# THE EARLY DECLINE OF FERTILITY IN SLAVONIA*

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*European countries today are characterized by fertility rates that are very low by historical standards. A century and a half ago in most European countries, and as recently as a half century ago in some, the average woman who married and lived in a married state until menopause could expect to bear about 7 children. Today in many European countries such a woman could expect to bear two, and of course many bear fewer than two. Until this astonishing change in fertility regimes, the major control over the total fertility of a population lay in the control of marriage and the sensitivity of the possibilities of marriage to social and economic conditions. Now, of course, the major control over fertility lies in contraception or abortion.*

## INTRODUCTION

Certanly European populations were conscious of techniques of fertility control, but such control was seldom widely used within marriage. There have been earlier, occasional periods in European history when it seems likely that some widespread control over marital fertility was exercised, but such control seems not to have been historically sustained. The first major exception heretofore, and the apparent onset of a long term decline in marital fertility seems to have been aristocratic France and among the Genevan bour-

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geoisie around the end of the 17th century, and among the peasantry in France just before the revolution of 1789.

Many studies have sought to find evidence of economic or other modernization associated with declines in fertility, but to no avail. Economic conditions varied widely across regions initiating fertility control, and there is strong consistency within microlinguistic areas, suggesting important cultural factors (van de Walle and Knodel 1980; Coale and Watkins 1986; Lesthaege 1983). But this appeal to "cultural factors" is entirely to a residual category of unexplained variation (see also Lesthaege [Lesthaege and Surkyn n. d.] on this important point of the misuse of nominal variables). Oder evidence suggests that if analysis is conducted at a sufficiently detailed level, there is a good argument for the association between economic factors and the onset of fertility control (Galloway and Hammel 1988). The issue is still in question, and the expected association from some theory between economic improvement and a decline in fertility is thrown further into doubt by the evidence reported here, where economic decline, rather than improvement, seems the crucial factor.

From this discussion we see that there are several interesting questions. First, how early is early? Is France really the place where general fertility control began? Second, does the examination of microregions provide information that the usual kind of aggregate analysis at higher levels does not? Third, what role is played by economic, political, and other social factors in control of fertility?

## THE IMPORTANCE OF SLAVONIA

The subject of this paper is evidence for very early nad perduring fertility control in one of the most economically backward microregions of Europe, under conditions not of economic growth but of economic stagnation and immiseration of the peasantry. This region is Slavonia, about a hundred kilometers south of Zagreb. From the date of the expulsion of the Ottoman armies at the beginning of the 18th century until after the middle of the 19th, much of Slavonia was part of an Austrian fortified zone that ran from the Adriatic almost to the Black Sea - the Military Frontier. In this region, families held title to land only in exchange for military service, a form of serfdom having its origins in 3rd century Rome. The remainder of Slavonia was under Hungarian feudal control and characterized by great landed estates with an enserfed peasantry. Agriculture was poorly developed, industry practically nonexistent. All of the available evidence suggests that after an initial pioneering period when families moved into the liberated territories, there was increasing land shortage, increasingly unequal division of land, deteriorating economic conditions, and after 1848 a disastrous economic collapse. In the civil zone peasants suffered from the extraction of feudal dues, parcellization, and especially after 1848 from hevy debt and loss of access to land following the abolition of feudal tenure. In the military zone peasants had fewer of these problems but had to bear the burden of military service. (Gelo 1987, Bićanić 1937, 1952; Hietzinger and Stopfer 1840; Mirković 1937; Moačanin and Valentić 1981; Pavličević 1984; Preradović 1970; Rothenburg 1960, 1966; Schumacher 1940; Valentić 1981; Vaniček 1875).

The evidence for an early and sustained decline of martial fertility is of several kinds. First, research in the neighboring and ecologically similar Hungarian region of Baranja, based on parish records, shows the onset of deliberate fertility control, probably by *coitus interruptus*, in the late 18th century (Andorka 1971, 1979, 1984; Demeny 1972).

Second, analysis of crude rates from Austrian sources 1830-1910 shows that fertility was in decline in the Slavonian and Varaždin areas of the Military Border as early as the beginning of that data set in 1830, but not in other areas of the Border in Croatia (Hammel 1985a, 1985b, 1985c). Krivošić's data (1983) suggest a decline in crude rates in the northwestern civil regions in the last quarter of the 18th century. However, Gelo's analysis (1987: 122-129) for broader areas shows the onset of decline for Croatia-Slavonia overall to be at least after 1890 and perhaps not until 1910, so that Slavonia was unusual even in the general Croatian context. In the military zone in Croatia overall the decline may have stated after 1848, but the trend in the civil zone appears positive in that period (Gelo 1987: 124). Where more refined rates are avaliable, for births per thousand married women, the decline in Croatia overall seems to come about 1870 (Gelo 1987: 141). This variability across major regions is noted by Gelo (1987: 123). Indeed, Pirc's work (1931) shows substantial variation in crude fertility rates between five sample counties within Slavonia and between the ethnic and religious groups within those counties. Fertility was lowest among native-born Slavonian Roman Catholics, highest among German settlers, although the operative, causal variables involved in these "ethnic" differences are not known. We can expect this heterogeneity to extend even to household level.

Third, the low rate of Slavonian fertility was something of political *cause celebre* among nationalists in the early years of this century, and research by Pirc (*op.cit.*) and Sremec (1940) shows the decline to have been associated with economic immiseration and long shortage, driven by concerns over inheritance, and that control was effected largerly through abortion and coitus interruptus.

Fourth, analysis of annual fluctuations in grain crop yields and human fertility 1830-47 throughout the Military Border (Hammel 1985b, 1985c), and of annual grain price and fertility fluctuations in the Slavonian parish of Cernik 1760-1860 (Čapo 1986) shows a strong fertility response to economic conditions. These results demonstrate the institutionalization of fertility control in response to economic conditions, at least in the short term. In general, analyses of economic and social conditions show increasing immiseration of the peasantry (viz. Bićanić, Valentić, Pavličević, *inter alios* ). Ongoing work by Čapo shows increasing inequality of land distribution even in the 18th century. It is reasonable to suspect the adaptation of institutionalized short term responses to long term trends, as well.

