the morning hours of March 3, 1867, enumerators visited all inhabited places in Riga and, following elaborate instructions, took information by household (*Haushaltung*) on each of the members: name, sex, age, relation to head, marriage status, religion (*Confession*), utilized language, social estate (*Stand*), occupation, place of current residence, and place of registered residence (*Hingehorigkeit*), thus combining individual and household level information. In the 1869 published summary, von Jung Stilling, the director of the Livland Committee, explained that language was being used as an indicator (*Kennzeichen*) of nationality, with the result that all the published cross-tabulations were grouped separately in terms of the German, Russian, Latvian, Estonian, Jewish, and "other" language/nationality designations (von Jung Stilling, 1869, p. vi). Most published tables were three-way (e.g., Russian population by age, sex, and, marital status), with identical table-clusters for each of the four main districts of the city, and for each borough of each district. This highly structured information, of course, limited the number of cross-tabulations that could reasonably be published and so prohibits any analysis that might confirm or deny residential clustering among resident language groups within the city.

By contrast, the 1881 census was organized by all three Statistical Committees, and carried out in the cities and rural districts on December 29. The published results of the census in each province were tabulated somewhat differently by each Committee and published separately over a five-year period. This time, enumerators filled out a form for each *individual*, asking for name, sex, marital status, nationality, religion, used language, literacy, main occupation and ancillary occupations, place of current residence, place of registered residence, and disability. Information from the individual forms was then grouped into household forms. As in 1867,

the 1881 published results for Riga (von Jung Stilling, 1883–85) used the city's districts and boroughs for grouping purposes. Unfortunately "nationality" was used infrequently. Therefore, while we can estimate nuptiality and fertility for language groups in 1867, we are limited to religious groups in 1881. From the explanatory material and classifications in both censuses one also detects an unease with the concept of "nationality," in part because the Baltic German elite argued in the political polemics of the day that the Baltic area was a *Ständestaat* (society of social orders), rather than a *Nationalstaat* (society of national groups). However, information on "social estate," which might have provided a way to analyze any breakdown in the traditional "social order," was not collected.

The motivation for the 1867 census was not reported in the published volumes, although it was the logical next step to the work of the Committee, which had carried out a series of trial censuses (*Probezählungen*) in various localities beginning in 1860. No doubt the sheer growth of Riga's population played a role as well, as the native born were losing ground to immigrants by 1867. The 1881 enumeration may have been carried out in preparation for the large-scale Imperial inspection of the three provinces, the so-called "Manasein Revision," in 1882–1883. That Imperial revision turned out to be the first step of a policy of "russification" aimed toward the Baltic provinces from 1885 to 1914 (Haltzel, 1981; Plakans, 1981; for contemporary discussions of problems surrounding the 1881 census, see Stieda (1881) and Wittschewsky (1881)).

Aside from the Baltic censuses, to our knowledge there were no other major censuses taken in the Empire prior to 1881; if there were others, they were provincial or local affairs. The first coordinated Imperial census was taken in 1897 and it is with this census that EFP researchers began to document fertility in the Russian empire and later Soviet Union (Coale et al., 1979; Coale and Watkins, 1986). In the case of the Baltic, the EFP extrapolated backwards in time from 1897 using reverse projection, and did not report using either census, despite the 1881 coverage of both rural and urban populations. Although ours is the first attempt to exploit these censuses, major limitations exist. For one, the information in the published versions of the 1867 and 1881 censuses is only partially comparable. For another, all data are aggregated. We have seen some of the 1881 individual household schedules for agricultural estates in the Latvian National Archives in Riga, but we have been unable to determine if all the individual schedules have survived. They are certainly not collected into an identifiable record group or special archive. The aggregate nature of the published data limits the demographic measures we can use and prohibits any multi-variate analyses, but they do allow some preliminary estimates.

2.2. MEASURES

The measures we use are mainly those that Coale developed for the EFP: the index of general fertility, I_f, the index of marital fertility, I_g, the index of illegitimate

fertility, I_u, and the proportion married, I_m (Coale, 1967, p. 209; Coale, 1969, pp. 4–6; Coale and Treadway, 1986, pp. 153–162). Each is interpreted as relative to the Hutterites, an Anabaptist sect that settled in the upper, central U.S. and lower central Canada in the late nineteenth-century, and which has a reliable record of socially unrestrained fertility (Eaton and Mayer, 1954, pp. 1–2). This has the value of making the measures essentially parametric and practically limited at 1.0. An I_g of 0.65 thus indicates that the population under study has a level of marital fertility that is 65 percent of Hutterite marital fertility. Although I_g has no inherent capability to indicate the *onset* of fertility control (Guinnane et al., 1994, p. 13), different values of I_g nonetheless indicate different *levels* of fertility; they also have been widely used and so can be compared to a wide variety of other historical populations.[1]

Measures of nuptiality include the Singulate Mean Age at Marriage (SMAM) and the median age at marriage (Hajnal, 1953; Shryock and Siegel et al., 1975, I, pp. 292–293). The SMAM is "analogous to an expectation of life as a single person" (Haines, 1996, p. 19) but implicitly assumes a closed, non-migrating population (Hajnal, 1953, pp. 130, 132). By contrast, the median age at marriage does not assume that the population under study is closed and thus is arguably a better measure of age at marriage since Riga experienced heavy immigration in the last half of the nineteenth century.

