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SES and the fertility decline in a population of Northern Italy.

An application of the Own-Children Method to 1881 and 1936 Italian Censuses.

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Introduction[1]

The decline of fertility during the demographic transition is one of the most studied topics in demography and social science but it also remains one of the most debated yet. Traditionally, the leading view on the process of fertility transition was that expressed by the Princeton's European Fertility Project, which postulated that pre-transitional fertility was natural, not deliberately controlled by individuals and couples (Coale, 1973; Coale and Watkins, 1986). Only when people became more conscious of their reproductive behaviors, through changes in social morality and independence from religious precepts, they started to control fertility voluntarily by adapting it to economic circumstances: Once couples had reached their desired offspring size they stopped (parity-specific control). In this regard, availability of contraceptive methods associated to the knowledge of their use helped people to make such control really effective. In the view of Princeton's Project, therefore, fertility control revealed itself as an innovative behavior "largely independent of social and economic factors" (Bengtsson and Dribe, 2006, 728). The use of contraceptive methods, a new system of moral values and new reproductive behaviors gradually spread from forerunner groups, usually aristocracy and elites along with some religious group such as the Jews, to the rest of the population (Haines, 1989; Livi Bacci, 1986). This "diffusionist" theory and some of the final results of the European Fertility Project were however criticized by many scholars (Szreter, 1993; Reher and Sanz-Gimeno, 2007; Brown and Guinnane, 2002; Hammel and Galloway, 2000; Galloway, Hammel and Lee, 1998; Bengtsson and Dribe, 2006; Van Bavel, 2004), who cast some doubts over the absence of any form of fertility control in pre-transitional populations. Their criticisms stemmed from two different but not really alternative theories of fertility decline (Alter, 1992). The earliest one was originally conceived by Carlsson (1966), who argued that some forms of voluntary birth control, in particular non-parity specific mechanisms, were already operating before the demographic transition. In this view, fertility transition was triggered by consistent changes in the desired offspring size, as couples' response to changed socioeconomic

[1]This work stems from a broader project aimed at reconstructing the history of the population of Novellara (RE) starting from the three Italian censuses of 1881, 1936 and 1961. The first stage of this project is about the analysis of fertility decline over the period 1868-1960 through application of the Own Children method of fertility estimation; the present paper represents the first application to the censuses of 1881 and 1936. The authors would like to thank Marzia Moreni archivist at the historical archive of Novellara, for her precious support and assistance in the retrieval and interpretation of the documents used in this work.

conditions and demographic structure. In other words, couples adjusted their reproductive behaviors to "changing costs and benefits of children" (Brown and Guinnane, 2002, 40).

A second alternative theory of fertility decline was put forward by Easterlin (1975), which represents a sort of synthesis between the Princeton's conclusions and Carlsson's view. Easterlin supported the idea that socioeconomic and cultural factors affected fertility indirectly by influencing the demand for children, on the one hand, and the costs of childrearing, on the other hand. The theory implements innovation and scientific progress issues since new and cheaper contraceptive methods could reduce the costs of birth control, thereby allowing couples to have fewer children to whom guarantee much more care and resources.

Despite the fertility transition's theory adopted, what emerges from the various studies is the high degree of heterogeneity in the patterns of fertility transition across Europe. This is even more true for Italy, where a large variety of demographic systems and demographic processes coexisted within the national borders. This makes really hard to define an "Italian way" to fertility decline and to single out which hypothesis might fit better. Moreover, the lack of micro-studies covering the whole transitional period of the fertility transition process does not provide the necessary insight to clarify some of the characteristics of the process. According to Livi Bacci and Breschi (1990), in the last two decades of the 19th century there were some areas (especially urban ones) and some small and limited social groups of the North that have already started their process of fertility decline, while in most of the Southern regions it is argued to have started only well into the 20th century. In her account on the rhythms and pace of fertility decline in Italy based on micro-level studies, Salvini (1990) starts from the same considerations of Livi Bacci and Breschi to support Easterlin theory of fertility transition, although she still claims the need to have much more data and results to provide a more reliable picture of the Italian framework of fertility decline. Moreover, from the very few studies reporting data by socioeconomic category, she conveys the idea that the SES groups that first controlled fertility were just those who had the highest fertility levels in the pre-transitional phase, namely the upper class and the bourgeoisie, thereby supporting findings from other scholars (Innes, 1941; Haines, 1989; Livi Bacci, 1986).