Fifth, there are allusions to a conflict between sexuality and childbearing and to birth control as an immoral, foreign intrusion in the early ethnographic observations of Reljković just after 1762 (viz. Reljković n. d.: 147ff, Ch XI) and explicit mention of "powders" (quinine) as an abortifacient before the end of the 19th century (Lovretić 1897; viz. Pirc, op. cit., pp. 82-83 on these citations and for other details of native contraception and abortion in the early 20th century). There can be no doubt of the knowledge of con-

traception and abortion or of their use and substantial antiquity in the region.

From this scattered evidence we may suspect both deteriorating economic conditions, the institutionalization of fertility control as a response to such economic conditions, and the onset of long term fertility decline as a response to continuing and worsening economic crisis. Finally, and to introduce the topic of this presentation, analysis of a large corpus of records of births, marriages, and deaths from one of the core areas of Slavonia (Cernik and its environs) shows the onset of sustained decline in marital fertility to have begun at least by 1780.

## THE EVIDENCE FROM CERNIK

The work reported here is the result of long cooperation between myself and Croatian colleagues without whose guidance and assistance the research would have been impossible.[1] This work has taken 5 years and has been a huge undertaking, resulting in the compilation in machine readable form of parish records from 1720 to 1870, constituting 23, 323 marriages, 90, 212 births, and 82, 489 deaths. There are also other data some based on Austrian sources, some on ecclesiastical censuses, but the core for this presentation is the record of births, marriages and deaths. I concentrate here on the demographic methods employed as a particular kind of history, on the illumination brought to the task by ethnography, and the results (Hammel 1986).

The method of approach is called family reconstitution, It was pioneered by the great French demographer, Louis Henry, and consists of the reconstitution, from records of the sacraments for a local population, of the conjugal lives of women in order to ascertain their fertility. The enterprise is based on three sets of data, the books of marriages, the books of burials, and the books of baptisms. One begins with the marriages. One then seeks to link the records of the marriages with the putative records of the deaths of the conjugal partners in order to determine the duration of the marriages. One then seeks to link baptisms to the marriages in order to determine the fertilty. From knowledge of the number and timing of births and of the period of marital exposure to pregnancy, one computes various measures of fertility.

The technique is fraught with difficulty. In the periods under consideration here, spelling was not standardized. Last names and even Christian names were inconstant, and especially women appear with different last names. The original single parish in the study area in 1720, Cernik, had divided by the mid 19th century into 7 parishes, some villages remaining under military, the others under civil feudalism, so that to concentrate on Cernik parish alone would have lost much of the data, especially through short-

1 I am particulary indebted to Dr. Dunja Rihtman, then Director of the Institute of Folklore research, and now to her succesor Dr. Zorica Rajković and her colleagues and staff, to Ms. Jasna Čapo of the Institute and of the Demography Group at Berkeley, to Dr. Olga Supek of the Faculty of Philosophy at Zagreb University, to Mr. Josip Kolanović and his colleagues of the Archive of Zagreb, to Prof. Vladimir Stipetić and his colleagues of the Faculty of Economics at Zagreb, to Ms. Dubravka Minđek and her assistants at the Institute, and to my hospitable friends, Prof. Vlado and Charlotte Ivir. I am also indebted to the National Science Foundation for support under BNS-8418760, to the Center for Slavic and East European Studies and the Institute of International Studies, and the Graduate Group in Demography at the University of California,

distance migration, and would have foregone the opportunity for a comparison of the civil and military regimes. This analysis is therefore based on a set of neighboring parishes centered on Cernik. Sensitivity to linguistic detail and to Hungarian and Italian style spellings as well as the Croatian standard after 1848 was important. It was important to understand the most traditional forms of South Slavic godpartenhood as illustrated by recent ethnographic work in Serbia (Hammel 1968) in order to take advantage of the additional in the baptismal books that would assist in linking children to their parents and siblings. It was important to understand the structure and dynamics of the Croatian joint household, or *zadruga*, as illuminated by Croatian ethnographers. As an ethnographer, I was pleased to see this essential nature of cultural understanding. I was also confirmed in two other views often unpopular in modern ethnography: that the understanding of culture and society in the absence of historical insight is impossible, and that a true understanding of social process often involves the most meticulous arithmetic. But it is rewarding. The work is tedious. Even the cleverest computer programming left as a necessery task the repeated manual examination of linkages.[2] It is still not finished. This presentation is based on a random sample of reconstituted marriages, amounting to about 18 percent of the 23, 323 total marriages.

## EVALUATING AND ADJUSTING THE DATA

In dealing with this sample of successfully linked records of births, marriages and deaths we will have to confront two other issues. The first is how to correct for varying data quality, from a period in which sacramental recording had just been instituted in a frontier zone to one in which pressure from secular authorities clearly resulted in great improvements in such record keeping. The second is how to determine the termination of marriages, in order to determine the period of risk of pregnancy in marriage.

To develop the argument I first show a graph (Fig. 1) of the crude birth rate (births per thousand population) from 1830 to 1911, based on Austrian and Croatian published statistics for 1830-1847, 1870-1883 and 1901-1911. The solid line is for the Cernik region of Slavonia - the old Gradiška regimental area of the Border, the dashed line is for the ecologically similar region of the Petrovaradin regiment on the Danube, just to the east. In the former the data suggest that the long term decline of fetility had alredy begun by 1830, while in the latter the decline does not even occur by 1911. In some other areas to the west, there is a decline, but it is generally later than in Slavonia. We are led to ask when the decline in Slavonia may really have begun.

Now I will show you the picture of fertility from the general span of data for the parish of Cernik and its environs, 1720 to 1860. First I must explain how the work was done. Without an understanding of the procedures and their risks, there is no understanding. We wish to exemine the fertility of women during a well defined period of risk of

2 I am indebted to Ruth Deuel for her indefatigable efforts in programming and data evaluation and manipulation and to Jasna Čapo, Branislav Đurđev, Rada Božić and Michael Bairdsenger for assistance in manual examination of the data.

pregnancy, namely the entire duration of their marriages. Our first step is to restrict the examination to first marriages taking those marriages for which the bride was not listed as previously married. There are 4, 290 such marriages out of 23, 323. This step means that our conclusions refer not to total conjugal exposure but only to exposure in first marriages. On another occasion we will examine remarriages.