2.3. ADJUSTMENTS

The calculation of Coale's indices requires data on age, marital status, and births, as well as some estimate of infant and adult female mortality. Both the 1867 and 1881 censuses list the population by sex, marital status, and single year of age; for persons under one, they list ages by month. However, neither census contains any data on deaths, which constitutes a serious problem because I_g is sensitive to even modest fluctuations in the number of births. Rashin's (1956) classic statistical summary of the Russian empire provides data on deaths that can be used to estimate mortality. Coale et al. (1979, pp. 207–208) reported using Rashin's estimates of crude birth and death rates in 1897 to select a model life table and a corresponding estimate infant mortality, $1q_0$ (the probability of dying between birth and exact age one), but reported using neither the enumeration of infants under one in the 1881 census nor Rashin's estimates of deaths prior to 1897. Rashin's estimates for Livland between 1866 and 1885 (Rashin, 1956, Table 123, p. 67) indicate an "East" model life table for females. The particular model life table levels (7 and 10) indicate $1q_0$s of 0.259 for females and 0.306 for males in 1867, and 0.198 for females and 0.235 for males in 1881. The change in levels represents noticeably improving mortality, but life expectancies at birth (e_0) were still below 45 (Coale and Demeny, 1983, 273–274).

While our estimates of infant mortality may be an improvement over the EFP's, they are not without problems. For one thing, Woods (1993) recently showed that

Table I. Urban multipliers for infant mortality in Riga, 1767–1881, and selected parts of Western Europe, 1799–1902

Locale and period	Rural q_0	Urban multiplier	Urban q_0
Bavaria, 1867–1885[1,2]	0.425	1.03	0.438
Finland, 1901–1902[1,2]	0.151	1.25	0.189
Prussia, 1901[1,2]	0.226	1.18	0.267
Germany, 1709–1899[1,2]	0.222	–	
Sweden, 1870[2,3]	0.141	1.53	0.216
Sweden/Stockholm[4]			
1861–1870	0.136	1.97	0.268
1871–1880	0.132	2.08	0.275
1881–1890	0.113	1.17	0.194
Latvia/Riga[5]			
1867	0.283		0.352
1881	0.217	1.25	0.270

Sources: (1) van de Walle, 1986, p. 209, Table 4.3, p. 217. (2) Reher, 1995, Table 1, p. 523; (3) Lynch and Greenhouse, 1994, p. 121; (4) Woods, 1993, Appendix Table 2, p. 219. (5) Latvian q_0s represent the averages of the estimates for males and females at East, Level 7 (1867) and Level 10 (1881); Coale and Demeny (1983, pp. 273–274)

the expected relationship between infant and adult mortality inherent in model life tables has not always applied historically. In nineteenth-century Stockholm, for example, adult and infant mortality varied independently, suggesting a pattern that occurs "when both are at very high levels, but especially infant mortality" (Woods, 1993, p. 202). Woods also showed how improvements in infant mortality might outpace those in adult mortality. In short, Woods' findings suggest extreme caution in estimating infant mortality using life tables as we have done, especially during a period of rapid change in mortality generally (Schofield and Reher, 1991). Yet without additional data on deaths that would allow us to construct independent estimates of mortality, we have no choice but to use estimates derived from model life tables and to urge interpretive caution.

An additional problem exists. Van de Walle (1986) demonstrated that infant mortality was higher in cities than in rural areas. Since our the estimates are for the entire province of Livland, they reflect a largely rural experience. We thus need to adjust infant mortality in Riga upward using an urban multiplier. Picking a multiplier, however, is risky business, largely for the reasons Woods outlined. Table I reveals the few instances in historic Europe where estimates of q_0 can be matched to an urban multiplier.

