“You Write Your Life Story by the Choices You Make”*

A Life Course Perspective on Women‘s Reconciliation of Family and Employment

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Uta Brehm

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Introduction

1. Objective

Upon the birth of a child, it is still predominantly women's lives that change dramatically. Besides being physically responsible for carrying, delivering and, according to WHO-recommendations[1], initially breast-feeding the baby, Western societies have allocated an extensive array of further responsibilities to mothers. Particularly during the 20th century, motherhood norms have expanded their areas of validity to dedicating a considerable amount of time to expansive caregiving, emotional support, and cognitive fostering of the child – tasks that have been perceived to reflect mothers' natural attachment to their children (Schütze 1986). To facilitate these time-consuming tasks, the provision of a family's economic security, i.e. gainful employment, has traditionally been ascribed to men (Parsons 1959; Becker 1981). Thus, up until the 1970s, the majority of women were housewives or secondary earners, they typically did not pursue a professional career, their education was perceived nonessential and hence rather low, and their financial subsistence depended on their spouses. Along with the educational expansion and simultaneous social changes, however, the picture changed rapidly: women increasingly aspired after an employment-relevant education, pursued a career, and carved out individual identities that offered meaning beyond motherhood (Barro, Lee 2001; Beck-Gernsheim 2006; Goldin 2006; Goldscheider et al. 2015). The associated opportunities led women to postpone or avoid the responsibility-intensive motherhood altogether in order to

[1] See recommendations on http://www.who.int/topics/breastfeeding/en/.

establish themselves in the labor market (Blossfeld, Huinink 1991). Even as mothers, women continuously pushed for employment (Leibowitz, Klerman 1995), initiating a 'gender revolution' and demanding an advancement of their role (Esping-Andersen, Billari 2015; Goldscheider et al. 2015). Since this expansion of employment tasks has not nearly been met with a corresponding decrease of their caregiving tasks, yet, women have been confronted with the often conflicting demands of family and employment (Krüger 2010). The question of how to integrate these conflicting demands into the course of life evolved from women's personal problem into a public and scientific discussion. The present thesis ties in with the strand of research that attends to that question.

From a scientific perspective, however, it is not easy to get hold of women's practices to resolve the problem of reconciliation. Mother's transitions and trajectories between family and employment are manifold, complex, and highly interdependent. Influenced by factors such as their previously acquired education, the structural framework and cultural background, mothers switch more or less easily, more or less quickly, and more or less carelessly between engaging in different types or scopes of employment and giving unpaid care to the offspring according to its age-specific needs. Higher education, for example, can increase the opportunities and prospects women have on the labor market (Becker 1993), incentivizing the postponement of fertile decisions for the sake of education and its utilization on the labor market (Blossfeld, Huinink 1991). At the same time, higher education increases the relative disadvantages that result from employment interruptions for unpaid caregiving (Mincer, Ofek 1982), making the trade-off between family and employment particularly weighty (Grunow et al. 2011; Drasch 2013). The resulting conflict can be decreased by a more reconciliation-positive framework, both in structural and cultural terms – though both aspects are typically highly interrelated (Pfau-Effinger 1996). With regard to structure, providing extensive public childcare and facilitating part-time employment, for example, can allow for engaged employment despite motherhood and for committed caregiving despite employment (Kenjoh 2005; Berninger 2009; Kalwij 2010). With regard to culture, the normative acknowledgement of mothers' possibly many-faceted identity can diminish their conflict between family and employment (Berninger 2009; Grunow, Müller 2012).

Evidently, reconciliation practices vary greatly throughout a lifetime, across different groups within a society, and across structural and cultural backgrounds which typically correspond to countries. The question remains as to how exactly these factors interact in influencing women's reconciliation of family and employment. To approach this question, drawing upon the theoretical framework of the life course perspective is most promising: this school of thought pays due regard to interdependencies of experiences and decisions at different stages of life (self-reference), to interrelations between diverse spheres such as family and employment (multidimensionality), and to the impact of manifold framework conditions on these aspects (multi-level process) (Mayer 2001, 2004). Along these lines, the present thesis addresses the question of what we can learn about women's reconciliation practices by consequently pursuing life course perspective's premises of self-reference, multidimensionality, and multi-level processes.

Much research has already addressed the issue of women's practices to reconcile family and employment, both on the basis of macro- and micro-level data. Specifically, macro-level approaches have been analyzing the changing cross-national association between total fertility and female labor force participation rates, and their political, economic, and social determinants (Brewster, Rindfuss 2000; Pampel 2001; Ahn, Mira 2002; Rindfuss et al. 2003; Adserà 2004; Kögel 2004; Engelhardt et al. 2004; Laat, Sevilla Sanz 2007; Engelhardt 2009; Kalwij 2010; Thévenon, Solaz 2014). Research on the micro-level, in contrast, has been focusing on individual countries in stand-alone or comparative studies and thereby added more detailed knowledge on the timing and conditions of women's fertile decisions (Witzel, Kühn 2001; Brückner, Mayer 2005; Timm 2006; Brose 2008; Bredtmann et al. 2009; Arránz Becker et al. 2010; Bauer, Jacob 2010; Passet, Viry 2012), of their transitions back to employment (Lauterbach 1994; Falk, Schaeper 2001; Kenjoh 2005; Matysiak, Vignoli 2008; Drasch 2011; Grunow et al. 2011; Frodermann et al. 2013; Gangl, Ziefle 2015), and these transitions' impact on employment (Ziefle 2004; Ejrnæs, Kunze 2004; Aisenbrey et al. 2009; Hirschle 2011; Miller 2011; Evertsson, Grunow 2012; Abendroth et al. 2014). Since macro- and micro-level research start from different premises, however, a dispute evolved about validity and added value to understanding the reality of life courses. Particular criticism has been directed at macro-level approaches for they discover through aggregation and abstraction instead of explaining individual

processes in depth (Mayer 2009; Billari 2015; Liefbroer et al. 2015; Nieuwenhuis 2015). The present thesis means to help pacify this dispute. Specifically, it seizes on previously little exploited strengths of both macro and micro approaches, proving that the life course perspective on women's reconciliation practices can be expanded and enhanced from both sides.

Macro-level analyses' means to discover trends and patterns across space and time (Billari 2015) is a particular strength that, I argue, can markedly enhance the classic life course perspective. To facilitate the integration, the thesis' first aim is to accentuate life course perspective's premises in macro-level research. Specifically, I suggest going beyond established approaches that focus on total rates of fertility and female labor force participation. Instead, I commend directing attention towards age group-specific rates which reflect associations at different stages of life in line with life courses' self-reference. Moreover, I offer means to understand countries' overall variance and long-term variability in more detail, seizing the macro-level perspective to approach multi-level processes within the life course.

Beyond that, even micro-level research often falls short of its potential to implement life course perspective's premises consequently in researching women's reconciliation practices. In fact, a large part of the literature merely attends to single transitions or the fairly immediate interweaving of family and employment decisions and outcomes. Thus, the thesis' second aim is to expand these approaches by an overarching focus on trajectories and their complex chronologies and interrelations. Based on the example of the longtime structurally conservative and culturally traditional West Germany (Esping-Andersen 1990; Pfau-Effinger 1996), I introduce (a) a profound analysis of mothers' multidimensionally interdependent biographical sequencing across both spheres of family and employment during family formative years. Moreover, I add (b) an overarching perspective on the self-reference of resources, decisions, and outcomes across the life course, addressing the way educational attainment as well as specific birth and employment decisions span far across both career and childbearing years. Paying due regard to multi-level processes therein, I address the impact of women's contextual background, namely their reconciliation practices across political settings.

To embed these contributions, the following sections carve out the theoretical framework of the life course perspective and what we know about the peculiarities of female life courses thus far. Drawing upon these elaborations, I further establish the necessity of new approaches to understanding women's means of reconciling family and employment. Offering resolutions, I then introduce three research contributions that deploy the suggested advancements. The three studies are then presented individually: Study I was coauthored with Henriette Engelhardt and elaborates *On the Age-Specific Correlation between Fertility and Female Employment: Heterogeneity over Space and Time in OECD Countries*. Study II is a single-authored contribution, called *Retreat, Return or Re-bear? Women's Reconciliation Behavior between First and Second Birth across Family Policies and Educational Groups*. Study III was coauthored with Sandra Buchholz and addresses 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*.

2. Theoretical background: life course perspective

The life course perspective had been developed as an approach to explain individuals' sociation, their positioning in society. Therein, the focus on individual life courses is the result of a social transformation: instead of peoples' full and solid integration in familial, corporate, or local bonds, individuals developed into independently constituted and self-reliant social units who are socially integrated by means of their position in and around gainful employment (Kohli 1985). Contrary to earlier, rather static approaches, the life course perspective perceives these sociation processes to be dynamic and highly time-variant: they are subject to effects of individual age as the central principle of structuring on the one hand, and historical cohort and time periods as heavily influencing factors on the other hand. Starting with the latter, individuals are influenced by historical contexts and social changes, either through the specific institutional and normative context of their birth cohort or through more spontaneous period effects. These effects influence individuals' opportunities and norms with regard to the life courses' structuredness alongside age. For example, the introduction and dissemination of compulsory education and a public pension system on the societal level promoted the age-grading on the individual level fundamentally.

Thus, across the lifetime, the life course is constituted of several socio-structurally relevant states (e.g., school, employment, and unemployment) of varying pervasiveness and duration that accumulate into an individual's (changing) societal positioning (Mayer, Huinink 1990). For each and every age group, there is a specific variety of possible employment-related actions which in turn provide the foundation to a subsequent variety of other actions: while children and young adults prepare for work by attending schools and attaining degrees according to their consecutively acquired knowledge, they eventually have to transit to the next level of adulthood, apply their skills and abilities on the labor market in order to earn a living and a social status from it, both for the respective present time and for the foreseeable future in retirement (Kohli 1985).

As one of the first European researchers to systematically pay attention to this structuredness of individual life courses, Martin Kohli (1985), described the resulting age-graded pattern to be a tripartitioning of life courses into school, employment, and retirement. He argued that this structure applies equally to most individuals, resulting in a chronologically standardized 'normal life course'. By thus chronologizing the life course around individuals' ages, it becomes regularized and rationalized; a person's typically expectable future becomes universally predictable. Hence, Kohli theorized the life course as a distinct dimension of social structure, as an institution of sociation itself which offers a regulative system around gainful employment and thereby objective guidelines for individuals' subjective interpretation and implementation. In doing so, he provided a macro level perspective on the life course, suggesting a structurally and culturally shaped ideal type of biography which offers a blueprint to individuals' behavior (Sørensen 1990; Solga et al. 2009).

Kohli's focus on gainful employment, however, has been criticized to disregard memberships in other sociation-relevant social institutions such as the family. Thereby, his approach systematically withholds attention from women (Krüger, Baldus 1999). Thus, another approach by Karl-Ulrich Mayer (1986 ff.) has been more widely adapted as it opens up to other pathways to individuals' sociation. Adding a micro level to the life course perspective, Mayer focused on describing the life course as a sequence of positions, roles, and integration in institutional orders which leads to the acquisition of specific experiences, resources, and opportunities. He put considerable focus on

institutions that affect and determine the states and transitions within life courses – such as the educational system, the labor market, marriage and family, and the pension system – but in varying degrees across social historic periods and across age groups. Following this argument, he rejects the validity of a 'normal' life course (cf. Solga et al. 2009).

Thereby opening up to highly differential trajectories facilitates the analysis of female life courses that can differ greatly from the 'male normality'. Particularly upon the birth of a first child, women have traditionally become the main caretaker of offspring and household chores, cutting back on labor market participation, working hours, occupational ambitions and prospects in return (Treas, Drobnic 2010; Abendroth et al. 2014). Thus, female life courses are not dominated by the employment system as unambiguously as men's; instead, the family system is at least as important yet much less institutionalized, structurally dominant, and therefore more difficult to grasp within the life course perspective (Krüger, Born 1991; Krüger 2001). For earlier decades, it has been argued that women's sociation happened through men's employment since housewives' life courses were economically dependent on their husbands'. Thereafter, along with their social development into more autonomous actors, it has been suggested that women move closer to the formerly 'male' tripartite life course (Brückner, Mayer 2005; Kohli 2007). Nonetheless, it has been widely conceded that the gender-specific intrafamilial division of labor is a similar driver behind heterogeneity and inequality to the societal division of labor – associated with resources, income, status groups, and occupational hierarchies (Mayer 2004).

Some researchers, particularly around Helga Krüger (1991 ff.), press even further. They argue that the family system is just as structurally formative for female life courses as the employment system, though far less accounted for in social sciences. This has been thematized to be particularly crucial as it also underestimates men's dependence on female family support in their own life courses (Krüger 1991; Krüger, Born 1991; Geissler, Oechsle 2001). At the same time, it has been pointed out that the employment system was by no means as low-ranking in female life courses as widely theorized. Though increasing shares of gainful employment and quicker returns have been acknowledged across cohorts, housewifery's former prevalence was factually overrated. Even at its high point after World War II and even in conservative Germany,

only about one third of women committed to it long-term. The vast majority of women instead alternated between unpaid caregiving and gainful employment repeatedly, clearly revoking assumptions of only one or two shifts across their adult life (Hofbauer 1979; Krüger et al. 1989; Krüger 1991; Lauterbach 1994). Nonetheless, the quality of the early employments and the driving ambitions behind them can be assumed to rather pursue a contingency plan instead of a career (Goldin 2006). Nonetheless, life courses of women evidently were and still are much less standardized than those of men. Though the former have been found to converge steadily to the male 'normality', the picture has been found to deviate distinctly as soon as children are born or just anticipated (Krüger 1991; Lauterbach 1994; Witzel, Kühn 2001; Brückner, Mayer 2005; Krüger 2010). Thus, in more recent years, the focus has shifted towards the concurrent and overlapping demands for women's commitment by institutions of both the employment and the family system (Krüger 2010).

Understanding conformities in heterogeneous life courses

To understand the joint structure of individual life courses despite their complexity, Mayer (2001, 2004) stresses that life courses are multidimensional, self-referential, highly differentiated multi-level processes. According to these three core elements, a life course unfolds (a) multidimensionally: several spheres of life, such as work, family, relationships etc., evolve in temporal and causal cohesion. Decisions and opportunities for an occupation can be shaped by the family of origin and the peer group; family formative processes might be subject to monetary and professional considerations; the progress of a career may in turn be shaped by the commitment claimed by or allocated to the family, leisure activities, and the social environment. Beyond that, physical and psychological developments shape each of the respective options and relations. Furthermore, the life course is (b) self-referential: it unfolds in dependence on an individual's cumulative experiences and resources that exert influence onto future sequences. A year of employment interruption, for example, can impair job opportunities long-lastingly, just like the skills, networks, and reputation acquired in one project can facilitate a substantial promotion later on. Besides, self-reference is also relevant with respect to an aggregated cohort's distribution and behavior, and its impact on the individual's decisional conditions. The incidental members of a high-birthrate cohort might face considerable obstacles when competing

with one another for apprentice or job positions; a generation's joint stigmatization of family formation might eventually diminish the retirement benefits its members can receive according to an intergeneration contract. Lastly, an individual life course is shaped by (c) highly differentiated processes on multiple levels. On the one hand, this applies to the interconnectedness with life courses of other persons (parents, partners, and children) and social groups (family of origin, chosen family), e.g., when spouses decide for a mutual place of residence and therefore have to restrict their job search to the commutable area, or when elderly parents grow into requiring care and the adult children have to either share their income or their time with them. On the other hand, life courses are influenced by social institutions, their organization, and development. Upon the state's introduction of an entitlement to part-time work, employees obtain the opportunity to reduce their working hours – given that the employer factually facilitates this option, the normative environment acknowledges the simultaneity of family and employment, and other social institutions provide external care for the offspring (Mayer 2001, 2004).

A crucial aspect within the multiple-level factors that influence life courses is the state as a capturer, reproducer, and creator of social institutions (Born 2001; Krüger 2001). Thereby, it seizes on a society's (changing) norms, values, and leitmotifs, includes them into its policy paradigms, and can thereby utilize its means to foster the status quo or encourage social change. Accordingly, a state's gender order and gender culture usually comply broadly in their characteristics (Pfau-Effinger 1996), except for rare cases of either structural or cultural revolutions (cf. Falk, Schaeper 2001; Grunow, Müller 2012). Time and place that mark social paradigms and their change, either across cohorts or across periods, and with gradation across age groups (Mayer, Huinink 1990; Elder 2003). Differential state interventions are one major driver behind inequalities (Mayer 2004). Hence, it is crucial to understand the specific conditions that affect life courses on the social institutional level.

Pursuing the latter premise, a pivotal focus has been set on the state as bearer of social paradigms (Mayer 2009). Accepting the employment system, particularly the economy, as a central generator of structure in the life course, the attention has shifted towards states and their differential means and levels of regulating as well as mediating between economy and individual (Mayer, Schoepflin 1989; Kohli 2007).

To understand the complex interconnectedness between state, economy and individual life courses, life course perspectivists often draw upon welfare state classifications. These are theorized to have different approaches to providing social, material, and cultural wellbeing to its people by redistributing income as well as providing services, jobs, and supportive policies. On the one hand, they do so by decoupling an individual more or less from his/her market dependency, i.e., by providing welfare as health, family, age, or further education require (decommodification). On the other hand, states may or may not regulate society's arrangement into strata that originate from market-related factors such as education, income, occupational chances (stratification) (Esping-Andersen 1990, 1999). With regard to life courses, a state's regulations thereby influence the stability, predictability, and universality of life courses (Mayer 2004; Kohli 2007).

However, it is important not only to look at a state's means to form a stronghold against putting individuals at the economy's mercy. Rather, the state itself reproduces economic premises and passes them on to its citizens. To get more precise, the state provides services as well as jobs that are highly professionalized and economically efficient, similar to their equivalents on the market. State-induced institutions aim to balance individual risks and chances by redistributing monetary and monetarily enabled services from the employed to the unemployed, from the working to the retired, from those that already deploy their labor market proficiency to those that are yet in preparation (Mückenberger 1985; Mayer, Müller 1986). This focus on monetary transfers in social security and redistributive systems also fosters economic orientation in individuals: it puts impersonal transactions before personal bonds, and offers opportunities that do not necessarily meet individuals' needs but still activate their functional rationality (Mayer, Müller 1986).

Along these lines, the welfare state plays a considerable role in shaping female life courses, too. The expectations imposed by the employment and the family system are closely linked to a state's gender order (Pfau-Effinger 1996), the institutional setup which regulates, e.g., a joint or individual taxation of spouses, the (non-)provision of different scopes of childcare, the (non-)facilitation of employment interruptions for childcare, and returns thereafter. The state's means of decommodifying and disburdening women by, e.g., facilitating leaves and consigning care-related tasks to

public institutions, reproduces structural inequalities in the gender culture (ibid.): it still allocates care-related tasks to either female or public hands but does not redistribute them equally into those of men (Sørensen 1990). At the same time, as argued before, the state assigns considerable relevance to the employment system in individual life courses. For mothers' life courses, this also means that employment operates as a provider, be it directly or mediated through the partner. Specifically, the employment system is held liable not only via neutral transactions, but also through, e.g., income-contingent alimony or leave allowances (Mückenberger 1985).

To understand the impact states have on individual life courses, Mayer (2004) elaborates on four mechanism of structural, cultural, and socio-economic nature that can be assumed to link the macro structures to the life courses on the micro level. More specifically, he describes (a) rather stable, universal decision processes such as functional rationality. With regard to female life courses, one prominent line of thought to reason women's rationality in terms of reconciling family and employment is economic theory. Generally, it suggests that, in order to benefit from the (monetary) amenities employment has to offer, people would strive for continuity. Interruptions, e.g., to give unpaid care to children, can result in foregone wages, i.e., opportunity costs. Additionally, the rate of the returns of employment depends on a person's human capital which increases with education. Human capital, however, can be subject to depreciation if employment is interrupted. Thus, given that the opportunity costs exceed the costs of external childcare, it would be economically rational for mothers to keep their child-related interruptions rather short (Mincer 1974; Mincer, Ofek 1982; Leibowitz et al. 1992; Becker 1993). On the other side of the coin, however, processes of (b) selection, self-selection, and anticipatory adaption are at work. Thereby, Mayer ascribes considerable decisional power to recruiting institutions at the other end of transitions and individuals' anticipation thereof. With regard to selection, mothers' child-related commitments and interruptions might be anticipated by employers, making them perceive all women as potentially unsteady and expensive employees. In order to minimize these risks, employers might statistically discriminate against women, denying them jobs, positions, or earnings (Phelps 1972; Arrow 1973). At the same time, women anticipate their 'duties' as mothers, too. Thus, they might self-select into jobs that facilitate interruptions or flexibility for family commitments or adapt anticipatorily by curbing their career ambitions (Krüger et al. 1989; Witzel, Kühn

2001). Furthermore, Mayer takes into account (c) peoples' adapting to and reproducing social pressure in the form of norms and expectations. For the case of mothers, this mechanism regards, for example, women's role as a 'good mother' who spends considerable time on a child's physical, emotional, and cognitive wellbeing (Krüger 1991; Schütze 1986; Wall 2007). Lastly, he addresses (d) social institutions' evocation of favorable personality traits. Accordingly, women's personality traits develop in line with the rights and obligations assigned to them by social institutions, such as being less individuated and more agreeable (Chodorow 1974). Beyond that, Mayer concedes rather little functional, reconstructable mechanisms such as value orientations which are not subject to the social context but rather create and shape it (Mayer 2004). Nonetheless, pursuing these linking mechanisms, it can be argued that the welfare state reinforces the standardization of life courses. It defines life states and transitions along with the associated rights and duties, and reproduces the structuredness of life courses and their arrangement around social institutions, particularly gainful employment (Mayer, Müller 1986).

Alongside these theoretical considerations, life course perspective acknowledges women's means to reconcile family and employment in its multifaceted and interdependent aspects. It poses questions such as: How do women's labor market participation and their occupational ambitions affect their fertile decisions? In what way does women's labor market participation change upon having children, e.g., in terms of interruptions, returns, working hours, and job changes? How does that trace back to their educational attainment, to their labor market entry and early career, to their ambitions and orientations? What effect does it have on their occupational prospects in terms of job security, income, and job mobility? And how are these interrelations shaped by social institutions as they are captured, reproduced, and created by (changing) states?

Social sciences have been addressing many of these questions already, however with some shortcomings with regard to a systematic pursuit of the life course perspective. The present thesis aims to fill some of the remaining gaps by suggesting novel approaches in macro- and micro-level research to understanding women's reconciliation practices of family and employment, and their interrelation with social institutional paradigms.

3. *What we know about female life courses*

Previous research has already contributed greatly to understanding female life courses during phases of competing demands by family and employment. Social sciences, particularly demography and sociology, have attended to the issue of women's reconciliation practices and the impact of social institutional paradigms in various Western societies. Along these lines, researchers have approached the issue by relying mostly on either a macro-level or a micro-level perspective.

Macro-level research has traditionally operationalized reconciliation by means of several national indicators such as fertility rates and female labor force participation rates which have been aggregated to find cross-national associations (Brewster, Rindfuss 2000; Pampel 2001; Ahn, Mira 2002; Rindfuss et al. 2003; Adserà 2004; Kögel 2004; Engelhardt et al. 2004; Engelhardt 2009; Kalwij 2010; Thévenon, Solaz 2014). The strength of this approach has been to observe the relation between both rates across many countries and long timespans and to thereby quickly identify population change (Billari 2015).

Thus, macro-level researchers acknowledged a change in the relation between total fertility rates and female labor force participation rates in the mid-1980s. In fact, it turned from a negative, theoretically comprehensible correlation to a distinctly positive one, suggesting that high fertility had evolved to concur with high levels of female labor force participation (e.g., Brewster, Rindfuss 2000; Ahn, Mira 2002; Rindfuss et al. 2003; Engelhardt et al. 2004). To find an explanation for this rather puzzling development, researchers have particularly focused on institutional and policy developments, stressing their relevance in line with life course perspective. In particular, research detected major explanatory impact exerted by the expansion of childcare institutions as well as employment-conditional maternity benefits and labor market adaptions such as the provision of part-time employment (Pampel 2001; Ahn, Mira 2002; Adserà 2004; Engelhardt 2009; Kalwij 2010; Thévenon, Solaz 2014). Similarly, changing gender relations towards more equity and individualism have been found to play a considerable role (Pampel 2001; Laat, Sevilla Sanz 2007; Engelhardt 2009; Luci, Thévenon 2010).

Micro-level research, in contrast, has been observing reconciliation practices alongside individual-level state continuances and transitions. To assess the impact of different social institutional paradigms, singular country case studies have been compared between countries (Köppen 2004; Kenjoh 2005; Grunow 2006; Matysiak, Steinmetz 2008; Berninger 2009; Aisenbrey et al. 2009; Gangl, Ziefle 2009; Grunow et al. 2011; Evertsson, Grunow 2012; Abendroth et al. 2014) or across changing policies and the associated culture (Hofferth 1996; Ziefle 2009; Grunow, Müller 2012; Drasch 2013; Elsas et al. 2013; Ziefle, Gangl 2014).