The second step is to exclude marriages in which there was not at least one child linked to the mother. There are 3, 320 marriages with at least one child. The effect of this step is to eliminate sterile couples, which might constitute 3 or 4 percent of the population of marriages, and also those that migrated out of the set of parishes before the birth of a first child. If the fertility of rapidly outmigrating couples did not differ systematically from that of couples that stayed, this exclusion should cause no problem. If it did, we may err in our estimate of fertility levels. If this possible correlation between fertility and early outmigration changed over time, we might err in our estimate of the change in fertility, as well as the level. But there is no other assumption we can make. At least the incorporation of data from a set of adjacent parishes mitigates some of the problems that might be introduced by migration.

The third step is to examine those marriages in which the date of death of husband and wife are both known. We choose the earlier of the two dates as the terminator of the marriage. (Here, as for other possible terminators, we accept as the termination date the earlier of the putative terminator or 35 years of elapsed duration of the marriage, the latter standing as proxy for menopause.) There are only 856 marriages in which both spousal deaths are known. This is too small number to analyze. We therefore examine the distribution of the difference between date of death of these 856 husbands and wives, and in those 1, 563 additional marriages in which the date of death of only one spouse is known, we estimate randomly the date of death of the other, and choose the earlier of these two dates (or 35 years' duration) as the terminator of marriage. This gives us a sample of 2, 419 marriages. This procedure assumes that couples in which both members were recorded as buried in the parish have the same mortality characteristics as those in which only one member was recorded as buried in the parish. This is a dangerous assumption if many husbands died as soldiers far afield and did not have their deaths recorded in the parish books. Such men would have been more likely to predecease their wives than men who stayed at home. However, we know that the Austrians had a levy system in which the first levy consisted of unmarried men, so that only under extreme conditions of mobilization would married men have been called to duty from the Military Border. We know nothing about conscription practices in the civil regions, but the use of civilian cannon fodder seems to have been quite rare. Now, the effect of assigning peacetime mortality when it was in fact higher would be to estimate the termination of marriages later than such termination actually occured, so that in periods of war we would incorrectly judge women to have been at risk of giving birth longer than they truly were, and we would incorrectly underestimate their fertility. Our wartime estimates of fertility would be based downward. To be sure, we know the estimates are not perfect, but at least we know the direction of our bias.

I now attempt to enlarge the sample of marriages by adopting a looser definition of ter-

mination than that depending on at least one known spousal death. I attempt to utilize the 901 marriages in the sample for which we have no evidence of a spousal death. Following the methods of Louis Henry (Gautier and Henry 1958), where I do not have a spousal death as evidence for marital termination, I look for the last recorded event for a marriage, such as the date of birth of the last born child or an infant or child death, and utilize information on that marriage up to the last previous five year marital durational boundary, because I am sure that the woman was still at risk of pregnancy up to that boundary. Of course I lose those marriages in which the last child was born within the first five-year period. Then as a further and somewhat riskier step, I examine the distribution of elapsed time between the date of birth of last born child and the date of termination of marriage by spousal death (from the sample of 2, 419 marriages above). Where I have only a date of child's birth as the last recorded event for a marriage, I use this distribution to estimate when the spousal death would have occured randomly, and we count those years of exposure to risk. This gives a sample of 3, 320 marriages. The presentation here rests on that sample. I have also analyzed each of the other, more certain samples obtained by the other procedures. The results do not differ in any important way, except that fertility levels are slightly lower for the largest sample because of the inclusion of additional years of sterile exposure. But as I will show the changes in fertility over time are not much affected. Thus I conclude that the procedures do not importantly bias the results but only stabilize them with the advantages of larger sample size. The insensitivity of the results to the alternative methods of estimation of termination of marriage is shown in Figs. 2 and 3. In these I display the levels of Children Ever Born, of cohort Total Marital Fertility, and of period Total Marital Fertility at each of the three sampling levels: where at least one date of spousal death is known, where neither is known but the Henry method is used, and where neither is known but the earliest is estimated. These graphs are for the basic raw data, uncorrected for data quality or underreporting (*vide infra*).

Five other methodological comments are in order:

(1) The quality of data in the parish books is not uniform over time. It is very poor before 1740 but begins to improve markedly about that time and stays relatively constant after 1760 until the end of the data set. The quality of the data is important, because I have more trouble linking data records when the quality is poor, when information is missing. I therefore employ an intuitive index of data quality based on the presence or absence of important information, such as the last names of father and mother, the name of the godparent, the place of birth. The proportion of the information that is present is divided into the apparent fertility rates; thus if information is perfect and the quality index is 1. 0, there is no effect. If the information is only half present, the correction doubles the fertility index. The effect of this correction is apparent only before 1760, when fertility appeared to be very low and climbing rapidly. What was climbing rapidly of course, was the completeness of the priests' recording, enabling us to link births to marriages.

(2) Another aspect of data quality is the apparent underreporting of infant burials. The apparent infant mortality rate (deaths to persons under one year of age, divided by births

in that year) is so low for a European peasant population before 1760 as to be ludicrous. There is important information in the ecclesiastical censuses (*libri stati animarum*) which are available for some periods, indicating that children were almost always baptised on the date of their birth. There is also information in the monastery chronicles of Cernik published by Jančula (n. d.), indicating that midwives were trained to baptize children. It is likely that the baptisms and infant burials recorded by the priests in all periods, especially from the outlying villages, were events witnessed by midwives or others and reported to the recording priest. In the early period (and comparative evidence supports the assumption) infants dying in the first few days of weeks of life were probably baptized *in extremis* and burried locally, but that the events were not reported. Now, if this is so, the unreported infants deaths disguise from view the births that preceded them, and our estimate of fertility is biased downward by this underreporting. Historical information from Austrian sources a century later as well as the Cernik data after 1780 suggest that about a quarter of infants died in their first year (see also Gelo 1987: 159). Assuming that infant mortality must have been at least that severe, fertility estimates may be corrected upward by the apparent deficit in infant mortality.[3] In general, this raises estimates of fertility in the earlier period, where the infant mortality rate is suspciously low.