In this paper, we want to bring our contribution to the knowledge of the fertility decline process in Italy by analyzing the fertility levels and the reproductive behavior of a community of Northern Italy, Novellara, in the period 1868-1936. This is a very important period for Italy, which spans from few years after the political Unification (1861) to the Fascist era passing through the great economic crisis of 1929-30. Novellara was a small town in the Emilian part of the Po plain, which, throughout the period studied, passed from being a typical rural community at the end of the 19th century to a more diversified and complex society at the beginning of the 20th century. The socio-economic characteristics of the population changed accordingly, to such a point that in 1936 a good share of the population was no longer involved in agricultural labors, and the town centre was inhabited by the bourgeoisie and white collars. This contrasted and evolving social structure should allow us to check not only the starting point and pace of the general fertility decline but also the evolution of fertility differentials by SES at the turn of the 20th century. Although very few studies on Italian transitional populations presented data by SES, this issue is of great importance for the understanding of the general pattern of fertility decline and for the individuation of which underlying theory should be more appropriate to describe the local transitional process (Haines, 1989; Dribe, 2008). The analysis of fertility trends and levels has been conducted retrospectively by exploiting the two Italian Censuses of 1881 and 1936. By using the Own-Children Method of Fertility Estimation, we have been then able to reconstruct the history of fertility of the population of Novellara for the period 1868-1936.

The population studied, data used and the method adopted

Novellara: Between land and marsh

Novellara is a small town with agricultural vocation situated in the Po valley a few kilometers south of the Po River. It became part of the Italian Kingdom in 1861 and assigned to the new Province of Reggio Emilia. In that year, Novellara counted 6,642 individuals, which rose continuously, but a slight drop between 1871 and 1881, up to 1936 when the population reached 10,637 inhabitants. This increase in population occurred even in presence of hard times, such the agrarian crisis of the last two decades of the 19th century, the First World War, the Spanish flu of 1918, and the general

economic crisis of 1929. Despite the long time span covered by the analysis and the changes in the economic structure, agriculture remained the leading sector in the economy of Novellara. If the Italian economy can be said to have experienced a structural lag compared to other European countries in the aftermath of political unification (Basini and Cattini 1985), the situation was even more backward in Novellara. Here, not only was agriculture poor, excessively bound to traditional production techniques and subject to high taxes, but manufacturing was also almost totally limited to handicrafts and small firms, such as hat factory and a few companies manufacturing hemp that employed mainly women and children at home. It is only in 1931 that a first important manufacturing industry opened in Novellara. Lastly, the dairy industry and food-processing sector are also worth mentioning.

Fig. 1. Novellara population at census.

Source: ISTAT, 1985.

The agricultural sector was stratified in various occupational figures such as landowners, sharecroppers and tenants (Basini 1995), along with a strong presence of farm laborers and day laborers. This latter social group was the one who faced the major drop in real wages following the period of high prices that peaked in 1873-75 (Federico and Malanima, 2004; Capasso and Malanima, 2007) . In the following years, the agricultural crisis worsened, involving also the other rural groups (Cazzola, 1996). The process of capitalist transformation of agriculture and proletarization of the rural

population rapidly accelerated and led to high levels of unemployment especially among farm laborers. High prices, unemployment, and low wages had obvious repercussions on farmers' living standards, with consequent repercussions over food consumption (Basini 1995). The mass of farm laborers, which had always found alternative occupational opportunities in paddy-fields (whose extension underwent a dramatic reduction locally), in works of land transformation and land reclamation as well as in public works such as railways, was now without any form of economic support.