In line with macro-level findings, micro-level studies could show that policies which facilitate the reconciliation of work and family influence mothers' labor market behavior. In particular, the provision of childcare has proven to be beneficial for mothers' opportunities to participate actively in the labor market despite having children (Berninger 2009). Similarly, the availability and facilitation of part-time employment have been shown to lessen the conflict between employment and motherhood (Kenjoh 2005). Long parental leaves, in contrast, were proven to keep mothers out of employment for the respective time span, particularly those with less education and thus already lower occupational opportunities (Ziefle 2009; Grunow et al. 2011; Drasch 2013; Elsas et al. 2013; Ziefle, Gangl 2014). Long interruptions, however, systematically lowered women's occupational prospects, not only directly as suggested by economic theories but also by means of statistical discrimination in countries where states encouraged a parent's time-out – a measure that is almost exclusively utilized by women (Grunow 2006; Gangl, Ziefle 2009; Grunow et al. 2011; Evertsson, Grunow 2012). Along these lines, countries such as France (Köppen 2004), Sweden (Kenjoh 2005), Denmark (Grunow 2006) and former socialist countries (Matysiak, Steinmetz 2008) have been found to explicitly enable mothers' simultaneous commitment to both family and employment. (West) Germany, in contrast, has often been adduced as an example for a state which has been aiming to allow women to solely concentrate on motherhood – with the effect of forming severe obstacles to mothers' occupational participation and career (Köppen 2004; Grunow 2006; Matysiak, Steinmetz 2008; Aisenbrey et al. 2009; Grunow et al. 2011).

In contrast to the other states, West Germany is a long-standing conservative welfare state which alleges the self-organization of the family[2] (Esping-Andersen 1990) in line with its rather traditional gender culture (Pfau-Effinger 1996), thus leaving the challenges of reconciling family and employment mainly to women (e.g., Grunow et al. 2007). Though there have been shifts to these ascriptions in recent years (Ostner 2006; Bujard 2013), the processes of factual adaption by families have been rather slow (Mühling et al. 2013; Schneider et al. 2015) or not reliably examinable, yet. Within this context, researchers have been studying West German women's employment behavior prior to but in anticipation of a family formation. They found a postponement of childbirth alongside women's educational attainment and their associated occupational opportunities as well as already curbed ambitions prior to motherhood, preparing for the upcoming family responsibilities (Witzel, Kühn 2001; Brückner, Mayer 2005; Timm 2006; Buchholz, Grunow 2006). Nonetheless, women have been found to have their first children predominantly out of an established employment (Brose 2008; Gebel, Giesecke 2009; Arránz Becker et al. 2010; Bauer, Jacob 2010; Passet, Viry 2012). Afterwards, however, they typically interrupt the employment for a few years, particularly if a lesser education does not offer disproportionally promising opportunities on the labor market, and often return to part-time employment or less promising jobs for the sake of flexibility and proximity to home (Lauterbach 1994; Engelbrech 1997; Falk, Schaeper 2001; Kenjoh 2005; Matysiak, Vignoli 2008; Bredtmann et al. 2009; Drasch 2011; Hanel, Riphahn 2011; Grunow, Müller 2012; Frodermann et al. 2013; Gangl, Ziefle 2015). Accordingly, women's second or further births have been found to be facilitated by periods of unpaid caregiving or part-time employment (Bernhard, Kurz 2007; Brose 2008; Arránz Becker et al. 2010). With regard to occupational prospects, however, the lengthy interruptions and part-time returns have been found to destabilize mothers careers, to keep their income developments flat, and to make their job stagnation or downwards mobility more likely (Ziefle 2004; Ejrnæs, Kunze 2004; Aisenbrey et al. 2009; Hirschle 2011; Miller 2011; Evertsson, Grunow 2012).

Researchers' focus on either macro- or micro-level data, however, has invoked a debate on the competencies of the respective analyses to make assertions on the

[2] Though France is formally considered a conservative welfare state, too, its policies differ considerably with regard to women and the family (cf. Köppen 2004).

reconciliation of family and employment (cf. most recently Nieuwenhuis 2015; Kögel 2016). In researching international structures and similarities on the basis of macro-level processes, researchers received critique by micro-level life course perspectivists, particularly on the practices of aggregating countries with very distinct policy histories and path dependencies (Mayer 2005, 2009). Though there have been several attempts to meet the requirements of country heterogeneity, both in terms of theoretical and empirical groupings and controls for unobserved heterogeneity (Ahn, Mira 2002; Rindfuss et al. 2003; Kögel 2004; Engelhardt et al. 2004; Engelhardt 2009), Mayer (2005, 2009) does not see an alternative to resorting to the level of individual countries. He argues that only research on the micro level allows pursuing central aims such as observing series of real cohorts instead of synthetic cross-sectional ones, analyzing long segments of lifetime instead of just fragments of it, and actually tracing the multidimensionality and self-reference of life courses. Macro-level researchers, on the other hand, argue that a marginalization of their perspective turns a blind eye to its particular strength resulting from observing many countries across long timespans with broadly accessible data. By thus investigating macro-level relations, it poses questions, induces further in-depth research, and thus provides a first '*discovery* stage' to further *explanatory* research on the micro-level (Billari 2015; Liefbroer et al. 2015). An attentive iterative process of macro- and micro-level research could therefore help to capture the big picture.

4. The present thesis' contribution

Pursuing this argument of an iterative process, the present thesis offers an approach to integrate the macro level into the micro level-dominated life course perspective. To facilitate this endeavor, I suggest an advancement of macro-level analyses. By merely analyzing *total* fertility and female labor force participation rates, macro-level research has been falling short of its opportunities to capture women's heterogeneous reconciliation practices from a life course perspective. Observing yearly macro rates across all ages of the relevant (fertile or employable) populations harshly underestimates the differing relevance of family and employment across the life course, particularly at times of expanding education and prospering female labor market identities on the one hand (Barro, Lee 2001; Goldin 2006), and retirement ages

that exceed the typically fertile years on the other hand (cf. D'Addio, d'Ercole 2005; Radl 2013). Thus, the present thesis introduces age group-specific rates as proxies for different stages in women's lives. This way, it describes women's practices to reconcile family and employment on the macro level yet in accordance with individual life courses. At the same time, it pays due regard to countries' complex heterogeneity in social institutional paradigms, offering an approach to incorporate, understand, and pinpoint variance and variability.

Beyond that, the thesis also offers advancements to micro-level research on women's practices to reconcile family and employment. Despite the obviously extensive literature, most studies fall short of considering long stretches of lifetime with several interconnected state continuances and transitions as aimed for by life course perspective (Mayer 2009). Instead, they analyze mere fragments such as individual transitions and short episodes, mostly irrespective of their specific embeddedness in the life course. Thus, based on the case of conservative West Germany, I specifically include biographical sequences of women's fertile, caregiving, and employment behavior in order to capture full trajectories with their alternations between the spheres of family and employment as well as the interdependencies of decisions. I relate these sequences to the political characteristics of social institutional paradigms as well as to individual characteristics such as educational attainment. Moreover, I put due focus on long-term interrelations of specific reconciliation practices and occupational prospects, and their variability by educational characteristics. Thereby, I add approaches that capture full trajectories of female life courses alongside the spheres of family and employment (multidimensionality), the influence exerted by individual characteristics on these trajectories as well as their own influence on the long-term career (self-reference), and their interrelatedness with social institutional paradigms (multi-level process).

In this thesis' three studies, I pursue these endeavors. Each of them reflects a study that, in individual consideration, ties in with current research on the respective subtopic. In the following, I summarize their individual contribution as well as their input to understanding women's reconciliation practices from a life course perspective.

Study I: On the Age-Specific Correlation between Fertility and Female Employment: Heterogeneity over Space and Time in OECD Countries

Contrary to theoretical assumptions, macro-level research has observed a positive cross-national association between Total Fertility Rate, an indicator of the family system, and Female Labor Force Participation Rate, an indicator of the employment system, since the mid-1980s in Western societies (Brewster, Rindfuss 2000; Pampel 2001; Ahn, Mira 2002; Rindfuss et al. 2003; Engelhardt et al. 2004). In a first study, I attend to the question whether this positive correlation is subject to a composition effect of age-specific associations, assuming disparities at different stages of women's lives which are caused by differential premises and conditions. Moreover, I aim to offer means to dismantle ambiguities that can result from pooling data of very heterogeneous countries (Kögel 2004; Mayer 2005; Beck, Katz 2007).

To pursue these aims, I use data on 17 OECD countries from the OECD (OECD.Stat Extracts), the World Bank (World Development Indicators), the European Commission (Eurostat), and the Max Planck Institute for Demographic Research (Human Fertility Database). For the period between 1985 and 2010, I compare the association between fertility and lagged female labor force participation rates of different age-groups (20 to 24, 25 to 29, 30 to 34, and 35 to 39 years old) to the total association. By using Random Coefficient Modeling, I go beyond merely paying regard to the multifaceted heterogeneity of countries and pinpoint it numerically.

The analyses yield that the differentiation of age groups does indeed contribute to better understanding the composition of the association between total fertility and female labor force participation rates. Generally, the macro measures highlight the postponement of fertile decisions in the last decades for the sake of women's increased, though delayed, labor market participation. Presumably, this results from the expansion of targeted education and the increasing self-purpose of employment for women, developments that have been regarded incompatible with fertile decisions (Goldin 2006; Goldscheider et al. 2015). More specifically, this reflects in a mostly positive macro-level association during women's early 20s, a time when large shares of women are still occupied with education and thus family and employment coincide in their relatively small relevance for women's life courses. This picture, however, changes

dramatically for women in their late 20s. Then, the association is largely distinctly negative, implying that the reconciliation of family and employment is especially difficult for women during their first years on the labor market. Particularly during the 90s, this had been true for women in their early 30s, too. However, developments during the 2000s imply that the reconciliation has become easier as the macro-level association between fertility and female labor force participation has been ranging around a null or occasionally even positive association. Interestingly, the latter has been true throughout for women in their late 30s. The macro figures suggest that, within this age group, women have been taking their fertile decisions fairly independently from their labor market participation, possibly due to their firm establishment in employment, their financial and psychological autonomy, and their social support.

At the same time, the study's country heterogeneity measures suggests that, particularly during the 2000s, states have been diverging increasingly with regard to the association for women in their early and late 20s. Apparently, the development of policies and social institutions has had increasingly different implications for these age groups across the OECD. The opposite appears to be true for women in their early 30s: while figures suggest that reconciliation of family and employment has improved, countries seem to homogenize in this development. For women in their late 30s who seem to have benefited from a fairly easy reconciliation, however, country-heterogeneity has been high but steady.

Drawing inferences to life course research, these macro figures suggest that, at different ages, there are distinctly different mechanisms at work when it comes to women's reconciliation of family and employment. Possibly, the structural context has different implications for women in their early 20s, their late 20s, and their 30s; the partly crosscurrent long-term developments across countries pose an additional question to the impact of states' structural contexts. To validate and understand these discoveries, however, explanatory micro-level analyses are commendable. Macro-level pointers to these curiosities regarding age-specific reconciliation practices and, therein, different developments of country heterogeneity, however, might initiate new lines of thought in micro-level research.

Accordingly, the thesis proceeds on the micro level, aiming to obtain a deeper understanding of changing policies' as well as educational characteristics' impact on the sequencing of family- and employment-related behaviors. With regard to the latter, the analyses include the particular characteristics of employment such as its scope. Especially the differentiation into full-time and part-time employment is crucial in this respect: increasing macro-level participation rates are often driven by part-time participation (Sørensen 1990) as part-time employment has been found to facilitate, stabilize, and extend women's course of employment despite their family responsibilities (Lauterbach 1994).

In line with previous research's focus on West Germany as a representative of a rather conservative state and traditional culture (Esping-Andersen 1990; Pfau-Effinger 1996), the subsequent micro-level studies address West Germany. Using the adult sample from the National Educational Panel Study (NEPS), the studies focus on the life courses of mothers of two children. By this means, they reduce some of the complexity of women's highly de-standardized life courses by concentrating on the life course that is most typical according to the prevailing two-child norm in Germany (Klein 2006; Kreyenfeld et al. 2010; Dorbritz, Ruckdeschel 2015).

Study II: Retreat, Return or Re-bear? Women's Reconciliation Behavior between First and Second Birth across Family Policies and Educational Groups

Previous literature on women's reconciliation practices has focused on solitary birth decisions and the preceding or succeeding states of activity or single transitions between caregiving and employment. In the second study, I argue that this emphasis on singular components falls short of recognizing the complex interrelatedness of decisions: women's return behavior after childbirth can be influenced by the pending decision for a further child while the decision for a further child can in turn be impacted by experienced and anticipated reconciliation arrangements. Instead, I regard birth decisions and mothers' behavior between births as a unit, inquiring into patterns and how they are influenced by West Germany's social institutional paradigms and women's individual characteristics.

Specifically, I use sequence analysis to identify patterns in women's multifaceted sequences between first and second birth. Starting from mothers' first birth, I analyze the complex interrelatedness of the spacing to having a second child, the continuance in unpaid caregiving and/or the timing and scope of an employment return. By entering the emerging patterns into logit models, I then examine influencing factors of women's behavior. Specifically, I inspect the impact exerted by German family policies between 1962 and 2006, investigating their long-term development in both character and scope, and examine how policies' impact varies by women's level of general and vocational education.

The analyses yield five distinct patterns that West German mothers of two have been pursuing to arrange their periods of unpaid caregiving and different scopes of employment between differently spaced births. One pattern of a long spacing with continuous full-time employment is very small in numbers and also very different from the others, possibly reflecting women that faced irregularities and obstacles during their family formative years. Two patterns emerged to be somewhat related with regard to their facilitation of more or less extensive time for childcare during a birth spacing of several years, namely a pattern that is dominated by exclusive unpaid caregiving, and a pattern that includes mothers' return to part-time employment between births. Two shorter spacing patterns, despite being very different in their employment behaviors, emerged to be fairly closely related with regard to labor market proximity: one pattern that leads women quickly back into full-time employment, and one pattern that blocks the two births very tightly, presumably facilitating a quick and final labor market return after only one period of giving unpaid care to both children.

Associating these patterns with the developments of family policies in West Germany between 1962 and 2006 implies that policies contributed considerably to the dissemination of a lengthy birth spacing spent in unpaid caregiving. The respective pattern gained prevalence mainly upon the introduction of a 36-month parental leave regulation in 1992, emphasizing the impact of the structural context on life course trajectories. However, a comparison of women with different educational backgrounds and thus different occupational opportunities shows that women with tertiary education deviate in their adaption to the policy stimulus: despite disincentives to return to full-time employment, highly educated women maintain their high levels of full-time

returns. As a result, educational groups display signs of increasing polarization upon the policy intervention. This effect is somewhat balanced upon the facilitation of part-time employment in 2001 when more women across all educational groups seize the opportunity to choose a middle way between a spacing dominated by unpaid caregiving or by full-time employment.

By observing the sequential patterns instead of mere transitions and continuances in a specific status, the study adds to research on female life courses (a) by revealing the interconnectedness of family and employment decisions, and (b) by unraveling the timing of transitions and their underlying meaning: staying in unpaid caregiving between births, for example, could either display full and extensive commitment to childcare or facilitate a definite return to employment after a tightened period of family responsibilities. Though structurally similar, the patterns can yield very different long-term implications (cf. study III).

Furthermore, by relating these patterns to macro-structural characteristics, the study helps to understand the impact of institutional contexts and social policies, and how they shape life course dynamics (Mayer 2009). The differentiation by education helps to understand the complex nature of the linking mechanisms between the macro structures and life courses on the micro level (Mayer 2004). Thereby, the study comprehensively arches the life course perspective: it accentuates mothers' life course multidimensionality in terms of family and employment, its conditioning on multiple levels such as family policies and their changing specifics, as well as its self-reference on prior resources and premises shaped by the educational attainment.

Study III: 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

In a third study, I take up the subject of the complex sequencing of fertile and employment decisions and proceed to inquiring into their long-term impact on employment. I address the specific embeddedness of first and second birth decisions and women's intermediate employment behavior into their occupational career, and how this affects their career prospects in the long run. Linking mother's individual characteristics with this interrelation, I investigate possible differential associations by educational level.

For different educational groups (no or lower, middle, and upper secondary education, as well as tertiary education), I describe the varying levels of occupational prestige at labor market entry, the prestige developments before the first birth and across the career until age 45. Using linear regression, I examine the career-spanning prestige development as a function of differently educated women's behavior regarding birth timing, birth spacing and intermediate employment in both timing and scope.

By generally entering motherhood, the analyses yield that particularly women with low or medium education risk destabilization and a severe impairment of their career. Better educated women, in contrast, can often draw security from their pre-motherhood career, often facilitated by their specific, possibly consciously planned timing of becoming mothers. Most pronouncedly, however, the findings suggest that the spacing of births and the intermediate employment behavior influences the long-term career in a complex manner. For example, the different long-term implications of giving unpaid care during a short spacing in contrast to a longer one become salient for women with at least higher secondary education: while a short spacing facilitates a positive long-term career, a long spacing proves to have a detrimental effect on it. This suggests a new approach to understanding the underlying meaning of better educated women's shorter average birth spacing (Kreyenfeld 2002): possibly, they choose spacing their births tightly in anticipation of a positive career development in the long run, although their mere continuance in unpaid caregiving after the first birth would not intuitively suggest occupational commitment. Alongside a contrary line of reasoning, part-time employment, particularly if adopted shortly after the birth of the first child, proves to be an immense obstacle to a long-term occupational success, expressly for women with lower or middle secondary education. While part-time employment does formally allow the concurrent realization of mothers' family and occupational responsibilities, it apparently means adopting a 'mommy track' from which it is very difficult or barely intended to (re-)enter an occupationally successful path.

With regard to a life course perspective on female trajectories, the study emphasizes the interrelatedness of specific decisions and outcomes across the life course: women's long-term career prospects are conditioned by the timing and spacing of birth decisions, and the intermediate employment behavior, albeit differently across educational levels. Thereby, it supports arguments on, (a), the complex system of self-

referential trajectories: women's eventual occupational prestige is hinted at by the differential resources and premises acquired by education, yet facilitated or impaired by birth decisions and their specific embedding in the courses of life and career, and furthermore affected by the associated decisions against or in favor of employment at a variable timing and scope. Moreover, (b), the study emphasizes the meaning of decisions in their multidimensionality: it is not decisions within either the sphere of the family or the sphere of employment that influence long-term career outcomes, but a multifaceted interrelation of both.

5. Summary

The thesis contributes to understanding women's practices to reconcile family and employment from a life course perspective. As life course theory argues, individuals' sociation, i.e., their placement in society, happens alongside their embeddedness in social institutions, predominantly employment. For women, a second pivotal social institution is the family which competes with employment in their demands for women's commitment. To comprehend women's practices to address this conflict, life course perspective suggests understanding them as self-referential, multidimensional multi-level processes. In the literature, these premises have often been met only fragmentarily. The present thesis advances previous approaches by applying means to profoundly analyze mothers' complex sequencing of family- and employment-related behavior during family formative years and these behaviors' long-term career effects. Furthermore, it endorses integrating the discovering strengths of the macro level to the life course perspective despite its domination by the explanatory micro level. It pursues this argument by introducing a novel, stage of life-oriented approach to discovering reconciliation practices in cross-national perspective. The thesis links these aspects to social institutional paradigms, i.e., heterogeneous states or changing policies, as well as to women's personal characteristics with regard to education.

Alongside three stand-alone studies, the thesis yields new understanding as well as new implications for further research. Specifically, basing on macro analyses, the thesis suggests that women's means to reconcile family and employment vary greatly depending on the stage of life. During women's late 20s, after the stage of education and during women's establishment on the labor market, reconciliation appears to be

most difficult. Over time, however, these obstacles seem to fade, leaving women in their late 30s with almost no association between fertility and labor force participation on the macro level. These age variations are subject to differential developments across countries, suggesting that states differ not only in the impact exerted on their women at different ages but also in these impacts over time. These novel impulses require micro-level examination for explanation.

For the particular case of mothers of two children in West Germany, two micro-level studies yield, (a), that transitions between the spheres of family and employment and the continuances within them are highly interrelated complexes which can lead to biased conclusions if examined separately. These interrelated complexes, (b), differ greatly in their effects on the long-term career. Specifically, results suggest that mothers can pursue different patterns regarding family and employment decisions. Particularly short birth spacings in full-time employment or other states, even unpaid caregiving, appear to reflect similar work orientation. Returns to part-time employment between births and long birth spacings in unpaid caregiving, in contrast, seem to resemble one another in family orientation – though part-time employment apparently pursues a track that is farthest off a prestige-oriented career. Linking these interrelations, (c), to women's educational characteristics suggests that highly educated women continuously tend to choose very short spacings, particularly in full-time employment, and also benefit by far the most from them in the long run. Their preference remains solid across, (d), family policies, even if they set strong incentives for rather long birth spacings in unpaid caregiving. These incentives are seized most by women with lower education, driving a wedge between educational groups.

Overall, the thesis offers new insights on women's practices to reconcile family and employment as well as novel approaches in both macro- and micro-level research in accordance with the life course perspective. For future research, it would be worthwhile to apply these approaches to further studies, e.g., which factors impact differential means of reconciliation at different stages of women's lives, what reconciliation practices women apply beyond their birth spacing and to what effect, and how further social-demographic and social institutional determinants impact women's reconciliation practices. The present thesis offers a valuable starting point to these new directions of thought.

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Study I

On the Age-Specific Correlation between Fertility and Female Employment: Heterogeneity over Space and Time in OECD Countries

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Research Article

On the age-specific correlation between fertility and female employment: Heterogeneity over space and time in OECD countries

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Research Article

On the age-specific correlation between fertility and female employment: Heterogeneity over space and time in OECD countries

Uta Brehm[1]

Henriette Engelhardt[2]

Abstract

BACKGROUND
Though there has been profound research on the curious change in correlation between total fertility rate (TFR) and female labor force participation (FLP) in the mid-1980s, aspects of the compositional character of age-specific effects and the nature of countries' heterogeneity have been neglected.

OBJECTIVE
The present paper aims to contribute to filling this gap by analyzing annual total fertility rates and their equivalents for four age groups between 20 and 39 years as well as the respective lagged FLP from 17 OECD countries between 1985 and 2010.

METHODS
Random Intercept and Random Coefficient Models are applied, allowing us to assess both effects and country heterogeneity in slopes and intercepts.

RESULTS
The analyses reveal that the development of the correlation between FLP and TFR after 1985 is comprised of very different relations between age-specific fertility and labor participation. The youngest group's situation is determined by a decrease in both fertility and FLP, while countries' effects differ increasingly. The oldest women's fertility decisions seem to be detached from labor market influences, though country variation is high. Women in their late 20s and early 30s, in contrast, appear to be most affected by the incompatibility of childbearing and gainful employment. Though these effects seem to have overcome their low points during the mid-1990s, only women in their early 30s show country-convergence.

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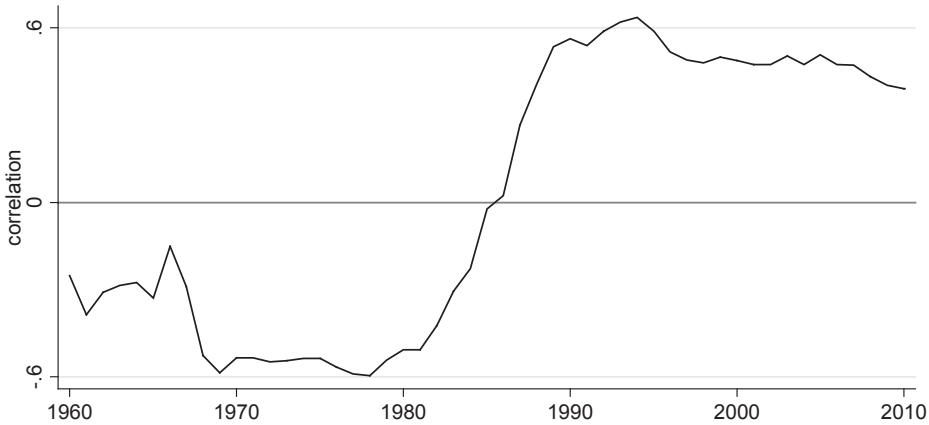
CONCLUSION
The results highlight the fact that total and age-specific fertility behavior, FLP-effects and country variances are distinct concepts that add considerably to the broad understanding of the correlation between fertility and FLP.

1. Introduction

In studying the correlation between fertility and female labor force participation, a common hypothesis states that women with small children face, to some extent, an incompatibility with engaging in gainful employment. As a result, women are supposed to choose between the two alternatives, which is expected to result in a negative correlation between the total fertility rate (TFR) and female labor force participation (FLP), empirically. Up to the mid-1980s, this assumption is supported by data for OECD member states. Since then, research has registered a positive correlation as is shown in Figure 1.

Figure 1: Correlations between total fertility rate and female labor force participation between 1960 and 2010



Countries: Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, Norway, Portugal, Spain, Sweden, United Kingdom, United States
Data: see Appendix.

While previous research has been focusing on underlying factors, such as social and labor market policies as well as changes in values and attitudes (e.g., Pampel 2001; Ahn and Mira 2002; Adserà 2004; Laat and Sevilla Sanz 2005; Engelhardt 2009; Luci and Thévenon 2010) some crucial aspects remain almost unconsidered. First, one can assume compositional effects in the total rates that are specifically due to *age-specific differences*. More precisely, the interplay of fertility and employment in different age groups has been influenced by various factors, all of which have undergone long-term changes themselves. These factors include, for example, the increasing enrollment in higher education, women's growing orientation towards both labor market and individual careers, as well as changing gender roles and family norms. These well-researched developments provide a theoretical basis for this study's assumption of empirically very different relationships between age-specific fertility and the respective FLPs.

Second, countries can be expected to vary clearly in their association between fertility and employment, as they follow very different policies, guiding motives and mentalities. These lead to highly variant country situations, both in cross-section as well as concerning long-term developments. Hence, very complex *country heterogeneity* may conceal the true nature of the association between FLP and TFR – an issue that, however, has so far been acknowledged rather insufficiently in previous research (e.g., Beck and Katz 2007).