(3) Despite the corrections in (1) for the quality of recorded information that may have impeded linkage, and in (2) for underreporting specifically linked to the omission of infant deaths, there were probably more general failures to report demographic (sacramental) events in the earlier periods. Such failures would account for the apparent increase in fertility from 1720 to about 1760 even in the data adjusted as in (1) and (2). For these reasons analysis is restricted to dates after 1749, to eliminate the worst of the unreliable data.

(4) The data are not only defective at the beginning of the period, they are raggedly incomplete beginnig in 1857 because the books of births from 1857 onward in some parishes were inaccessible and were not analyzed. For this reason I do not analyze fertility past 1857. That means the anlysis cannot utilize marriages in which the birth of the first child occxured after 1857. The sample of useful marriages is reduced to 2, 615.

(5) The last pont is to explain the sets of measures that will be used. In all instances the data are based on duration specific measures of fertility - the probability of giving birth in the succesive five year durations of marriages. I use duration specific rather than age specific rates because I think these more sensible and also because direct information

3 Missing births, e, are estimated as
$e = (.25b - d)/ .75$ for $d/b < .25$
from $(d + e)/ (b + e) = .25$
where d are reported infant deaths and b are births, in the same year and assuming that all of the deficit in reported infant mortality involves both a missing death and a missing birth. We must be very cautious about how we do this correction, because if we overdo it, we might create fertility in the early period so high that subsequent fertility would surely show a decline. Therefore we do not allow this correction to exceed the highest level of uncorrected fertility, nor do we permit it to lower reported fertility where the reported infant mortality rate is higher than .25.

on age at marriage and thus at succesive births is very poor.

First, I employ **cohort** measures of fertility, showing the fertility experience of groups of women marrying for the first time in succesive decades of the data. These cohort rates provide a view of the life-course of women entering marriage in succesive periods of history. The difficulty with the use of cohort data is of course that the marital experiences of the women of a cohort streched over varying amounts of time - for some a few years, for others decades - so that it is hard to match the changes in cohort experience with particular historical events or even periods. Because the experience of marital cohort stretches in front of them, and because I must cut off the data in 1857, I cannot use cohort measures for cohorts past 1830-39, and these have only 18-28 years of recorded useful experience, so that I may slightly underestimate cohort fertility even for the 1830-39 cohort.

I also calculate **period** rates, the fertility rates for specific historical decades for all women alive and married in those decades, regardless of when they married. Thus, the information for the period 1800-1809 includes the experience in that decade of women who married in 1809 who contributed only the first year of their marital experience as well as that of women who died in 1801, who contributed only the last year of their marital experience, which might have been their 30th conjugal year.

## RESULTS OF ANALYSIS

First I show a graph of Children Ever Born and the Total Marital Fertility Rate for the decadal **cohorts** of women marrying 1750-1839 (Fig. 4). I do not use data for women marrying before 1750 because they are so defective, nor after 1839 because of the problem already noted for missing birth data after 1857. Four levels of correction are displayed. The first uses the raw, uncorrected data. The second corrects just for underreporting of infant deaths. The third corrects for general data quality in terms of completeness of the individual birth records. The fourth combines both of these corrections. The general shape of the trends is the same for all levels of correction, but the levels tend to separate for the early years when data are poor, and converge for the later years, when data are better. The following discussion is based on the fourth level of correction. For the cohort analysis, the corrections are advanced one decade; for example, information for the marriage cohort of 1800-1809 is corrected by data from the period 1810-1819, since the mean duration of childbearing falls in the decade after marriage.

Children Ever Born is the actual number of children per woman born during the period of risk, Total Marital Fertility is a calculation of the number of children a woman would bear if she lived through all of her fecund years in conjugal state. Total Marital Fertility is of course higher than Children Ever Born because not all women did live through their fecund years in a conjugal state. The difference between CEB and TMFR is a measure of lack of exposure to pregnancy. It can have several components: bride's age at marriage, spousal separation during marriage, and date of death of husband or wife. I leave the exploration of this difference to another analysis. Here it is enough to note that the difference between the two rates (CEB and TMFR) is about the same for all historical periods,

suggesting that there were no important differences between historical periods in the degree to which women did or did not remain in conjugal status. There are also some differences for the marital cohort of 1800-09, perhaps a reflection of spousal separation or early deaths of husbands during the Napoleonic wars.

This graph shows that the long term decline of fertility as measured by TMFR seems to begin with the cohort of women marrying in the decade 1780-1789. Before the 1770 cohort there is an apparent increase in fertility (except where the strongest correction for TMFR is used), but I am suspicious of this increase and belive that there were other sources of underreporting that account for it. The low point is reached by the women marrying 1790-1799, and then there is a partial recovery to the cohort marrying 1800-1809, after which TMFR declines slightly to the cohort marrying 1820-29 and then steeply again to the cohort marrying 1830-39. The recovery in CEB after 1790 lasts until 1820, suggesting that spousal separation or early widowhood were important factors for the cohort of 1800-89, much of whose experience was during the Napoleonic Wars. The data for the cohort of 1830-39 may be slightly depressed because of the truncation of the birth data after only 18-28 years of experience for these women. All in all, the decline in TMFR is from an expectation of about 7 to about 5 births, if we accept data correction both for underreporting of infant deaths and for general data quality.

I then examine **period** rates, from 1760-69 onward, that is, the fertility rates obtaining in specific periods, terminating with the short period of 1850-57. The next graph (Fig. 5) shows the period TMFR, corrected for all four levels, as before. Here, irrespective of the marriage cohorts affected, it is apparent that period rates began to decline after after the decade 1770-79, hit a low point 1790-1799, recovered partially in the decade 1800-1809, sank to a somewhat lower point 1810-1819, recovered partially again 1820-1829, plateaued to 1840-49, and then fell again to a final data point for the short decade 1850-1857. The reasons for the low point 1790-1799 appear to lie in serious organizational and econimic crises in the Border and mobilization for wars with France. The low point 1810-1809 is surely attributable to military action and economic crises during the Napoleonic Wars, when Croatian troops were haevilly engaged (indeed against troops from the western Border regions) during the French occupation of the Illyrian provinces (Dalmatia and Western Croatia). The timing of these period fluctuations thus confirms the interpretation of the cohort fluctuations.