After 1922, the new Fascist government introduced some new norms with the aim to face agricultural backwardness and crisis. The results were not as good as expected and between 1926 and 1929 unemployment tripled (Margini and Ruini, 1981), peaking in 1930 following the outbreak of the great economic crisis of 1929. Over 70% of jobless individuals were farmers and mostly day laborers (Basini, 1995). At the end, the crisis affected the entire socioeconomic structure leading to a large process of proletarization of farmers and poor artisans. To assess the extent of this important socioeconomic phenomenon in Novellara, we have decided to group professions into three large SES categories: Upper class (liberal professions, white collars, traders & the bourgeoisie), farmers (smallholders, tenants & sharecroppers), and the poorest (wage earners, day laborers, servants, etc.). It is a quite rough classification, which we were forced to adopt because of the changes in the occupational structure intervened during the seventy years studied, but it is sufficient to highlight the much greater weight that the poorest class, following the process of proletarization, had in 1936 social structure with respect to the census of 1881. In 1936 the lowest SES group amounted to 37.7% of total population 15+ years, which, compared to a figure of 21.7% in 1881, denotes an almost doubling of the proportion of poor and indigent people. One of the most impressing phenomena caused by such a socioeconomic situation in Novellara was the increase of female temporary emigration. In 1932, about 6,000 women left their homes in the province of Reggio Emilia to go to work in the paddy-fields of Piedmont and Lombardy (Margini and Ruini, 1981). This social and demographic phenomenon declined dramatically only at the eve of the Second World War, when many men were sent to the front forcing women to stay home to till the land (Paterlini, Storchi, and Pastorini, 1987).

Another important element not to be overlooked is the demographic policy of the Fascist regime (Ipsen, 1996, 1998; Saraceno, 1995; Treves, 2001). From the mid-twenties onward, many government interventions followed one another with the purpose to support natality. In 1925, the regime created the ONMI (National Organization for Motherhood and Childhood Welfare), with the intention to take care and assist motherhood and childhood for all the categories of mothers (never-married or ever-married) and children (legitimate or illegitimate). Two years later, in 1927, the Fascist government enacted a law that taxed bachelors between 25 and 65 years, but priests, religious, disabled and military, whose amount was doubled the following year. Still in 1927, heavy penalties for those favoring or procuring abortion were introduced. Abortion was already a crime before fascism, but now it changed nature, passing from crime against morality to crime against the state. In 1928, the government granted tax exemption for large families and, later on, it promoted incentives for the most prolific families. In 1929, the government issued provisions that established that spouses would have the priority in public and private hiring. In 1930, discriminatory provisions against women who adopted contraceptive practices and against the circulation and commercialization of contraceptives were introduced in the new Criminal Code (the Rocco Code).

The Italian censuses of 1881 and 1936

The Italian censuses used in this study are those dated 31.12.1881 and 21.04.1936, deposited at the local Historical Archive. The rationale behind this choice is in the completeness of information and in the possibility to cover two phases – at the beginning and at the end of the transitional process. The studied period spans for almost 70 years, from the Italian unification to the Fascist era just few years before the Italian entry into the Second World War (1940). The census of 1936 is in fact an exceptional census, conducted only 5 years after the previous one – thereby not respecting the usual ten-year periodicity – following a personal decision by Mussolini, which attests "the need felt for up-to-date statistics in the planned Fascist corporate economy" (Ipsen, 1996, 208). The archival documentation consists of 1,308 household returns for the census of 1881 and 2,004 for the census of 1936, subdivided by section of residence (nine in both censuses).

The pieces of information recorded in the household returns are basically identical in both years and they concern house location (section, address, number and typology of rooms and, only in 1936, the information on being located outside or within the town centre) and individual data on household components: surname, name, father's name, relationship to the household head, sex, birth date, marital status and occupation. In both censuses there is also a section dedicated to people temporary absent from Novellara, with indication of current domicile and, in 1936, date of leaving home.

The census of 1936 lacks, however, some important information that were vice versa present in that of 1881: birthplace of household components, individual literacy skills, and no indication on the ownership of land and houses.[2] On the other hand, in 1936 information on occupation are much more detailed. Individual "Profession", "Role" and "Activity sector" are reported in the household return allowing a more correct definition of the socioeconomic status of each individual. Moreover, while in 1936 information on occupation was recorded for all the people of 5+ years, in 1881 it was annotated only for household heads. For reasons of comparability, we have therefore decided to assign household head's occupation to every household component.

As anticipated, we have used the Own Children method of fertility estimation to reconstruct the levels of total fertility across the period studied (Cho, Retherford and Choe, 1986; Breschi, Kurosu, and Oris, 2003). Data processing was made using APPLAUSI software (Breschi, De Sanctis, 1985).