The aim of this paper is to address both of the described aspects. Specifically, it scrutinizes if and how the puzzling relationship between TFR and FLP is attributable to a composition of varying age-specific associations between fertility rates and FLP. Furthermore, the paper contemplates on the complex nature of underlying country heterogeneity. To do so, it goes beyond merely controlling for varying country-specific intercepts and slopes while estimating the association between total and age-specific fertility and the respective FLPs. In fact, it aims to additionally pinpoint the specific scope of country heterogeneity and its long-term development.

In order to pursue these objectives, we proceed as follows: in section 2, we discuss the relevance of age-specificity, country heterogeneity and the interaction of both from a theoretical point of view. Subsequently, in section 3 we introduce the relevant sample of 17 OECD countries and our method of choice to achieve our complex purposes: Random Coefficient Modeling. Descriptive and multivariate results are presented in section 4. Their substance and its implications are discussed in section 5.

2. Analytical framework

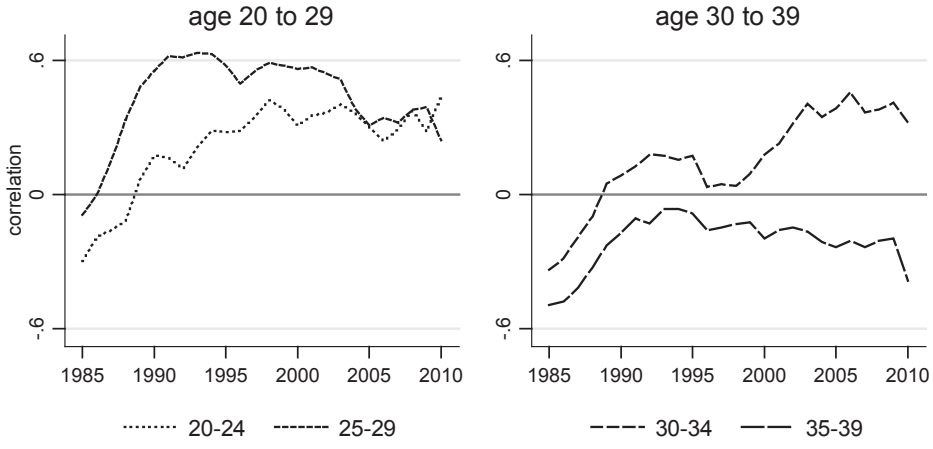
From a theoretical point of view, the difficulties in combining gainful employment and childbearing urge women to choose between these alternatives. Consequently, this decision should result in a negative correlation between fertility and female labor participation (Becker 1960, 1991; Mincer 1963; Willis 1973; Butz and Ward 1979). Empirical evidence, however, suggests a change in OECD countries' correlation between TFR and FLP from negative to positive values in the mid-1980s (e.g., Esping-Andersen 1999; Brewster and Rindfuss 2000; Pampel 2001; Ahn and Mira 2002; Rindfuss, Guzzo, and Morgan 2003; Engelhardt, Kögel, and Prskawetz 2004). Recent studies concentrate on finding reasons for this change in correlation, mainly based on pooled time series from OECD countries. Particularly, elements of family policy are considered to be relevant. Several authors attribute capital importance to childcare institutions (Ahn and Mira 2002; Engelhardt 2009; Luci and Thévenon 2010) and, to a lesser degree, to maternity benefits and part-time employment (Adserà 2004; Engelhardt 2009). Besides, the changes of attitudes and gender roles towards individualism and equality are considered to be similarly relevant (de Laat and Sevilla Sanz 2007; Pampel 2001; Castles 2003; Engelhardt 2009; Luci and Thévenon 2010; Luci 2011). Beyond that, however, research has left a gap in the study of the causal association between fertility and FLP. While it has focused on finding reasons for the overall relation, crucial aspects, such as the correlation's composition of age-specific associations, as well as the complex nature of underlying country heterogeneity have often only been acknowledged superficially or neglected altogether.

2.1 Age-specificity

Pursuing Adserà's (2004) family-economic approach, different age groups are connected to different periods of education, childcare and participating in and economically benefiting from the labor market – three periods of life that are fairly incompatible with one another (also see Brewster and Rindfuss 2000; Engelhardt, Kögel, and Prskawetz 2004). The period of gainful employment goes along with a certain prospect of income, as well as a risk of unemployment. Prospects of income may increase and those of unemployment decrease as education, recent experience, and attachment to the market grow. As the major responsibility for childcare is still held by women, the period of childcare is accompanied by less time for and less commitment to both education and the labor market. The period of education, in contrast, aims for a maximum accumulation of human capital, which is later on transferable to the period of gainful employment.

The described periods are connected to a certain age – a relation, however, that has changed clearly over the last decades. As a result of an interplay between the educational expansion and more accurate and extended predictions regarding future working lives (Goldin 2006), women prolonged their periods of education, viz. by more than five years across the OECD between 1970 and 2009, and almost two and a half years since 1990 (Gakidou et al. 2010). Subsequent to graduation, women enter the labor market increasingly with the intention of pursuing occupational success (Goldin 2006). Both aspects contribute to postponing the period of childcare: over the last decades, family formation has been delayed by three to four years (e.g., Sobotka 2008). Drawing upon these considerations, we hypothesize a decrease of both fertility rates and FLP in younger age groups up to the mid-20s, and hence a positive association. In the mid- to late 20s, in contrast, we assume a negative association, since fertility makes way for increasing FLP. Throughout the 30s, we expect increasing figures for both rates, reflecting in their competition and hence in a negative association. Altogether, we assume the rise into a positive correlation between TFR and FLP to be due to a compositional effect of greatly varying correlations at different ages. Figure 2, illustrating the crude correlation between age-specific fertility rates and FLP, conveys a first impression of the variety of associations. Curiously, the correlations for the age groups 25 to 29 and 30 to 34 do not meet our hypotheses of negative associations. While puzzling at first, this might be an indication of the great relevance of underlying country heterogeneity.

Figure 2: Age-specific correlations between fertility and female labor force participation between 1985 and 2010



Data: see appendix

2.2 Heterogeneity in space and time

Some authors direct an additional focus on country- and time-specific heterogeneity, arguing that due to a disregard of these aspects, the observed change in correlation is perhaps questionable altogether (Kögel 2004; Engelhardt, Kögel, and Prskawetz 2004). There have been different approaches to coping with countries' heterogeneity: Ahn and Mira (2002), for example, divide countries into three groups according to their FLP, unveiling their differences in the association with the respective TFR: while countries with low FLP also proceeded from formerly very high (2.75 in 1970) to very low levels of fertility (1.5 in 1995), high-participation countries' fertility rates only experienced a comparatively slight drop (from 2.2 in 1970 to 1.75 in 1977) and slightly increased again during the late-1980s. These contradicting trends may have contributed to the observed change in correlation. In a slightly different line of thought, Rindfuss, Guzzo, and Morgan (2004) control for each country's sensitivity of fertility to changes in FLP – this however apparently without allowing for variances across time – and derive institutionally different groups of countries: while the TFR in Scandinavia and the former British colonies is fairly insensitive to changes in the FLP, the opposite applies to Southern European countries. The authors argue that the changing cross-sectional correlation of TFR and FLP can also be explained by these differences. Going one step further, Kögel (2004) controls for unmeasured country-specific factors as well as for slope-heterogeneity across European regions (i.e. Scandinavian, Mediterranean and other countries) in fixed and random effects estimations. While other researchers uphold the positive cross-country correlation after 1985, he argues these findings have been due to the neglect of these aspects of country heterogeneity. In his empirical analysis, Kögel finds evidence for a persistently negative, though only marginally significant, correlation between TFR and FLP. He detects this to be particularly true for the Mediterranean countries while effects in other regional groups are insignificant. Implementing the idea of unobserved variation differently, Engelhardt (2009) chooses to control for unobserved country-specific as well as time-specific heterogeneity by incorporating respective fixed effects into one model. Simultaneously, her model attempts to accommodate restrictions of temporally and spatially correlated errors in pooled time series. Following this method, she finds support for the positive bivariate correlation between FLP and TFR after 1985.

While these deliberations already convey an overall impression of the manifold nature of country heterogeneity, the objective of our paper adds another level of complexity to the issue. Specifically, the examination of age-specific associations between fertility and FLP also requires consideration of heterogeneous country effects beneath these effects of age-specificity.

2.3 Heterogeneous age-specificity

Due to different cultural, political and economic structures, both total and age-specific developments do not only differ across time, but also between countries. Different rates and intensities of development reflect this suggestion: the expansion of (higher) education varies clearly across countries (e.g., Schofer and Meyer 2005), the impact on females' school attendance ranging between 2.7 (USA) and 7.5 (Netherlands) additional years in 2009 compared to 1970 (Gakidou et al. 2010). The FLP also grew at different speeds and from different starting points in various countries: Sweden, for example, featured a rate around 55% in the early 1960s, with an increase of about 25 points in the 1970s and early 1980s. Since then, the rate holds steady at almost 80%. Spain's FLP, in contrast, was still at about 35% in the late 1970s, with steadily growing values in the last decades, up to about 65% in 2010 (Appendix 1). Concerning family formation, in 1983 Finland was one of the first countries to show a postponement of two years compared to the formerly stable mean age at first birth – one of the last OECD countries was Portugal in 1997 (Sobotka 2008). Still, the median ages at first birth differ clearly: van Bavel and Nitsche (2013) cite differences of up to four years across Europe's Western countries alone (Portugal: 26 years – Netherlands, Spain, Switzerland: 30 years).

The differing compatibility of the described age-specific periods of education, gainful employment, and childcare across countries results in varying patterns of subsequence or concurrence of periods, and therefore in different age-specific associations between fertility and FLP. To explain the differing compatibility, consideration of conditions at the societal level is requisite. To this end, Laat and Sevilla Sanz (2005) put forward a model on norms and attitudes regarding gender equality, concluding that social externality effects and their interaction with household attitudes lead to the change in the cross-country correlation between TFR and FLP: while traditional labor division is conductive to a higher number of children on the micro-level, on the macro-level more egalitarian values lead to an on average higher male share of home production which allows fertility, a function of the sum of time devoted to household services, to increase. The related attitudes, social norms, and culture, however, differ substantially across countries, constituting long-term differences that have only been uncovered by rather short-term increases of the FLP.

In line with this thought, McDonald (2000) argues that low fertility may be due to conflicting orientations in social institutions: while individual-oriented institutions promote gender equality, the rearrangement of gender roles happens much more slowly in family-oriented institutions. The twentieth century's individual-oriented developments (higher education, women's participation in the labor market etc.) conflicted with persistently low gender equality in family-oriented institutions,

prompting women to reduce and postpone births. As soon as family-oriented institutions catch up on gender equality, fertility can be expected to recover.

Interdependently, a complex of political and economic institutions determines opportunities and costs of childbearing and -rearing relative to gainful employment. Particularly relevant in this respect are child daycare and/or women's part-time employment. The occurrence of such institutions can be assumed to depend on a country's overall regime: while some liberal countries rely almost solely on the market's ability to facilitate the compatibility of family and career, others consider the state to be responsible for the provision of childcare. Still others have traditionally relied on subsidiarity, and therefore on families to take care of their children (Esping-Andersen 1990), resulting in a fairly consecutive order of employment and childcare. A clustering along these ascribed and observed lines, however, is only partly expedient, as variation is high even within these groups[3].

Instead, this paper aims to pay due regard to countries' factual variation without drawing on grouping assumptions. Specifically, we orient our research towards Kögel's approach, which estimated fixed and random effects in order to control for unmeasured country-specific factors and slope-heterogeneity, respectively (cf. page 697). However, we aim at going one step further by applying a method that integrates both aspects, i.e. heterogeneous intercepts as well as slopes, into one comprehensive model. This allows us to pursue our first objective of estimating the correlation between total and age-specific fertility and FLP, while simultaneously controlling for and precisely predicting various forms of country heterogeneity, as suggested by our second objective.

In order to satisfy our research purposes, we apply Random Coefficient Modeling as suggested by Beck and Katz (2007) to a sample of 17 OECD countries, both of which are elaborated upon in the following section.

3. Data and methods

3.1 Data

For the empirical analysis, we assembled annual time series of both total and age-specific fertility rates and female labor force participation rates for OECD member states. Data was drawn from data banks provided by the OECD (OECD.Stat Extracts), World Bank (World Development Indicators), European Commission (Eurostat), and

[3] Examples of within-regime variation: France contrasts Germany with regard to family, labor, taxation and pension policies for working mothers (Luci 2011); Portugal contrasts Southern Europe with regard to FLP (Appendix 1, cf. de Sousa 2005); Ireland contrasts other free-market states with regard to both fertility and FLP (Appendix 1)

the Max Planck Institute for Demographic Research (Human Fertility Database) (see Appendix). As studies do not differ with respect to the negative correlations prior to the mid-1980s, we focus on the much-disputed time after 1985. This procedure ties in with Kögel's (2004) strategy of considering the time periods before and after 1985 separately. Also, as the collection of age-specific data is a rather new concept, this premise enables us to include data from as much as 17 OECD member states widely scattered over Europe (Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Norway, Portugal, Spain, Sweden, United Kingdom), North America (Canada, USA) and Asia (Japan).

Providing an overview, Appendix 1 displays each country's total and age-specific fertility and FLP behavior from 1960 until 2010. We assume women's main childbearing age to fall between 20 and 39 years, which is why we focus on age groups of between 20 and 24, 25 and 29, 30 and 34 as well as 35 and 39 years. While the TFR is calculated by summing the single-year age-specific figures, the fertility of aggregated age groups is provided mainly in the form of averages from the corresponding age-specific rates. As a result, the values' ranges differ quite substantially, with TFR-values between approximately 1.1 and 4.3, and age group-specific rates between 0.01 and 0.26 (below serving as proxies for age-specific fertility rates). While this does not affect the relative impression of the age-group fertility description in Appendix 1, readers must be aware that in the following multivariate analyses, these small rates result in even smaller slope coefficients which are, however, not negligible.

3.2 Methods

To pay regard to the causal order of fertility decisions, the bivariate causal analyses are carried out with lagged variables for FLP. This is based on the assumption that individual-level decisions for or against childbearing are made approximately one year prior to measurable events such as births and, consequently, to macro-level fertility. At the time of decision-making, current economic issues, like the FLP, are taken into account (e.g., Örsal and Goldstein 2010). The relevance of this theoretical premise mirrors in the finding that, in a minimum of two lags, the unadjusted total as well as age-specific FLPs Granger-cause the respective fertility rates. This, however, does not apply in the opposite direction. This finding from time series between 1985 and 2010 contradicts Michael's (1985) results using data from 1950 to 1980, who reports the age-specific fertility rates to Granger-cause (married women's total) FLP.

After examining the development of fertility rates and FLP descriptively, focus is laid on multivariate analyses. Specifically, we follow Beck and Katz' (2007) advice and make use of Random Coefficient Modeling (RCM) for time-series cross-section data.

This method enables us to model the variation of the effect of total and age-specific female labor force participation on the respective fertility rates while, at the same time, allowing for heterogeneous country intercepts and slopes. In their Monte Carlo experiments, Beck and Katz highlight the superiority of the maximum likelihood RCM estimator to those with pooled data, even if the latter allow for fixed country effects and hence intercept heterogeneity.

To present the model's general idea, we follow Beck and Katz' depiction and assume standard time-series cross-section data with x_{it} being the vector of K independent variables for unit i and period t. To work out the issue of parameter heterogeneity, we assume serially independent and normally distributed errors ε_{it} with zero mean and constant variance. By allowing β_i to take on a variety of patterns, we get to the equation

$$y_{it} = x_{it}\beta_i + \varepsilon_{it} \qquad i = 1, \dots, N; t = 1, \dots, T. \tag{1}$$

However, the RCM assumes the β_i to be related and hence adds the assumption of

$$\beta_i = \beta + u_i \tag{2}$$

with

$$u \sim N(0, \Gamma). \tag{3}$$

In this, Γ reflects a matrix of variance and covariance terms and hence the heterogeneity of the unit parameters. As a result, the full model with its complex error term (in braces) reads

$$y_{it} = x_{it}\beta + \{x_{it}u_i + \varepsilon_{it}\}. \tag{4}$$

Translating this general model to our specific case, we estimate the effect of the lagged total and age-specific female labor force participation rates FLP_{it-1} on the respective fertility rates FR_{it} across countries i and over time t. Simultaneously, the model allows for varying intercepts, expressed by unspecified country effects u_{0i}, and time residuals ε_{it}. Annual changes in mean fertility are included by adding fixed time effects v_t. A random continuous time effect Y_{it} controls for varying fertility slopes across countries. To estimate how FLP contributes to the explanation of countries' heterogeneity, we append the FLP_{it-1} as a fixed effect. Country-specific effects of FLP are additionally tested by inserting a random coefficient FLP_{it-1} (not shown in the equation). A cross-level interaction of FLP and year $FLP_{it-1} \times v_t$ then contributes to the assessment of if and how the influence of FLP on fertility differs by year across

countries. Resulting in an overall equation that sets the foundation for a gradual empirical compilation, the model reads as follows:

$$FR_{it} = \beta_0 + v_t + \beta_1 FLP_{it-1} + \beta_2 FLP_{it-1} \times v_t + u_{0i} + u_{1i} Y_{it} + \varepsilon_{it}. \quad (5)$$

In order to deal with temporally and spatially correlated errors, the residuals' nuisance is modeled as a first-order autoregression or AR(1) process (details in Engelhardt and Prskawetz 2005)

$$\varepsilon_{it} = \rho \varepsilon_{i,t-1} + \gamma_{it}. \quad (6)$$

Though tests for both contemporaneous correlations and residual heteroskedasticity have also been positive, we disregard these error structures in our models, as they do not alter the model's explanatory power. Specifically, contemporaneously correlating countries appears to be rather random,[4] while estimations with due regard for residual heteroskedasticity do not modify results substantially.

4. Results

4.1 Descriptive results

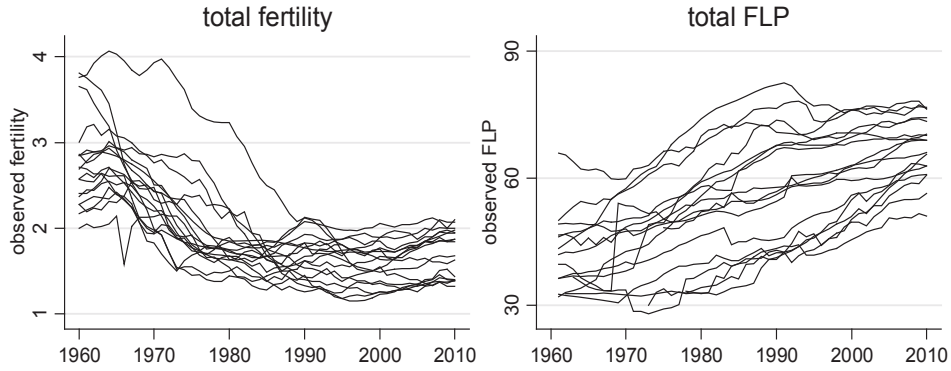
The graphs in Figures 3 to 5 emphasize the relevance of considering both age-specificity and time as well as country heterogeneity by giving an overall impression of countries' relational developments of fertility and FLP[5]. Regarding the respective total rates in Figure 3, the TFR ranged at a high level between 2.0 and 3.8 in 1960. This variation went down to 1.3 and 2.5 respectively until 1985, and has only slightly changed since (2010: 1.3 to 2.1). This suggests that most of the changes in fertility took place before 1985. Regarding the total FLP, in contrast, countries vary considerably in their pace of development: long established high-participation countries had already increased their rates by the late 1980s, moving at fairly constant high paces after that. In contrast, an increase of FLP in traditionally low-participation countries does not show until the mid-1980s, with signs of a further increase beyond the observation period. This is reflected in comparatively little country variation during both the 1960s and

[4] For instance, Belgium's errors correlate strongly with Japan's – as do Luxembourg's with Ireland's. Rather obvious contemporaneous correlations, in contrast, like those between Norway and Sweden or Italy and any of the other Mediterranean countries, do not prove to be nearly as strong, if existent at all.
[5] Appendix 1 supplements this picture by presenting countries' individual developments.

2000s, though at considerably different levels, and a very wide variation during the decades in between.

In age-specific terms, however, the picture looks very different, as Figures 4 and 5 suggest for the decades after 1985. The youngest age group does not only show a strong decrease in fertility but also a slighter one in FLP. In the next oldest group, fertility decreases similarly while the countries' FLPs converge to a fairly high level. In the two oldest age groups, in contrast, both levels of fertility and FLP show, on average, increases. The development of the latter, however, is driven by a considerable amount of convergence, with many low-participation countries almost catching up on a level others have been holding for the entire observation period.

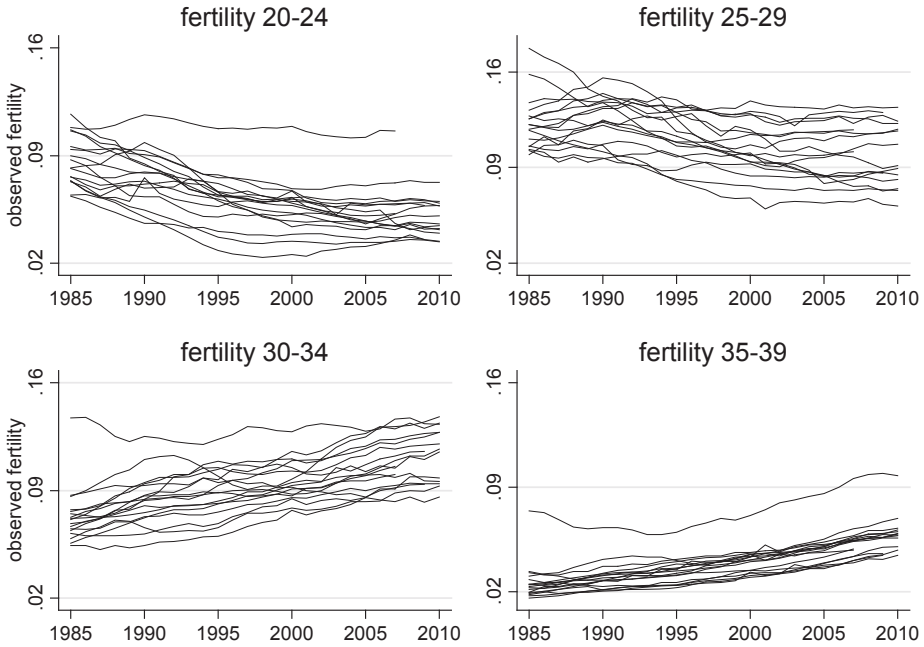
Figure 3: The development of total fertility rate and total female labor force participation rate between 1960 and 2010



Data: see appendix

Overall, Figure 4 shows that fertility in the late 1980s ranges highest for the age group between 25 and 29 years and by far lowest for women between 35 and 39 – with Ireland as a very pronounced outlier. In 2010, in contrast, women between 30 and 34 exhibit the highest average fertility rates, closely followed by women between 25 and 29 – though rates are considerably lower than in the high-fertility group of the 1980s. At the same time, fertility rates in the youngest and the oldest age group have converged from initially different levels in the course of time. In sum, countries' fertility rates appear to have harmonized across the observed age groups: while they differ greatly in 1985 with figures between 0.02 (age group 35 to 39 years) and 0.18 (25 to 29), their rates vary less and at lower levels in 2010, ranging between 0.03 (20 to 24) and 0.14 (30 to 34).

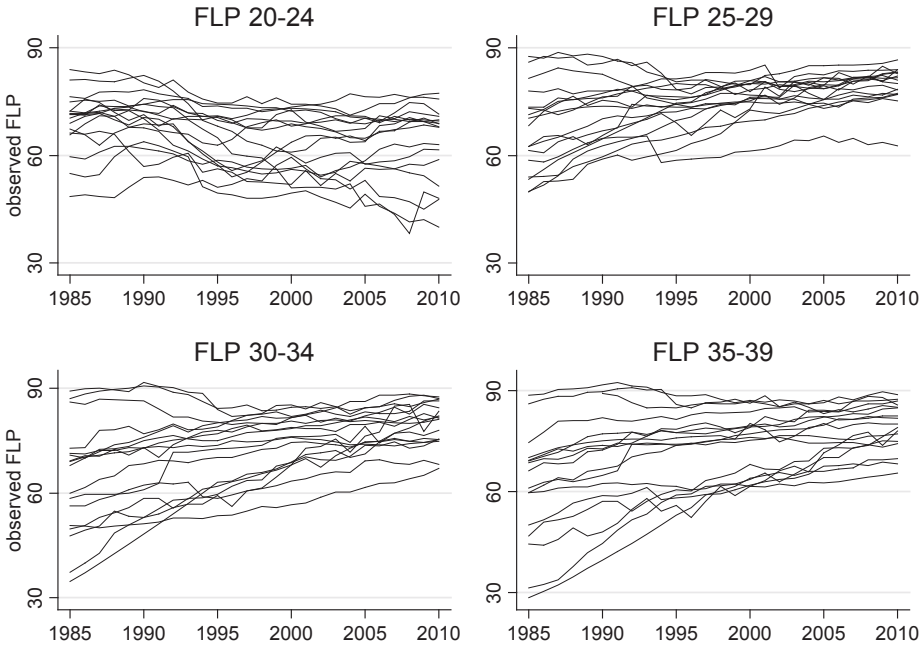
Figure 4: The development of age-specific fertility rates between 1985 and 2010



Data: see appendix

Regarding the FLP, Figure 5 demonstrates that countries vary considerably across all age groups in 1985, with wider variation for older women (a range from approximately 30% to 90% in age groups 30 to 34 and 35 to 39). Apart from the youngest women's FLP, which continuously and even increasingly differs across countries at a decreasing average level (1985: range from 49% to 83%; 2010: 39% to 75%), this picture changes into one of remarkable convergence at very high levels across both countries and age groups until 2010 (range from 61% [25 to 29] to 90% [30 to 34, 35 to 39]). However, the development is composed of different paces of FLP-increase at different ages: the penetration of the labor market at higher rates even for low-participation countries started earlier – seemingly even well before the observation period – for younger age groups.