Collectively the multipliers reveal no clear pattern that would lead us to choose one over another for Riga. The values of $1q_0$ for both sexes in Livland, 0.283 in 1867 and 0.217 in 1881, are closest to those for Prussia in 1901 (0.226) and Germany

from 1709–1899 (0.222), and suggest a multiplier between 1.20–1.25. The figures derived from Sweden and Stockholm between 1860 and 1890 would favour a much higher multiplier on the order of 1.75–2.0. The rapid growth of Riga and the absence of a modern public health regime in the city might also favour choosing a high urban multiplier; although the presence of a military garrison would also suggest some public health measures were in place (Kunitz, 1986). The Stockholm example is one of extremely high infant mortality. By contrast, the other urban multiplier for Sweden in 1870 (1.53) comprehends other urban areas. The population of Riga was also predominantly German, Latvian, and Russian, which would favour the northeast European multipliers. Applying the high Sweden/Stockholm multipliers, moreover, pushes I_g above 1.0, which is simply not credible. Accordingly, we have chosen to use the simple average of the urban multipliers for Bavaria, Prussia, Finland and Sweden (van de Walle, 1996, p. 217), and have adjusted our estimates of the essentially rural $1q_0$ in Livland by 1.25 to arrive at q_0s for both sexes in Riga of 0.352 in 1867, and 0.270 in 1881.

3. Fertility and nuptiality

Table II presents basic estimates of fertility for Riga in 1867 and 1881, and for selected Russian and Baltic provinces in 1870 and 1897. Two matters warrant comment. First, while our estimates are higher than the EFP's because we used different estimates of mortality, they are consistent with a decline in fertility after 1880. From a high of 0.692 in 1867, I_g fell to 0.623 in 1881, and to 0.519 in urban Livland in 1897. Moreover, we believe that our estimates are better than the EFP's because they are made on the basis of actual enumerations rather than projected populations, and they embody corrections for mortality for the periods surrounding the enumerations. Our measures of fertility may change when better estimates of mortality become available, but we believe they are the best we can currently make.

Second, nuptiality in Riga, as indicated by the SMAMS, median ages at marriage, and proportions single aged 45–54 displayed in Table III, reflects Hajnal's (1965) western European marriage pattern of relatively late ages of marriage for both men (late-20s) and women (mid-20s), and substantial proportions of both sexes remaining single (13–16 percent). Minor differences existed among Riga's various language and religious groups, but the commonly understood Eastern European marriage pattern of early and universal marriage did not prevail in post-1850 Riga. This finding underlines the problems in applying Hajnal's dichotomous model to the wide variety of demographic behaviour in the European east as well as to the complexities of urban nuptiality.

Lynch (1991) recently argued that the evidence of Hajnal's western European marriage in cities could be explained by economic constraints and values that operated in different ways for different groups. Instead of lowering the age of marriage among urban immigrants because young couples could secure independent incomes in industrial occupations as Hajnal reasoned, constraints imposed

Table II. Estimates of fertility in Riga, 1867 and 1881, and selected Russian cities and Livland, 1870 and 1897

Locale	Year	I_f	I_g	I_u	I_m
Riga	1867	0.361	0.692	0.064	0.473
	1881	0.338	0.623	0.073	0.482
Moscow	1870	0.531	0.781	0.150	0.604
	1897	0.439	0.645	0.125	0.604
Kiev	1870	0.559	0.787	0.063	0.685
	1897	0.543	0.752	0.060	0.685
St. Petersburg	1870	0.393	0.659	0.119	0.507
	1897	0.330	0.553	0.101	0.507
Livland	1870	0.335	0.670	0.043	0.466
Rural	1897	0.305	0.605	–	0.474
Urban	1897	0.256	0.519	–	0.452

Sources: Coale, Anderson and, Härm 1979, Table 2.2, p. 20; Coale and Treadway, 1986, Appendix A, pp. 137–138; von Jung Stilling (ed) 1869, Table 64, n.p. (Between 292 and 299); von Jung Stilling and Anders, (eds) 1885–1887, Vol. 1, Table 11, pp. 23–26.

Table III. Estimates of nuptiality in Riga, Latvia, 1867 and 1881

	1867		1881	
	Males	Females	Males	Females
Proportion, 44–54, single	0.162	0.160	0.137	0.131
SMAM	30.4	25.6	29.8	25.0
Median age at marriage	28.7	23.2	28.1	24.2
Difference (SMAM – median age)	1.7	2.4	1.7	0.8
Total, 15–49	31,570	27,858	45,196	45,291
Total population	52,047	50,543	85,821	83,499
	102,590		169,320	

Sources: von Jung Stilling (ed) 1869, Table 64, n.p. (Between 292 and 299); von Jung Stilling and Anders (eds) 1885–1887, Vol. 1, Table 11, pp. 23–26.

by the high cost of housing or the requirements of education and training may actually have raised the age of marriage for many. The net result, in Lynch's view, is that a heterogeneity of experience prevailed and that simple accounts of the age of marriage in urban Europe are dangerous. Geographically, Riga sits above the Hajnal line that runs from St. Petersburg to Trieste. Although inhabited by peoples from both Eastern and Western Europe, Riga and the Baltic states have long been viewed as part of Eastern Europe. Certainly as part of the Russian empire, Riga would be considered part of Eastern Europe, but political divisions do not always

translate into identifiable behavioural patterns. In parts of rural Latvia, the Western European marriage pattern definitely prevailed (Plakans and Wetherell, 1988). We have dealt with the issue of what geographic areas might be construed as Eastern Europe elsewhere (Plakans and Wetherell, 1997), and have argued that distinguishing Eastern from Western European demographic patterns in border areas such as the Baltic is an extremely difficult, if not a currently intractable, problem.

