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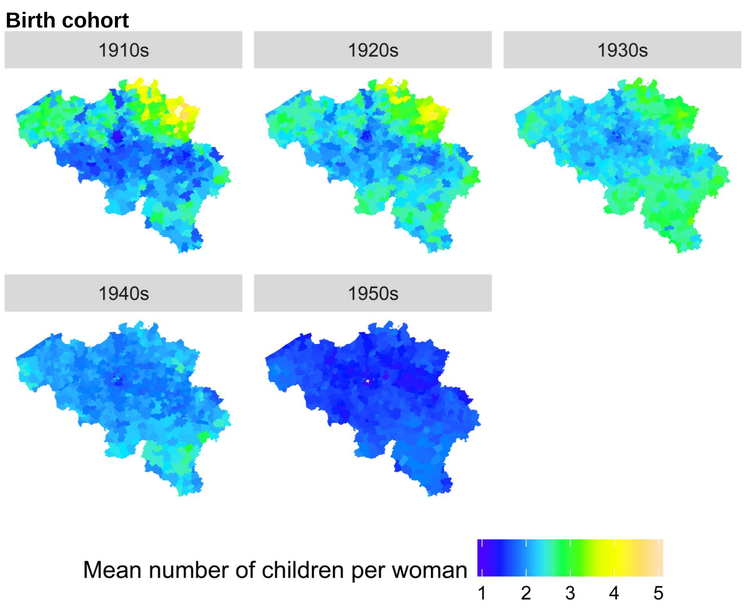
The Mid-Twentieth Century Baby Boom and the Role of Social Interaction: An Agent-Based Modelling Approach

We all know the Baby Boom, but the causes and mechanisms behind it are unclear

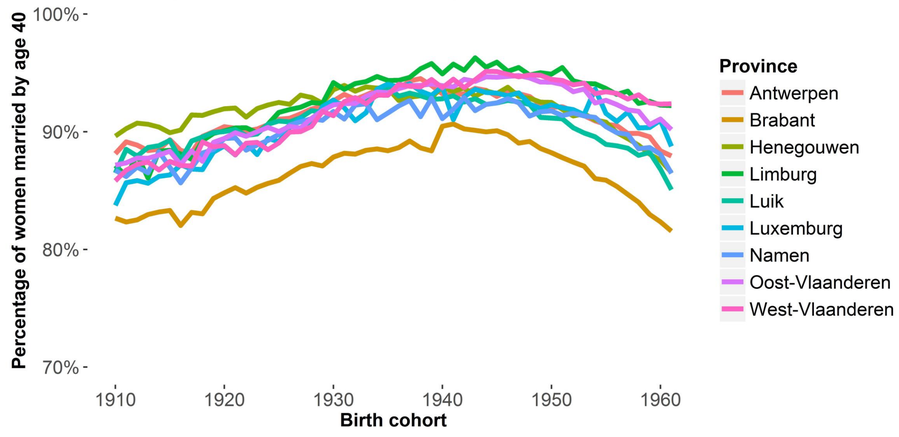
Classical explanations based on 'post-war optimism' and an 'economic boom' cannot explain the inter- and intra-country variation in timing and magnitude.

Belgium provides an example: some regions experienced a rather large increase in fertility, others experienced even a decline.

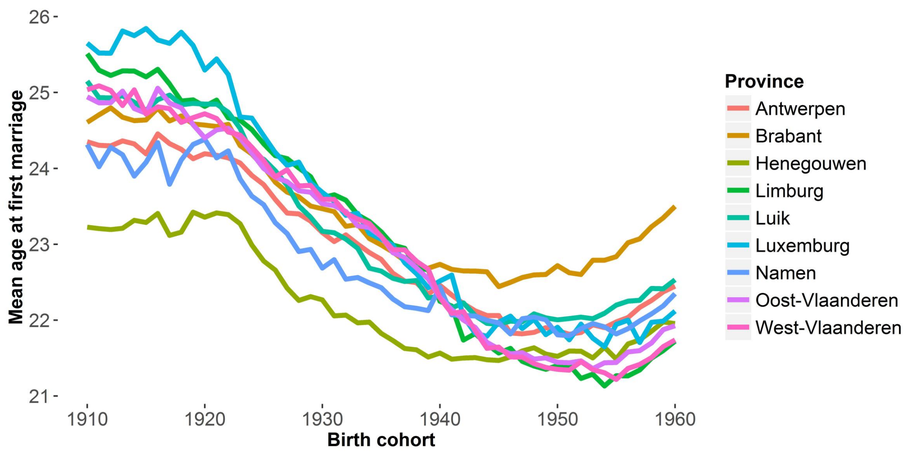


What strikes is that regions exhibit similar demographic trends connected to fertility