Figure 5: The development of age-specific female labor force participation rates between 1985 and 2010



Data: see appendix

Similar to the emerging comparison of the bivariate correlations in Figures 1 and 2, these observations strongly point to a compositional effect of TFR and total FLP from different age group-specific conditions. Hence they suggest that it is shortsighted to refer only to total rates when studying the correlation of fertility and FLP. In addition to that, the figures convey an idea of country variability over the course of time, and imply that it is indeed worthwhile to minutely consider time-specific country heterogeneity.

4.2 Multivariate results

To extract the cross-country association between FLP and fertility, multivariate methods are applied. In order to find a model that does justice to each of the observed groups' particular data basis, we make step-by-step estimations, gradually adding effect

terms to the model. While considering countries' varying intercepts in fertility proves to be crucial for all observed groups, slopes show significant country variation for the total rate and the three youngest groups (though only marginally significant for women in their early 20s). Hence, further analysis has to account for country heterogeneity in both intercepts and slopes over the course of time. It is of course possible that further year-level explanatory variables lessen the extent to which countries vary. In any case, though, this has to be analyzed thoroughly. For women in their late 30s, in contrast, slopes do not differ between countries.

With regard to the effect of FLP on fertility rates, the relation proves to be rather complex. Surprisingly, the main effect does not help to explain either the total fertility rate or the fertility of women in their early 20s. In fact, in these cases the FLP does neither offer a significant fixed coefficient nor does it help to explain some of the countries' heterogeneity. In the age groups between 25 and 39 years, in contrast, the FLP offers a significant though small main effect according to which a 10% increase in FLP accounts for a fertility decrease of between 1.8% (30 to 34 years) and 3.3% (35 to 39 years) and helps to explain between-country variance by up to 34.7% (25 to 29 years).

Despite these diverse main effects of FLP, the cross-level-interaction term of FLP and year[6] contributes significantly to the model's quality. This implies that the influence of FLP on fertility differs significantly by year. Testing for its country-specific effects, in contrast, does not improve the comprehension significantly for any of the groups. Evidently, the effect of FLP on fertility does not vary between countries. The final models of both the total and age-specific estimations are summarized in Appendix 2.

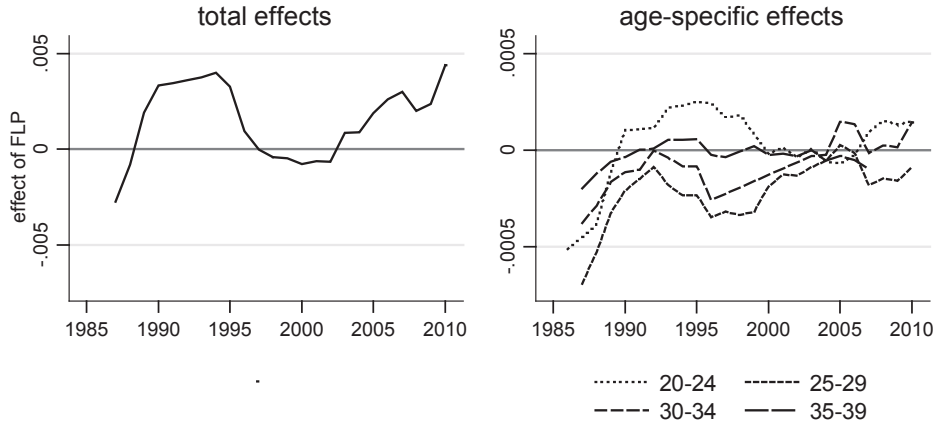
Based on these compiled models, Figure 6 illustrates within-country effects of FLP more specifically by describing its yearly effect on fertility in both total and age-specific terms. As a result of considering country heterogeneity in intercepts and slopes, the graphs differ clearly from the ones drawn on the basis of crude correlations, as seen in Figures 1 and 2. Nonetheless, it becomes apparent that the overall FLP's effect on TFR since 1988 indeed ranges in a slightly positive area, yet with a distinct decrease to a null relationship around 2000. Age-specifically, however, the picture is much more diverse, and reveals compositional effects. While up to about 1990, the effect of FLP on fertility seems to develop quite steadily towards more positive figures for all age groups and the total rates respectively, the effects start to diverge in about 1992. Young women between 20 and 24 show a positive age-specific correlation between FLP and fertility in the 1990s. Yet women in their late 20s and early 30s already exhibit a repeated decline of correlation in the mid-1990s. For the rest of the observation period, this holds true

[6] For the age group between 34 and 39 years, for which previous tests proved no between-country variation in slopes, the interaction term is applied only on level 2.

for women in their late 20s, although the situation improves temporarily during the early 2000s. Those in their early 30s, in contrast, even show a slight though not solid positive correlation in the mid- and late-2000s. The oldest women's fertility, instead, proves to be fairly little influenced by FLP right from the start of the observation period, but even more so from the early 90s onwards.

Drawing inferences from these age-specific effects about the total effects, a positive correlation during the early 90s seems to be mainly contingent on the age group between 20 and 24, but declines steeply around 1995, when the effects of younger and intermediate age groups compensate. The increasingly positive effect in the late 2000s, again, seems to be determined by the youngest women, as well as those in their early 30s.

Figure 6: The effect of female labor force participation on fertility

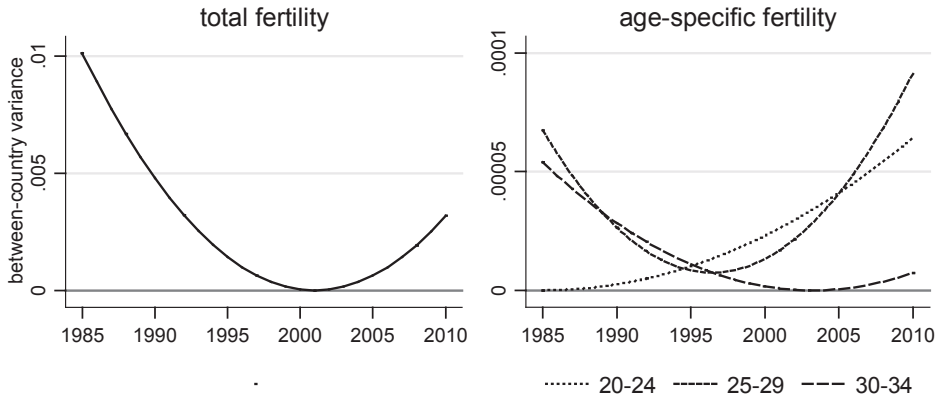


Displayed values at p <.05, gaps smoothed. *Data*: see appendix

As we discussed earlier, however, these mean effects cannot be expected to convey the full extent of the association between the factors. Though the stated effects are thoroughly controlled for country- and time-specific variances, the variances themselves add valuably by giving an insight into country heterogeneity and its development across time. Figure 7 accentuates the change in the predicted fertility's variation due to country differences as a function of year. Coinciding with the quickly changing mean effect of FLP from negative to positive and almost zero figures, countries' predicted fertilities converge steadily until 2000 – the between-country variance declines to an OECD-wide harmonization. In the early years of the new millennium, though, along with the progressively positive effect of FLP on TFR,

fertility's variance is on the rise again: countries' correlations develop at increasingly varying positive paces.

Figure 7: Between-country variance as a function of time



Data: see appendix

Figure 7 also illustrates the between-country variance in FLP- and year-based fertility age-specifically across time. Young women in their early 20s show an increasing variance, implying that countries increasingly differ in their participation-related fertility at that age: during times of positive FLP-effects on fertility, but especially when mean effects imply a zero impact, which suggests country-specifically varying effects into areas of both negative and positive correlations. The next group, consisting of women between 25 and 29 years of age, portrays a u-shaped between-country variance. Countries differ considerably in this age group's participation-based fertility in the beginning and at the end of the observed period, even though they show a similar pattern in-between. More precisely, countries' variance decreases to a minimum in 1996, while at the same time FLP's mean effect hits the negative low point, and increases again until 2010, along with a slight shift into less negative areas of correlation. For women in their early 30s, in contrast, countries vary strongly in their correlation between fertility and FLP in 1985, but converge remarkably after that: variance decreases until the mid-2000s while FLP's effect on fertility changes in rather negative areas and increases very slightly after that, partially into areas of positive effects. The oldest women's slopes, as formerly implied, do not vary significantly across countries, but consistently move at a fairly high total level of variation while effects imply that FLP's mean impact is consistently rather low. The high variation is

particularly contingent upon one outlying country, Ireland, whose fertility is continuously much higher than that of any other country. An addition to the given total and age-specific picture is offered in Appendix 3, illustrating the relative Variance Partition Coefficient, which expresses the share of between-country variance in the total variance.

5. Discussion

Ever since researchers have observed a change in the correlation between fertility and female labor force participation (FLP), the issue itself, its nature and its influential factors have been a focus of the social sciences. Aspects of the compositional character of age-specific effects as well as the nature and scope of countries' heterogeneity, however, have been neglected. The present paper aims to fill this gap by first scrutinizing if and how the relationship between TFR and FLP is composed of varying age-specific associations between fertility rates and FLP. Secondly, the paper demonstrates the complex nature of underlying country heterogeneity by both controlling for its relevance in the analyses of total and age-specific associations between fertility and FLP, as well as by identifying the specific scope of country heterogeneity and its long-term development.

Our study's pursuit of these questions is based on annual total fertility rates and their equivalents for age groups between 20 and 39 years, as well as the respective lagged FLP from 17 OECD countries between 1985 and 2010. Random Intercept and Random Coefficient Models are applied, allowing us to assess both heterogeneous slopes and intercepts across countries. The estimations clearly show that total and age-specific fertility behavior, FLP-effects and country variances are very distinct concepts that all add to the broad understanding of the compositional character of the correlation between TFR and FLP and its multifaceted underlying country heterogeneity.

While the observed TFR has not changed much between 1985 and 2010, its development is contingent upon very different age- and country-specific developments. The influence of overall FLP on the TFR changes from negative to positive values in the late 1980s, maintains that level during the first half of the 1990s, and falls into a null correlation between the mid-90s and early 2000s. Concurrently, until about 2000, the between-country variance estimated from FLP's effect is declining from a fairly high to a very low level. This means that even though the mean effect of FLP on TFR alternates strongly across time, countries converge in these effects, driven mainly by a convergence of FLPs. After 2003, however, fertility and FLP exhibit simultaneous increases manifesting in positive effects. These are accompanied by increasing between-country differences, indicating a repeated divergence of countries regarding

the effect of FLP on TFR. In summary, the picture appears to be rather complex and inconsistent, and calls for a detailed analysis for compositional effects.

Descriptive analyses show distinctly differing developments across age groups. Observed fertility rates of young women in their early 20s exhibit a decrease, particularly during the late 1980s and 1990, that goes along with a slight decrease of the FLP. Mirroring a positive mean effect of FLP on TFR, this development is in line with theoretical suppositions regarding the postponement of occupation and, even more so, fertility, as expanding periods of (higher) education concur with economic dependency and social norms of incompatibility. Beyond that, the timing of the decrease in FLP that partly drives the positive relation during the 1990s and late 2000s can be ascribed to periods of high youth unemployment that coincide with a continuing decrease in fertility, for similar economic and normative reasons. Simultaneously, between-country variance increases. Apparently, countries' association between fertility and FLP starts to vary along with unemployment developments, by which countries are heterogeneously affected and to which they react heterogeneously. Obviously, these heterogeneities increase over time. This hinders the evaluation of OECD states within a single uniform classification, and makes any overarching statements practically impossible.

As expected, women in their late 20s similarly give evidence of decreasing fertility rates, though some countries show much steeper declines than others. These coincide with rising FLP, mirroring one another in consistently negative relations, though they show slight improvements during the early 1990s and the early 2000s. In line with our assumption of an almost exclusive occupational period right after a prolonged educational one, these developments imply that these women's internal ideas and the external demands of life are particularly incompatible with and happen at the cost of fertility. This seems especially true during the second half of the 1990s, when countries jointly hit a low: the effect of FLP is at a negative mode while country variation is fairly small. Possibly, this development is supported by the emergence of lowest-low fertility in Europe that can mainly be traced back to a further postponement of births (cf. Kohler, Billari, and Ortega 2002) while, at the same time, the high youth unemployment rates exhibit some improvement, and animate women to increasingly strive towards the labor market. Before and after that period, in any case, analysis proves to be more complicated, as country variations are high. Countries reach the low point from very diverse and quickly-changing preceding situations, and also proceed to widely differing, though on average less incompatible, circumstances for fertility and FLP.

The age group between 30 and 34 shows a fertility pattern that is quite different from the groups before: fertility increases over the course of time, supporting the assumption of a postponement of fertility due to incompatible education- and

occupation-oriented periods at younger ages. Simultaneously, though, the FLP increases and converges over time, which is reflected in a decreasing estimated heterogeneity across countries. Much like the slightly younger age group, and congruent with our hypothesis, the age group displays a considerably negative association between FLP and fertility. Again, the greatest incompatibility is observed during the mid-1990s, when women can be supposed to surge to the again more promising labor market. After that, the effects develop towards a null or temporally even slightly positive correlation, which implies that the incompatibility between gainful employment and childbearing has been decreasing for women of this age group. This seems to be a particularly positive notion considering the concurrent convergence of countries.

As expected, the oldest observed women, between 35 and 39, also show increasing fertility rates. From the beginning of the observed period, however, these rates are less affected by the FLP and, thus, labor market arrangements. Inconsistent with our hypothesis, these women apparently can rely on their acquired experience and occupational status, their financial and psychological autonomy, as well as supporting partners, friends and relatives. Furthermore, countries develop homogeneously across time, while the high variation is mainly imposed by single deviants. Comparing this oldest group's long-term development into apparent compatibility to the estimates for the women in their early 30s late 20s, one might assume a premonition of the future developments of younger age groups. Possibly, the negative relationship between fertility and FLP will be a thing of the past in some decades.

Altogether, the results on the age-specific associations highlight the importance of considering age-specificity when analyzing the correlation between fertility rates and FLP. By only focusing on the total rates TFR and FLP, students of this association commit themselves to the assumption of a somewhat unilinear relationships and developments across age groups. As the analyses have shown, this assertion is inapplicable, and disregards the association's composition of sometimes greatly contradictory age-specific developments.

Beyond the actual scope of country heterogeneity, another striking aspect yielded by these results is the great relevance of controlling for it in analyses. Even a brief comparison of the crude correlations in Figure 2 and the profound association in Figure 6 accentuates the major bias caused by neglecting the various aspects of country heterogeneity. Controlling for country-specific variances in intercepts and slopes proves to be crucial to a meaningful analysis of the association between fertility and FLP.

Though these results offer a worthwhile addition to the research on the relation between TFR and FLP, there are limitations to this paper. Particularly, period-specific country heterogeneity has been traded for overarching functions across time that cannot illustrate the accurate progress of between-country variance. In addition, yet beyond our

control, the lack of data obtainability unfortunately puts an early end to one of the most pressing questions concerning a more long-term comparison of age-specific associations and compositional effects. Apart from that, it was not within the scope of this paper to control for further variables' influence on fertility rates, though this would be of major interest for future research. To include the influencing factors of time and country heterogeneity, however, future research may want to deploy a different model, as this paper's complex modeling would hardly tolerate additions. Alternatively, a very insightful approach would be to analyze the underlying mechanisms more minutely by using the example of a few particularly prominent countries.

Moreover, our consultation of female labor force participation rates did not allow us to accurately apportion the influence of the subjacent employment and, in contrast, unemployment rates on women's childbearing. In order to understand these associations without drawing upon inferences, a systematic comparison of the effects of FLP as stated in this paper on the one hand, and the effects of actual employment rates on the other, would be yet another valuable starting point for future research.

Beyond these proposed aspects, all of which have been beyond the scope of this paper, our research nonetheless succeeded in demonstrating that the consideration of age-specificity and country heterogeneity should attain essentiality in future research of fertility's influencing factors.

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Appendix

Total fertility rate:

Average number of children that would be born alive to a woman during her lifetime, based on a given set of age-specific fertility rates observed in a population during a given year

Sources: World Bank – World Development Indicators (all countries except Germany): http://data.worldbank.org/ [January 2013]; Max-Planck-Institute of Demographic Research – Human Fertility Database (West Germany until 1990, Reunited Germany since 1991): http://www.humanfertility.org [January 2013]

Age-specific fertility rates:

Estimated average from observed fertility rates of ages within five-year ranges (20 to 24, 25 to 29, 30 to 34, 35 to 39) in a population during a given year

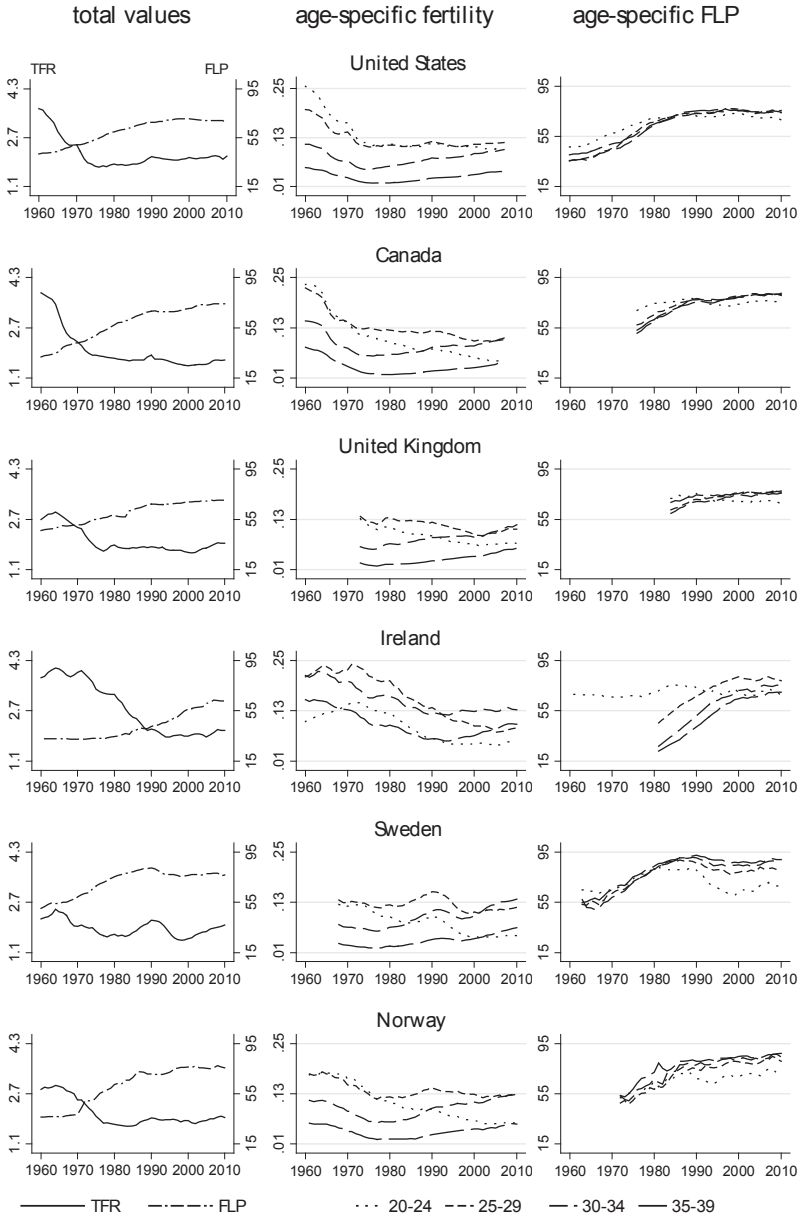
Sources: European Commission – Eurostat (all countries except the following): http://epp.eurostat.ec.europa.eu [January 2013]; Max-Planck-Institute of Demographic Research – Human Fertility Database (Canada, West Germany until 1990, Reunited Germany since 1991, Japan, United States): http://www.humanfertility.org [January 2013]

(Age-specific) female labor force participation:

Number of females working part- or full-time or actively seeking employment at ages 15 to 64, for the total and in five-year groups (20 to 24, 25 to 29, 30 to 34, 35 to 39) for the age-specific rates divided by the total female population at the respective age

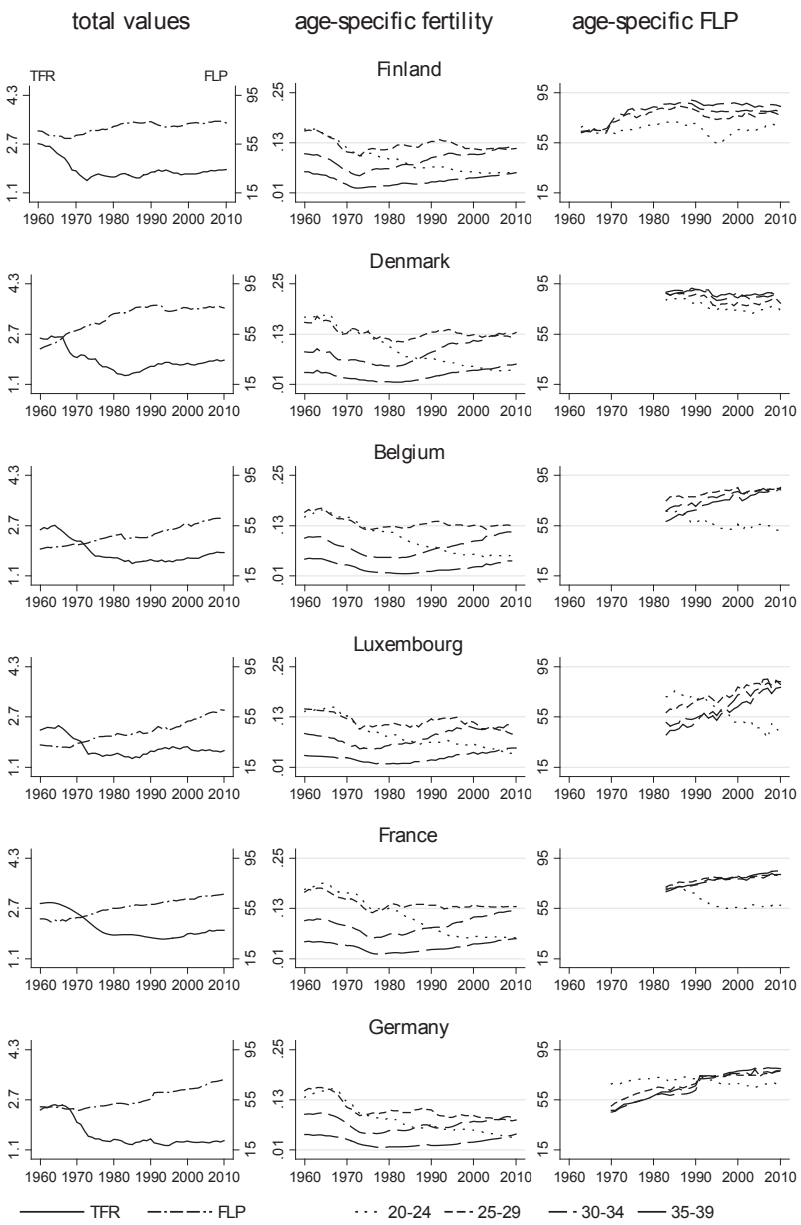
Sources: OECD – OECD.Stat Extracts: http://stats.oecd.org/ [January 2013]

Appendix 1A: Total and age-specific fertility and FLP by country



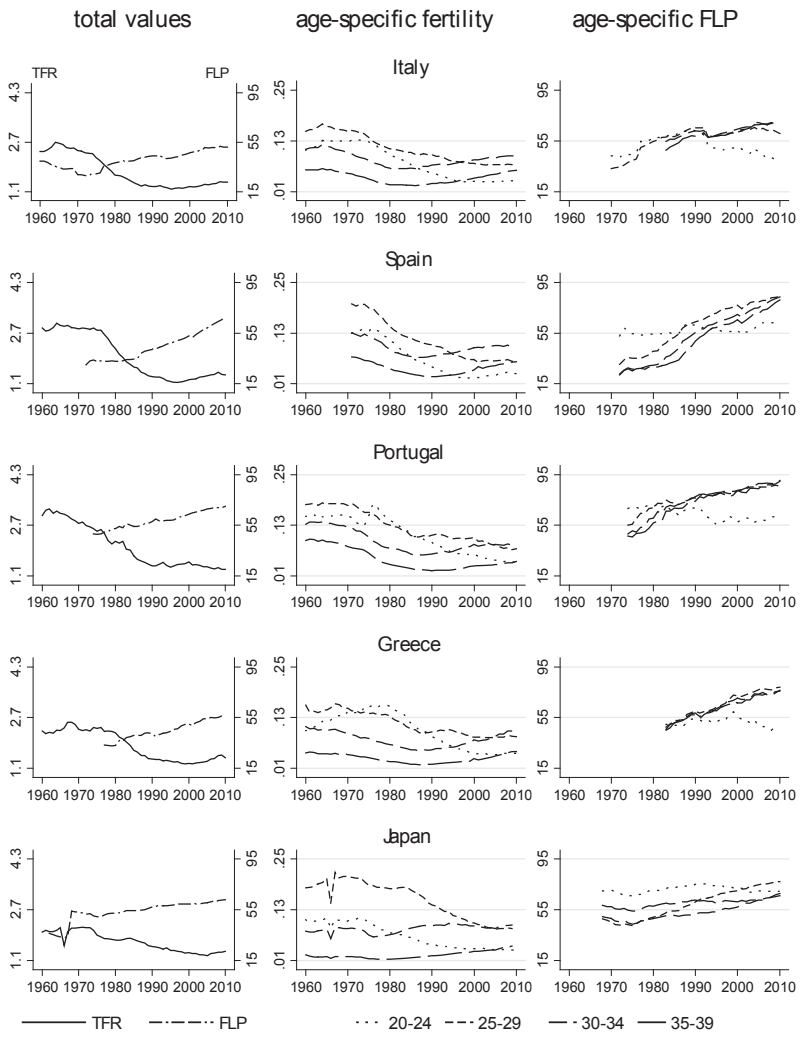
Data: see Appendix

Appendix 1B: Total and age-specific fertility and FLP by country



Data: see Appendix

Appendix 1C: Total and age-specific fertility and FLP by country



Data: see Appendix

Appendix 2: Effects of female labor force participation on total and age-specific fertility and the underlying country heterogeneity between 1985 and 2010