4. Nationality, language, and religion

In order to comprehend the cultural divisions that might have existed in Riga and elsewhere in Eastern Europe, it is helpful to understand both the profound social changes that occurred in the Baltic in the nineteenth century and the attending rise of national sentiments. Taken together, they arguably worked to sustain differences in language and religion that may have helped to sustain national and ethnic sensibilities and behaviours at a time when urbanization and industrialization was breaking down such barriers elsewhere. In short, cultural identifiers such as language and ethnicity may have real analytic value in Eastern Europe as Watkins (1991) contends.

Imperial internal passport reforms of the 1850s loosened restrictions on movement within the Russian Empire and produced migration to urban areas in the 1860s and 1870s. The existence of the two urban censuses that we are using is itself a symptom of the disquiet which the Baltic German provincial elites experienced with the advent of population redistributions in the Baltic area during the second half of the nineteenth century. Rural people were on the move, urban industry was expanding rapidly, the nature of the labour force was changing, and all of these aspects of "modernization" called for thorough population inventories so that effective control could be maintained. Moreover, these same decades marked significant upturns in the creation of new enterprise in the Empire generally and in Riga particularly, increasing in the long run the proportion of Riga's residents who worked in factories and craft enterprises by about 141 percent (1861–1897) (Krastinš, 1978, Table 4, p. 22). Finally, these decades also witnessed the sharpening of national consciousness in the Baltic area, as Latvian and Estonian nationalists successfully popularized the idea that language groups were "nationalities" and thereby forced German-speakers to articulate a group ideology of their own. Strong Slavophile sentiments in Imperial government circles also made the "nationalities" of the Baltic area increasingly aware of being governed by another nationality – the Russians – rather than simply Imperial administrators who spoke a different language (Plakans, 1995).

In the third quarter of the nineteenth century, the Riga population grew principally through in-migration. In 1867, 64.2 percent of the population had been born there, while in 1881 that share had declined to 39.9 percent. Where these immigrants came from is easier to determine than who they were. In 1867, the main source of immigrants (34.1 percent of all immigrants) had been Livland province.

The next largest source had been the province of Kurland (27.0 percent), adjoining Livland to the southwest; the remainder had come from other Russian provinces (21.6 percent) or elsewhere in Europe (16.3 percent). By 1881, the trajectory of migration had changed. The dominant supplier now was Kurland (31.5 percent) which lay south of Riga, followed by Livland itself (27.6 percent) and other Russian provinces, such as Kovno (12.4), which lay directly south of Kurland (Figure 1).

Although Riga's officials did not keep records on individual immigrants, the language classifications in 1867 and 1881 help to answer the question of who the immigrants were. In 1867 the dominant language in Riga was German, which was spoken by 42.9 percent of all residents. Russian was the second most commonly spoken language (25.1 percent), followed by Latvian (23.6 percent), and Yiddish (5.1 percent) a distant fourth. In 1881, these proportions had changed at the expense of German and Russian. German-speakers still dominated, but their share had fallen to 39.4 percent of the population. The second largest language group now were Latvian-speakers (29.5 percent), with Russian-speakers assuming third place (18.9 percent). Because Riga's total population had also increased, all language groups contained larger absolute numbers, but proportional gains are instructive. While the increase in the number of German-speakers from 1867 to 1881 stood at 51.8 percent, Latvian speakers increased 106.5 percent and Yiddish-speakers 170.7 percent. The increase in Latvian-speakers in part reflects the expectation among the rural landless that Riga would provide them with employment. The increase for Yiddish-speakers fits with the noted southerly-to-northerly shift in the trajectory of migration: the Pale of Settlement ended at the Kovno-Kurland border, and Riga lay only 75 kilometers to the north. The steady in-flow of both Latvian and Yiddish speakers suggests that forces for retaining ethnic ways were strong as new immigrants reinforced rural habits of mind and behaviour – a common feature among U.S. immigrants during the late nineteenth and twentieth centuries (e.g., Zunz, 1982; Bodnar, 1985; Morawska, 1985, 1996; Massey, 1995; cf. Economakis, 1997).

