

UNION DYNAMICS AND FERTILITY

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Short abstract

The link between partnership instability and fertility is increasingly explored. How cohort completed fertility is affected by new partnership behaviours and how this has changed over time is however rarely studied. In an environment where cohabitation becomes a common context of births and people are more and more educated, these factors cannot be excluded from the study.

We draw on Thomson and al.'s (2012) article, who find that in France, in the recent cohorts, completed fertility is less affected by union instability than in the past. They enlarge the prediction to the most recent cohorts using a microsimulation model. We extend this study by (1) adding marriages to the partnership history, (2) taking account of the level of education and time spent at school, (3) studying the mechanisms in other countries with different systems of value, the UK and later on Italy.

In a first step, we describe the various changes in the countries under study: completed fertility, family trajectories, and the interrelationship between those. In a second step, we implement the microsimulation model that also includes levels of education. To do so, we use the coefficients from hazard regressions of transition to births (for up to 4 birth orders), to partnership (marriage or cohabitation as competing risks, on three orders), to separation and to repartnering.

First descriptive results show that in the UK, women who separated by age 40 have continuously rather lower fertility than those in a stable union (birth cohorts 1940-1969). While repartnering enhanced fertility levels in the 1940s birth cohorts, it does not seem to be the case any more in the 1960s cohorts. Non-traditional family behaviours are still scarce in Italy in the cohorts described, but the microsimulation should unravel the most recent alterations.

Extended abstract

Research repeatedly raises the question of the impact of family change on fertility. While at the individual level a separation followed by a new union often leads to “additional” births (Vikat et al. 1999; Thomson et al. 2002; Beaujouan 2011), aggregate fertility can be rather inhibited by high divorce rates (Beaujouan 2010; Thomson et al. 2012; van Bavel et al. 2012). This is the result of two opposite processes: on the one hand, union dissolution reduces opportunities for conceiving and bearing children; on the other end, it produces a pool of persons who may enter new partnerships and produce ‘extra’ children. Thomson et al. (2012) find using micro-simulation techniques that union instability is actually not enhancing macro fertility in France. This confirms more descriptive results in Beaujouan (2010) and van Bavel et al. (2012). We propose to extend the work of the first article to other countries and to refine the approach to include marriage and level of education.

The uptake of cohabitation and its acceptance as a place to have children spreads differently across countries. Scholars highlight a wide variety of legal contexts and of behaviours in terms of fertility and partnerships (Klüsener et al. 2012; Perelli-Harris and Sánchez Gassen 2012). For instance, while in Italy partnerships and childbearing establish in a traditional setting, in the UK unpartnered and unmarried births are frequent. France shows again another type of behaviour, most of their births taking place within unmarried unions. Though in many countries being in a marriage is still seen as the ideal setting to start and complete family plans, we have witnessed a change in the link between fertility and marriage that could possibly reflect on the link between instability and fertility. The heterogeneity observed over time and across countries in the marital structure of partnerships could be another factor of variation in fertility outcomes.

Partnership and fertility depend on the level of education, and this relationship has changed over time (Kravdal and Rindfuss 2007; Torr 2011; Ní Bhrolcháin and Beaujouan 2013). It also changes deeply between countries (Rendall et al. 2010). We thus expect the link between separation and fertility to vary not only over time but also between the educational groups. For instance lower educated enter their first partnership/marriage earlier, mainly because they remain enrolled in education for a shorter time (Marini 1978; Prioux 2003); however, partnerships formed at young ages are also the most likely to break-up (Lyngstad and Jalovaara 2010). Taking into account these differences in partnership formation and dissolution should enrich the study of educational differentials in fertility; and the other way round, informing education differences should improve the analysis of the link between union dynamics and fertility.

The aim of this research is to extend the understanding of the link between union dynamics and fertility. We will set our new working frame, based on the one implemented in Thomson et al. (2012), that additionally details marriage and level of education. We first show, on the example of the UK, descriptive results to gain an intuition of the processes, then show the results of the extended microsimulation model. We study whether once the new factors are taken into account, like in France, (1) the incremental risk of childbearing is greater when all of the woman’s children are born of previous partners; (2) the net impact of instability on completed fertility is negative. In further work we will extend this new modelling to Italy.

Data and method

For the analyses, we use the ESRC Centre for Population Change GHS Series (General Household Surveys, ONS 1979-2009) in conjunction with the Understanding Societies survey (ONS, 2010). For more information on the data series, see Beaujouan et al. (2013). These surveys entangle information on fertility and partnerships, including unmarried-cohabitation history from 1998. Our overall UK sample thus consists of more than 30,000 female respondents, interviewed between 1998 and 2010 across the cohorts 1940-69. The Italian data come originally from two Italian multi-purpose household surveys on “Family and Social Subjects”, carried out in 2003 and 2009*. The first is internationally known as the Italian GGS survey, and we use the version that has been harmonized by the participant of the Non marital Fertility Network (Perelli-Harris et al. 2012, see www.nonmarital.org). The 2003 survey provides information about 49,500 male and female respondents of all age groups, and the 2009 survey 44,000. In our paper we keep only women, excluding those who had a first child before the age of 15 or after the age of 49, and who were born abroad.

A careful exploration of the data first gives a deep insight into the mechanisms linking instability and childbearing. Hazard regression models of progression to each birth order and to the formation and dissolution of union for first, second and third unions are performed, that will feed the microsimulation. Union and marriage formation will be treated as competing risks, as women out of a partnership can choose either to marry or to enter an unmarried cohabitation. The covariates include age, birth cohort and detailed combinations of past unions and births as well as the level of education and enrolment.