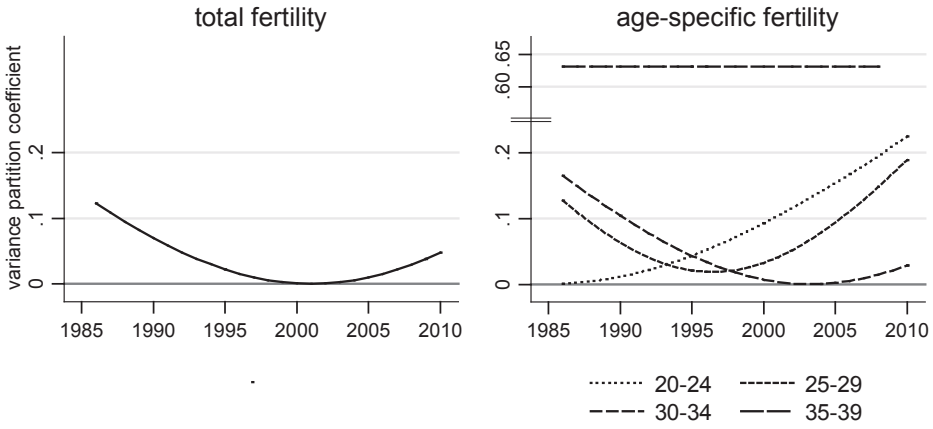
	total		20-24		25-29		30-34		35-39	
	b		b		b		b		b	
FLP	-7.6E-03	**	-7.1E-04	**	-9.5E-04	**	-5.0E-04	**	-3.1E-04	**
year (ref.: 1985)										
1986	-.048		-.016	**	-6.0E-03		4.5E-04		-1.1E-03	
1987	-.290	**	-.024	**	-.017	**	-3.7E-03		-5.1E-03	**
1988	-.380	**	-.029	**	-.025	**	-6.6E-03	+	-9.0E-03	**
1989	-.540	**	-.050	**	-.040	**	-.013	**	-.012	**
1990	-.590	**	-.065	**	-.046	**	-.014	**	-.013	**
1991	-.630	**	-.068	**	-.053	**	-.013	*	-.014	**
1992	-.640	**	-.071	**	-.058	**	-.019	**	-.014	**
1993	-.670	**	-.082	**	-.055	**	-.016	*	-.017	**
1994	-.700	**	-.085	**	-.053	**	-.011		-.016	**
1995	-.690	**	-.089	**	-.057	**	-.010		-.015	**
1996	-.560	**	-.090	**	-.050	**	4.1E-03		-7.9E-03	+
1997	-.500	**	-.087	**	-.054	**	.012		-5.7E-03	
1998	-.490	**	-.089	**	-.055	**	.016	+	-6.8E-03	
1999	-.480	**	-.083	**	-.057	**	.013		-7.5E-03	
2000	-.440	*	-.077	**	-.067	**	.013		-2.1E-03	
2001	-.460	*	-.081	**	-.074	**	.013		-1.6E-03	
2002	-.460	*	-.079	**	-.075	**	8.2E-03		4.8E-04	
2003	-.540	**	-.083	**	-.079	**	-2.3E-03		3.5E-04	
2004	-.520	*	-.079	**	-.081	**	-5.8E-04		5.8E-03	
2005	-.580	*	-.079	**	-.088	**	-.013		5.6E-03	
2006	-.590	*	-.081	**	-.084	**	-8.7E-03		9.9E-03	
2007	-.600	*	-.089	**	-.072	**	3.9E-03		.016	*
2008	-.500	+	-.091	**	-.073	**	3.7E-03		.023	**
2009	-.540	+	-.091	**	-.073	**	3.7E-03		.025	**
2010	-.670	*	-.092	**	-.078	**	-4.7E-03		.020	*
cross-level interaction										
FLP*										
1986	8.5E-04		1.9E-04	**	1.0E-04	+	2.7E-05		3.2E-05	+
1987	4.9E-03	**	2.6E-04	**	2.6E-04	**	1.2E-04	**	1.1E-04	**
1988	6.8E-03	**	3.2E-04	**	4.2E-04	**	2.2E-04	**	1.9E-04	**
1989	9.5E-03	**	5.9E-04	**	6.2E-04	**	3.4E-04	**	2.5E-04	**
1990	.011	**	8.1E-04	**	7.4E-04	**	3.9E-04	**	2.7E-04	**
1991	.011	**	8.1E-04	**	8.0E-04	**	4.0E-04	**	3.1E-04	**

Appendix 2: (Continued)

	total		20-24		25-29		30-34		35-39	
	b		b		b		b		b	
1992	.011	**	8.2E-04	**	8.6E-04	**	5.0E-04	**	3.2E-04	**
1993	.011	**	9.2E-04	**	7.7E-04	**	4.6E-04	**	3.6E-04	**
1994	.012	**	9.4E-04	**	7.1E-04	**	4.2E-04	**	3.6E-04	**
1995	.011	**	9.6E-04	**	7.1E-04	**	4.2E-04	**	3.6E-04	**
1996	8.5E-03	**	9.5E-04	**	6.0E-04	**	2.4E-04	*	2.8E-04	**
1997	7.6E-03	**	8.7E-04	**	6.3E-04	**	1.6E-04		2.7E-04	**
1998	7.2E-03	**	8.9E-04	**	6.1E-04	**	1.2E-04		3.0E-04	**
1999	7.1E-03	**	7.9E-04	**	6.3E-04	**	1.7E-04		3.3E-04	**
2000	6.8E-03	*	6.9E-04	**	7.6E-04	**	2.1E-04		2.8E-04	**
2001	7.0E-03	*	7.2E-04	**	8.2E-04	**	2.2E-04		2.9E-04	**
2002	7.0E-03	*	6.7E-04	**	8.2E-04	**	2.9E-04	*	2.8E-04	**
2003	8.5E-03	*	7.1E-04	**	8.6E-04	**	4.7E-04	**	3.1E-04	**
2004	8.5E-03	*	6.5E-04	**	8.9E-04	**	4.8E-04	**	2.5E-04	**
2005	9.5E-03	*	6.4E-04	**	9.7E-04	**	6.5E-04	**	2.8E-04	**
2006	.010	*	6.8E-04	**	9.3E-04	**	6.4E-04	**	2.5E-04	**
2007	.011	*	8.0E-04	**	7.7E-04	*	4.9E-04	**	2.1E-04	*
2008	9.6E-03	*	8.6E-04	**	8.0E-04	**	5.3E-04	**	1.6E-04	
2009	.010	*	8.4E-04	**	7.9E-04	*	5.2E-04	**	1.4E-04	
2010	.012	*	8.5E-04	**	8.6E-04	**	6.5E-04	**	2.2E-04	+
constant	2.094	**	.135	**	.187	**	.105	**	.045	**
country variances:										
intercept variance	.010	*	1.6E-07		6.7E-05		5.4E-05	**	8.7E-05	**
slope variance	4.0E-05	**	1.0E-07	**	4.6E-07	**	1.6E-07	**		
intercept-slope covariance	-6.3E-04		-1.3E-08		-5.2E-06		-3.0E-06			
residuals - AR(1):										
variance	.064	**	2.3E-04	**	3.9E-04	**	2.4E-04	**	5.1E-05	**
rho	.990	**	.990	**	.991	**	.991	**	.985	**
log-likelihood	803.53		2017.46		1909.68		2024.12		2116.26	

+ p<0.10, * p<0.05, ** p<0.01. *Data*: see Appendix

Appendix 3: The share of between-country variance in the total variance



Data: see Appendix

Study II

Retreat, Return, or Re-bear?
Women's Reconciliation Behavior between First and Second Birth across Family Policies and Educational Groups

Uta Brehm

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Retreat, Return, or Re-bear?
Women's Reconciliation Behavior
between First and Second Birth
across Family Policies and Educational Groups

1. Introduction

In the last decades, research on women's means of reconciling employment[4] and family responsibilities has become a substantial issue in international social sciences (e.g. Pfau-Effinger 1996; Kenjoh 2005; Köppen 2006; Neyer et al. 2006; Lewis et al. 2008; Aisenbrey et al. 2009; Thévenon/Solaz 2014). In this field, West Germany[5] has been a prominent example for a long-standing conservative welfare regime (Esping-Andersen 1990) with a typically traditional gender culture (Pfau-Effinger 1996). The associated gender-specific division of paid and unpaid labor (Schulz/Blossfeld 2006; Grunow et al. 2007) leaves the challenge of reconciling paid employment and unpaid caregiving predominantly to women. To approach this issue, manifold studies have been conducted on West German women's behaviors with regard to childbirth, and the outcomes of this behavior. Focus has been set on women's employment interruptions and returns (Engelbrech 1997; 2001; Falk/Schaeper 2001; Dornseiff/Sackmann 2003; Buchholz/Grunow 2006; Rübenach/Keller 2011), the resulting short and long-term career effects (Ziefle 2004; Gangl/Ziefle 2009; Ochsenfeld 2012; Brehm/Buchholz 2014), as well as the impact of changing family policies (Grunow et al. 2011; Elsas et al. 2013; Ziefle/Gangl 2014; Gangl/Ziefle 2015).

The vast majority of these studies have focused on women's behavior around one solitary – often the first – birth, and the resulting persistence in and transitions between caregiving and employment. These singular components have been presented as a

[4] Throughout the text, the term 'employment' also includes self-employment, subsuming any paid work.

[5] The term 'West Germany' is commonly used to refer to the region that corresponds to the initial Federal Republic of Germany (FRG) before the reunification with the former German Democratic Republic (GDR) in 1990.

model case for women's overall reconciliation behavior. Pursuing this premise, however, severely underestimates the interdependency and multidimensionality of the decisions determining women's reconciliation behavior (Mayer 2000; 2009; Kohli 2007). Considering women's employment behavior – that is, the timing and scope of a return to work – to be merely the function of preceding childbirths ignores the extent to which the decision to return to employment is predicated on the intention to have further children while, in turn, further pregnancies will likewise be influenced by both the experienced and anticipated arrangement of caregiving and employment. Thus, I argue that a more comprehensive approach is needed to understand women's reconciliation behavior; specifically, I assert that women's birth decisions and the behavior influenced by births represent one interrelated complex of decisions.

To pursue this aim, this paper commences by observing two birth decisions and mothers' behavior between those births as a unit: It captures the spacing duration between births, mothers' interruptions for caregiving, their employment returns in both timing and scope, and the interrelation of these reproductive and employment behaviors. In order to reduce complexity by one dimension, the study analyzes the case of mothers of two children, who thereby comply with the prevailing two child norm in West Germany (Kreyenfeld et al. 2010; Dorbritz/Ruckdeschel 2015). The aim is to identify patterns in women's reconciliation behavior by analyzing the biographical sequences between first and second birth. Furthermore, to obtain a deeper understanding of the distribution and development of these patterns in the conservative West German context, the study aims to unveil these patterns' dependency on specific institutional settings, i.e. family policies, and on women's responsiveness to these conditions according to individual characteristics, measured by their educational level.

To implement these ideas, sequence analysis supplies the necessary means to make the complex interrelation of reproductive and employment behaviors apparent, intelligible, and tangible for multivariate analysis. Specifically, it allows the depiction of the specific and potentially highly variable dates of the two births and, in between, mothers' timing in transitioning between multiple states such as unpaid caregiving, part-time employment, or full-time employment, as well as the continuance in these states. Furthermore, sequence analysis allows us to examine these complex behaviors for clusters, i.e., patterns, and makes them available for further analysis. Thereby, it

offers unique methods to go beyond understanding reconciliation behavior as the mere succession of childbirth and employment return, instead supplying the means for grasping mothers' reconciliation behaviors as an interrelated complex.

This endeavor is addressed as follows: In chapter 2, I elaborate on the state of research on the various aspects of women's reconciliation behavior, and point out the gaps in knowledge when it comes to comprehensive behavioral patterns between births. In chapter 3, I develop the theoretical framework, deriving assumptions on institutional and individual factors' impact on women's reconciliation behavior between first and second birth. In the subsequent chapter 4, I will elaborate on the study's design, the dataset in use, namely the National Educational Panel Survey (NEPS)[6], and the applied methods. Chapter 5 provides an intelligible and accessible guide to the results yielded by the analyses' different steps. Their implications for research as well as policy will then be discussed in chapter 6.

2. State of research

Describing women's behavior in reconciling family and employment, as well as understanding its decisional origins and labor market outcomes, have been issues of major concern in social sciences during the last decades. Even after the German reunification in 1990, the area of West Germany has regularly been used as a model of an established conservative welfare state, functioning as an example of a relatively traditional gender order and gender culture (Esping-Andersen 1990; Pfau-Effinger 1996), and thus a quite gender-specific division of paid and unpaid labor (Schulz/Blossfeld 2006; Grunow et al. 2007). Research has been guided by the fundamental questions as to how West German women behave during their family formative phase with regard to the reconciliation of work and family, and in what way this behavior is shaped by institutional and individual parameters.

[6] This paper uses data from the National Educational Panel Study (NEPS): Starting Cohort Adults, doi:10.5157/NEPS:SC6:5.1.0. From 2008 to 2013, NEPS data was collected as part of the Framework Program for the Promotion of Empirical Educational Research funded by the German Federal Ministry of Education and Research (BMBF). As of 2014, NEPS is carried out by the Leibniz Institute for Educational Trajectories (LIfBi) at the University of Bamberg in cooperation with a nationwide network.

In order to approach this very complex set of questions, research has divided the first one into partial aspects for analytical purposes, inferring the reconciliation behavior particularly from two strands of research questions. The first strand addresses women's behavior after a singular childbirth – often that of the first child – with regard to their staying in unpaid caregiving and/or their return to employment. The second strand focuses on the circumstances of women's subsequent – mostly second – birth decision, examining the state of employment preceding the transition and the duration that passes between both childbirths.

With regard to women's state of employment following the first birth and prior to the second, they have been found to return to the labor market at different speeds and into different working hours after their first child (Engelbrech 1997; 2001; Falk/Schaeper 2001; Dornseiff/Sackmann 2003; Buchholz/Grunow 2006; Rübenach/Keller 2011). Within three years of having their first child, mothers go back into part-time employment at higher rates than into full-time employment. Still, a major share of women stay in unpaid caregiving altogether (Kenjoh 2005; Grunow/Müller 2012; Frodermann et al. 2013). The literature suggests that the chances of having a second child during a period of unpaid caregiving or part-time employment are considerably higher than having it during full-time employment (Bernhard/Kurz 2007; Brose 2008).

Focusing on the underlying spacing duration between first and second child, previous research has found West German women to be most likely to have a second child when the first child is two or three years old. Approximately half of those manifest birth decisions are made within that period of time – as opposed to about one third of women who have a second child more than four years after the first, and only about one in seven who have the second child within less than two years (Kreyenfeld/Zabel 2004, supp. by own calculations; Köppen 2006).

However, studies have not stopped at describing women's behavior, but have instead aimed to understand the parameters that drive women's reconciliation behavior between births. To do so, research has been directing major attention to two influencing factors: West Germany's institutional context on the one hand and women's level of education on the other hand.

First, researchers have been analyzing the impact exerted by the institutional context, specifically the various notions of family policy. Effective family policies represent an indicator not only for changing decisional conditions but also for normative shifts in society (Berninger 2009; Elsas et al. 2013; Ziefle/Gangl 2014; Gangl/Ziefle 2015): Although mediated and thus influenced by policy makers and the media, the negotiation and process of implementing policies reflect normative notions, perceptions, and debates in the wider public sphere (Ostner 2006; Bujard 2013; 2014). As a result, family policy is a pivotal direct and indirect impact factor for women's potential to reconcile childcare and employment (Rosenfeld et al. 2004; Berninger 2009; Elsas et al. 2013; Ziefle/Gangl 2014; Gangl/Ziefle 2015). In line with this argument, manifold studies have found proof for the far-reaching effects of policy changes; research has found that women are willing to adapt to the extension of leaves and allowances, as well as to incentives to return to the labor market more quickly (Kenjoh 2005; Grunow et al. 2011; Frodermann et al. 2013; Ziefle/Gangl 2014; Gangl/Ziefle 2015). A recent study by Gangl/Ziefle (2015) shows that a considerable extension of parental leave regulations can exert a strong and even increasingly negative impact on women's work commitment and thereby their employment behavior. By the same token, compensatory and apparently rather minor changes in policy can still promote some mothers' return to work if they meet previously subliminal needs and set new norms (also see: Ziefle 2009; Drasch 2013; Ziefle/Gangl 2014). Underlying this relation, however, one can assume distinct effects for part and full-time employment: Frodermann et al. (2013) argue that both levels of employment return follow different rules. Specifically, they find that part-time employment constitutes a middle way between unpaid caregiving and returning to the labor market with full commitment. Accordingly, they could not find a particular policy impact on mothers' part-time return.

Second, mothers' educational background has repeatedly proven to be of prime importance in understanding women's behavior between their first and second birth (Kreyenfeld 2002; Timm 2006; Kreyenfeld et al. 2007; Bauer/Jacob 2010; Brehm/Buchholz 2014). Research shows that more educated women reenter the labor market more quickly and more frequently after childbirth, partly waiving leave entitlements altogether (Drasch 2011; Grunow et al. 2011; Hanel/Riphahn 2011). Additionally, they have been found to return to full-time employment at higher rates

(Kreyenfeld et al. 2007; Konietzka/Kreyenfeld 2010) and to have their second child more decidedly and thus more quickly (Kreyenfeld 2002; Klein 2003; Kreyenfeld/Zabel 2004; Köppen 2006; Bernhard/Kurz 2007; Brose 2008).

Beyond that, women's education might influence their way of adapting to changes in family policies. However, research on this interconnection has been fairly scarce and nonuniform in its results. While Grunow et al. (2011) find that women of any educational level adopt to leave-prolonging policies equally, Drasch (2013) and Elsas et al. (2013) acutally find statistically significant polarization effects, suggesting that less educated women orient themselves more closely towards the extension of parental leaves. For a policy that set slight incentives for a sooner return into employment, in contrast, results are mixed (Drasch 2013; Elsas et al. 2013).

A review of the literature reveals that the majority of these studies have merely touched upon the overarching question of how women reconcile family and employment, examining single transitions and continuances, as well as their impacting factors. In order to truly understand women's reconciliation behavior, however, we need a more comprehensive approach that acknowledges mothers' behaviors subsequent to one birth and prior to another as an interrelated complex of decisions. This claim's underlying argument is that the decision to return to employment, on the one hand, can be altered or even stalled by the prospective decision to have another child; having a further child, on the other hand, can be influenced by mothers' employment-related experiences after the first birth, or by her future anticipations. For example, when their parental leave is drawing to an end, mothers with a fundamental preference for another child might face the decision as to whether a return, the job reentry prior to another period of parental leave, is at all feasible for all involved – or if they rather opt to 'retreat' into motherhood. If they have returned instead, their experiences with employment and concurrent caregiving might facilitate their reflection on expanding their reconciliation practices to include another child. Moreover, a strong commitment to employment might foster women's future planning of their ultimate return, encouraging them to swiftly complete their reproductive phase by 're-bearing', i.e., by having the anticipated children in quick succession. Either way, the trajectories in both family and employment can be expected to be interdependent, particularly during the reproductive phase when both spheres claim concurrent validity

and compete in their demands for women's commitment (Krüger 1991; 2010). In contemporary literature, however, that interrelation has not been acknowledged in its complexity.

The present paper aims to fill this gap. It approaches women's reconciliation behavior between births as an interrelated set of decisions on, first, the states of employment or non-employment between births, second, the timing of transitions between states, and, third, the duration until the next birth. To meet the requirements of this decisional interlinkage, sequence analysis is applied, uniquely providing the means to examine all aspects at once. In this respect, I focus on West German mothers of precisely two children. In the light of a two-child norm in West Germany (Klein 2003; Dorbritz et al. 2005; Klein 2006; Goldstein/Kreyenfeld 2010; Kreyenfeld et al. 2010; Dorbritz/Ruckdeschel 2015), this group complies with society's – and hence presumably their own – expectations, distinguishing them both in personal anticipation and social acceptance of their reconciliation behavior between first and second birth[7].

3. Theoretical framework

To comprehend mothers' behavior between the births of their two children theoretically, one can draw on economic, institutional, and normative explanatory approaches. A purely economic perspective focuses on a return to the labor market, which allows women to sustain their human capital and thus enables them to transfer it into material goods such as income (Mincer 1974; Mincer/Ofek 1982; Becker 1993). However, economic theories contradict one another when it comes to timing the return to employment following a quick succession of births or between two widely spaced births. As Razin (1980) argues, a longer spacing duration induces higher occupational costs than a short spacing, because mothers withdraw from the labor market for the time of successive periods of childcare (see also Newman 1983). Opposing arguments, however, consider a longer spacing to be economically beneficial, because it allows for a labor market return between births and thus for a more balanced utilization of occupational opportunities (Miller/Xiao 1999; Troske/Voicu 2009; Karimi 2014).

[7] Comparing the results for mothers of two on the one hand and mothers of greater numbers of children on the other hand indeed yields remarkably different reconciliation behaviors (cf. chapter 5, spec. Figure 1 and Appendix 2).

Leibowitz et al. (1992) add that mothers' return to the labor market is necessarily delayed by the time the opportunity costs, i.e. the foregone wages of a paid employment, exceed the costs of external childcare, a figure that decreases only as the child gets older and more independent. Disregarding labor market factors, however, a longer spacing is regarded as favorable, as it allows mothers to invest more time and effort in individual childrearing periods, resulting in a higher 'quality' of the children in terms of attainment and health. Also, for a mother, a longer spacing is assumed to facilitate a more balanced utilization of non-child-related opportunities over time (Razin 1980; Newman 1983).

The validity and extent of these economic arguments are strongly reliant upon a country's institutional and normative framework, constituting an interdependent complex (Coleman 1986). In the post-war conservative welfare regime of West Germany (Esping-Andersen 1990), both the gender order, i.e. institutionalized gender relations, as well as the gender culture, i.e. tacit gender-related normative models, have been gender-specifically traditional, assigning high economic costs to mothers' return to the labor market, while pledging high normative rewards to unpaid caregiving (Pfau-Effinger 1996; Pfau-Effinger/Smidt 2011). Institutionally, West Germany's joint taxation of married couples exerts additional costs to mothers' return to work by imposing a higher tax on smaller additional incomes, allocating minimal absolute tax rates to families with high income differences. Pursuing a similar notion, public childcare for small children or during the afternoon hours had been very rare for many decades, assigning childcare responsibilities mainly to families themselves. Although these institutional elements to structure people's lives have nominally been gender-neutral since the late 1970s[8], their embeddedness into societal norms had, for a long time, not challenged women as the unambiguous addressees of policy intervention (Aisenbrey et al. 2009; Grunow/Müller 2012). Specifically, the institutional conditions complied with a strong norm of a 'good mother' that is fully committed to her family. As a result of both factors, a large share of mothers – and at times even childless married women, being potential mothers-to-be – had withdrawn from the labor market permanently or for a minimum of several years (Schütze 1986; 2010;

[8] Up until 1977, the Civil Code § 1356 BGB (1) explicitly declared wives to be responsible for housekeeping; employment was assumed to lie in the husband's hands who therefore was entitled to deny his partner the participation in paid employment.

Buchholz/Grunow 2006). Thereby, institutions have long promoted a gender-specific division of paid and unpaid labor.

While the general alignment of policies in West Germany has long been rather conservative and traditional, considering it static fails to pay due attention to the processes of institutional change. Specific family policies such as the existence and scope of parental leave, monetary allowances, job guarantees and childcare institutions have influenced and altered the manifestation of West Germany's effective gender order. In doing so, policies have introduced institutional and, alongside, normative anchor points for women's behavior between their first and second birth, influencing the direct and indirect costs as well as the opportunity structures for labor market returns between births.