The general picture of fertility decline is confirmed by examining the duration specific period rates themselves, that is, the probabilities of giving birth in given historical decades to women married for different lengths of time. The next chart (Fig. 6) displays the duration specific rates for two historical periods, 1740-1809 and 1810-1857. This graph gives us some insight into the timing of fertility reduction within the life courses of women. There is only the smallest difference across these two historical periods in the early years of marital duration, but a noticable lowering of fertility in the later years of marital duration. From this we may draw the tentative conclusion that there was at least some "stopping" behavior after 10 years of marriage, when on average 3 or 4 children would have been born.

## DISCUSSION

I have been careful in this presentation to place emphasis on demonstration of the phenomenon of interest rather than embark on explanatory excursions of a phenomenon that cannot first be shown to exist. My principal intent has been to show that in a general climate of feudal stagnation and increasing immiseration, and in an area of Europe far from the centers of power and development, there is an unusually early instance of ongoing fertility decline, from the third or fourth quarter of the 18th century to the present day. The story I want to tell is that the population of this area never recovered demographically from the demographic, political, and economic results of the imperial wars of the late 18th and early 19th centuries or the political and economic events that followed with the decay of political absolutism and of traditional feudalism. Can is be that their antagonists, the French, showed a similary early decline in fertility for similar reasons? The transition between two historical worlds was a traumatic one. The ethnographic and historical sources all point to inequality and insufficiency of land as an important cause and to abortion and coitus interruptus as the mechanism. The picture is starkly Malthusian in the choice between misery and control, although the politico-economic causes would satisfy any Marxist critic of Malthus. The picture is very different from the expectation of modernization and attendant amelioration of the conditions of life implicit in development theory and most economic theories of fertility. It is different from the post-frontier period decline of fertility in North America that occured as free land became less available but under generally good economic conditions. That opposite conditions could have the same effects on behavior should not surprise us - was it not Durkheim's observation that suicide rates increased both in times of economic disaster and in those of extraordinary prosperity? Can one not see in this possible U-shaped response that it is the cultural perception of resource insufficiency, whether generated by increased demand or decreased supply, that may be the motor of change (Hammel and Howell 1987)?

The Slavonian case is an important one for the understanding of the demographic response of European populations to economic and political conditions. Why did the fall in fertility occur in Slavonia, as in Baranja and perhaps in the northwest of Croatia, but not in adjoining regions? The real proof of the association between immiseration and fertility control cannot rest on this broad ecological association for a single region. It must be pursued comparatively across such data set. It must be pursued within this data set at the more detailed level of village comparison to show that the association holds for communities of varying economic status. It must be pursued at the level of household comparison to show that the basic decision making units of Croatian peasant society manipulated their fertility in response to economic conditions impinging immediately on them (Hammel 1980). It must separate villages and households living under civil feudalism from those living under military feudalism to examine differences induced by the style of political control. Was it wealthier or the poorer villages or households that first controled fertility? Was it the villages or households under military or civilian rule? Was it the peasants or the population of the few small towns?

This is the task that awaits, and I stress again the preliminary nature of this enterprise,

which has only uncovered the questions by demonstrating the existence of early fertility decline, not answered them. I hope that the emerging confluence of interest and this initial and modest demonstration of the utility of parish records will encourage my colleagues in our host country, whose detailed knowledge is so essential to the enterprise, to join in adressing these issues that are central to the understanding not only of the Croatian and Yugoslav past, but also to the great and continuing debates about the position and role of the peasant economy in the historical transformation of European society (Hammel 1986).

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## POČECI OPADANJA RAĐANJA U SLAVONIJI

Sažetak

Današnje europske zemlje, u odnosu na povijesne standarde, karakterizira veoma niska stopa trudnoća. Prije stoljeća i pol u najvećem broju europskih zemalja, jednako kao i do prije pola stoljeća u nekima od njih, žena u braku mogla je očekivati da će začeti prosječno sedmero djece. U suvremenim europskim zemljama taj se broj danas kreće oko dvije trudnoće. Glavni uzroci tome leže u prilagođavanju brakova socijalnim i gospodarskim uvjetima. U ovome radu donosi se pregled, temeljen na statističkim podacima, o počecima toga procesa od početaka 18. st. do sredine našeg stoljeća.

