

International Seminar on
Demographic Responses to Sudden Economic and Environmental Change
Kashiwa, Chiba, Japan, 21-23 May 2009

REPORT

The international seminar on Demographic Responses to Sudden Economic and Environmental Change was organized by the IUSSP Scientific Panel on Historical Demography and hosted by Reitaku University. The seminar received support from Reitaku University and was held in cooperation with Lund University and the Population Association of Japan.

The fourteen papers presented at the conference examined the effects of sudden or unexpected economic or environmental change on the demographic behavior of individuals and families. The papers dealt with a variety of changes of external origin across a wide range of time – the seventeenth century to the present – and space – including Europe, Asia, the United States and Africa. Studies looked at the external changes stemming from natural as well as political and economic origins. Changes included economic stress, political turmoil, harvest failure, famine, spread of disease, earthquakes, droughts and climate change. Many of the studies applied new methods such as combined event-history and time-series analysis to novel historical and contemporary datasets with individual level information, and thereby yielded new insight into the processes by which economic and environmental pressure translate into changes in demographic behavior.

The demographic impacts of sudden changes varied according to the type and extent of the external shocks as well as the political, social and familial organization of the study population that experienced the shock. Individuals responded in different ways according to their age, gender, family context, and socioeconomic status. Higher socioeconomic status at the household or individual level generally helped insulate individuals from various risks, though there were exceptions. The diversity of responses reflected the multiplicity of options available to households and individuals. It also mirrored the effectiveness of political measures taken in response to urgent situations.

The fourteen papers represented a great diversity in geography, period, and type of sudden changes. In order to allow for intensive communications across areas and disciplines, each paper was given a full hour for presentation and discussion.

Six papers examined demographic responses to sudden changes in preindustrial period. By combining life-event and time-series techniques to analyze individual and household level data, these studies explored in detail processes by which economic and environmental pressure translate into changes in demographic behavior. Bengtsson and Broström analysed mortality crises in a rural area in southern Sweden between 1766 and 1870. They found that mortality dynamics in crisis years differed from other years in a number of ways, most notably with respect to effects of food prices. Dribe et al. looked at the impact of regional economic fluctuations on demographic behavior for about 400 parishes in the province of Scania in southern Sweden. They demonstrated that manorial parishes exhibited a considerably lower response to economic fluctuations, and argued that the manors help insure against risk, which benefitted inhabitants by smoothing their consumption.

Two Italian papers took a similar approach but compared multiple demographic responses – mortality, fertility, and nuptiality – by socioeconomic background in Italy. Breschi et al. examined demographic responses to both short-term economic and epidemic stress in a Tuscan community 1819-1859 that had an economy largely based on sharecropping. The demography of the poorest classes emerged as being greatly affected by epidemiological and, to a lesser extent, short-term economic crises. Cholera, in particular, altered the entire demographic system of the poorest social groups by increasing mortality at all ages as well as household out-migration, and depressing fertility. Another paper by Breschi et al. applied the same approach to the region of Friuli in North-East Italy. Contrasting two populations, a mountain community and a parish of the plain, they found that in the mountain community, short-term economic stress affected mainly marriages and births, while in the plain, bad economic conditions influenced deaths. They suggested that the complex interaction between social and economic factors that existed in different areas of Italy were the basis of the differences in demographic responses.

In the Asian context, Tsuya and Kurosu examined demographic responses of men and women in preindustrial rural Japan to economic stress of the normal years and the two greatest famines in the early modern period, the Tenmei famine in the 1780s and the Tenpo famine in the 1830s. Modeling death and out-migration as competing risks, they found men were more likely to suffer death not only in the periods of the great famines but also in the years of less serious local economic downturns. But they were less likely to suffer death and to leave the village if they were in wealthy household. Women responded to economic stress only when it was severe and widespread, for example during the times of the two massive famines. Campbell and Lee also examined the demographic impact of climatic fluctuations in northeast China in 1749-1909, distinguishing three periods during which there were cool summers of unusual frequency or intensity: 1782-1789, 1813-1815, and 1831-1841. The results demonstrated that extended periods of adverse weather were associated with dramatic fluctuations not just in mortality, but also in fertility. The nature of demographic responses appears to have varied. They discussed a mixture of the expected and unexpected patterns of responses revealed by their disaggregation by gender, age, socioeconomic status and other individual and family characteristics.

Two papers discussed responses to external shocks of political origin in the twentieth century. Cai and Wang dealt with the demographic consequences of the Great Leap Forward famine, focusing on the mechanisms of reproductive (fertility) loss. Their analysis revealed that, contrary to the popular periodization that the famine was a three-year ordeal (1959-1961), 1959 was the single year that made the most difference. Their results further reinforce the view that the famine was caused mostly if not entirely by political miscalculations and mistakes of enormous historical proportions, rather than only poor harvests in 1959 to 1961. Even under the socialist system that was in place at the time of the famine, the effects of the famine varied by socioeconomic status: Urban Chinese as well as individuals of higher occupational status, such as professionals and officials, fared consistently better than others. Schoumaker et al., using recent retrospective data and event history models, demonstrated that international migration and political crises are closely related in DR Congo. They argued that international migration from DR Congo since the mid-1970s had been clearly influenced by political troubles and, to a lesser extent, by economic crises. Periods of political instability and wars have contributed to significantly higher risks of migration, especially to Europe and North America, but also to other places in Africa.