Specifically, family policies have continuously been expanded in scope since World War II (cf. Gerlach 2009; Ziefle/Gangl 2014). Originally, beyond the introduction of a fourteen-week maternity leave in 1952, there were only rather reluctant policy-making steps[9] until the end of the 1970s. Providing and securing childcare was predominantly left to the self-organization of husband and wife, promoting mothers' unpaid caregiving. Mothers that aimed for employment despite the normative female caregiver model – be it out of preference or out of financial necessity – would have to bow to labor market demands. A first milestone in terms of leave regulations happened in 1979, when a six-month maternity leave entitlement and an income-contingent allowance was introduced which facilitated mothers' reentry to the workforce from then on. The reform's notions of explicitly addressing mothers, as well as its income-contingency, were replaced in 1986 by a nominally gender-neutral ten-month parental leave entitlement, accompanied by a fixed and partly income-tested monthly allowance. Over time, these ten months were extended, until in 1992 a 36-month period of parental leave was made law, along with a 24-month fixed allowance. The regulations allocated three years of a parent's time to giving unpaid care for one child at a time. In doing so, they economically liberated mothers from any competing occupational demands while normatively also limiting their alternatives. The policies were supplemented by an entitlement to public childcare starting from the age of three

[9] These steps included the introduction of a maternity leave allowance in 1965 and of (originally quite small) child allowances in 1975.

in 1996. Heralding a turnaround in 2001, leave regulations were flexibilized, predominantly by enabling parents to use the third year of leave entitlements any time before the child's eighth birthday, given the employer's consent. At the same time, an act came into effect that prohibited discriminating against part-time workers, institutionalizing the transition from a female caregiver reference model to a model of a female additional earner and caregiver. In 2007, a new family policy fundamentally reformed parental allowances, pursuing the path that was merely suggested by the leave regulations of 2001 and thereby bringing about what has been called a 'change in paradigm' (Ostner 2006; Bujard 2014). Specifically, the reform included a twelve-month fixed allowance for non-working parents as well as an income-contingent allowance for those in employment before childbirth, replacing (up to and capped at) 67% of the leaving parent's net income. Furthermore, the reform introduced two additional months of said allowances if the secondary caregiver went on parental leave as well. In line with that, the entitlement to public childcare was extended to children older than twelve months in 2013, following some years of an intense buildout of facilities. Comforting conservative resistance, an additional allowance for parents' unpaid childcare of one- and two-year-olds was introduced simultaneously. This was, however, judicially abandoned again in 2015, only months after the twelve-to-fourteen-month allowance right after childbirth had been supplemented with further measures flexibilizing and enhancing it for part-time employed parents.

While the institutional framework both sets anchor points for and reflects and shapes the normative environment, it cannot fully determine mothers' behavior between the birth of their first and second child. This is due to two interconnected but still discretely operating individual factors: behavioral preferences and education. When discussing the impact of family policies, one can expect different levels of adaptivity and economic rationality within both categories.

With regard to preferences, on the one hand, Hakim (2000) describes analytical types of women from a continuum of inclinations. The types feature different preferences regarding work and family and thus a different responsiveness to economic, institutional, and normative incentive structures. Specifically, she establishes three categories: First, she describes family-centered women who prioritize family life and children over labor market participation, irrespective of economic or

institutional incentives. Second, she characterizes work-centered women, who are committed to the labor market, tend to act with economic rationality, and embrace policies that enable (full-time) employment despite family obligations. Third, she identifies a large group of adaptive women who respond to the institutional and normative framework. Since they thus react strongly to the respective gender order and gender culture, they display either rather family-centered or work-centered preferences.

Education, on the other hand, reflects productivity and thus the expectable economic returns from employment, as well as short and long-term occupational opportunities and opportunity costs (Mincer 1974; Mincer/Ofek 1982; Becker 1993). Additionally, the depreciation of human capital happens at a quicker pace for more educated and thus more specialized people (Mincer/Ofek 1982). In line with this argument, higher education strenghtens the women's reasons for returning to the labor market: The opportunities, wages, and competencies forfeited while staying in unpaid caregiving are considerably higher. For this reason, theories which explain return behaviors between two births can be assumed to pertain more strongly to highly educated women, regardless of the institutional setting. This behavior reveals the interconnectedness of education and preferences: Better educated mothers are more likely to exhibit more work-centered behavior between the first and second birth. As a result, the choice between either returning to the labor market between births or 'blocking' the periods of childcare in order to return ultimately afterwards is more relevant to higher educated women (Razin 1980; Newman 1983; Miller/Xiao 1999; Troske/Voicu 2009). If they do return between births, a larger share can be assumed to opt for a quicker and, in terms of working hours, more committed return to the labor market (Leibowitz et al. 1992; Becker 1993). Logically, the choice of an intermediate or an ultimate return depends on the chances and gains of returning to the same job, or merely to any suitable occupation, factors that are again influenced by institutions. Less educated, less specialized employees can be more easily replaced, leaving even more work-centered mothers with little chance of returning to their old job if there is no institutionalized guarantee to facilitate their return. Better educated, more specialized employees, in contrast, can be assumed to benefit from agreements with their employers in order to maintain efficiency for both sides (Lazear 1984) – beyond

the chances facilitated by job guarantees. In the light of these options, the overarching institutional and normative[10] frameworks influence which pathway to take.

Consequently, mothers that differ in terms of education and preferences can be assumed to react differently to the described family policies. To be precise, the complex of theoretical elaborations allows me to pose specific assumptions regarding women's reactions to effective family policies. Before the introduction of the first maternal leave regulations in 1979, one can assume that a large number of mothers, particularly the less educated, followed the dominant gender order and left employment permanently upon marriage or their first birth (Grunow et al. 2006). Thus, *I hypothesize for the time before 1979 that most (less educated) women's behavior between their first and second birth is dominated by unpaid caregiving and a rather long spacing duration. For women that are more work-centered, however, I assume similar shares of returns to full-time employment between births on the one hand and particularly short spacing durations on the other*, ultimately returning to employment afterwards. Since higher education was less common at the time, particularly for women, and thus greatly prized on the labor market (Becker 1993; Timm 2006), *I expect the better educated women to spend their spacing predominantly in full-time employment. In contrast, I propose that part-time employment will be of only minor importance.* Upon the introduction of a paid six-month maternity leave entitlement, *between 1979 and 1985, I assume work-centered mothers of any educational level to interrupt employment for six months and return into full-time employment thereafter, delaying a second birth.* For those women who prefer unpaid caregiving anyhow, in contrast, I do not expect any impact to be exerted by the quite short leave entitlement. Thus, *I expect most mothers, particularly the less educated, to opt for unpaid caregiving.* As a result, *I do not hypothesize that the 1979 policy will exert additional impact on the overall shares of mothers orienting themselves towards caregiving or employment.* This picture can be assumed to change upon the introduction and gradual extension of parental leave entitlements between 1986 and 1991, and particularly after the implementation of a 36-month period of parental leave in 1992. The extensive time for childcare sets an institutional and normative anchor, particularly to those with

[10] Although highly educated women have been found to be more likely to share egalitarian values (van Berkel/Graaf 1999), the general trend of normative anchors can be assumed to influence society as a whole.

lower education. Hence, *for the time between 1986 and 2000, I assume all mothers, particularly the less educated, to decide for a second child during a lengthy period (several years) of unpaid caregiving.* Despite the simultaneous expansion of female education and labor market participation (Goldin 2006; Timm 2006), the reforms enabled even mothers who generally shared the emerging model of additional earner and caregiver to engage in several years of unpaid caregiving. *For reconciliation behaviors dominated by full-time employment, in contrast, I expect an overall loss in relevance. For highly educated women, as well as persistently work-centered mothers with less education, I hypothesize a particularly short spacing*: They can be assumed to largely resist the extension of leave regulations and instead utilize the provided time to pursue a shorter period of childcare for multiple children, thus complying with occupational requirements. The reforms in 2001 provide more leave flexibility, as well as legal equity to part-time employees, institutionalizing the return to part-time employment as a middle way between continuous unpaid caregiving and full-time employment. Hence, *for the period after 2001, I expect changes across all educational groups, i.e., an increase in the importance of part-time employment during mothers' spacing at the expense of unpaid caregiving.* For the period after the 2007 turnaround, these developments are likely to become even stronger with lower educational groups gradually approaching reconciliation patterns that have traditionally been exhibited mainly by better educated women.

4. Data and methods

The present study builds upon the premise that women's birth decisions and the embeddedness of those decisions into women's courses of life and employment are taken as an interrelated complex of decisions, particularly when they comply with Germany's long-established two-child norm. To understand the resulting reconciliation behaviors between their first and second birth, this paper applies sequence analysis, a complex of methods that allows for a graphically comprehensible analysis of behavioral pathways, tracking the observed persons' transitions across time. On this basis, cluster analysis facilitates an identification of typical patterns which then can be inspected for the influence of relevant factors, i.e. family policies and mothers'

education. The subsequent chapter will elaborate on the methods after introducing the dataset and the relevant sample.

Data, sample and main variables

To pursue the aims of this study empirically, I draw upon the rich data on adults' educational and occupational trajectories of the National Educational Panel Study (NEPS), Starting Cohort 6 (Release 5.1.0) (Blossfeld et al. 2011). The dataset incorporates a precursive study of the Nuremberg's Institute for Employment Research (IAB) of 2007/08, which since 2009/10 has been continued at the University of Bamberg, and since 2014 under the aegis of the Leibniz Association. A particular strength of the dataset is the collection of monthly retrospective information at every interviewee's first interview and their yearly follow-up since 2009/10. Furthermore, there have been supplementary and auxiliary samplings in 2009/10 and 2011/12, providing the five currently available waves up until 2012/13 with data on 17 140 persons born between 1944 and 1986.

The sample relevant for the present study incorporates 1 880 mothers of precisely two biological singletons whose traceable life trajectories up to their second birth have taken place in West Germany. The relevant period of time to analyze reconciliation patterns stretches from the month of a woman's first birth to the third month of her second pregnancy, calculated from the measured event of the actual second birth. The rationale behind observing them at the third month of their second pregnancy is to confirm the mothers' knowledge of their pregnancy, thus providing the basis for decisional behavior with regard to their employment, for example. Furthermore, it is mainly after the third month of pregnancy that relevant numbers of women drop out of the labor market for health-related reasons (Joesch 1997; Saurel-Cubizolles et al. 2004).

The data on women's employment states between births has been subject to some specifications. First, employment careers during the period of maternity protection has been smoothed and ascribed to mothers' post-birth employment states, to prevent divergences from their actual trajectories. Second, employment has been divided into

distinct categories, separated along women's total working hours[11]: full-time employment drawing upon statements of 'more than part-time' or 'full-time employment', part-time employment[12] as reported by 'less than part-time' or 'part-time employment', and a category of any other or flexible employment. Along with the state of unpaid caregiving, the first two states of employment in particular constitute the most relevant states for women between their first and second birth. Additionally, unemployment, other non-employment, and a category of void states are considered. Lastly, the category of mothers' state of education has been designed to subsume episodes in any form of school, university or vocational training.

To account for mothers' affectedness by family policies, they are grouped alongside the birth of their first child. More precisely, the category '1962-78' includes women that gave birth to their first child during the period before any leave regulations, apart from maternity leave up until 1978. While the year 1962 is of no particular relevance with regard to family policies, it still marks the year of the first observable births in the dataset. The category '1979-85' includes women that were entitled to six months of maternity leave and an income-contingent allowance after their first birth. '1986-91' subsumes the sequence of parental leave extensions that were relevant to first-time mothers during that period. The group of policies that entitled women to 36 months of parental leave and a fixed allowance for up to 24 months is described by the category '1992-2000'. Women who were affected by the subsequent, more flexibly deployable leave regulations upon their first birth are grouped in '2001-06'. All more recent family policies, particularly the paradigm-changing reform of 2007, must unfortunately be neglected: The premise of considering first and second births as a unit requires an observation period of several years to ensure sufficient case numbers on the one hand, and the representation of trajectories that are unbiased by premature cut-offs on the other hand[13].

[11] In the unusual cases of women having several jobs at once, the working hours have been summed up.

[12] With regard to working hours, NEPS data only includes information at the beginning as well as the end of one employment. To impute the actual moments of changes, I assume them to happen following childbirth.

[13] The cut-off may still bias the sample in the category '2001-06', falsely excluding first-time mothers who would have their second child after 2013 while in turn falsely including mothers of two who go on to have a third child. Appendix 1 describes the distribution of mothers of one, two, and at least three children across the relevant categories. Comparing the

The second central element of the analysis, namely the educational level of mothers, describes their general and academic school leaving degrees at the time of the first birth. Since vocational qualifications are held by the vast majority of women anyway[14], they are categorized without further distinguishing between women with and without vocational qualifications. As a result, the educational levels are divided into 'no or lower secondary degree' (*Haupt-/Volksschulabschluss*), 'middle secondary degree' (*Mittlere Reife*), 'upper secondary degree' (*Abitur*) and 'tertiary degree' (*Fachhochschul-/Universitätsabschluss*).

The described variables concerning women's educational level and the effectivity of family policies are again listed and quantified in Table 1 below. The following section addresses the methods applied to put them into more informative context.

figures to both previous trends and similar estimates based on micro census data (Statistisches Bundesamt 2013; Lück et al. 2015) indeed suggests a disproportional exclusion of mothers who are yet to have a second child, particularly among less educated women. The false inclusion of mothers who are yet to have a third child, in contrast, seems to be of minor significance. Nonetheless, these potential biases need to be taken into account when interpreting results. In line with that, the interpretative focus is set on the categories prior to '2001-2006'.

[14] In our sample, only between 3 to 5.2% of women with lower, middle, or upper secondary school leaving degrees report not holding a vocational qualification at the time of their first birth.

Table 1: description of the sample's composition

		educational level				
		no or lower secondary degree	**middle secondary degree**	**upper secondary degree**	**tertiary degree**	***sum***
effective family policies	**1962-78**	240	118	29	34	**421**
		57%	*28%*	*7%*	*8%*	***100%***
		43%	*16%*	*9%*	*13%*	
	1979-85	102	163	32	36	**333**
		31%	*49%*	*10%*	*11%*	***100%***
		18%	*22%*	*10%*	*13%*	
	1986-91	85	182	63	51	**381**
		22%	*48%*	*17%*	*13%*	***100%***
		15%	*24%*	*20%*	*19%*	
	1992-2000	97	232	135	92	**556**
		17%	*42%*	*24%*	*17%*	***100%***
		17%	*31%*	*44%*	*34%*	
	2001-06	31	54	50	54	**189**
		16%	*29%*	*26%*	*29%*	***100%***
		6%	*7%*	*16%*	*20%*	
	sum	**555**	**749**	**309**	**267**	**1880**
		30%	***40%***	***16%***	***14%***	***100%***
		100%	***100%***	***100%***	***100%***	

Note: N=1880; NEPS adult cohort (release 5.1.0), own calculations.

Methods

Before using reconciliation patterns between births for explanatory purposes, it is first and foremost necessary to understand the fundamental composition of these patterns. It is one of this paper's main aims to pursue this descriptive approach in order to shed light on this new explanatory factor for future research. To do so, this paper applies methods of sequence analysis: This method regards women's trajectories between the first birth and the third month of a mother's second pregnancy as coherent sequences, consisting of categorical states, i.e. – in order of their significance – full-time employment, part-time employment, unpaid caregiving, other employment hours, unemployment, other non-employment, education, and void. Sequence analysis considers these sequences as observation units, and aims to decode dissimilarities and patterns. With regard to the trajectories between a first birth and a second pregnancy,

several dimensions within these sequences are of relevance. A first central dimension is the order of states, the succession of, e.g., unpaid caregiving, part-time employment, and full-time employment within women's spacing. Second, the timing of the transition from one state to another is essential, for instance whether women transition from unpaid caregiving into employment after one or three years. Third, the aspect of sequence duration considers the varying lengths of the observed sequences, with the third month of the second pregnancy representing the outer limit. This third dimension is not necessarily inherent to sequence analysis, yet it is inherent to birth behaviors and thus adds complexity to the analysis.

The analysis will proceed as follows: In a first step, a state index plot of the sample provides a state-sorted insight into frequent trajectories, durations, and transition timings of the eight states. Since birth spacing can vary widely and thus distract from the big picture, a cut-off in time is set at the 75th percentile. That way, all women's states after all their first births can be observed up until the month in which 75% of women have reached the third month of their second pregnancy, disregarding longer spacings of unusual durations and individual outliers. In a second step, a cluster analysis is performed to group women's various reconciliation behaviors by their similarity. To do so, pairwise dissimilarities between the full sequences are computed; the metric of choice is optimal matching. By choosing this metric, the matching of sequences month by month happens at minimal costs. For that purpose, the costs for processes of inserting and deleting are set to 1, while substitution costs are obtained by calculating a matrix on the costs of transitioning from one state to another based on the factual transition rates. The clustering itself is agglomerative, processed hierarchically and from bottom to top. The number of clusters is chosen manually, according to their distinctness and their ability to enhance comprehensiveness. The clusters are graphically introduced first by a dendrogram. The tree illustrates the procedure of the clustering, as well as the height of the different bifurcations, proportionally representing the dissimilarity of the two separated clusters: The higher the node, the higher the dissimilarity of patterns; a zero height accounts for differences at the individual level itself. Second, the clusters' state distributions are visualized, again with cut-offs at the 75th percentiles of women's birth spacing duration. In a third step, these clusters are analyzed for their relative relevance in distinct educational groups, in relation to various effective family policies and in different educational groups at times

of different family policies. To do so, their distribution is first analyzed descriptively. Second, logistic regressions are estimated on each of those clusters, testing for the impact of women's affiliation to educational and family policy groups, on the probability of exhibiting the specific reconciliation patterns while controlling for other potentially influential factors, namely birth cohort affiliation[15], age at first pregnancy (Appendix 4), and labor market experience at first pregnancy (Appendix 5, for further information see Appendix 6). Interaction effects for education and family policies are inserted upon positive checks on their model improvement capabilities in likelihood ratio tests. Conditional marginal effects and predictive margins are reported and analyzed according to the respective research questions.

Observing these three steps, the following chapter will elaborate on women's overall reconciliation behaviors between first and second birth, on patterns within these behaviors and on the impact which educational and family policy impose on the distribution of these patterns among West German mothers of two.

5. Results

Women's reconciliation behavior between first and second birth

To obtain a first overview of women's reconciliation behavior between their first birth and their second pregnancy, Figure 1 illustrates the sequences of all observed women, sorted by their states of activity. Since the figure displays mothers' states of activity across the full observed period of time – the sampled women's first children were born between 1962 and 2006 – naturally, the sample contains a variety not only of family policies and legal entitlements but also of, e.g., normative frameworks and population compositions which need to be kept in mind. Further analyses address rather obvious aspects that could facilitate sample selectivity, comprising the elements of mothers' general prevalence to have two children across time as opposed to having one or three children (Appendix 1), their attachment to the labor market as of their employment status immediately before their first pregnancy (Appendix 6) and their overall experience up to that point (Appendix 5), as well as their migration background

[15] The models have been checked for multicollinearity between mothers' birth cohort and the categories of their first birth. VIF-values are consistently at 3.3, implying that the estimates are not biased by multicollinearity.

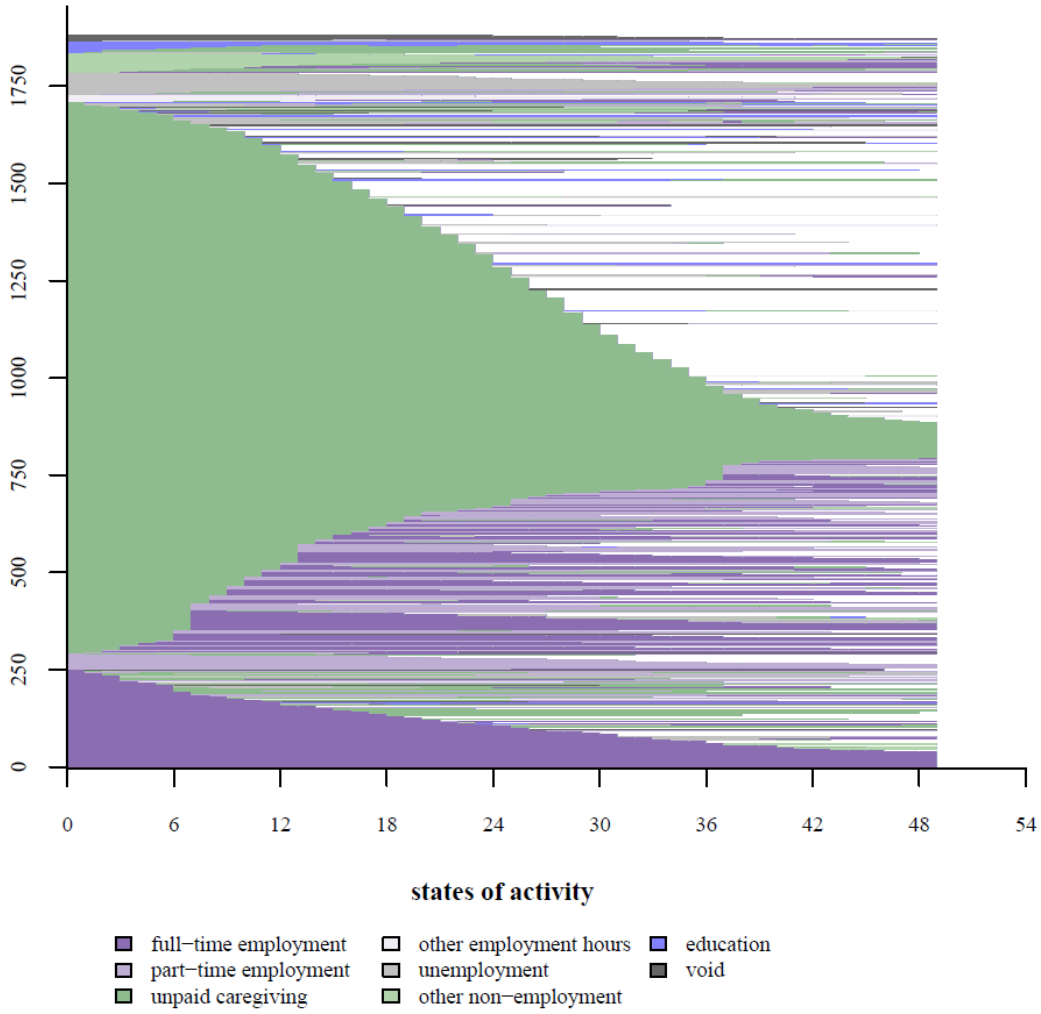
(Appendix 7). These additional analyses, however, reveal that, beside an increase in labor market attachment before first birth, there are few consistent trends that appear to exert noticeably irregular influence across time or educational groups. While this record is not all-encompassing, and only applicable to this study's potentially limited sample, it still needs to be kept in mind. However, further elaborations, though interesting, surpass the scope of the paper.

Accordingly, throughout the long time span and several educational groups, Figure 1suggests that a considerable share of the observed women continue their full-time employment right after the first birth. Most of these women have continued their employment due to the early lack of parental leave regulations (analyses not shown). Interestingly, however, many of them do not stay in employment throughout their period of birth spacing, but instead enter a quite lengthy period of unpaid caregiving later on. These transitions primarily occur within the first 20 months after the first birth.

More remarkably, however, the figure shows that the majority of first-time mothers engage in unpaid caregiving. A large share of them decides to have a second child during this state; many others return to part-time or full-time employment before transitioning to their second pregnancy. Of those that do return, the vast majority do so between six to 20 months after childbirth. Interestingly, this is true even though 40% of the sample's women are eligible to return after 36 months, according to job guarantees as of 1992 (analyses not shown). Instead of returning after that period, however, most have already entered their second pregnancy, thereby refraining from employment between births altogether.

Regarding the overall duration of women's birth spacing, the figure suggests that 75% of women report being pregnant within 49 months, just over four years, after their first birth. However, the figure also shows that hardly any women report their second pregnancy less than a year after their first birth. Between one and three years after having a first child, in contrast, the transition into the second pregnancy seems to happen at a fairly steady rate, which flattens again after 36 months. Overall, women in unpaid caregiving appear to take the decision to have a second child quicker than those that return into any type of employment.

Figure 1: state index plot of women's behavior between the first birth and the third month into their second pregnancy



Note: N=1880; NEPS adult cohort (release 5.1.0), own calculations; visual duration cut-off at the 75th percentile.

In sum, the raw sequence index provides an initial insight into women's reconciliation behavior between their first birth and their second pregnancy. While most mothers overall stay in unpaid caregiving throughout their spacing, it is most noticeable that returns into employment mainly occur within 20 months after first childbirth, even at times when job guarantee regulations facilitate returns for 36 months. In contrast to the shorter regulations, women appear to hardly utilize such long job guarantees between births. Instead, they seem to use the provided time of unpaid caregiving to have a second child, thus also activating another job guarantee. This

indication is of particular interest considering previous findings that a long job guarantee causes considerable costs and risks on part of the employer – who, in turn, passes these potential costs on to all women in the form of statistical discrimination (Phelps 1972; Arrow 1973; Ziefle 2004; Gangl/Ziefle 2009; Hirschle 2011). This little-used safety net might actually be detrimental for all women.

Comparing the sequence index of mothers of two in Figure 1 with the complementary figure on mothers of three or more children in Appendix 3 emphasizes the benefit of distinguishing between both groups for analysis: The reconciliation behavior between births concerning both employment returns and spacing duration differs notably. On the one hand, multiple mothers are more likely to withdraw from the labor market altogether before becoming pregnant again. On the other hand, their spacing duration appears to be shorter. As per the 75th percentile, multiple mothers enter their second pregnancy 14 months earlier than mothers of two. Apparently, their greater family-centeredness already shows between their first two births. Evidently, separating the groups into mothers of two and mothers of three and more accounts for considerable selectivity. Accordingly, the next section again focuses on the reconciliation behavior between the births of mothers of two. Specifically, it derives typical patterns from the sequences illustrated in Figure 1[16].

