The geography of fertility and marriage in Roussillon and Bas-Languedoc in the 1860 S.

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This essay presents some preliminary results of a cooperative research project. Although preliminary, I believe these results are very interesting in view of several issues that have been defined, or at least identified, in recent research on French populations in the eighteenth and nineteenth centuries, particularly the problems of fertility decline and local demographic variation in the nineteenth century.

More than any other, the question of fertility decline has been at the center of the last quarter-century of research in historical demography. It seems that fertility began its definitive decline on the eve of the French Revolution, at least in some regions. Exactly when, among which social classes, why, and where have been the main questions. After a long process of discovery, the question of the geography of fertility decline at the local level recently has come to the forefront.

To shed light on this and the other questions, historical demographers have developed two kinds of methods. First are the methods for the analysis of nominative documents, i.e. census lists, civil registers, and, above all, parish registers. These methods are often termed micro-demography, the most famous of which is family reconstitution, developed by Louis Henry and the Institut National d'Etudes Démographiques (INED). The second set of methods, seldom used by French demographers, but widely practiced by their British and American counterparts, is aggregative analysis or macrodemography, i.e. the analysis of data on national, provincial or départemental populations considered in their totality. Each method has its advantages and disadvantages. Microdemography provides an exact description of demographic behavior at the familial level, but the representativeness of the community under study is debatable. Particularly debatable is the representativeness of the families reconstituted by the method of the INED because it misses the geographically mobile families, who were usually of the poorer classes and who constituted the majority. On the other hand, macrodemography is certainly representative, because it includes everyone, but specificity is lost. Variations between social classes, occupations, economic and geographic zones, or urban and rural populations are swamped in a meaningless of average of the divergent tendencies.

Midway between these two methods there is another possibility, aggregative analysis at the village or communal level, followed by the nominal analysis of a sample of communities chosen for the characteristics that the aggregative analysis reveals to be important. This approach involves almost countless arithmetical calculations and therefore would be unthinkable without the computer. Even with it, assembling the necessary data-files involves considerable labor and patience. Once assembled, however, the researcher has remarkable freedom to choose and change his level of aggregation according to his needs, whether it be the family (however defined), commune, canton, département, or even the entire nation.

Attractive thought this method may be, its use is limited only to those places and historical moments for which statistical documentation is abundant and exact. For this reason, the second half of the nineteenth century is the best point to begin. By chance in Bas-Languedoc and Roussillon the oldest adequate documentation is for the 1860s. It exists for the entire département of Pyrénées-Orientales, which comprises the former province fo Roussillon and, to its north, three cantons detached in 1790

from Bas-Languedoc, named Saint-Paul, Sournia, and Latour-de-France. In Bas-Languedoc, the archives of the neighboring département of Aude offer very little, but the necessary data are available for the arrondissement of Montpellier in Hérault.

The results reported in this essay are the first step in a systematic examination of these documents. The next step is to establish a data-file of the other socio-economic variables. Besides indices of fertility and nuptiality, there are eight major variables : literacy, types of agriculture and manufacture, economic structure as determined by socio-professional categories, an index that measures distribution of wealth (Gini coefficient), population size, degree of urbanization or agglomeration, linguistic culture, geographical characteristics, and even political inclination as revealed by election results. Then all these may be put through multiple regression analysis. This step merely gives greater precision to the results obtained by cartographic analysis, which are presented below, and which indicate clearly the main determinants of local variations in fertility and nuptiality. More important is the third step, to carry the analysis back to the beginning of the century, and the fourth, the micro-level analysis of five or six representative communes.

The indices of fertility and nuptiality are calculated by the methods of the European Fertility Project of the Princeton University Office of Population Research. The project has involved calculating these indices for all the provinces or départements of Europe from Russia to Ireland, from the time before the modern decline of fertility until the end of its descent. For France, and Belgium, that is the entire nineteenth century and first quarter of the twentieth century. The project has already yielded several books. Indispensable for any French regional study is Etienne van de Walle, *The Female Population of France in the Nineteenth Century* (Princeton, 1974). By means of a mathematical reconstruction of the female population, it computes the départemental and national indices. The indices for France and the départements of Bas-Languedoc and Roussillon are reproduced in Table 1. There are three indices of fertility : total or general (I_f), legitimate (I_g), and illegitimate (I_h). Each has as a numerator the five-year average of births (totals, legitimate, and illegitimate respectively), and as a denominator the sum of married or single women aged 15-49. Im, the proportion married, is the number of married women aged 15-49 divided by total women 15-49. Each of these four indices expresses fertility or nuptiality as a fraction of that which has been observed as the highest recorded, which is that of the religious sect known as the Hutterites. The Princeton group has determined empirically that an index I_g greater than .600 indicates the absence of limitation of birth in marriage, while less than .600 suggests (the lower, the more certain) deliberate limitation of births. These indices are precise, they control the effects of differences in population composition by sex and age, and they have great comparative value. Therefore we have adopted them for our regional study.

