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Introduction to the special issue on:
*Timing and spacing of births: Effects for parents
and children*

In Europe, age at birth has been increasing for decades. Research on the timing of first and subsequent births has focused primarily on the causes and less on the consequences of individual childbearing histories (Sobotka 2010; Balbo et al. 2013). Theoretical background, as in many studies on fertility, is the life course perspective (Elder et al. 2003). The central idea is that lives are influenced by an ever changing biographical and historical context. The trajectories in the various life domains – family, education, work, health, etc. – are linked and simultaneously influence each other. For instance, the family and fertility life cycle is interconnected with the employment and health life cycle. Thus, the occurrence and timing of events in one life domain may cause the occurrence and timing of events in other domains.

In life course research, timing effects are mostly captured by age and historical time. However, age as a social construction also differentiates the life course. “The social meanings of age can structure the life course through age expectations, and informal sanctions, social timetables, and generalized age grades” (Elder et al. 2003: 10). As the meaning of early and late parenthood compared to the ‘proper’ age of parenthood had considerably changed over time, the consequences should vary according to normative social timing (Mirowsky 2005; van Bavel/Nitsche 2013). Thus, when studying the effects of birth timing, one has to take care of the meaning of early and late timing which varies over time and regions and is different for women and men.

The consequences of the birth history on later life have received limited attention yet. In recent years though, a growing body of literature has been focusing on the educational, occupational and financial attainment, on social participation and social support, on physical health and psychological well-being of birth timing.

The focus of research in sociology and demography is on the consequences on fertility history on well-being in later life (e.g., Spence 2008; Umberson et al. 2010; Myrskylä/Margolis 2014). Various studies in economics are interested on the wage penalty for motherhood and in the optimal timing of births, whereby the output is defined either in terms of career paths or in terms of wages (e.g., Gustafsson 2001; Miller 2011). Social epidemiologists are concerned with health consequences of early and late motherhood (e.g.,

Mirowsky 2005; Henretta 2007; Grundy/Kravdal 2009). In many studies on the various outcomes of fertility histories, systematic analyses of differences in early and late timing are missing.

The life course perspective also directs attention to the Elder's concept of "linked lives", which points to the fact that individual life courses are interdependent (Elder 1994). Thus, the life courses of spouses, of parents and children, and of parents and grandparents, are coupled and mutually influence each other. In this perspective, the timing and spacing of births could not only affect the life course of mothers but also different life domains of fathers, children, and grandparents. It has been shown that the transition to fatherhood affects working life (Wetzels 1999) and well-being of men (Pollmann-Schult 2014). The transition to grandparenthood seems to be associated with early retirement (van Bavel/De Winter 2014). Moreover, early grandparenthood has shown to be negatively associated with health and well-being (Burton/Bengtson 1985).

As early as a hundred years ago, Alexander Graham Bell (1918) suggested that the lifespan of children varies with mothers' age at birth. While this relationship has been investigated in many studies (for an overview see Myrskylä/Fenelon 2012), the consequences of timing and spacing of births on other life domains, e.g. educational achievement of children, to my knowledge has been not studied yet.

This volume adds to the literature by focusing on selected outcomes on mothers and their offspring. The first two papers discuss effects of first birth timing on the labor market success of mothers. The following two deal with the effects of first birth timing on physical health and well-being in later life. The fifth paper studies the effect of birth order and birth spacing on children's competencies. Given the limited space in this volume, there is unfortunately no paper on the effects of reproductive histories on the life courses of fathers and grandparents.

The first paper by *Uta Brehm* and *Sandra Buchholz* deals with the question: "Is there a wrong time for a right decision? The impact of the timing of first births and the spacing of second births on women's careers". It investigates if and how women's career trajectories are influenced by the way women embed their prevalently two births into their employment biographies. Using data from the National Educational Panel Study for West German mothers of two children, the study finds that the occupational prestige at age 45 is severely impaired by the period after women's first birth. While this is not affected by a specific timing, higher educated women tend to time their first births least detrimentally. With regard to spacing, empirical evidence suggests that higher educated women can succeed in continuing their prestige accumulation by spacing their births very tightly. Lower and medium educated women's prestige is not considerably impaired by spacing, unless they return to part-time work soon after first birth.

Tobias Putz and *Henriette Engelhardt* consider in their contribution "The effects of the first birth timing on women's wages". While the wage effects of a birth, the so-called "motherhood wage gap", have already been analyzed in detail, studies exploring the timing of this life event still tend to be rare and are completely missing for Germany. Based on longitudinal data of the German Socio-Economic Panel, fixed-effects panel estimates indicate that the negative wage effects of a first birth up to age 45 can primarily be observed for those women, who bear their first child relatively late. Furthermore, the negative wage effects related to late motherhood can especially be observed for low-educated

and medium-educated women as well as for women who were married at first birth. Moreover, it seems that only young mothers experience an increase in their wages as time since the first birth elapses. At last, yet for late mothers only, the negative effects of childbirth increase with the length of the work interruption around first birth. Overall, in contrast to the existing literature, these results indicate negative wage effects of a delayed first birth. Thus, in accordance with the well-established “motherhood wage gap”, these results can be considered as indication for a “late motherhood wage gap”.

The following two contributions investigate the effect of birth timing on well-being. *Henriette Engelhardt* and *Jessica Schreyer* consider “Timing of first birth and satisfaction in later life”. A large body of literature has documented a negative association between early childbearing and well-being in later life. The effects of late parenthood are mixed due to different social and physiological mechanisms as well as selection processes for the timing of first birth. This article extends the literature by employing propensity score matching to estimate effects of birth timing net of observed selectivity. A sensitivity analysis using Rosenbaum bounds provides hints on remaining unobserved selectivity. The analysis of data from the German Socio-Economic Panel shows that the timing of first birth has no effect on well-being in later life both for women and men. In case of the naïve estimator, the negative effects of early births and positive effects of late births for women are due to selection processes.

Friederike Schlücker and *Raphaela Blumenfelder* look at „Effects of age at first birth on health of mothers aged 45 to 56”, controlling for early life conditions which affect both timing of first birth and health in later life. Compared to mothers who gave birth at middle age, they find a significantly higher risk of illness among young first-time mothers using data from the Survey of Health, Ageing and Retirement in Europe. This effect largely remains after controlling for selection effects which determine age at first birth. The results indicate that the negative effect of young age at first birth remains even after controlling for health-related resources throughout the life course. The results identify mechanisms of cumulative social inequality when disadvantaged women become mothers at younger age and thereby further increase their risk of disease.

The final contribution by *Claudia Karwath*, *Ilona Relikowski* and *Monja Schmitt*, “Sibling structure and educational achievement: How do the number of siblings, birth order, and birth spacing affect children’s vocabulary competencies?”, focuses on the childbearing effects on children. Empirical evidence suggests that sibling structure influences children’s educational outcomes: While the negative effect of the number of siblings is quite consistent, there are mixed findings for birth order and birth spacing. Using longitudinal data from the BiKS 8-14 (Educational processes, competence development and selection decisions in preschool- and school age) study at the end of elementary school and focusing on children’s vocabulary competencies, the results indicate a negative effect for increasing number of siblings, particularly when children originate from families with a lower educational background. Regarding birth order, the paper shows differential effects by parents’ education, as only children from less educated families suffer from being a later-born child. Moreover, a longer spacing between a child and its older sibling is positively related to vocabulary competencies.

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