

Preface

The decline of fertility that was evident in Europe in the nineteenth century was not caused by industrialization. Fertility decline occurred in southwestern France as a unique and independent reaction-diffusion process and this process proceeded in parallel with industrialization as a whole.

The independence of the phenomenon of fertility decline from the prevailing socioeconomic conditions has been positively demonstrated by diffusionist scholars such as Coale, Knodel, and van de Walle. (See *The Decline of Fertility in Europe* [15].)

The absence of a causal relation between fertility decline and industrialization was astounding. Further pursuit of this remarkable occurrence would have led to the discovery of previously unexamined laws of sociology, in which demography involved.

However, since the emergence of household economics, this amazing phenomenon has been completely forgotten. Academic knowledge has not developed in a linear manner; it evidently retreated a considerable extent. Household economics has yielded no novel findings. It is only suggestive.

We may assume that the fertility decline resulted from a stochastic process, with the number of children born to each set of parents primarily attributed to the influence of residential neighbors on the parents in terms of their choices regarding the desired number of children. We can then provide reasonable explanations relating to key aspects of fertility decline such as *irreversibility*, *stability*, and *smoothing*. Moreover, we can specify the geographical location and historical period of the initial perturbation toward fertility decline. This space-time point is named a singularity of fertility decline in this book. We can further estimate the location and time of onset of a singularity of fertility decline by means of the velocity of a progressive (or traveling) wave.

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Process

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