Fig. 1
Crude Birth Rates 1830-1910

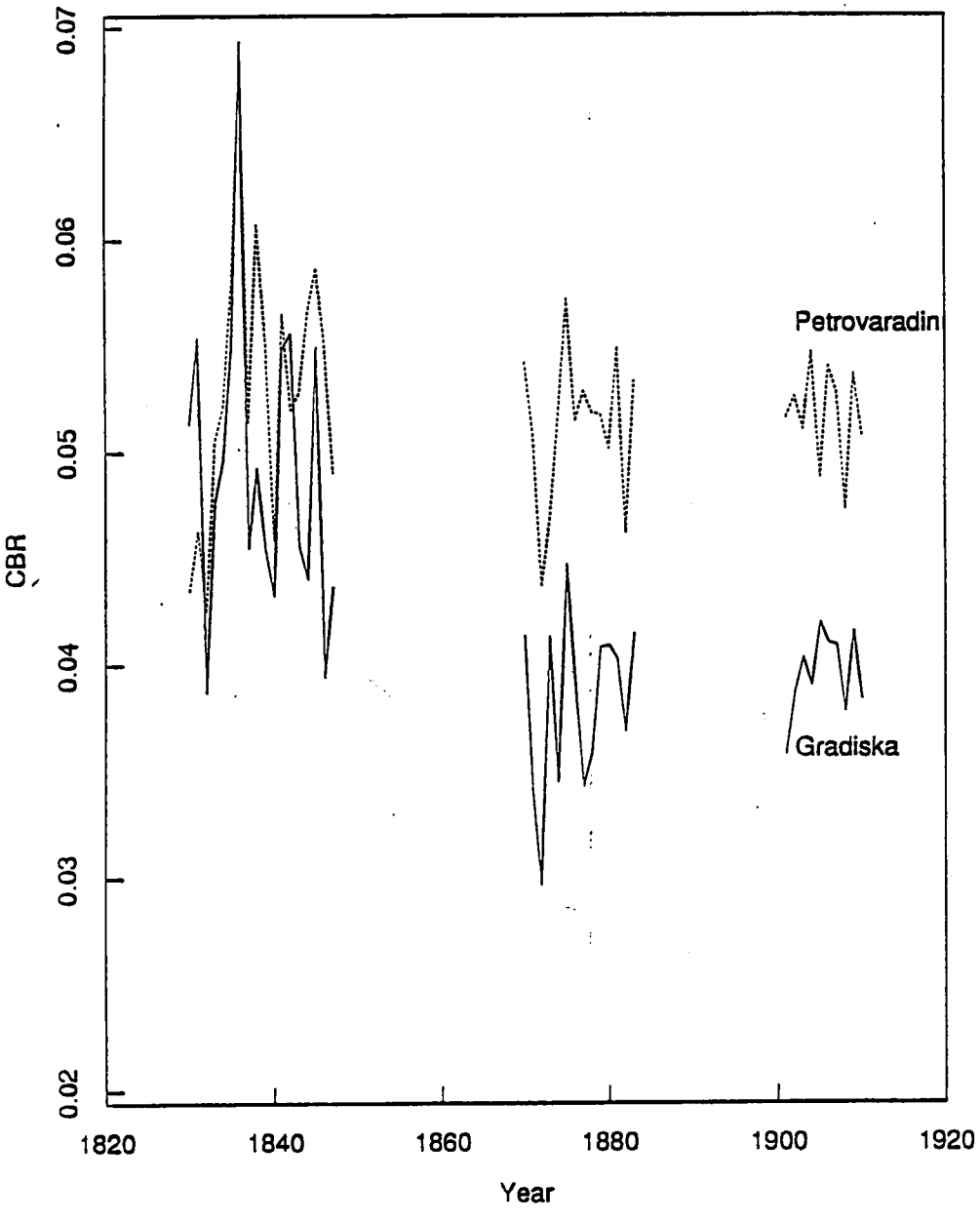

**Fig. 2**
**Unadjusted Cohort TMFR & CEB for 3 Methods**