Two papers discussed the influence of major earthquakes in Taiwan. Liu investigated measures of reconstruction after two major earthquakes undertaken by both the government and nongovernmental groups. The two major earthquakes, the 1935 Hsinchu-Taichung Earthquake and the 1999 Chichi (Jiji) Earthquake, were compared in terms of their demographic responses as indicated by the crude death rate, in and out-migration rates, and widowhood rates. Lo studied the impact of the 1999 earthquake for residents in Taichung and Nantou Counties in Taiwan to see whether or not property damage and the loss of family members had an effect on fertility, mortality, marriage and divorce. Other things being equal, those who experienced these effects from the earthquake had less chance of getting married than those who did not, but there was no difference in other demographic behaviors.

Two more papers examined the impact of natural disasters on more widely defined demographic responses including land use and care for the aged. Leonard et al. examined changes in the use of household labor on farms experiencing drought by applying multi-level growth models to data from over 25 townships in Kansas between 1875 and 1930. The land-use/labor relationship was unaffected by drought. However, drought did slow the process of farm building through cash cropping and farm expansion. Herrmann et al. focused on the aftermath of European heat wave during August 2003 which brought about 40,000 additional deaths. They assessed possible changes in individual and family broad demographic behaviors after the 2003 European heat wave regarding the oldest old, as well as public health and migration policies related to their care. The heat wave had varying impacts on the different European countries. The largest number of deaths occurred in France where the heat wave was pronounced and the country not well prepared. However, the direct impact of the heat wave on demographic indicators was rather limited.

Finally, another two papers examined the effectiveness of measures against smallpox in historical populations. Murayama and Higashi examined the implications of differences in measures taken against the spread of smallpox by two neighboring villages of the Southwestern tip of Japan in 18 and 19th centuries. The two villages provide examples of successful and unsuccessful measures to limit the impact of smallpox. Comparison between the two villages suggests that isolating patients and quarantining their household members was an effective way of limiting the spread of smallpox. Kawaguchi discussed the role of the introduction of vaccination into villages in the outskirts of Tokyo around 1850 in reductions in childhood deaths attributable to smallpox. He demonstrated how people responded to smallpox before and after the introduction of vaccination by using quantitative data from temple death registers and qualitative data from diaries and paintings.

Seminar papers will be published in an edited volume by Reitako University Press, in 2010, and made available on the IUSSP website. A selection of the papers may also be published separately.

**“Demographic Responses to Sudden Economic and Environmental Change”
Reitaku University, Kashiwa, Chiba, Japan May 21-23, 2009**

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IUSSP Seminar
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Program

Wednesday, May 20

7:00pm-8:30pm Opening reception

Thursday, May 21

9:00am Welcome and opening remarks

9:15am Tommy Bengtsson (Lund, Sweden), Göran Broström, (Umeå, Sweden) “Crises in Rural Southern Sweden 1766-1860”

10:15am Break

10:30am Satoshi Murayama (Kagawa, Japan), Noboru Higashi (Kyoto, Japan), “Smallpox and Population Change in 18th and 19th Century Amakusa Islands, Kyusyu, Japan”

11:30am Hiroshi Kawaguchi (Tezukayama, Japan), “Decrease of the child deaths after the introduction of the vaccination on the outskirts of Edo/Tokyo”

12:30pm Lunch, Manryo, Campus Plaza

2:00pm Ts’ui-jung Liu (Academia Sinica, Taiwan), “Determinants of Reconstruction after Major Earthquakes in Taiwan”

3:00pm Joan C. Lo (Academia Sinica, Taiwan), “The Impact of the Chi-chi Earthquake on Demographic Changes – An Event History Analysis”

4:00pm Break

4:15pm Francois Herrmann, Jean-Marie Robine, and Jean-Pierre Michel (Geneva, Switzerland) “Changes in broad demographic behaviors after the 2003 European heat wave”

7:00pm Dinner

Friday, May 22

- 9:00am Cai Yong (Utah, USA), Wang Feng (UCI, USA),
“Reproductive Consequences of China’s Great Leap Forward Famine”
- 10:00am Cameron Campbell (UCLA, USA), James Lee (Michigan, USA)
“Demographic Impacts of Climatic Fluctuations in Northeast China, 1749-1909”
- 11:00am Break
- 11:15am Noriko O. Tsuya (Keio, Japan), Satomi Kurosu (Reitaku, Japan),
“To die or to leave: Demographic responses to harvest failure in northeastern Japan 1716-1870”
- 12:15am Lunch
- 1:45pm Marco Breschi (Sassari, Italy), Alessio Fornasin(Udine, Italy),
Giovanna Gonano (Sassari, Italy) Matteo Manfredini (Parma, Italy),
and Chiara Seghieri (Pisa, Italy) “Demographic Responses to Short-Term Economic Stress in a 19th century Tuscan Sharecropping Population”
- 2:45pm Marco Breschi (Udine, Italy), “Demographic responses to short-term economic stress in north east Italy (Friuli 19th century)”
- 3:45pm Break
- 4:00pm Martin Dribe, Mats Olsson, and Patrick Svensson (Lund, Sweden),
“Production Crisis, Manorialism, and Demographic Response: Southern Sweden in the Preindustrial Period”
- 7:00pm Dinner

Saturday, May 23

- 9:00am Susan Hautaniemi Leonard (Michigan, USA), Myron Gutmann, (Michigan, USA), Glenn D. Deane (New York, USA),
“Drought and the lifecycle/landuse trajectory in agricultural households”
- 10:00am Bruno Schoumaker, Sophie Vause and José Mangalu (Université catholique de Louvain, Belgium)
“Political Turmoil, Economic Crisis, and International Migration in DR Congo. Evidence from Event-History Data (1975-2007)”
- 11:00am Break
- 11:15am General discussion, publication plans