The application of such a method allows to estimate, starting from census-like data, age-specific fertility rates for each of the 15 years prior to the census, which are then synthesized in terms of TFR and mean age at delivery. The basic assumption is that children of 15 years or less still reside in the native family. In this study, we have chosen to limit the time span analyzed to the 13 years prior to the census for two orders of reasons. First, at 15 years of age, children could already living outside the family for apprenticeship or domestic service, thereby introducing some bias in fertility estimation; second, 15-year retrospective reconstruction for the second census of 1936 would lead to years still too close to the end of the First World War, characterized by a peculiar reproductive pattern.

[2] For a critical review of the characteristics of the Italian census of 1936 see Ipsen (1996),

The mortality pattern used to correct age-specific fertility rates was drawn from Coale and Demeny South's model life table for the census of 1881 as it reflects the high risk of infant mortality typical of Italian populations in the late 19th and early 20th century (e_0=34.9 and q_0=201). Missing the life table for females only, we have employed the MF table. As for 1936, we chose to apply Coale and Demeny East's model life table. We used the female life table for mothers (e_0=58.2 and q_0=90.3) and the MF life table for children (e_0=56.7 and q_0=97.4). The model life tables adopted fit almost perfectly with the Italian life table of the biennium 1881-82 on the one hand (Gini and Galvani 1931) and with the one of 1936 (Human Mortality Database) for the Fascist census, on the other hand.

One of the requirements to have accurate results from the Own Children method is the presence of low migration rates in the years of estimation. In our case-study, we are still on the way to collect complete data on emigration and immigration by age in order to be able, in the next future, to implement a correction factor for migration. However, a first look at the registers of migrants has allowed us to verify that migrations flows were low in the years prior the census of 1881. On the other hand, in the first decades of the 20th century people moved prevalently on short and very short distances on account of new land available following the important reclamation works in the areas surrounding Novellara. Moreover, as typical of other sharecropping communities (Manfredini, 2003), the prevalent type of migration was family migration of landless people (especially sharecroppers), in which entire households left farms for more favorable contracts elsewhere or after eviction, and other families went in to takeover the farm. The geographical pattern of migration (moves on short distance) and the common socioeconomic background of migrants should assure over the homogeneity of fertility patterns among emigrants and immigrants and should therefore lower the possibility of biasing fertility estimate (Retherford and Cho, 1978). In addition, family migration should prevent from biasing the children-women ratio - which is the focus of the own-children method – since it guarantees against the separation of mothers from their children (Rettaroli and Scalone, in press).

A useful indicator to assess the quality of data and reconstruction is the proportion of "non-own" children, which is the share of children that were not attributed to mothers.

In both the censuses, such indicator is quite low, accounting for 0.5 % in 1881 and 2.3% in 1936.

In order to assess the degree of birth control in the two periods studied, age-specific marital fertility rates have been estimated. Since at this stage no nuptiality model has been implemented, we have limited the analysis of marital fertility to the last three years prior the two censuses. Age distribution of currently married women 15-49 at the moment of census has been assumed to be constant for the 3-year period considered.[3] We have then used the distribution of legitimate births by mother's age at childbirth to compute age-specific marital fertility rates and TMFR. Estimates have been adjusted for mortality of mothers and children.

The degree of parity-specific birth control has been assessed by means of Coale's *m* and M indices (Coale and Trussell, 1978). They have been computed for the two censuses, for the total population and by SES group, using a regressive model proposed by Brostrom (1985).

A brief outline of the nuptiality pattern in Novellara

As in many other Italian populations, Novellara presents different marriage patterns according to SES and form of land tenure (tab. 1).[4] Overall, it appears a certain increase in celibacy between 1881 and 1936, both among males and females, as well as in mean age at first marriage, especially for women, who passed from 22.9 years on average to 26.4.

As for SES groups, the Upper class presents the highest figures of celibacy in 1881 (10.7% for men and 17.7% for women), dropping in 1936, especially among males. Sharecroppers, which represent the most part of Farmers, had a very peculiar marriage pattern. Basing their contractual power and the opportunity to find a farm on the household working force, sharecroppers usually married patrilocally to prevent the departures of young men. On the other hand, they had to preserve a certain balance between workforce and number of dependent children "as landowners were notorious for their opposition to "bocche inutili" (literally, "useless mouths") on their farms, afraid that these would undermine productivity and literally eat up the farm's products"

[3] This is obviously a very strong assumption. In the future, we will apply a more refined method to calculate age-specific marital fertility rates (Retherford and Thapa, 2003).