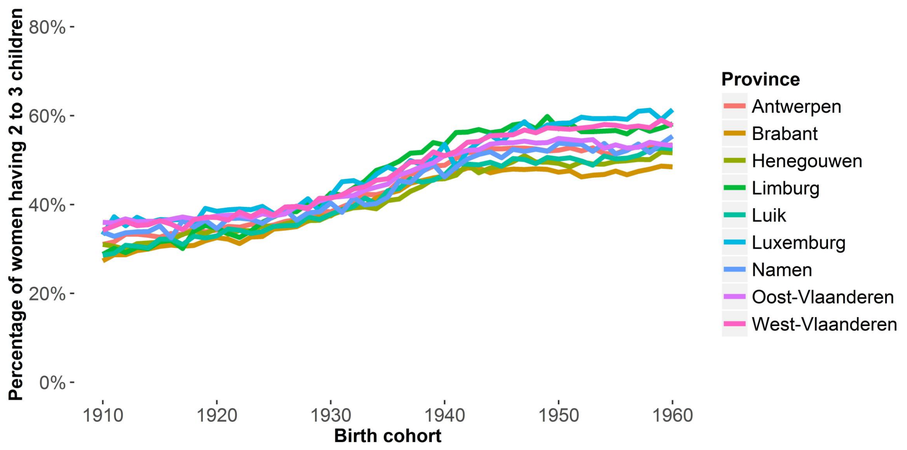
An increasing likelihood of marriage:



A decreasing age at first marriage:



An increasing number of women that have 2 or 3 children:



The diffusion of a two-child norm could potentially explain opposing fertility trends

In social groups in which families often had four or more children, the emergence of a two-child norm could cause a decrease in fertility.

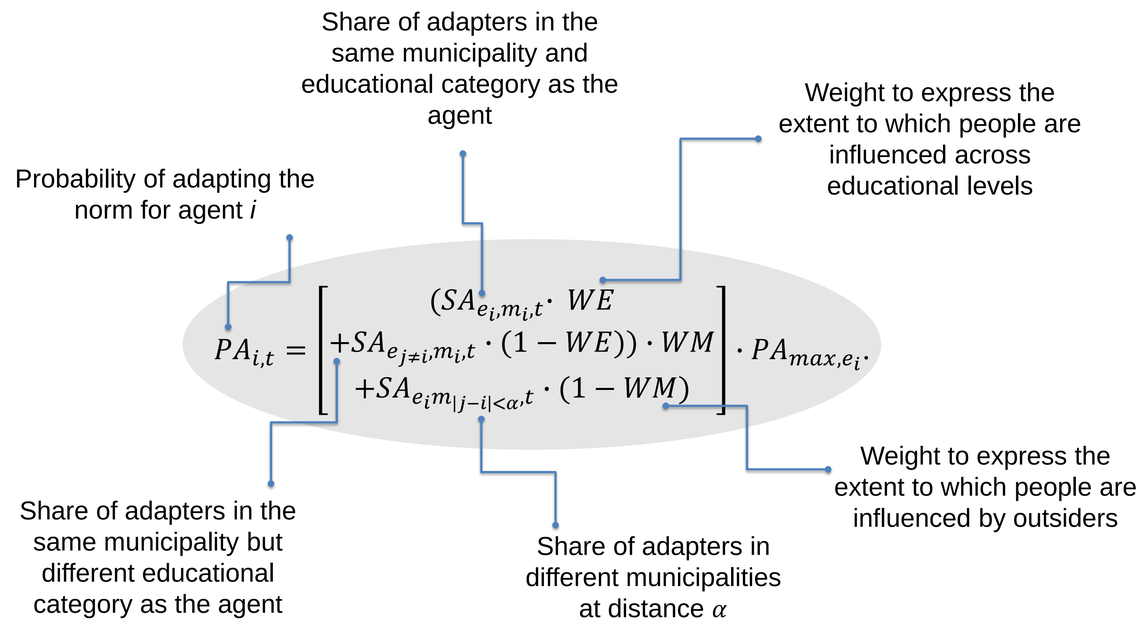
In social groups in which families often had no or only one child, the emergence of a two-child norm could cause an increase in fertility.

→ The diffusion of the two-child norm along socio-economical, educational and spatial dimensions is potentially related to the observed net fertility changes.

An agent-based computational model of the diffusion of the two-child norm

A woman's childbearing intentions are influenced by her peer group. With agent-based computational modelling, we can simulate the diffusion of the two-child norm.

At each time *t*, the probability that an agent who has not yet adapted the norm will adapt the norm at this point is expressed by:



The diffusion process is instigated by the fact that a small vanguard group of people of the highest educational level living in urban municipalities have already adapted the norm in the start situation.

What's next?

The model is currently being implemented in the simulation software NetLogo.

In our simulation experiments, we will make extensive use of empirical data for creating realistic agent-populations (e.g., census data about the population composition in terms of age, educational attainment, etc.).

The main result of interest will be the correlation between the observed net fertility changes by educational level and municipality and the simulated patterns of diffusion.

One core element of the simulation will be extensive sensitivity analyses, to assess the extent to which model outcomes are sensitive to each of the model's parameters.

Data Sources

- Belgian Censuses of 1981 and 2001

Acknowledgements

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