Spatial analysis of the fertility transition in late 19th Century Paris

by

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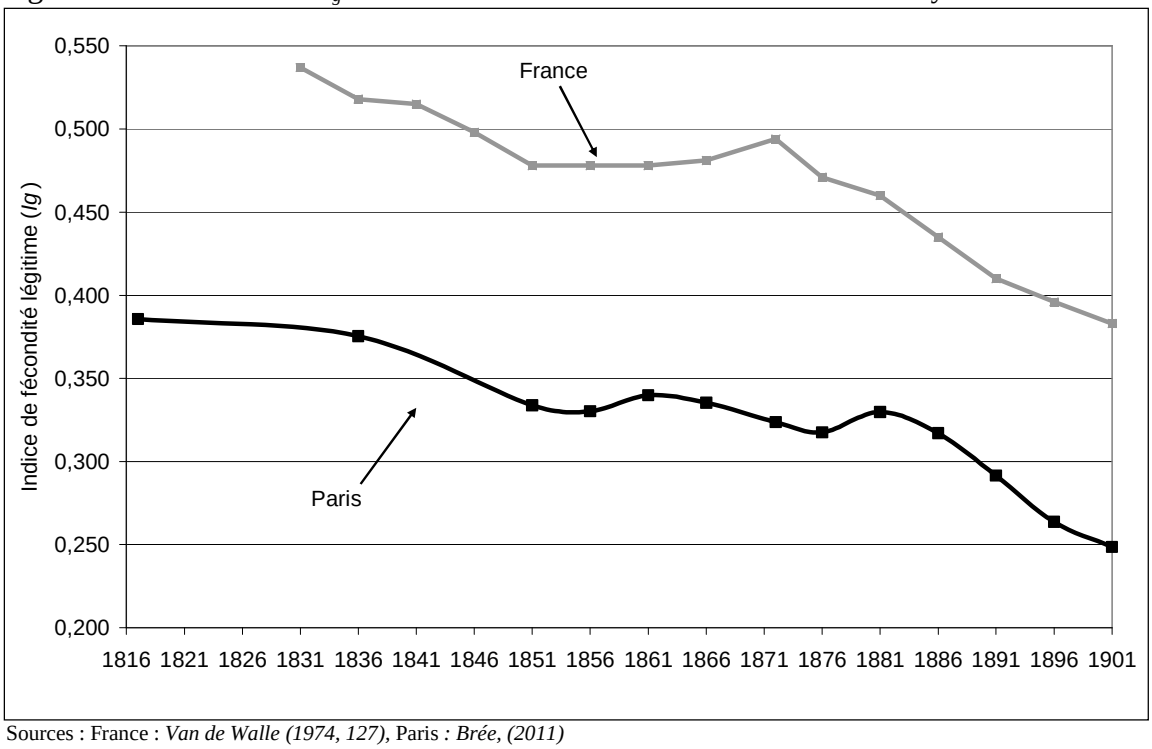
This communication, which extends a doctoral work (Brée, 2011), will analyze the spatial decline of fertility in the late 19th century Paris. If transversal analysis is not often used today to study the decline of fertility, it is almost inevitable to study large cities (due to heavy migration and population size), and all the more essential in the case of Paris, as personal archives have disappeared in 1871 ("Commune de Paris"). The originality of this paper also lies in the spatial approach to understand the spread of birth control in the neighborhoods of Paris for a quarter century.

Birth control, already deeply rooted in Paris in the eighteenth century, increases during the nineteenth (figure 1). But is this decline due to an intensification of the process in the neighborhoods characterized by an early use of contraception, a generalization of these behaviors or a combination of these two phenomena? Through a spatial approach of marital fertility in Paris in the late nineteenth century, this research aims to analyse the evolution of fertility (using Coale's indices, Coale, 1973; Coale and Watkins, 1986) and to understand the spatial contraceptive movement in Parisian neighborhoods at the end of the nineteenth century and thus test the diffusionist theory of fertility (Caldwell, 1976; Knodel and Van de Walle, 1979).

Figure 1. Evolution of the I_g index in Paris and France in the nineteenth century