[4] See Rettaroli, 1990 and Derosas et al., forthcoming.

(Kertzer, Koball and White, 1997, 220). Consequently, landowners and household heads themselves practiced a strict control over marriages in order to control fertility, determining usually high levels of permanent celibacy, especially among men, and high mean ages at first marriage for both sexes. This appears to be only partially true in Novellara, especially in 1881, when the proportion never-married at 50 years was really low and mean age at first marriage was the earliest for both sexes. In our opinion, the availability of new land and new farms following reclamation works loosened the control over marriage (Rettaroli, 1993). Once reclamations works were terminated, celibacy peaked again, becoming, for males, the highest figure among SES groups in 1936 (9.2%).

Tab. 1. Permanent celibacy and SMAM in 1881 and 1936. Overall and by SES

	Permanent celibacy (%)		SMAM	
	M	F	M	F
1881	6.5	8.7	27.8	22.9
Upper class	10.7	17.7	28.5	23.8
Farmers	2.9	1.5	26.9	22.8
The poorest	3.6	4.2	28.8	22.9
1936	8.2	11.4	28.3	26.4
Upper class	6.9	13.0	29.1	26.2
Farmers	9.2	4.5	27.7	26.1
The poorest	7.3	11.2	28.6	27.2

Among the poorest sectors of the population, where patrilocality was less common, celibacy among females was much higher than among males, showing an increasing trend between 1881 and 1936, from 3.6% to 7.3% for the latter and from 4.2% to 11.2% for the former.

Fertility levels in Novellara before and during the fertility transition.

In table 2 and figures 2-3, TFR and mean age at childbirth, overall and by SES are shown. The general trend of total fertility rate in Novellara (fig. 2) demonstrates quite clearly the drop in fertility that has intervened between 1868 and 1935. At the beginning of the seventies of the 19th century, fertility shows a gradual increase up to 1874, when the TFR reaches the level of about 5.6 children per woman. Increases before the onset

of fertility transition are not unusual (Soliani, 1990; Del Panta and Scalone, 2002) and they have been related to the very first phases of modernization, which implied increase in agricultural productivity and life standards of rural populations (Bobbioni and Cattini, 1990). Obviously, changes in the marriage pattern cannot be excluded as well. After that phase, the TFR shows a constant decline – at least for the period observed – to reach the value of 2.51 in 1935, with a sharp decrease of over 50% in 61 years. According to Livi Bacci and Breschi (1990), who placed the starting of the irreversible decline of fertility between 1911 and 1921 for Emilia Romagna, the 13-year period between 1923 and 1936 is at the heart of fertility transition.

Fig. 2. TFR in Novellara, 1868-1935. Estimated figures and 3-term moving average.

In the first period analyzed, 1868-80, the overall TFR is estimated at around 4.9 children per woman, which is in line with corresponding figures for Tuscany (Breschi and Malanima 2002), Pavia (Ge Rondi 2000) and Turin (Del Panta, Reginato, and Scalone 2002). Comparisons are not easy to draw within the region since Emilia Romagna had a varied and heterogeneous fertility pattern. However, TFR estimates at the provincial-level for the second half of the 19th century (Del Panta and Scalone, 2002) show that fertility ranged from 4.2 to 5.5 children per woman in the decade 1871-81.

As for the period spanning from 1923 to 1936, the estimated TFR displays a continuous downward trend, passing from 3.72 to 2.51 children per woman, with over 32%

decrease in 12 years. As already emerged at the macro level, it appears quite clearly the inefficacy of the pronatalistic policies of Fascism, which resulted pretty ineffective in yielding any significant increase in the fertility of couples and in affecting their reproductive behaviors.

The trend of mean ages at childbirth shows small variations over time, ranging from 29.8 years in 1872 to 30.5 in 1878 (fig. 3). A comparison between mean values of the two sub-periods reinforces this consideration, with a variation of only 0.2 years passing from 1868-81 to 1923-36 (tab. 2). The coefficient of variation is only 0.007 for mean age at childbirth while it is 0.254 for TFR, denoting a much higher (downward) variability in fertility intensity than in the timing of giving birth. The decline of fertility, especially in the first decade of the 20th century, appears therefore as only slightly connected to modifications in the mean age at childbirth.