Now consider the maps of the fertility indices calculated by canton. First they are calculated by commune, but the communal maps are too difficult to interpret visually, and are too detailed to present in this brief report. In any case, the communal variations--aside from urban-rural differences--turn out to have little importance.

Our original expectation was that local variations would have been determined by socio-economic and topographical features. Pyrénées-Orientales contained remarkable economic and geographic contrasts. The high Pyrénées to the west were a region of pastureland for sheep, cattle and horses, forests, crops of rye, hay, and potatoes, but no vines, and independent small landowners. To the east was the plain of Roussillon, watered by irrigation, sunny and warm, where viticulture and market vegetable gardening prevailed. Here peasants were mostly vineyard workers, some owning small parcels many being landless laborers; both enjoyed higher wages and more comfortable standards of living than their countrymen in the mountains. Between these two extremes was a zone of dry, infertile hills and narrow valleys that combined the economic activities to the east and west. The arrondissement of Montpellier had a very similar economy and topography, the Cévennes to the north, the coastal plain to the south, and the dry *garrigues* and narrow valleys between.

These considerably different economic and geographic characteristics seem to have had almost negligible effect on levels of fertility and nuptiality. In Roussillon legitimate fertility was almost everywhere above .600, but in the Languedocien cantons annexed to Pyrénées-Orientales département it was considerably lower, less than .500 in Saint-Paul and Latour, less than .550 in Sournia. The Languedocien départements of Aude and Hérault, and the cantons of Montpellier arrondissement, reveal the same low fertility pattern. Where fertility was low, proportions married were high, and where fertility was high, proportions married were low. Without a doubt, the decisive difference between these two regions was language and culture. Many local savants and modern ethnographers and linguists have remarked on the cultural distinctiveness of the Roussillonais, who were Catalan, not French or even Languedocien. For example, Henri Baudrillart, who visited Roussillon in the late 1880s, wrote : "La langue catalane est restée la langue usuelle des populations roussillonaises. Elle a aidé à y conserver un certain fonds de moeurs et de traditions qui rappellent l'Espagne". (*Les populations agricoles de la France*, série 3 : *Les populations du Midi*. Paris, 1893). Referring to Languedoc, the geographer Maximilien Sorre wrote : "Ils ont toujours été des pays français au sens le plus fort du mot. Leurs dialectes appartiennent à une autre famille que ceux du Conflent ou du Capcir : ce sont des dialectes languedociens". (*Les Pyrénées méditerranéennes*, Paris, 1913).

Therefore, in the mid-nineteenth century Roussillon and Bas-Languedoc had two different demographic regimes determined by their respective cultures. To be sure, socio-economic factors were important, and they explain the lower fertility in the zone of hills in Roussillon, and the fertility slightly higher than the rest of Montpellier found in the communes of the garrigues. However, these were fluctuations within demographic regimes whose fundamental character was determined by culture.

These are interesting and puzzling results, and much remains to be explained. Such social phenomena can be revealed and precisely measured only by means of machine-assisted data processing. The computer is indispensable for the many mathematical operations required to produce the requisite demographic indices. Although this use of a computer may seem rather elementary to computer scientists, it nonetheless underscores how vitally important and otherwise unsuspected social phenomena can be identified and explained, and therefore emphasises the inestimable value of computers for historical science.

TABLE 1

OVERALL AND MARITAL FERTILITY, 1866, DEPARTEMENTS

Departements	Overall Fertility I_f	Marital Fertility I_g	Proportions Married I_m
Ariège	.287	.535	.511
Aude	.273	.448	.584
Gard	.306	.526	.566
Hérault	.271	.451	.575
Pyrénées-Orientales	.339	.627	.512
France	.276	.481	.530

Source: E. van de Walle, Female Population of France.