Spatial analysis: a fertile turning point for demography

Demise Pumain[*1]

[1]Géographie-cités (GC) – CNRS : UMR8504, Université Panthéon-Sorbonne - Paris I, Université Paris Diderot - Paris 7 – 13 rue du Four - 75006 Paris, France

Résumé

The Neolithic demographic transition, the spatial diffusion of agriculture in Europe in the Neolithic era, the spatial diffusion of contraception in Victorian England, the wombling method to detect discontinuities and barriers, the use of kriging to analyze the Fertility transition in India, trend surfaces and auto-correlation .... Jean-Pierre Bocquet Appel has continued to practice spatial analysis to build his research in demography. Spatial variations were for him an intermediary in a multi-disciplinary reasoning to fill the gaps of our information on the past populations. We are following a parallel path to overcome our ignorance of the multiple interactions that preside over past and present changes in settlement systems, especially for cities that became the dominant form of human habitat. I would like to show how spatial analysis coupled with computer models that make strong assumptions about spatial interactions could reconstruct evolutionary trajectories of urban populations. The new methods of validation of multi-agent systems now put us in a position to determine which hypotheses are not only sufficient but also necessary for this reconstruction, while the incremental construction of models allows a variable granularity in the transition from general to local.

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[*]Intervenant