Fig. 3. Mean age at childbirth, Novellara 1868-1935. Estimated figures and 3-term moving average.

As for fertility differentials by SES, the results have revealed deep differences between SES categories both in trend and overall intensity (fig. 4). In general terms, all the three socioeconomic groups here considered show a decline in fertility over time, a drop that is quite evident in the second part of period studied. The upper class passes from a mean

value of 4.18 children per woman at the end of 19th century to 2.65 in the first decades of the 20th (-36.6%), a drop only slightly greater to the one estimated for farmers (-34.9%). Sharecroppers, tenants and farmers in general are however the SES group that presents the highest TFR figures throughout the whole period analyzed (tab. 2 and fig. 2). It is also to remark that farmers are the only SES group to show some slight TFR increase just in the period following some of the most important pronatalistic provisions of the Fascist regime, namely after 1929. Whether there is a causal relationship between the two events is still a matter of speculation.
On the other hand, the poorest class shows the smallest fertility reduction (-28.3%).

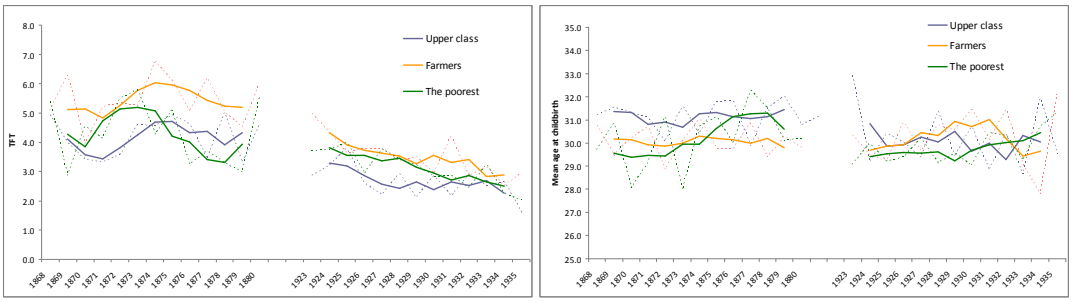
Tab. 2. Total fertility rate and mean age at childbirth. Overall and by SES

	TFR	Mean age at childbirth
1881	4.85	30.2
Upper class	4.18	31.2
Farmers	5.44	30.1
The poorest	4.34	30.2
1936	3.03	30.0
Upper class	2.65	30.2
Farmers	3.54	30.2
The poorest	3.11	29.8

At the end, Novellara features a social gradient of fertility that goes from the high-fertility category of farmers, to the poorest and, finally, to the low-fertility upper class. This hierarchy changes from 1875 to 1881, when the increase in fertility occurred in the early years of the seventies levels off for farmers and the upper class, while it reverses dramatically for the poorest group, leading to very low levels of TFR. It is likely that wage earners, day laborers and unemployed people were the first to feel the effects of the price increase of the seventies, with consequences also on the reproductive behavior. The different marriage patterns and, most of all, the very different levels of permanent celibacy characterizing the three SES groups make premature any comment about birth control and the beginning of the process of fertility transition, which will be discussed in the next section on marital fertility. However, by simply looking at the figures 4 and 5 it is possible to see that the drop in fertility of the poorest sectors of the population is linked to an increase in mean age at childbirth: this contrasts with the classical view of

birth control, which implied parity-specific behaviors and a decrease of age at childbirth caused by the drop of high-parity children.

Fig. 4-5. TFR and mean age at childbirth by SES, Novellara 1868-1935. Estimated figures and 3-term moving average.



Marital fertility and voluntary birth control. SES differences in the process of fertility transition in Novellara

This section of the paper presents an attempt to estimate marital fertility in Novellara in order to measure and assess the level of voluntary birth control in the two periods studied, overall and by SES. As previously mentioned, we will make use of Coale and Trussell's parameters which will allow us to test only the existence of parity-specific reproductive behaviors. In table 3, total fertility rates, total marital fertility rates along with *m* and M parameters are shown.