At the same time, the overriding and analytically troublesome fact is that the populations of the Baltic provinces in the second half of the nineteenth century are impossible to separate cleanly into groups defined by these designations. Baltic administrative boundaries corresponded very badly with the boundaries of putative national, linguistic, or religious "communities." Estonians lived in Estland and adjoining Livland in almost equal numbers; Latvians lived in Livland and Kurland and perhaps 20 percent could be found in the western districts of adjoining Vitebsk province. Baltic Germans, Russians, and Jews were scattered throughout rural and urban areas of the three provinces, though there were fewer Jews in Estland than elsewhere in the Baltic. Most Baltic Germans, Estonians, and Latvians were Lutheran Protestants, yet all three groups contained important sub-populations of Roman Catholics and persons of the Orthodox faith. Moreover, minorities of each nationality group identified the language of some other nationality group as the language of the their own homes. Although only 1.1 percent of Germans declared

their language to be something *other than* German, the propensity was higher among other nationalities: 9.0 percent of Russians, 12.0 percent of Latvians, and 28.8 percent of all Jews.

The EFP discouraged explanations of fertility that relied only on nationality by showing that the factors depressing fertility in any given area, including the Baltic provinces, were reflected in similar levels for all nationality groups in one area in comparison to groups of like nationality in other areas. In other words, "whatever it was that caused Latvians to have low fertility when there were few non-Latvians around also led non-Latvians to have low fertility in the presence of Latvians" (Anderson, 1986, p. 309). The phrase "whatever it was" invites the use of cultural propensities that affected all groups. At the same time, and especially in the Imperial borderlands in the nineteenth century, the assumption that language-group membership can be defended, as the correlation (r = 0.76) between language and nationality in 1881 suggests.

One thing is certain. National identity was in flux between 1867 and 1881, and enumeration techniques could not have been flexible enough to catch the processes of change in individual self-identification muddying the area's cultural-political history. The same persons, mostly male household heads, who provided evidence to enumerators about their own and their families' group membership made up the age groups we use to examine fertility, and they are also the same people who were most vulnerable to changes in national identity. While estimates of fertility do not require subjective interpretations, national identity is subject even to short-term change. To use language as an indicator of nationality, and to assume, in this period, continuity in the latter may be misleading. This observation would not hold true as much for the Jews (considered as a nationality) as for the German- and Latvian-speakers. In sum, nationality is fraught with uncertainties in this transitional period. To make matters worse, the boundaries that Watkins (1986, 1991) has argued separated fertility regimes in Western Europe were bound to prove more permeable in a cosmopolitan city such as Riga. Bi- and even tri-lingualism (commonly German, Russian, and one other language) had long been an element in the region's history, but assessing that specific influence on fertility behavior remains impossible given the current state of our knowledge.

5. Language, religion, and fertility

Nonetheless, as Table IV reveals, there were differences in the fertility of the major language groups in Riga in 1867, although no clear pattern. Marital fertility was highest among Yiddish speakers (I_g = 0.771) and lowest among Latvians (I_g = 0.656). Estimates of nuptiality further suggest a divide between Yiddish speakers (Jews) and other language/nationality groups. Following Lynch (1991), one might expect male German speakers, who held the majority of jobs in the municipal bureaucracy and professions, to have a high age of marriage as the requirements of training and education would work to delay marriage. The same might be true of

Latvian-speakers who dominated industrial and factory occupations, but for whom the high cost of housing in Riga worked to delay marriage. By contrast, Yiddish speakers, who were concentrated in craft industries and whose female labour force participation was less than 7 percent, might tend to have lower ages of marriage.

The extent of inter-faith marriage in Riga suggests the social relevance of religion for the study of fertility. Between 1881 and 1885, the overall incidence of mixed marriages (*Mischehen*) was only slightly more than one in ten (cf. McCaa, 1993). Of 6,952 unions contracted, only 12.5 percent (876) were between partners of different faiths (von Jung Stilling, ed. 1887, pp. 207, 218–221, 224). The degree to which persons of different religions decided to marry, however, differed according to sex and opportunity. Protestants, who were primarily German- and Latvian-speakers, were not the most likely to enter such unions, as we might expect on religious grounds: of all Protestant men married during the period only 5.9 percent married women of a different faith, and of the Protestant women only 9.9 percent did so. By contrast, 42.4 percent of Orthodox men married partners of a different faith along with 25.4 percent of Orthodox women. Of the main confessional groups, the highest incidence of interfaith marriage was among Protestants and Jews. If we interpret these results as reflecting preferences, we get support for group identity. Nonetheless, Protestants comprised 62 percent of the population and enjoyed a reasonably balanced sex ratio (98.2). By contrast, Orthodox and Catholic sex ratios were extremely unbalanced, 170.6 and 129.6 respectively, indicating that opportunity in the marriage market governed perhaps more than preferences.