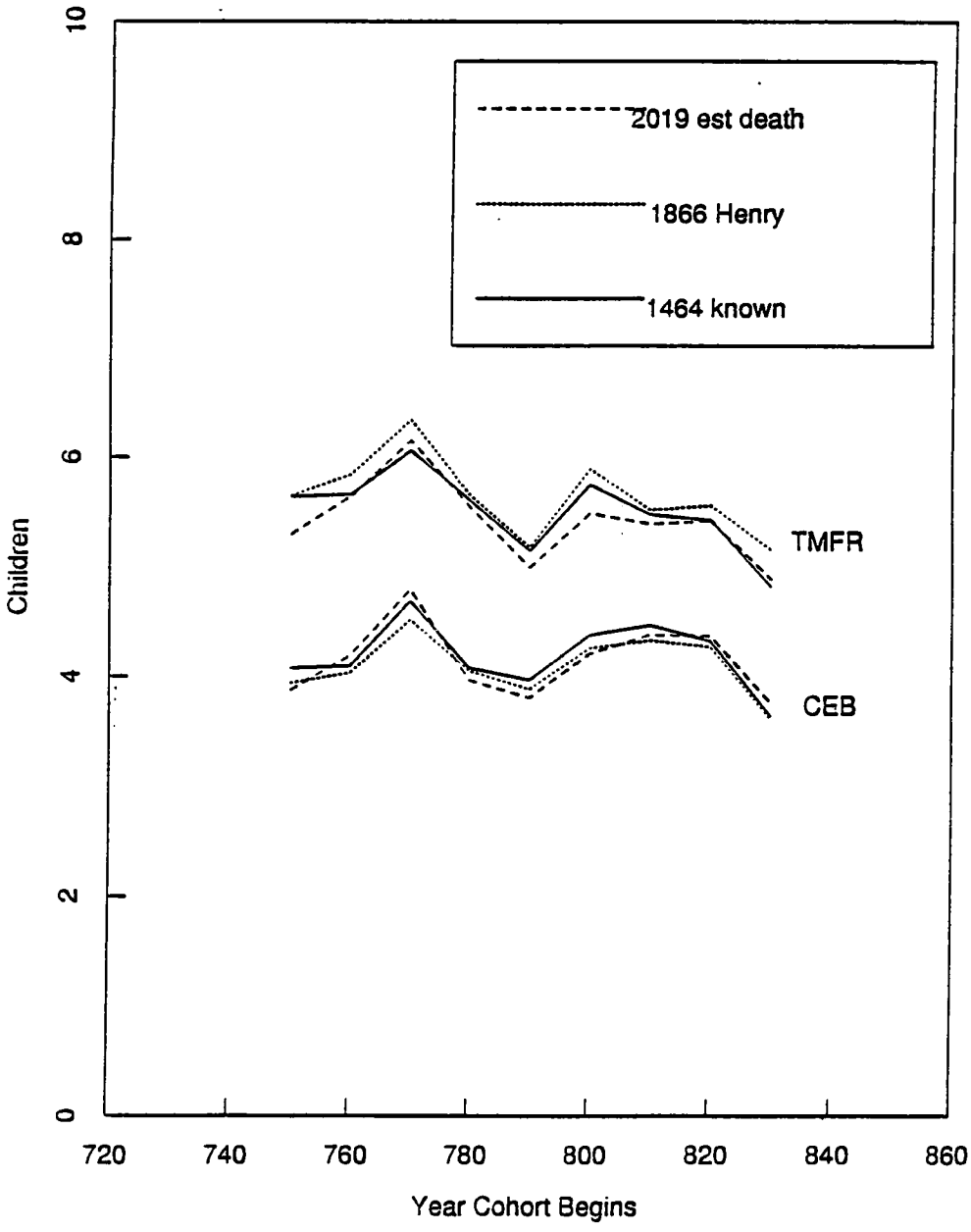

**Fig. 3**
**Unadjusted Period TMFR for 3 Methods**

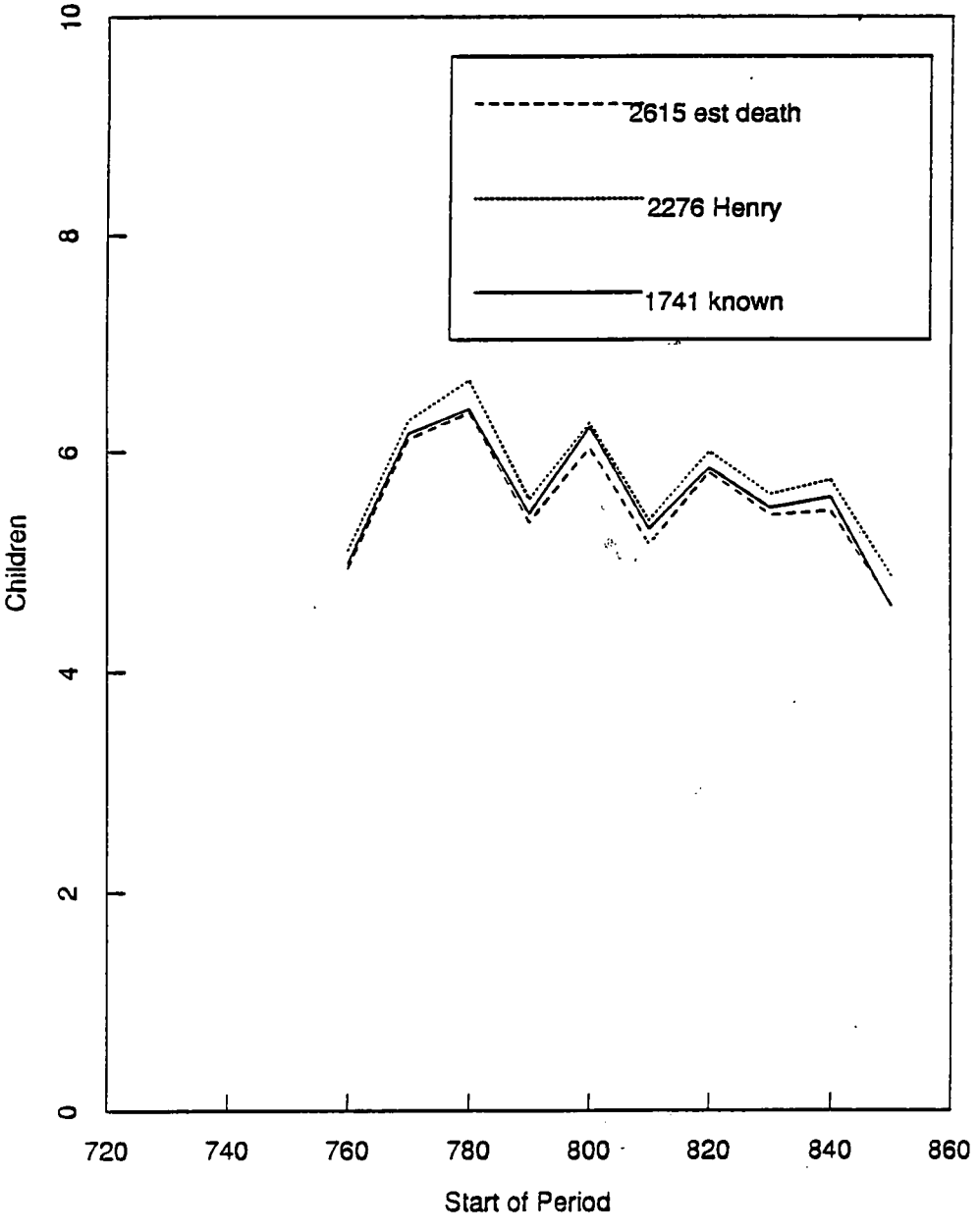

**Fig. 4**
**Cohort TMFR & CEB