The role of differential celibacy among SES groups is evident in the social hierarchy of marital fertility. The very high proportion of never-married women at 50 years among the Upper class determined very figures of marital fertility, but once this factor has been controlled for, this social group shows the highest levels of TMFR. This is in agreement with the view that before the onset of fertility transition marital fertility was positively associated with socioeconomic status, the higher the SES, the higher marital fertility. Novellara makes no exception. The Upper class presents the highest TMFR20 in 1878-80 (5.5 children per married woman), while poorest couples had the lowest one (3.9 children). This situation changes largely in the thirties of the 20th century, when fertility transition had already started. The Upper class has now the lowest TMFR20 (3.47 children per woman), only slightly lower than the poorest people (3.58), while farmers presents a TMFR20 which is still over 4 children per married woman between 1933 and 1935. This social reversal was yielded by the great drop of fertility among the richest

part of the population, which declined by 36.7% in 55 years. Pressed by high marital fertility and decreasing infant mortality, the richest people of Novellara were the first to adopt a different reproductive behavior addressed to limit the number of children. This decrease is characterized by the onset of voluntary birth control, as proved by the *m* parameter, which passes from 0.089 to 0.567.

Tab. 3. Total fertility rates and Coale-Trussell's parameters. Novellara, 1878-80 and 1933-35.

	TFR	TMFR	TMFR20	Coale e Trussell indexes			
				M		m	
1881	4.70	5.83	5.11	0.720	**	0.213	*
Upper class	4.32	6.61	5.48	0.744	**	0.089	
Farmers	5.21	6.07	5.41	0.776	**	0.245	*
The poorest	3.94	4.37	3.93	0.538	**	0.191	
1936	2.51	4.92	3.88	0.539	**	0.455	**
Upper class	2.26	4.15	3.47	0.502	**	0.567	**
Farmers	2.88	5.70	4.06	0.632	**	0.701	**
The poorest	2.51	4.93	3.58	0.456	**	0.263	*

Significance level *5%, **1%

These findings confirm once again the forerunning role played by socially and economically privileged classes in the process of demographic transition (Breschi 1985; Salvini 1990; Schiaffino 1993). Even far from big cities and in the context of a small rural town, new behaviors were introduced by the most educated and rich class, the one more in contact with scientific and technological progress and with the cultural and economic means to use them.

The same social pattern of marital fertility was found by Kertzer and Hogan (1989) in Casalecchio, a suburban population close to Bologna, for the first years of the 20th century. They found a more conservative and stable pattern for farmers, sharecroppers in particular, who did not show any decline in TMFR between 1861 and 1905. At the same time, they stressed the idea that their fertility would have declined much later, only when key changes in the demographic process and in the economic and productive system – i.e. dramatic decrease in infant mortality (in Emilia Romagna it passed from about 230‰ around 1880 to 79‰ around 1935), absence of new lands and farms,

proletarization - significantly reduced their need for a family workforce, making the expense of having children a central issue in family strategies (Rettaroli and Scalone, in press). This is exactly what we have found in Novellara, where in 1933-35 a consistent drop in farmers' marital fertility (-25% compared to 1878-80) was already occurred. Such a view recalls Easterlin's theory of fertility transition, in which reproductive behavior and birth control were strongly dependent on the balance between supply and demand for children within a couple or household, which in turn were heavily influenced by socioeconomic and cultural factors. The analysis of the *m* index (tab. 3) confirms the process above outlined: birth control was absent around 1881 ($m = 0.245$) among farmers, while it was vice versa already present in the thirties of the 20th century ($m = 0.701$).

The situation of the poorest couples presents some differences from the two SES groups just described. The drop in fertility is quite limited, especially if compared to the rest of the population (-8.9%), but its level is always at the bottom of the ladder. Nevertheless, such low levels were not the consequence of deliberate forms of birth control, as proved by the low figures of the *m* index, 0.191 and 0.263 respectively in 1878-80 and 1933-35. It is likely that poor people met already the desired offspring size, which was already low, without the need to control fertility.[5] Nevertheless, why was fertility so low among the poorest? In the pre-transitional phase, TMFR20 of the poorest was about 10% and over 32% lower than Total Marital Fertility rates at 20 years for, respectively, the Upper class and the farmers. We can claim economic, social and epidemiological reasons behind such low levels. Firs of all, farm laborers and wage earners had to face really hard times. Although their life conditions remained relatively stable until the early 1870s, the subsequent diminution of wheat cultivation, consequent price increase and the fall in employment opportunities further increased the misery of this SES group (Basini 1995). In these years, it also began a long process of proletarization of farmers that deteriorated further the living standards of rural populations. Proletarization of peasants' masses lasted throughout the whole interwar period, thereby affecting farmers' lives also in the thirties of the 20th century. Bad living conditions were somehow associated to epidemiological problems. Actually, when their economic conditions deteriorated, they were forced to base their diet almost exclusively on corn,