We develop a continuous-time, competing risk microsimulation model, comparable to the one employed by Thomson et al. (2012), following the same structure as in the hazard regression models. The model is implemented in Modgen, a generic microsimulation programming language developed and maintained at Statistics Canada (2009). The microsimulation model generates synthetic life courses of birth and union events for each cohort, based on the parameters produced from the regression analysis. In order to incorporate the impact of educational level and enrolment on the birth and union dynamics into the simulation, we proceed as follows: Based on the educational pathways prevalent in a given country, we define educational scenarios capturing not only different levels of education but also differences in the length of enrolment leading to the completion of these levels. Then, we use the estimated relative risks of educational level and enrolment from the hazard regression in order to adjust the age-specific hazard of the birth and union processes for each of the educational scenarios. Applying the latter in the simulation of the birth and union dynamics, we derive synthetic life courses of union and birth events for each educational scenario.

* The Italian data were collected in the survey "Famiglia, soggetti sociali e condizione dell'infanzia" 2003 and 2009, conducted by the Italian National Statistical Institute, Istat. Istat is not responsible for any results obtained from the data.

First results

The proportion of first births taking place outside a union or in an unmarried cohabitating partnership has increased for women born in the 1960s as compared with women born in the 1940s (Figure 1). While the increase was fast in the UK, it was much slower in Italy, and almost inexistent for births outside a union. Disruption of first childbearing union is also more and more frequent by age 40 in both countries, though the overall level of non-traditional behaviours remains very low in Italy. The proportion of higher order births taking place after this union increases steadily in the UK, but has not taken off in Italy. The microsimulation will allow us continuing these trends and examining the change in the cohorts currently completing their childbearing years. The recent uptake of new partnership behaviours in Italy could reflect on the childbearing behaviour of the most recent cohorts.

Figure 1 Unions and births to British women born in 1940–1968, to age 40.

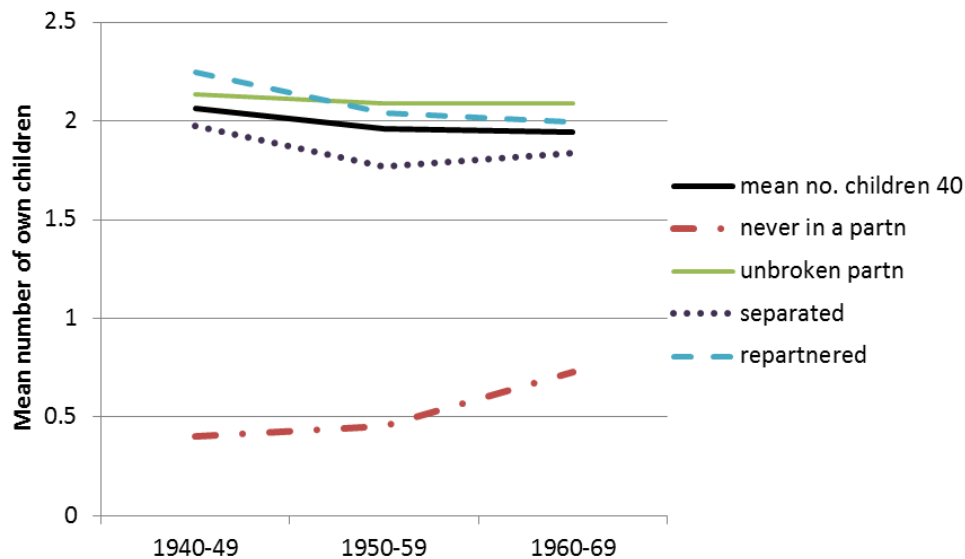
Birth and Union Histories to Age 40	United Kingdom Birth Cohort			Italy Birth Cohort		
	1940-49	1950-59	1960-68	1940-49	1950-59	1960-63
1st birth						
Not in union	6.2	6.9	10.8	3.1	3.2	3.8
Cohabiting union	1.1	4.0	10.3	0.9	1.6	2.3
Marriage	77.9	73.2	63.2	84.9	80.9	75.2
1st childbearing union						
Intact	65.7	62.9	56.4	81.3	75.8	70.6
Dissolved	17.2	18.5	22.7	4.5	6.7	6.9
2nd birth						
In 1st childbearing union	67.7	64.6	60.5	66.1	61.0	53.6
After 1st childbearing union	1.8	2.7	3.7	0.4	0.8	0.4
3rd birth						
In 1st childbearing union	26.5	23.0	22.1	24.9	16.8	13.3
After 1st childbearing union	3.0	3.4	4.9	0.2	0.4	0.2
4th birth						
In 1st childbearing union	7.3	6.2	5.3	6.9	3.4	1.4
After 1st childbearing union	1.9	2.0	2.1	0.1	0.1	0.0

Sample: women aged 40+ at survey

Source: UK General Household Survey ESRC CPC Series, Italian FFS 2003

While the overall number of births by age 40 has been decreasing from one birth cohort to the other in the UK, the mean number of children born outside a union is on the rise (Figure 2). Fertility in intact partnerships is very stable. Women who separated have rather lower fertility than those in a stable union. While repartnering enhanced fertility levels in the 1940s birth cohorts, it does not seem to be the case any more in the 1960s cohorts. This is certainly because break-ups affect more and more often non-fertile first partnerships, postponing the time people start having children.

Figure 2 Mean number of children by age 40, by partnership history at age 40.



Sample: women aged 40+ at survey
 Source: General Household Survey ESRC CPC Series

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