Patterns beneath women's reconciliation behavior

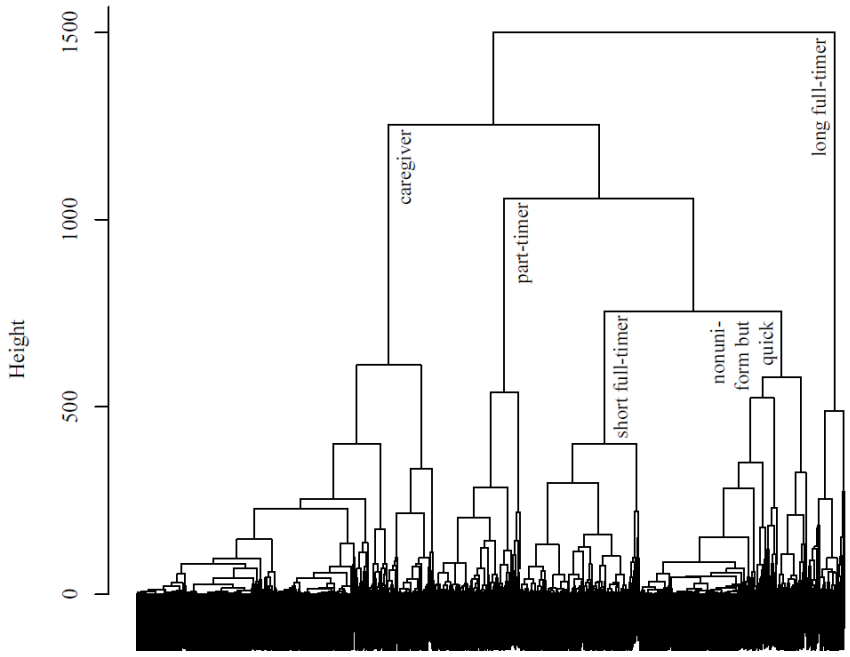
The deliberations in chapter 3 suggested several patterns that can be expected on the basis of previous research. To follow up on these assumptions, Figure 2 illustrates the cluster analysis' procedure in a dendrogram. Figure 3, an index plot of the emerging clusters, visualizes the respective patterns, explains the rationale behind their naming and helps to illuminate the mechanisms behind the behaviors.

As Figure 2 shows, the dendrogram's first bifurcation establishes a pattern in the sample. Judging from the difference in height to the next point of separation, these women are very different from the rest of the sample. Also, the cluster appears to be very homogenous, since it is highly resistant to further segmentations. Regarding the cluster's composition, Figure 3 suggests the description 'long full-timer': Women who

[16] The emergent patterns are also stable to cluster analyses on the behavior between first and second birth across all mothers with at least two children.

exhibit this pattern display a very long spacing duration, largely spent in full-time employment entered less than a year after the first birth. The share of women exhibiting this pattern, however, is very small, reflecting only 5.4% of women. Possibly, these mothers experience unusual, specific settings for their employment and birth decisions, such as having to care for the first child by themselves or having a second child despite the long-standing arrangement of caring for an only child.

Figure 2: dendrogram of cluster analysis on sequences between first birth and second pregnancy



Note: N=1880; NEPS adult cohort (release 5.1.0), own calculations.

The dendrogram's next bifurcation separates a group fitting the description 'caregiver' from the sample (cf. Figure 3), displaying periods of unpaid caregiving no shorter than 20 months. Arithmetically, the evident distinctness of the pattern matches observations in Figure 1: As opposed to the period prior to month 20, mothers' transitions are fairly uniform, moving mainly from unpaid caregiving into second pregnancy, instead of returning to the labor market. Thereby, mothers exhibit a longer reconciliation pattern dominated by unpaid caregiving, which signals family-centeredness. The relatively few women that return to the labor market after 36 months, mainly into part-time employment, are arithmetically less distinct and thus also assigned to the cluster.

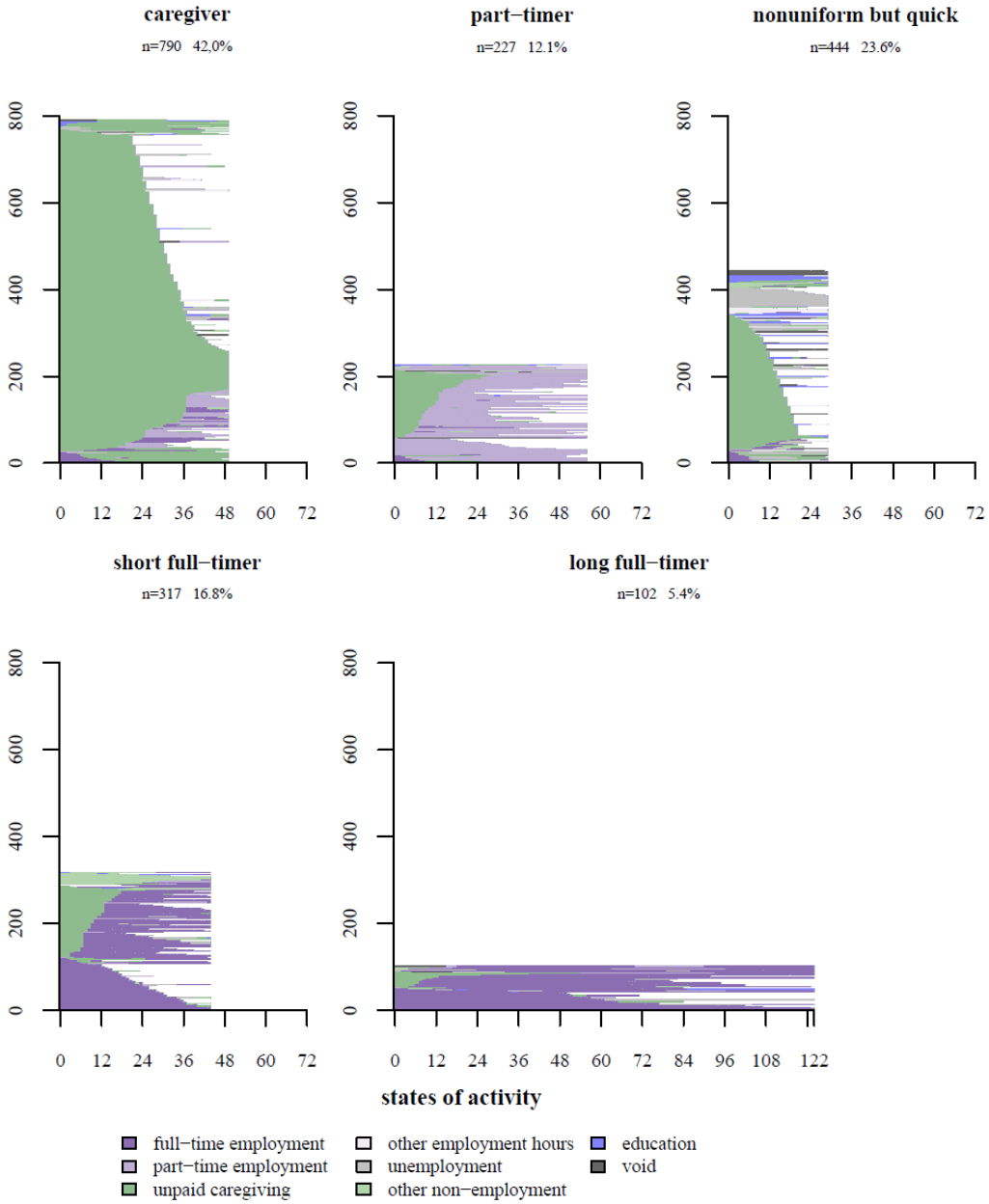
In a next clustering step, the pattern ‘part-timer’ emerges from the sample, consisting of mothers that return into part-time employment soon after childbirth, or after a short period of unpaid caregiving. Subsequent to that, a last protruding bifurcation happens at a slightly more distant height, adding valuably to the comprehension of the patterns. In fact, it first adds a more stable pattern named ‘short full-timer’, encompassing women who enter full-time employment after their first birth and soon decide for a second child out of employment. Interestingly, women who report being in a state of non-employment that is not caregiving-related, such as sick-leave or retirement, have also been assigned to that pattern, suggesting strong orientation to the labor market. Second, a cluster ‘nonuniform but quick’ is distinguished, accumulating states that did not match any of the other clusters identified so far. As a result, the dendrogram suggests that it is not particularly stable; the height until the next bifurcation is relatively small. Nonetheless, the cluster displays an interesting composition. Specifically, the pattern predominantly features women who enter their second pregnancy within 20 months of unpaid caregiving after first childbirth. Thereby, the pattern captures the evidently very distinct behavior of women who decide for a quick succession of births as opposed to long periods of unpaid caregiving, as in the pattern ‘caregiver’. Besides that, many women in this cluster report states of unemployment, i.e. the search for employment, or states of education that are continued beyond childbirth or after a shorter period of unpaid caregiving.

Comparing the patterns in Figure 3 further reveals several distinctive characteristics. First, they reflect on women’s employment behavior: The three patterns describing returns to the labor market, namely ‘part-timer’, ‘short full-timer’ and ‘long full-timer’[17], jointly display returns within the first 20 months after childbirth. Late returns, as in the cluster ‘caregiver’, if at all, are dominated by part-time returns. This complies with the relative closeness of the patterns ‘part-timer’ and ‘unpaid caregiving’ in the dendrogram: Returns into part-time employment appear to operate more as a variant form to staying in unpaid caregiving than as a perfect alternative to full-time employment (for a systematic comparison of part- and full-time returns cf.

[17] In the full-time clusters, higher shares of women do not leave the labor market for unpaid caregiving. This is, however, mainly a result of the simultaneous distribution of part-time employment and parental leave regulations.

Frodermann et al. 2013). The pattern ‘nonuniform but quick’, in contrast, does not seem to include returns into any type of employment at all. However, it has proven to be very close to the pattern ‘short full-timer’ (cf. Figure 2). Apparently, these patterns constitute two related alternatives – possibly facilitating either a particularly early or a later but ultimate labor market return.

Figure 3: state index plots on clustered reconciliation patterns



Note: N=1880; NEPS adult cohort (release 5.1.0), own calculations; visual duration cut-off at each clusters’ 75th percentile.

Second, Figure 3 also displays some interesting aspects regarding women's spacing duration. At the 75th percentile[18], the small and distinct pattern 'long full-timer' displays a length of 122 months, just over ten years. The four remaining, dominant clusters vary between lengths of 29 and 56 months, the longest being 'part-timer', followed by 'caregiver' with 49 months, 'short full-timer' with 44 months, and, finally, the pattern 'nonuniform but quick'. Interestingly, women following the pattern 'short full-timer' have their second child sooner than most women withdrawing from the labor market for some time to give unpaid care. In the same vein, part-time employment is closer in duration to the family-centered pattern 'caregiver' than to the work-centered pattern 'short full-timer'. Again, the figures suggest different mechanisms when it comes to the returns to part-time or full-time employment, even regarding the period of time which passes until women have their second child. Apparently, the tendency to be family-centered reflects in being committed to one child at a time, and over a longer period of time. Conversely, the dominant patterns suggesting work-centeredness, i.e. 'short full-timer' and its close relative 'nonuniform but quick', seem to aim for a quick finalization of the family formative phase.

In sum, the clustering procedure supports my assumptions (cf. chapter 3) of the existence of one pattern dominated by fairly extensive unpaid caregiving between first birth and second pregnancy ('caregiver'), one featuring mothers' part-time employment ('part-timer'), and one pattern that is characterized mainly by its short spacing duration ('nonuniform but quick'). However, the analysis also adds to the expected picture, in particular with regard to full-time employment. Specifically, contrary to my assumptions, mothers that return to full-time employment are not a homogenous group, but can rather be separated into two very distinct clusters: a very small one that features a particularly long spacing duration ('long full-timer'), and a more sizeable one that exhibits unexpectedly short spacings between the first birth and the third month of the mothers' second pregnancy ('short full-timer'). A return to full-time employment thus does not necessarily delay the decision for a second child. On the contrary – mothers who can be assumed to be more work-centered seem to opt for a shorter spacing duration in general, irrespective of their activity in the meantime ('short full-timer' and 'nonuniform but quick'). More family-centered women, in

[18] The Optimal Matching and subsequent clustering have of course been estimated using the full durations.

contrast, seem to allocate quite a lot of time exclusively to their firstborn, in both the patterns 'caregiver' and 'part-timer'. Interestingly, a mother's choice of pattern seems to be identifiable before 20 months. By that time, more work-centered women seem to have either returned to employment or begun their second pregnancy. A return after 36 months, as facilitated by policies since 1992, on the other hand, seems to be a variation of staying in unpaid caregiving between children. This supports the argument of a 36-month job guarantee being not only a fairly needless but also detrimental regulation, since it facilitates women's statistical discrimination on the labor market.

The influence of family policy and education on women's reconciliation patterns

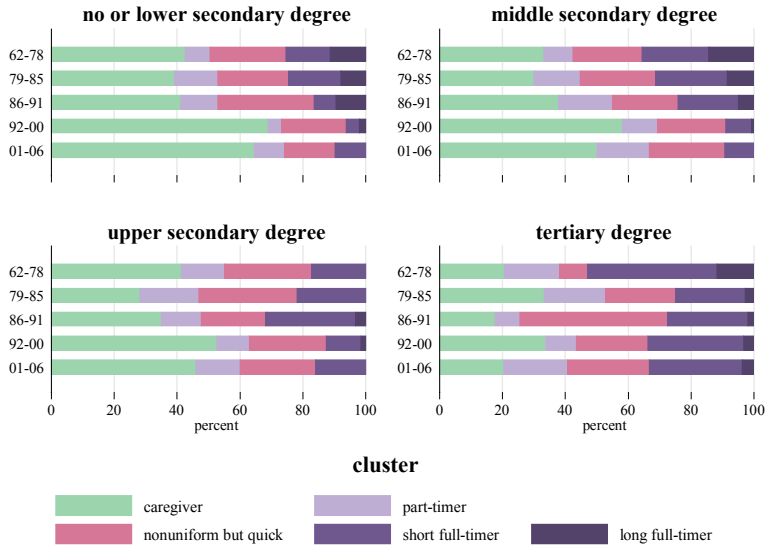
As theoretically elaborated in chapter 3, reconciliation patterns between births, particularly of work-centered and adaptive mothers, can be expected to be impacted by both family policies (and the associated norms) and women's education. To investigate the data for the battery of postulated assumptions, the following section provides an in-depth characterization of the distribution of patterns by analyzing their relevance across effective family policies and educational groups. For illustration, I provide bivariate categorical frequency plots on the one hand (Figure 4), and marginal effects derived from logistic regressions controlling for further potentially influential factors on the other hand (Figure 5 displays the predictive margins, Table 2 reports the exact marginal effects and their significances conditional on women with middle secondary education).

The picture is diverse and complex, but it does suggest quite similar long-term patterns for women with no or lower, middle, and upper secondary degrees. Although the patterns' scopes differ slightly, the overall distributions, as well as the long-term developments, are fairly similar. Very different, in contrast, are the spacing patterns exhibited by mothers with tertiary education; they at least partially display patterns that run almost diametrically to the other women.

In the years before any parental leave regulations – that is, until 1978 – the pattern 'caregiver' is indeed the most relevant one, but not as dominant as expected. In fact, in the three less educated groups, the pattern is exhibited by only up to 40% of the group, with women holding no or a lower secondary degree being slightly ahead. The patterns

'short full-timer' and 'nonuniform but quick' are, as expected, similarly important, with levels of around 20%, albeit 'nonuniform but quick' is slightly more frequent. Women with tertiary education, in contrast, exhibit a very different distribution of patterns. Corresponding to my assumptions, they strongly reject both the 'caregiver' and the 'nonuniform but quick' patterns; instead, they embrace the pattern 'short full-timer'. Interestingly, this picture changes rapidly upon the introduction of a short period of parental leave in 1979. Instead of less educated mothers converging upon the positions of the better educated, the opposite is the case: Large numbers of women with tertiary degrees suddenly reject the pattern 'short full-timer', accept 'nonuniform but quick', and display similar behaviors as the other educational groups. Only the difference in the tendency to follow the pattern 'caregiver' stays significant.

Figure 4: distribution of clusters across educational groups and family policies

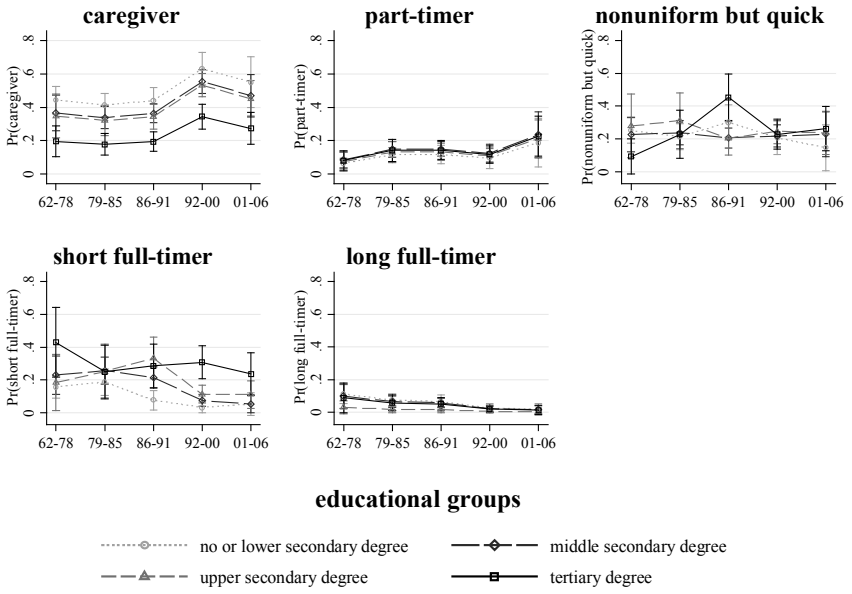


Note: N=1880; NEPS adult cohort (release 5.1.0), own calculations.

Contrary to my assumptions, the analysis reveals that the impact of the gradual extension of parental leave between 1986 and 1991 did hardly function as a precursor to the effect of the 1992 reform. This is apparently not due to the quick succession of extensions: Results suggest that the policies did indeed make an impact. Specifically, women with tertiary education adjusted by displaying the pattern 'nonuniform but quick' at higher rates. Women with no or lower education adapted mainly by abandoning the pattern 'short full-timer'. The predicted effect of a considerable

increase of the pattern ‘caregiver’ due to the extension of parental leaves, in contrast, does indeed only show after 1992. Then, however, the effect is substantial, particularly for the three less educated groups. Amongst them, the share of mothers following the pattern ‘caregiver’ increases by about 20%, resulting in a clear majority of up to 63% exhibiting this pattern. The increase among tertiary educated women is smaller but considerable, too. However, contrary to the other educational groups, the increase does not happen at the expense of the pattern ‘short full-timer’, but instead at the cost of a decrease in the pattern ‘nonuniform but quick’. Overall, driven by differences of a minimum of 22% in the patterns ‘caregiver’ and ‘short full-timer’, the educational groups differ distinctly more than as the result of any previous family policy.

Figure 5: predictive margins



Note: N=1880; NEPS adult cohort (release 5.1.0), own calculations. The clusters ‘nonuniform but quick’ and ‘short full-timer’ are estimated allowing for the interaction of family policies and education. Models have been controlled for cohort affiliation, age at first pregnancy and labor market experience at first pregnancy (yes/no and duration in years).

Upon the slight flexibilization of parental leave policies in 2001, the polarization stays strong, changing only slightly. While all educational groups move away from the pattern ‘caregiver’, the tertiary educated women retain their overall widespread rejection of the pattern ‘caregiver’ for the benefit of ‘short full-timer’. However, the introduction of the anti-discriminatory act levels some of the educational differences

by increasing all women's share in the pattern 'part-timer' by 10%. The pattern 'long full-timer', instead, reaches an all-time low, having generally been of little significance over the entire period observed here.

Table 2: conditional marginal effects on probability to exhibit reconciliation patterns

	caregiver	**part-timer**	**nonuniform but quick**	**short full-timer**	**long full-timer**
	CME	*CME*	*CME*	*CME*	*CME*
Estimates based on interaction of family policy and education			✔	✔	
reference: middle secondary education					
no/lower secondary education					
1962-78	0.082 **	-0.030 *	0.037	-0.068	0.003
1979-85	0.080 **	-0.050 *	-0.013	-0.067	0.002
1986-91	0.081 **	-0.050 *	0.110 +	-0.137 **	0.002
1992-2000	0.081 **	-0.042 *	0.001	-0.042 +	0.001
2001-06	0.084 **	-0.073 *	-0.075	0.002	0.001
upper secondary education					
1962-78	-0.022	0.000	0.037	-0.052	-0.065 *
1979-85	-0.021	0.000	0.057	-0.015	-0.044 *
1986-91	-0.022	0.000	-0.015	0.108	-0.039 **
1992-2000	-0.024	0.000	0.015	0.032	-0.015 +
2001-06	-0.024	0.000	-0.006	0.054	-0.011
tertiary education					
1962-78	-0.175 **	0.011	-0.149 *	0.201 *	0.015
1979-85	-0.166 **	0.018	-0.038	-0.006	0.011
1986-91	-0.175 **	0.018	0.208 **	0.072	0.009
1992-2000	-0.217 **	0.016	-0.018	0.234 **	0.004
2001-06	-0.204 **	0.025	0.003	0.186 *	0.003
N	1880	1880	1880	1880	1880

+ p<0.10, * p<0.05, ** p<0.01

Note: NEPS adult cohort (release 5.1.0), own calculations. Models have been controlled for cohort affiliation, age at first pregnancy and labor market experience at first pregnancy (yes/no and duration in years).

In sum, the mechanisms of choosing a behavioral pattern between first and second birth differ slightly from what was expected. With regard to the – in a gender context rather traditional – pattern 'caregiver', the analyses show that the pattern has been important, but not as popular in earlier decades without extensive parental leave as

expected. Beyond that, the figures suggest that, surprisingly, women from most educational backgrounds have been behaving very similarly – the only real outliers are women with tertiary education, who consistently reject the pattern 'caregiver' at a much higher rate. Without any parental leave, tertiary educated mothers instead predominantly follow the work-centered pattern 'short full-timer'. Women from the other educational groups, in contrast, pursue their – presumed – work-centeredness by opting for short-spaced births, either in unpaid caregiving ('nonuniform but quick') or in full-time employment ('short full-timer'). Interestingly, the introduction of a short period of parental leave and the accompanying job guarantee results in only tertiary educated women changing their patterns. While they stick to a short-spaced pattern, the politically facilitated interruption apparently leads them to believe an employment return ('short full-timer') before the second birth is no longer sufficiently feasible. Instead, they stay in unpaid caregiving but expedite their second pregnancy ('nonuniform but quick'). As a result, the relatively short period of parental leave introduced in 1979 leveled the differences between educational groups. The gradual extension of parental leave between 1986 and 1991, in contrast, led to a divergence of educational groups' behaviors again, though not in the expected way of increasing the shares in the pattern 'caregiver'. Instead, tertiary-educated women continue to pursue their previously favored path. The parental leave and job guarantee of up to 24 months further facilitate their rather short spacing in unpaid caregiving ('nonuniform but quick'). Interestingly, apart from that, only women with no or lower secondary education adapt to state family policies, particularly by at least partially abandoning the pattern 'short full-timer'. While this reaction by a rather policy-sensitive group precedes mothers' reactions to the further extension of parental leave in 1992, the results still show that the extension of parental leaves up to 1991 was not embraced and appreciated by mothers such that they would thus adapt promptly. This was only induced by the 36-month parental leave effective between 1992 and 2000. The figures show that, indeed, this family policy resulted in enormous adaption processes across all educational groups. The lower three educational groups strongly reject full-time returns to work ('short full-timer') for the sake of the institutionally and normatively promoted pattern 'caregiver'. Some tertiary educated women, instead, seem to trade the pattern 'nonuniform but quick' for a longer period of unpaid caregiving ('caregiver'). Their share of women returning into full-time ('short full-timer'), however, is consistently

high. This family policy thus contributed to a considerable educational polarization. Interestingly, this polarization has established itself as quite natural in reconciliation research – even though it appears to have emerged quite recently and been caused by policy intervention. The slight shift in institutions and norms in 2001 halts that development slightly, particularly through the extension of part-time employment between first and second birth ('part-timer'). Although part-time employment was suggested to operate more as alternative to unpaid caregiving than to full-time employment, it still enjoys mutual consent across educational groups.

6. Conclusion

There is a considerable canon of research on women's means of reconciling employment and family responsibilities in conservative West Germany. However, the question of how West German women behave during their reproductive phase with regard to the reconciliation of work and family has been approached merely by analyzing partial aspects of overall reconciliation behavior, such as the timing and scope of mothers' return to work upon the birth of a child (Falk/Schaeper 2001; Dornseiff/Sackmann 2003; Kenjoh 2005; Buchholz/Grunow 2006; Rübenach/Keller 2011; Frodermann et al. 2013), as well as the spacing and the state of activity prior to having another child (Kreyenfeld/Zabel 2004; Köppen 2006; Bernhard/Kurz 2007; Brose 2008). The present paper contributes a more comprehensive perspective, arguing that women's reproductive behaviors, and the related employment behaviors, actually represent an interrelated complex of decisions. In light of the two-child norm prevailing in West Germany, I focus on mothers of two biological singletons. Thereby, the study aims to establish and analyze systematic patterns in the reconciliation behavior between the first and second birth. Moreover, it aims to understand factors that impact upon these behavioral patterns. Specifically, it analyzes the influence of changing family policies, ranging from periods with maternity leave only (before 1979) to 36-month parental leave with a 24-month allowance (since 1992, slightly flexibilized in 2001). To understand the adaptiveness of differently qualified women, the paper analyzes mothers' behavioral reaction to policies by their educational background.

The analyses show that women's reconciliation behavior between their first and second birth exhibits five distinct patterns. First, the pattern 'caregiver' features mothers participating in almost exclusive and fairly long-term unpaid caregiving. Starting from only a relative but not absolute majority at the time of early policies, it has gained considerable relevance with the introduction of 36-month parental leave, particularly among less educated women. Second, the pattern 'part-timer' traces mothers' return into part-time employment and displays many essential similarities to the previous pattern. Despite being of minor importance overall, it has gained relevance following the anti-discrimination act in 2001, and is met with shared consent by all educational groups. Third, the pattern 'nonuniform but quick' encompasses women's quick decision for a second child, irrespective of their choice of occupational activity. It proves to be in close relation to the fourth pattern, 'short full-timer', comprising a similarly quick decision for a second child out of full-time employment. In particular, highly educated women alternate between both patterns as they both provide means to retain work-centeredness regardless of increasingly conflicting policy incentives. Fifth, the pattern 'long full-timer' is very distinct but small and increasingly irrelevant, featuring women's reentry to and long continuance in full-time employment before a second pregnancy.