[5] An alternative hypothesis is that the diffusion of effective birth control techniques was not yet arrived to the bottom of the social ladder.

which thereby increased the diffusion of pellagra (Funk, 1912). The spread of this disease, caused by a chronic lack of niacin in the diet, became endemic in many provinces of Emilia Romagna, reaching its peak between 1870 and 1880 (MAIC 1879): among the 45 municipalities of the province of Reggio Emilia 36 were afflicted by pellagra (Balletti and Gatti 1886). The depressive effect of pellagra on fertility is unquestionable, not only in terms of malnutrition, with a reduced caloric intake and/or physical debilitation, but also in terms of reproductive behavior changes due to stress, variations in libido, frequency of sexual intercourse and voluntary abstinence (Livi Bacci 1986).

Another reason behind the low fertility levels of the poorest class is emigration. In the last decades of the 19th century there was some permanent emigration, especially overseas (Istituto Centrale di Statistica, 1926), but most of the emigration flows consisted of seasonal and temporary migrants, especially men, mainly bound to the plains of Lombardy and Veneto, involved in farm labors or in large public construction projects (Balletti and Gatti 1886). Such a forced separation of spouses yielded longer intergenesic intervals and a consequent drop in fertility. Temporary migration was a key factor also in the fertility pattern of the poorest in 1933-35. In those years, women joined men in temporary movements outside Novellara. For the most part, women were employed in rice-field labors, an activity that until the last decade of the 19th century was confined to local paddy-fields, while at the beginning of the 20th century it brought many *mondine* (rice-weeders) to far distant areas, especially Piedmont, where paddy-fields were more widespread and there was a great demand for female labor. This seasonal activity took wives far from home for some months. These women typically came from exceptionally poor families in dire need of supplementing the husband's meager salary. This type of emigration appears to be a desperate attempt to find a way to out from a society that was still tightly closed to phenomena of social mobility (Margini and Ruini 1981).

Some conclusive remarks

The process of fertility transition here described for the Italian population of Novellara is far from being exhaustive and complete. At this stage, we have not yet analyzed in a multi-way approach the influence of intermediate factors such as education, techniques

of birth control, religion and the process of secularization, child survival (net offspring size) and so our understanding of the reasons behind the starting and the rhythms of fertility transition is still poor. However, we have highlighted some points that, once again, confirm the high variability of the process of fertility transition not only among geographical areas but also among SES groups. In particular:

1) The study supports the shared view of a fertility decline that in Italy started later than in other European countries, as in 1881 it was still to come: high TFR figures and absence of reproductive behaviors addressed to control fertility.
2) In 1936, fertility transition was already started, with the Upper class appearing as forerunner in the practice of voluntary parity-specific birth control. Urged by the highest values of marital fertility and by declining infant and child mortality to limit fertility, this wealthy SES group had material and cultural resources to change its reproductive behavior and to use some techniques of birth control .
3) Contrary to other studies, where sharecroppers and tenants were found to be the latest in assuming reproductive behaviors addressed to control fertility, in Novellara wage earners and day laborers were the sole SES group still not showing any sign of voluntary birth control. Probably on account of already low levels of marital fertility, the poorest sectors of the population were not urged to put strategies of birth control into practice. Rather than an issue associated to problems in the up-to-bottom diffusion of new ideas and new moral values, the absence of birth control among the poorest is more likely tied to contingent and specific questions of economic and demographic nature that contributed to maintain "naturally" low levels of marital fertility.
4) Important events of political, economic and social nature, such as the pro-natalistic campaigns of Fascism, the great depression of 1929, and the agricultural crisis of the seventies of the 19th century, appear to have played a minor role in determining fertility levels and in changing reproductive behaviors.

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