Fertility varied across religion as we might expect. Among the major religious groups in Table 5, Catholics had the lowest marital fertility (I_g = 0.493), Jews the highest (I_g = 0.778), and Protestants about halfway in between (I_g = 0.638). Logically, Orthodox and Raskolniks ('Old Believers') would tend to be Russian, thus untangling national propensities from religion is even more problematic. No clear explanation for the difference exists in the age structures or the ages of marriage of the different groups, with the exception of the Jews. Jewish women married roughly two years earlier than Protestant, Catholic or Greek Orthodox women, but that difference could not axiomatically account for their higher marital fertility. Raskolnik women married at about the same age as Jewish women, yet their marital fertility was considerably lower. Differences in the age structure of Jews and other religious groups stem from the presence of greater proportions of children, which suggests similar or even higher Jewish marital fertility in the previous two decades.[2]

Although religion differentiates between levels of marital fertility in Riga, the question remains of whether those differences are large enough to highlight religion as a cultural feature that differentiates childbearing behaviour among groups. The only group whose indices are consistently different are the Jews. They have substantially higher fertility and proportions married, and lower illegitimacy, proportions 45–54 single, and female labour force participation. Yet we simply do not know whether the differences among the other religious groups are substantial enough

Table IV. Estimates of fertility and nuptiality by major language group, Riga, 1867

	German		Russian		Latvian		Yiddish	
Fertility								
I_f	0.342		0.374		0.383		0.530	
I_g	0.721		0.715		0.656		0.771	
I_u	0.056		0.067		0.076		0.034	
I_m	0.430		0.474		0.656		0.673	
	M	F	M	F	M	F	M	F
Nuptiality								
SMAM	30.6	25.3	29.8	25.2	31.3	26.7	25.1	21.5
Median age at marriage	29.3	23.3	26.4	23.5	30.0	24.2	24.1	19.7
Difference (SMAM-median age)	1.3	2.0	3.4	1.7	1.3	2.5	1.0	1.8
Proportion, 45–54, single	0.144	0.203	0.221	0.169	0.132	0.092	0.030	0.016
Sample sizes								
Ages 15–49	11,510	12,783	9,280	6,315	7,553	6,661	1,533	1,296
Births	847	868	450	453	467	521	133	143
Total population	20,682	23,308	14,420	11,352	12,174	12,025	2,769	2,465

Sources: von Jung Stilling (ed) 1969, Vol. 1, Tables 69, 74, 78, 84, 89, 94, 100, n.p. (between 292 and 299). Notes: SMAM indicates Singulate Mean Age at Marriage (Hajnal, 1953). Births are adjusted for mortality; see text.

Table V. Estimates of fertility and nuptiality by major religious group, Riga, 1881

	Protestant		Orthodox		Catholic		Raskolnik		Jewish	
Fertility										
I_f	0.335		0.303		0.286		0.284		0.443	
I_g	0.638		0.516		0.493		0.687		0.778	
I_u	0.061		0.119		0.077		0.000		0.025	
I_m	0.475		0.463		0.503		0.414		0.555	
	M	F	M	F	M	F	M	F	M	F
Nuptiality										
SMAM	30.5	25.8	28.9	24.6	32.5	24.9	26.8	24.7	26.4	22.7
Median age at marriage	28.6	23.9	27.4	23.7	30.4	24.1	25.1	21.2	25.9	21.7
Difference (SMAM-median age)	1.9	1.9	1.5	0.9	2.1	0.8	1.7	3.5	0.5	1.0
Proportion, 45–54, single	0.131	0.130	0.206	0.148	0.175	0.128	0.238	0.243	0.017	0.008
Sample sizes										
15–49	28,453	29,769	6,805	5,179	3,332	2,696	1,403	2,023	4,965	5,369
Births	1,848	2,022	309	293	125	170	108	109	447	490
Total population	49,989	55,266	10,976	9,301	5,179	4,572	2,706	3,803	9,885	10,119

Sources: von Jung Stilling and Anders (eds) 1883–1885, Vol. 1, Tables 12–16, pp. 27–46. Notes: SMAM indicates Singulate Mean Age at Marriage (Hajnal, 1953). Births are adjusted for mortality; see text.

to warrant a larger study of what practices and beliefs might have produced them. We are not dealing with the individual level data that would allow us to analyze the relationships *among* the major cultural characteristics such as language, nativity, religion, let alone the potentially important influences connected with occupation, household composition, or residence that the census takers enumerated but did not report in conjunction with much else. In a very real sense, we have to ask whether an analysis of fertility in Riga using individual level data has an analytical payoff worth the effort. Clearly such an analysis could help to understand the dynamics of Riga's population at or near the start of the fertility transition, and might well reveal the presence of controlling minorities who could, in turn, be analyzed from a variety of structural, economic, and demographic perspectives. Clearly too, we cannot continue to rely on the EFP's measures to reveal the presence of controlling behaviour. We thus conclude that only with the individual level data that the 1881 and 1897 censuses contains can we hope to produce analyses that take advantage of recent methodological and theoretical innovations, and so genuinely advance our understanding of the decline of fertility in Eastern Europe.