Lag-Adjusted**

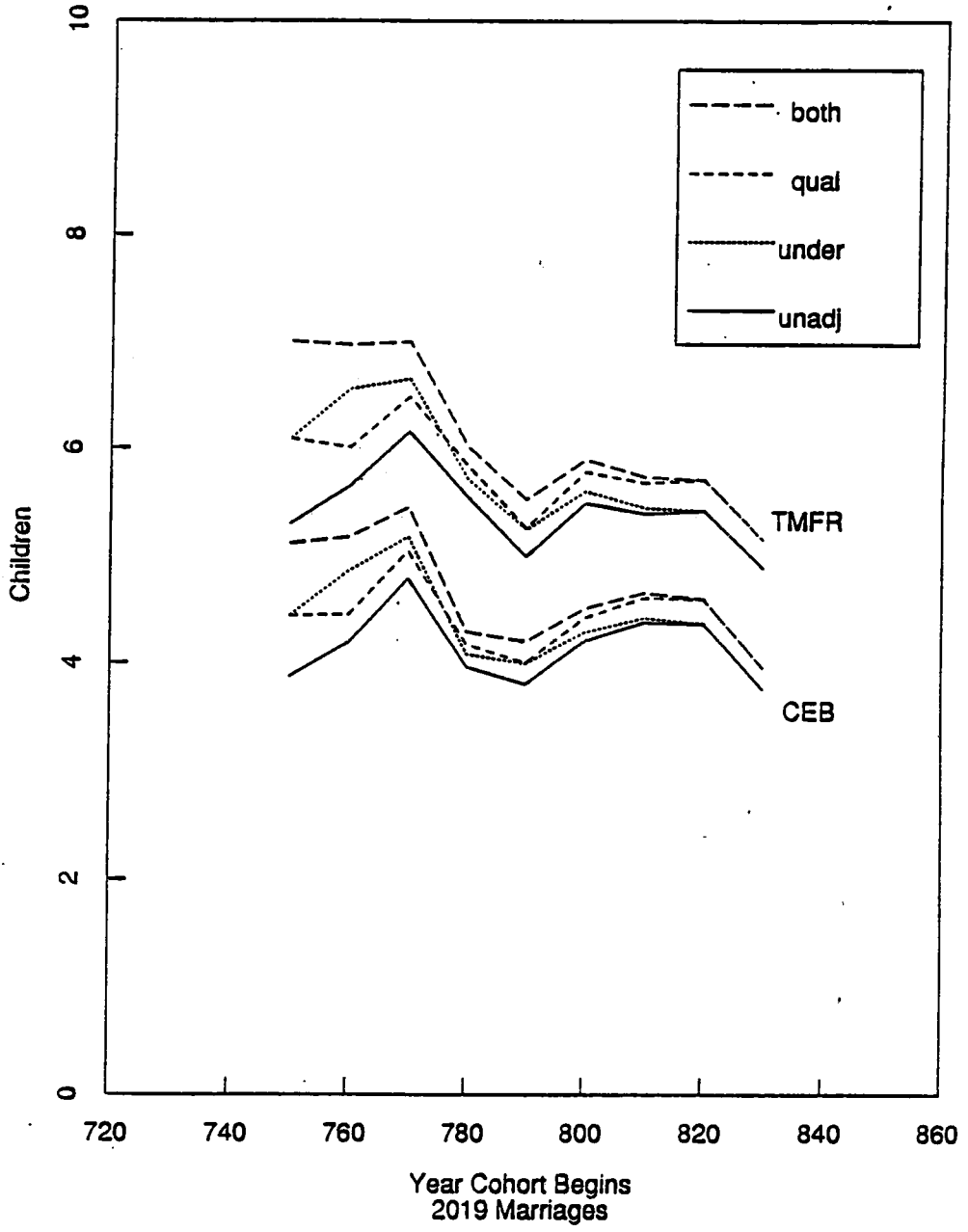

**Fig. 5**
**Period TMFR**

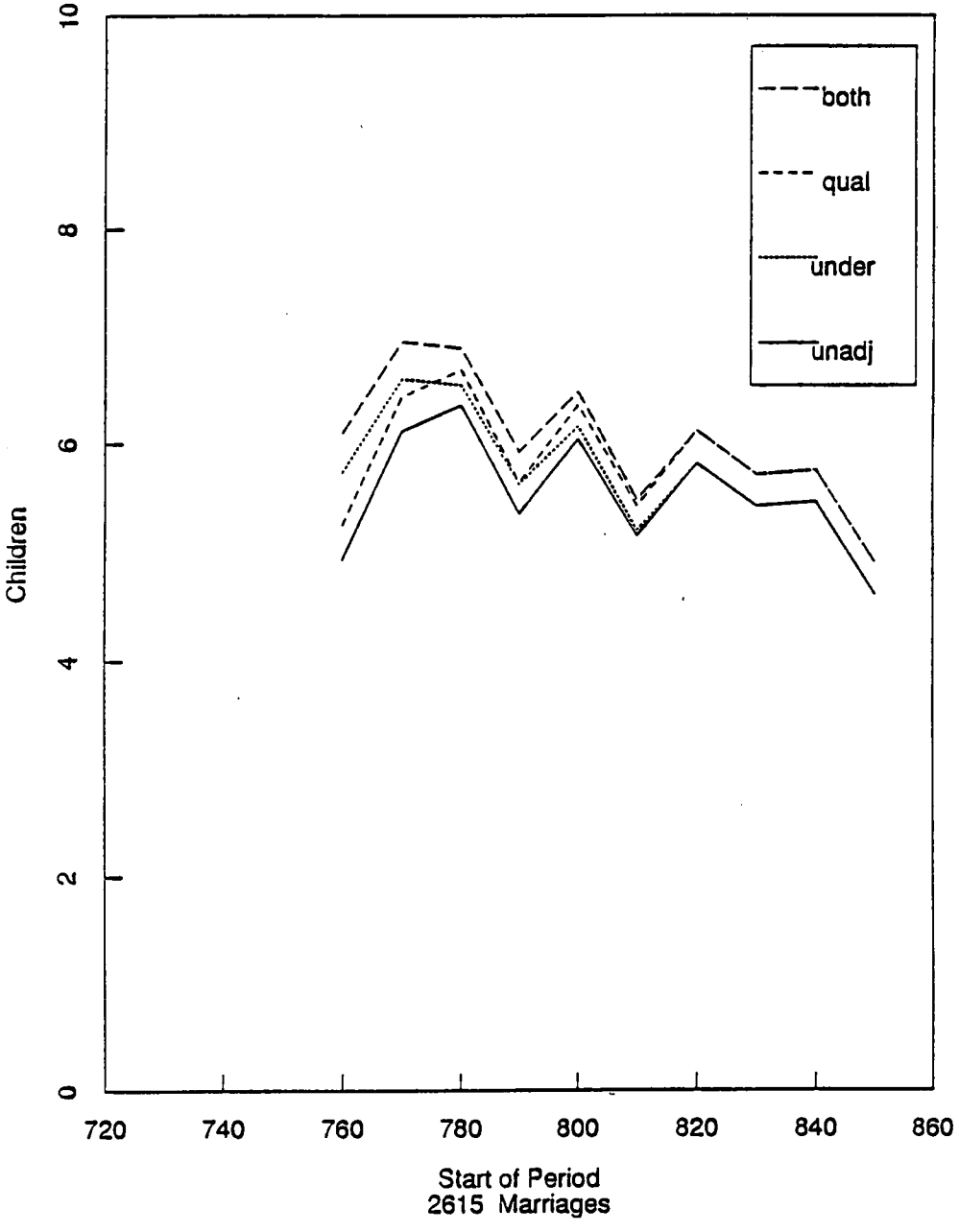

**Fig. 6**
**Period DSMFR**