Sources : France : *Van de Walle (1974, 127)*, Paris *: Brée, (2011)*

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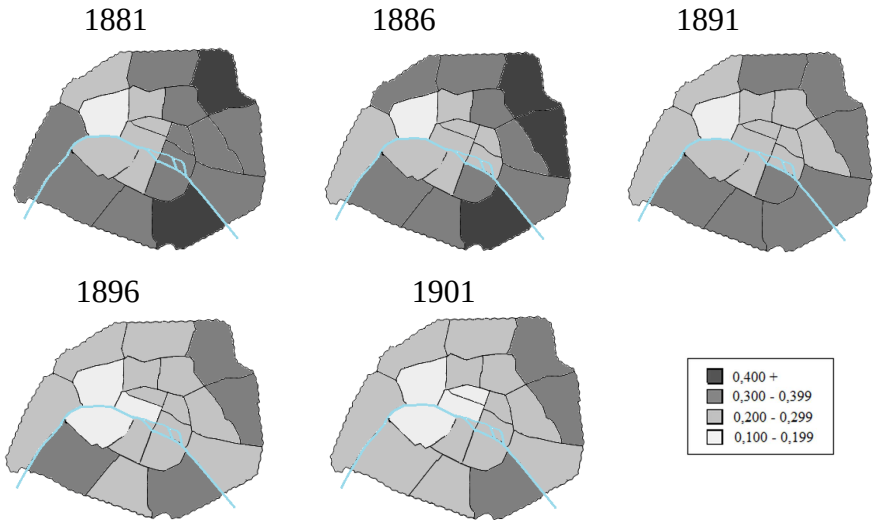
This analysis focuses exclusively on marital fertility because illegitimate fertility is very strong in Paris (a quarter of births in the late nineteenth century, Brée, 2014) and also because the behavior of married couples and single mothers are not characterised by the same motivations or the same social logic (Brée, 2014).

After having briefly traced the history of fertility in Paris in the nineteenth century (Figure 1), the analysis will focus exclusively on the period 1881 to 1901, the only one for which data by districts and neighborhoods (only until 1896) are available, namely sex, age and marital status of women aged 15 to 49 years and births distributed by place of residence of the mother. Indeed, before 1880, births are given in the sources by districts but they are distributed according to place of birth and not of residence.

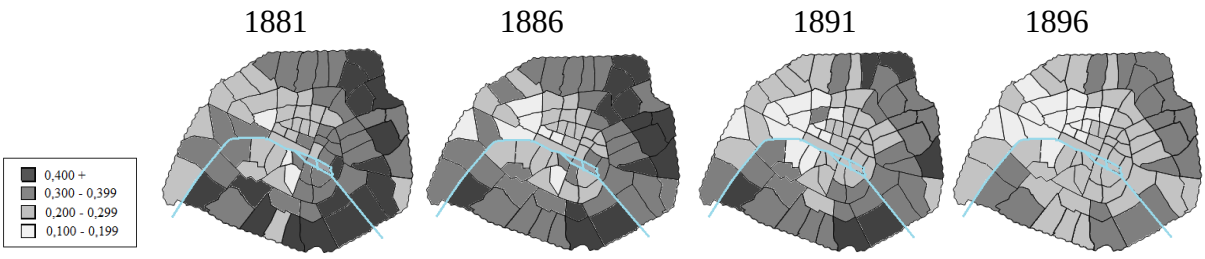
Furthermore, the study period (1881-1901) is a recovery phase of fertility decline (figure 1) for which it is interesting to try to understand the spatial movement.

If marital fertility declines throughout Paris, spatial differentiation is sharp and the dissemination of birth control from center west to the rest of the city is obvious (maps 1-5). After a descriptive analysis of marital fertility cards, the spatial movement of birth control will be analyzed by categories (principal component analysis and classification analysis) to understand if there are different "models" and whether it is possible to make typologies of districts/neighborhood according to the rhythm and the intensity of their fertility decline.

Maps 1-5. I_g Indexes by districts (1881-1901).



Maps 6-9. I_g Indexes, by neighborhoods (1881-1896)



Analysing now the levels of fertility in the neighborhoods, we will try to understand what distinguishes, in the same district, the neighborhoods where birth control is stronger than elsewhere (each district - “arrondissement” - is composed by four neighborhoods - “quartiers”).

Preliminary results show that during the last quarter of the century, the fertility of married couples varies widely between boroughs. The differences are so strong that the most fertile districts have not rejoined, in 1901, the levels of 1881 of the most contraceptives. The evolution of these differences shows that the decline of marital fertility is due to the continual decline of most contraceptives districts (up to a certain level) and to an intensification of birth control in the most fertile ones.

The richest neighborhoods are characterised by highest use of contraception. Birth control spreads from district to district, step by step. The 8th and 9th districts, the most contraceptive districts, “contaminate” first the districts around the center (1st, 2nd and 6th), then west (16th and 17th) to reach the popular districts in the center and the east of the city only later. This strong geographic differentiation between districts seems to reveal a social determination of fertility behavior. This analysis suggests a kind of “contamination” of neighborhoods and thus diffusion (Caldwell, 1976, Knodel et Van de Walle, 1979 ; Casterline, 2001; Lesthaeghe et Vanderhoeft, 2001), not denying an eventual adaptation to the needs and social norms (Van Bavel, 2004).

SOURCES

Sources where structures by sex, age and marital structures of Paris for the 19th Century are published.

Years	City scale	Districts scale	Neighbourhoods scale
1881	*Dénombrement de Paris*, 1881	x	x
1886	*Dénombrement de Paris*, 1886	x	x
1891	*Dénombrement de Paris*, 1891	x	x
1896	*Dénombrement de Paris*, 1896	x	x
1901	*Résultats du dénombrement*, 1901	x	

Sources where the numbers of births in Paris for the 19th Century are published.

Period	Name of publications
1880-1901	*Annuaire statistique de la ville de Paris*

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