6. Conclusion

Our necessarily superficial look at fertility in Riga yields mixed results. We find that fertility differs among language and religious groups; but also that untangling the effects of these presumed cultural propensities, if they exist at all, is impossible with the aggregate level data of published censuses of 1867 and 1881. Methodologically, we would only be able to explore the presumed interaction of cultural characteristics with individual level data and probabilistic multivariate techniques; and even then we are not sure whether such an enterprise would yield any better conclusions since all language, religious, and nationality groups were part of the same Baltic cultural "milieu." To what extent the wider cultural milieu influenced fertility in concert or in conflict with religious precepts or nationalist impulses, is, of course, a central question that we as social historians would like to answer.

Although some historical work (Guinnane et al., 1994; Galloway et al., 1994) continues to emphasize structural economic change, studies emphasizing social mechanisms tied to ethnic propensities continue to accumulate. Watkins and Danzi (1995), for example, link the dissemination of contraceptive knowledge among Italian and Jewish immigrant women in New York City to cultural values governing women's paid labour force participation. Where resistence to wage labour was low, women gained contraceptive knowledge; where it was high, women did not and continued to have high fertility. In a study of developing nations between 1960 and 1990, Bongaarts and Watkins forcefully advanced a conceptually similar explanation. They argued that economic development cannot explain all the variation in declining fertility and that "social interaction," or a broad mechanism for the diffusion of ideas which operates "independently of social and economic circumstances," is also necessary (Bongaarts and Watkins, 1996, p. 656). Economic

development remains a "potent" force, but, in addition to altering the costs of children and hence demand, it creates more channels of social interaction through which "exchanges . . . about the advantages or disadvantages of fewer children or techniques of modern contraception" actually occur (Bongaarts and Watkins, 1996, p. 669). While economic development in Riga and Eastern Europe may have created more "channels" of communication, residential segregation, constant immigration, heightened national consciousness, and ethnic divisions within occupational structures may all have worked against the kind of "social interaction" that elsewhere allowed new ideas and values to spread. Indeed in Eastern Europe, Watkins's earlier (1991) argument that linguistic integration predated fertility transitions may well be the key hypothesis that historians will have to test.

Another twist comes from the larger Baltic context. A logical case can be made that the agrarian regime that preceded the growth of Riga in the second half of the nineteenth century by a hundred years, and which produced the majority of people that populated the city in the 1867–1881 period, produced a predisposition to control marital fertility either by traditional (delaying marriage) or modern (stopping or spacing) means that did not exist in the interior of the Russian empire. In interpreting fertility in Riga we must remember that the EFP findings on the Baltic start in the 1860s, which is also the first decade when the first modern census of any kind was carried out in the area. Before 1867, birth, death, and marriage information is available only at the community level, and then only for a small number of places randomly scattered across time and Baltic space (Plakans and Wetherell, 1988, 1992). This scattered evidence raises the interesting possibility, however, that the levels of fertility we see in Riga, particularly among Latvian-speakers, may actually represent not the beginning of a transition but rather the start of the documentation of change that had begun much earlier. The case for this claim has to be primarily logical rather than empirical. The question has to do with the general nature of the Baltic agrarian regime in the last half of the eighteenth century and the first half of the nineteenth century, and whether it created incentives or disincentives for controlling marital fertility that may have created cultural propensities that we see at the end of the nineteenth century in Riga.

Many studies have already argued that in "traditional" or "preindustrial" Europe there were sub-populations that practiced fertility control, that not everywhere was a large family "the peasant's greatest wealth" (Czap's [1983, p. 105] phrase for the nineteenth-century Russian peasantry). In the Baltic the point at issue is the workings of serfdom to the 1816–1819 period when it was abolished, and the workings of the labour rents system that replaced serfdom and remained the context of Baltic peasant family life until the 1860s, when the purchase of farms by peasants began in earnest. After a detailed examination of how these two successive agrarian systems operated, it is not possible to make a strong case that they gave peasants a strong incentive for desiring many children (Plakans and Wetherell,

1988, 1992, 1995; Wetherell, Plakans and Wellman, 1994; Wetherell and Plakans, forthcoming).

The Baltic serf estate contained both landlord and peasant land, with the latter being divided among individual farmsteads. Proliferation of farmsteads was discouraged and their number generally remained relatively fixed over a long period of time. Farmstead heads and their family members normally made up roughly 40 percent of the total peasant population; the rest of the peasantry were farmhands (both male and female, and often in families), cottiers, and others peripheral to the labour market. A farmstead head was responsible for assembling a labour force large enough to handle the needs of the farmstead and to meet the *corvee* obligation on the estate lands. *Corvee* labour was widely seen as harsher here than elsewhere in the Empire, and the work force required to meet it was stated precisely: x number of men, x number of women, z number of days per week. The *corvee* system encouraged the hiring of farmhands who could be sent to the estate to work so that the peasant's own family would be protected. Yet farmhands were frequently married and had children. Therefore excess numbers of persons in both categories (peasant family, farmhand and families) placed a strain on the farmstead's resources, and would have encouraged the head to keep his familial group small, or if already large, to hire only those farmhands with small families. In short, the demand for children was low.

The system contained other disincentives to having large families. Since partible inheritance was impossible and the proliferation of farmsteads discouraged, farmstead heads knew that only one son could inherit the headship, while other sons either had to make good marriages (with daughters of other heads, which opened the possibility of son-in-law inheritance) to remain in the same social stratum. Otherwise, these sons had to enter the ranks of the farmhands. Daughters faced even worse life chances, since they normally did not inherit the father's headship. The frequent moves made by male farmhands, many of whom were married and never acquired headships, discouraged large numbers of children among them. A small supply of children would have fewer psychic costs for parents as sibling rivalry over succession would be correspondingly low. Most children of farmhands had to leave their parents very early to become herders and apprentice farmhands in other farms. The usual expectation that children could in fact provide sustenance in old age would also have been diminished by the way the system worked. Farmhands were hardly able to transport ageing parents from farm to farm in their frequent moves. For farmstead heads, the prospect of being able to stay on the farm with an inheriting son was frequently realized but did not require more than one male heir, while a strategy of establishing continuing control of a headship over more than two generations demonstrably did not work most of the time. Judging by information on family structure and the functioning of the family in the serf (and later, the labour-rent) estate, disincentives to large numbers of children are more impressive than incentives. Moreover, those with the greatest disincentives, such as farmhands and non-inheriting sons, more than likely were precisely those who

moved to Riga when that became possible, carrying with them the predisposition not to have large families. Yet whether nineteenth-century Baltic fertility exhibited control in either urban or rural areas remains to be seen.

We have tried to raise the issues that historical demographers of Eastern Europe generally, and the Baltic in particular, will ultimately have to address and resolve. But we should not expect an easy resolution of the analytical problems presented by the heterogeneous urban populations of the pre-twentieth century European east. Gellner's characterization of what he calls "preindustrial" society is apropos here: "Cultural boundaries are manifold, varied, and crosscutting. Lines separating gender, status, kinship, religious affiliation, political allegiance, and so forth, generally do not converge" (Gellner, 1992, p. 243). Riga during the second half of the nineteenth century was not only growing in size, but in the process was becoming a city of many different communities. Though we agree with Hammel that "the value of culture for social analysis is not so much that the informants speak to the investigator, but rather that they speak to one another and can be overheard" (Hammel, 1990, p. 475), it is far from clear that the inhabitants of such cities as Riga were conversing with each other across ethnic and linguistic community boundaries generally, let alone on subjects relevant to explanations of the fertility decline. Kirby (1995, p. 211) contends that the cultural barriers among the end-of-century Riga inhabitants were substantial: "How extensive was the blurring of language and ethnic divisions at an everyday level is hard to determine, though the existence of sharply defined and strongly endogamous communities (Old Believers, Orthodox, Jews) and the strong traditions of exclusivity reinforced by patterns of social activity and behaviour (i.e. patronizing 'German' or 'Latvian' shops, services, institutions) would tend to suggest there was relatively little." If true, two things are clear. First, the structural and demographic evidence historians will need in order to test the various explanatory narratives of the fertility decline in Eastern Europe must pertain to individuals. Second, simple demographic and economic data will not be enough. Historians will also need to explore the value that different ethnic groups placed on education, family limitation, women, and children. Only then will they be able to explore adequately the fertility transition in Eastern Europe.

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Notes

[1] Conceptually, EFP measures assume that fertility control is parity-dependent; that is, couples stop having children after a desired number or parity. Underlying recent advances in measurement, however, is the notion that couples may "space" births in addition to or instead of stopping them altogether (Anderton and Bean, 1985; Knodel, 1987; Anderton, 1989; Ewbank, 1989; Okun, 1995). The aggregate census data for Riga cannot support measures designed to detect spacing, which only serves to highlight again the need for better sources of fertility behaviour in Eastern Europe, and the attendant need to explore different notions of fertility control.

[2] A comparison of the age structures of the four major religious groups yields the following indices of dissimilarity; a difference of 15 is considered meaningful (Shryock and Siegel, 1975, pp. 231–233).

	Orthodox	Catholic	Jew
Protestant	4.81	8.15	16.43
Orthodox		5.62	17.85
Catholic			45.36

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