Though simultaneous societal and normative developments could not be accounted for in depth, the analyses still suggest that family policies have had a major impact on the emergence of highly education-specific behaviors, dominated by unpaid caregiving and disapproving of full-time employment, as scientifically established today. Prominently influential was the introduction of a period of 36-month parental leave in 1992: While previous gradual extensions of leave regulations did not yield any major adaptions that would identify mothers as particularly eager to stay in unpaid caregiving, the 1992 reform proves to have been incisive, raising the shares of women pursuing the pattern 'caregiver' enormously at the expense of 'short full-timer'. This is similarly true for all educational groups except for tertiary educated women, demonstrating their extraordinary consistency even in the face of adverse family policies (Ziefle 2004; Drasch 2013). The institutional and normative establishment of part-time employment in 2001 levels the emerging educational differences, and suggests that large shares of mothers anticipating two children are quite willing to adapt to policies that facilitate employment between first and second birth.

This is particularly interesting in the light of the underutilized yet apparently detrimental 36-month job guarantee that has been in place since 1992. The vast majority of women who do return into employment between their first and second birth take action during the first 20 months. Beyond that point, reentries into employment are very rare; most mothers instead link a second pregnancy to their period of unpaid caregiving, entering a second parental leave and thus another 36-month job guarantee. At least with regard to the spacing between first and second child, this suggests that mothers hardly ever take advantage of the last 16 months of their job guarantee. In the view of results showing all women being statistically discriminated against by employers who thereby pass on the risks and costs imposed by long job warranties (Ziefle 2004; Gangl/Ziefle 2009; Hirschle 2011), this underutilized regulation appears needlessly costly for women as a whole. Instead, an arrangement appears feasible which, on the one hand, facilitates mothers' return within the first 20 months after childbirth but, on the other hand, also simplifies the reentry of mothers that interrupt their employment for many years – not at a predetermined time, however, but when they themselves ultimately decide to return, upon finishing their linked periods of childcare. The present study's results suggest that a considerable number of women are willing to adapt to policies that facilitate the concurrent reconciliation of work and family.

To critically examine the validity of the arguments put forward here, however, further research is indispensable, looking to validate the results of this paper in the light of societal developments extending beyond the ones analyzed here. Furthermore, more light needs to be shed onto mothers' behavior after their last child, analyzing their ultimate return behavior and contrasting it with their pattern of behavior during their birth spacing. Additionally, this study requires supplementation with data on the impact of the most recent family policies on women's reconciliation behavior between their first and second birth. Furthermore, the mechanisms hypothesized here need to be collated with the behavior of mothers with just one or more than two children, in order to reveal the full picture of women's behavior concerning the reconciliation of work and family in West Germany. In any case, however, the study provides an initial and strong argument in favor of observing mothers' birth and reconciliation behavior as one behavioral unit.

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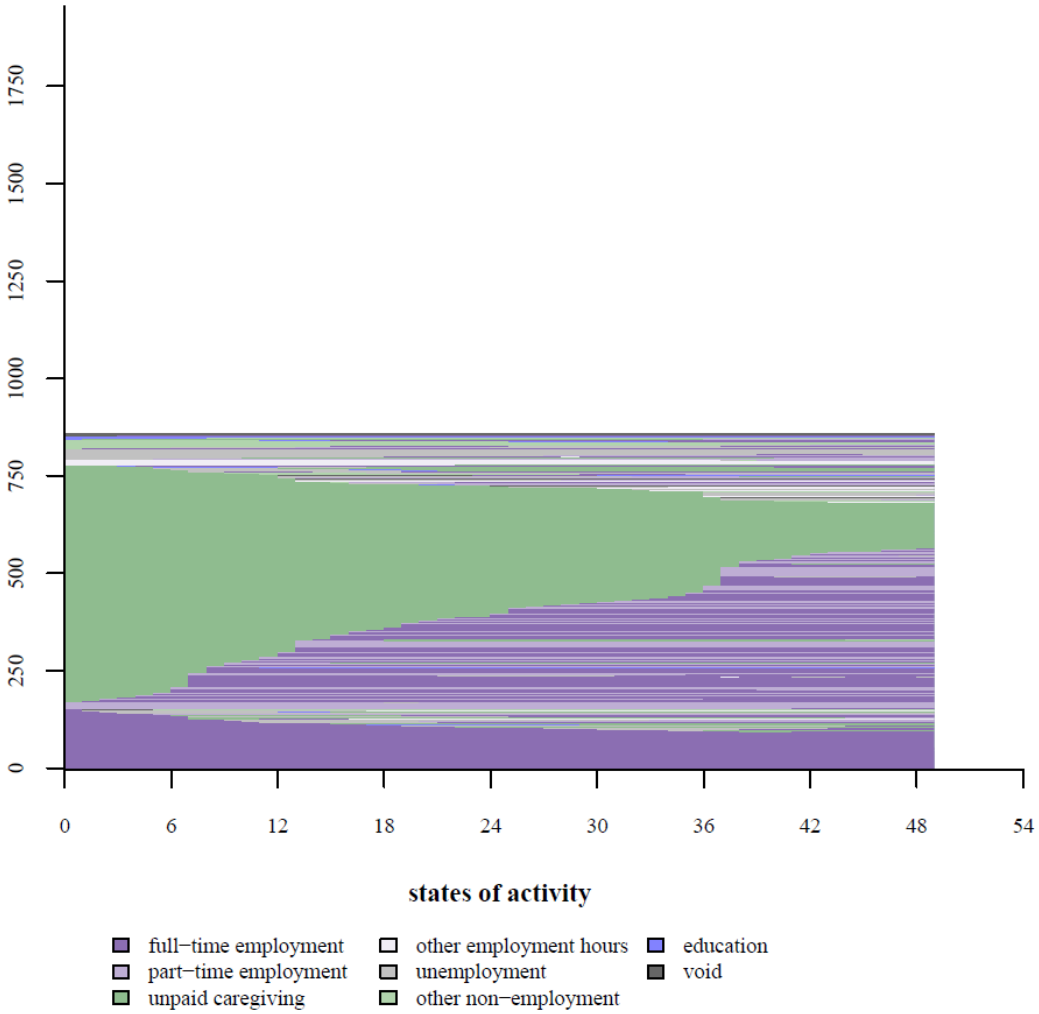
Appendix

Appendix 1: number of children across relevant groups

effective family policies		***educational level***							
		number of children							
		no or lower secondary degree				**middle secondary degree**			
		one	**two**	**three+**		**one**	**two**	**three+**	
	1962-78	119	240	120	**479**	55	118	50	**223**
		25%	*50%*	*25%*	***100%***	*25%*	*53%*	*22%*	***100%***
	1979-85	55	102	74	**231**	62	163	70	**295**
		24%	*44%*	*32%*	***100%***	*21%*	*55%*	*24%*	***100%***
	1986-91	36	85	54	**175**	75	182	87	**344**
		21%	*49%*	*31%*	***100%***	*22%*	*53%*	*25%*	***100%***
	1992-2000	44	97	49	**190**	101	232	72	**405**
		23%	*51%*	*26%*	***100%***	*25%*	*57%*	*18%*	***100%***
	2001-06	23	31	10	**64**	49	54	14	**117**
		36%	*48%*	*16%*	***100%***	*42%*	*46%*	*12%*	***100%***
		upper secondary degree				**tertiary degree**			
		one	**two**	**three+**		**one**	**two**	**three+**	
	1962-78	10	29	12	**51**	7	34	10	**51**
		20%	*57%*	*24%*	***100%***	*14%*	*67%*	*20%*	***100%***
	1979-85	15	32	33	**80**	14	36	19	**69**
		19%	*40%*	*41%*	***100%***	*20%*	*52%*	*28%*	***100%***
	1986-91	33	63	38	**134**	25	51	27	**103**
		25%	*47%*	*28%*	***100%***	*24%*	*50%*	*26%*	***100%***
	1992-2000	50	135	49	**234**	34	92	47	**173**
		21%	*58%*	*21%*	***100%***	*20%*	*53%*	*27%*	***100%***
	2001-06	21	50	14	**85**	31	54	22	**107**
		25%	*59%*	*16%*	***100%***	*29%*	*50%*	*21%*	***100%***

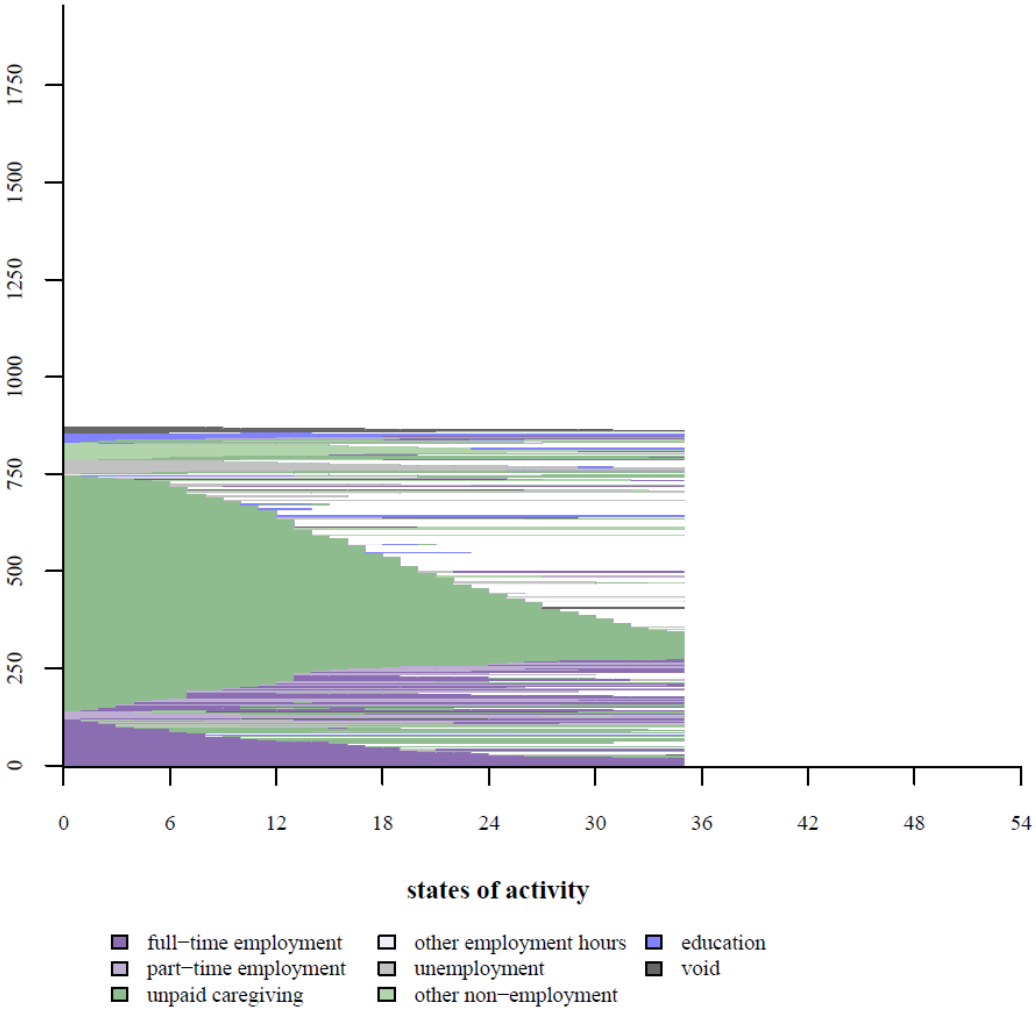
Note: N=3610; NEPS adult cohort (release 5.1.0), own calculations.

Appendix 2: state index plot of sequences of mothers of one child, axes and visual cut-off oriented towards the state index plots of mothers of two in Figure 1



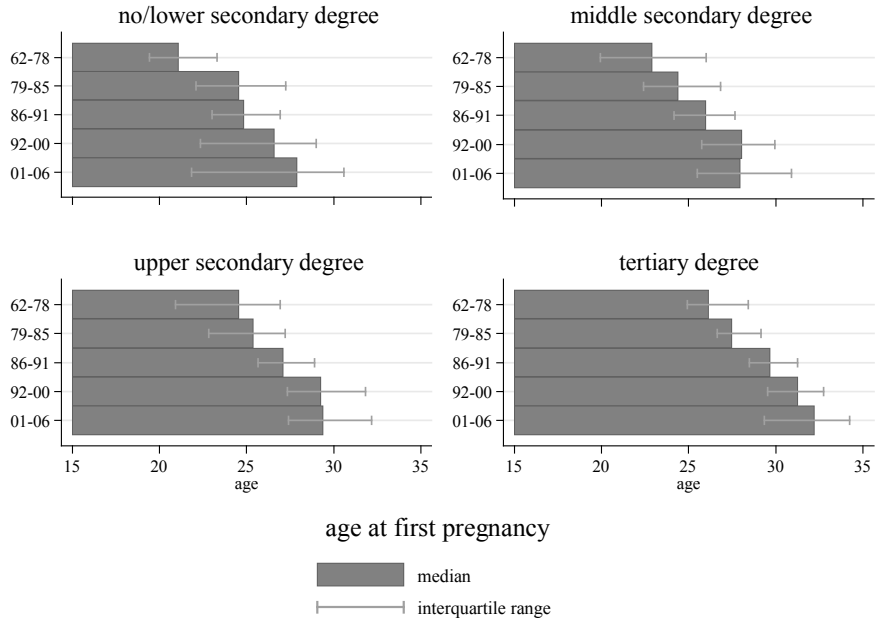
Note: N=859; NEPS adult cohort (release 5.1.0), own calculations; visual duration cut-off at mothers of two's 75th percentile.

Appendix 3: state index plot of sequences of mothers of three or more children, axes oriented towards the state index plots of mothers of two in Figure 1



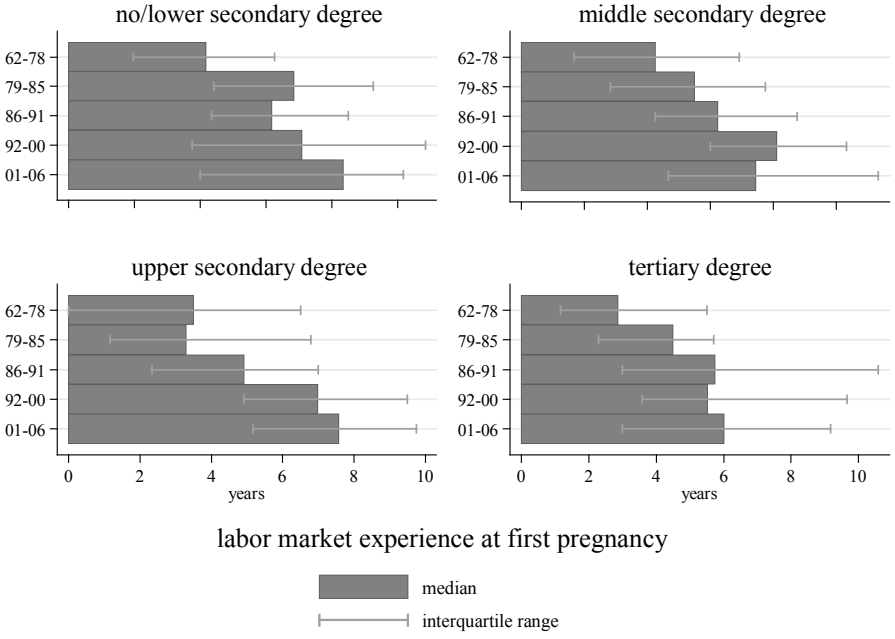
Note: N=871; NEPS adult cohort (release 5.1.0), own calculations; visual duration cut-off at 75th percentile.

Appendix 4: age three months into first pregnancy



Note: N=1880; NEPS adult cohort (release 5.1.0), own calculations.

Appendix 5: labor market experience three months into first pregnancy



Note: N=1880; NEPS adult cohort (release 5.1.0), own calculations.

Appendix 6: women's states of activity three months into first birth across family policies at first birth

		state of activity at first pregnancy								
		full-time employment	**part-time employment**	**other employment hours**	**un-employment**	**unpaid caregiving**	**education**	**other non-employment**	**void**	***sum***
effective family policies	**1962-78**	284	8	23	12	33	45	12	4	**421**
		67%	*2%*	*5%*	*3%*	*8%*	*11%*	*3%*	*1%*	***100%***
	1979-85	242	15	10	16	23	24	3	0	**333**
		73%	*5%*	*3%*	*5%*	*7%*	*7%*	*1%*	*0%*	***100%***
	1986-91	296	24	4	20	8	15	11	3	**381**
		78%	*6%*	*1%*	*5%*	*2%*	*4%*	*3%*	*1%*	***100%***
	1992-2000	450	22	10	17	16	33	4	4	**556**
		81%	*4%*	*2%*	*3%*	*3%*	*6%*	*1%*	*1%*	***100%***
	2001-06	148	11	5	7	3	13	2	0	**189**
		78%	*6%*	*3%*	*4%*	*2%*	*7%*	*1%*	*0%*	***100%***
	sum	**1420**	**80**	**52**	**72**	**83**	**130**	**32**	**11**	**1880**
		76%	***4%***	***3%***	***4%***	***4%***	***7%***	***2%***	***1%***	***100%***

Note: N=1880; NEPS adult cohort (release 5.1.0), own calculations.

Appendix 7: women's migration background as to either parent's non-German or not ascertainable place of birth

		educational level				
		no or lower secondary degree	**middle secondary degree**	**upper secondary degree**	**tertiary degree**	***sum***
effective family policies	**1962-78**	19	10	2	2	**33**
		8%	*8%*	*7%*	*6%*	*8%*
	1979-85	17	17	2	2	**38**
		17%	*10%*	*6%*	*6%*	*11%*
	1986-91	15	7	8	4	**34**
		18%	*4%*	*13%*	*8%*	*9%*
	1992-2000	14	16	12	13	**55**
		14%	*7%*	*9%*	*14%*	*10%*
	2001-06	5	7	4	7	**23**
		16%	*13%*	*8%*	*13%*	*12%*
	sum	**70**	**57**	**28**	**28**	**183**
		13%	***8%***	***9%***	***10%***	***10%***

Note: N=1880; NEPS adult cohort (release 5.1.0), own calculations.

Study III

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

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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[1]

Gibt es einen falschen Zeitpunkt für eine richtige Entscheidung?

Der Einfluss des Timings der Erstgeburt und des Spacings der Zweitgeburt auf die Karrieren von Frauen

Abstract:
The issue of how to reconcile family and work is particularly relevant in the light of West Germany's institutional and normative framework which has been facilitating mothers of young children to withdraw from the labor market for some years. Though the topic has already been subject to academic debate, the questions remain if and how women's careers are influenced by the way women embed their prevalently two births into their employment biographies as well as if educational groups differ in these effects.

So far, research has mainly focused on the first birth's timing: aspirations to establish firmly on the labor market suggest a postponement of the first birth to some degree. The effect is less obvious for the spacing between first and second births: to avoid a detrimental career discontinuity, women can either choose a short spacing, blocking their periods of unpaid caregiving tightly for a quick and definite occupational return, or space their births widely, intermitting their parental leaves with periods of employment.

Using NEPS data for West German mothers of two, the study finds that compared to career entry, 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

Zusammenfassung:
Die Frage nach einer erfolgreichen Vereinbarkeit von Familie und Beruf stellt sich insbesondere in Westdeutschland, wo der institutionelle und normative Rahmen Mütter ermutigt, mehrere Jahre für die Betreuung ihrer Kleinkinder zuhause zu bleiben. Trotz umfassender Forschung zum Thema blieben bisher die Fragen offen, inwiefern weibliche Karrieren durch die zeitliche Einbettung der überwiegend zwei Geburten in die Erwerbsbiografien beeinflusst werden und ob sich Bildungsgruppen darin unterscheiden.

Bisher konzentrierte sich die Forschung dahingehend vor allem auf das Timing der Erstgeburt: Um sich fest am Arbeitsmarkt zu etablieren scheint eine gewisse Verzögerung der Erstgeburt hilfreich. Bezüglich des Spacings zwischen Erst- und Zweitgeburt liegen hingegen zwei Strategien nahe: Entweder bekommen Frauen ihre Kinder kurz nacheinander um danach endgültig an den Arbeitsmarkt zurückzukehren, oder sie nutzen einen langen Abstand zwischen den Kindern für eine berufliche Episode.

Mithilfe eines NEPS-Samples zweifacher Mütter kann die Studie aufzeigen, dass ihr berufliches Prestige zwischen Karriereeinstieg und dem Alter 45 insbesondere von der Episode nach der ersten Geburt beeinträchtigt wird. Obwohl dies nicht durch ein bestimmtes Timing bedingt ist, er-

1 This paper uses data from the National Educational Panel Study (NEPS): Starting Cohort 6 – Adults (Adult Education and Lifelong Learning), doi:10.5157/NEPS:SC6:3.0.1. The NEPS data collection is part of the Framework Program for the Promotion of Empirical Educational Research, funded by the German Federal Ministry of Education and Research and supported by the Federal States.

births least detrimentally. With regard to the spacing, evidence suggests that only higher educated women can achieve to continue their prestige accumulation, namely by spacing their births very tightly. Lower and intermediately educated women's prestige, in contrast, cannot be impaired considerably by their spacing behavior, unless they decide to return to part-time employment soon after their first birth.

Key words: timing, spacing, occupational prestige, female career

weist sich das Timing höher gebildeter Frauen als am wenigsten nachteilig. Für das Spacing zeigt sich, dass nur höher gebildete Frauen nach ihren Betreuungsphasen noch Prestige anhäufen können, so sie denn ihre Kinder im kurzen Abstand zueinander bekommen. Die Prestigeentwicklung von Frauen mit geringerer Bildung hingegen wird nicht wesentlich durch das Spacing vermindert, außer sie entscheiden sich kurz nach der Geburt des ersten Kindes für die Rückkehr in einen Teilzeiterwerb.

Schlagworte: Timing, Spacing, Berufsprestige, weibliche Karriere

1. Introduction

It is well-known that a trade-off between work and family is characteristic for women in Germany (Buchholz/Grunow 2006; Grunow 2006; Pfau-Effinger/Smidt 2011). Women's mid-career phase is not as clearly defined as it is for men (Mayer 1991; Lauterbach 1994). This especially applies for West Germany with its long-standing conservative welfare regime (Esping-Andersen 1990) and its rather traditional gender culture (Pfau-Effinger 1996; Falk/Schaeper 2001) which results in a very gender-specific division of labor within families (Schulz/Blossfeld 2006; Grunow et al. 2007). Typical examples for the strong support of a rather traditional gender contract in West Germany include relatively generous maternity leave regulations, tax legislations favoring the male breadwinner or the 1.5 earner model instead of the dual earner model for families, comparatively low early childcare coverage rates, a still mostly half-day oriented kindergarten and schooling system, and strong support for rather traditional gender values.[2] As a consequence, women's careers in West Germany tend to be marked by employment interruptions as well as by high rates of part-time employment after family formation. Even today, the reconciliation of paid labor and childcare is mostly left to mothers.

A vast body of literature and empirical studies have already addressed the issue of how women in West Germany combine family and work and the effect of family obligations on women's labor market behavior and their employment careers (e.g. Engelbrech 1997; Grunow et al. 2006; Matysiak/Steinmetz 2006; Brose 2008; Aisenbrey et al. 2009; Gangl/ Ziefle 2009). It has been shown that the birth of the first child is the major incision into women's working lives and even occupationally established women draw back quite 'naturally' from the labor market to dedicate themselves to childcare for some years after having made the transition to motherhood (e.g. Blossfeld/Huinink 1991; Reichle 1996; Timm 2006). However, one particular issue that has been underrepresented or even missing altogether in the academic debate is if and how women's careers are influenced by the

2 Although there has been a clear modernization of both the gender culture and welfare state arrangements over the past decades in Germany, changes across time and/or birth cohorts are beyond the scope of this article. Similarly, we will not discuss existing differences between East Germany and West Germany.

way women embed their birth decisions into their life courses. Precisely, the notion addresses the impact of the *timing* of the first birth after labor market entry as well as the *spacing* of childbirths, which, in turn, is the time women allow to elapse after the birth of their first child until having their second child. Since these decisions go along with a specific occupational and childcare behavior, they can be expected to have a major influence on the ways women pursue and succeed in their career. Hence, the central aim of our study is to fill this research gap. Specifically, our analyses aim at answering the following research questions:

– How do mothers' careers develop before and after family formation?
– In what way does women's birth behavior, i.e. their timing of the first births and spacing of the second births, affect women's subsequent careers?

For both of these research questions, we will pay special attention to the question of educational differences. It is well known that women's educational level strongly influences their family planning, especially with regard to timing the birth of their first child (Timm 2006; Kreyenfeld 2007; Brehm 2013). However, the aim of our empirical analyses is to understand if women's timing of the first births and their spacing of the second in their employment careers differently impact their career development. For example, are higher educated women able to reduce their risks of career setbacks with the aid of steeper career developments before their family formation, a later timing of first births, and different spacing of second births?

Our empirical analyses are based on data from the adult cohort of the National Educational Panel Study (NEPS). The NEPS cohort supplies detailed and high-quality longitudinal information on individual life courses for various birth cohorts. Although this dataset also offers information on persons born in East Germany, we only use information of West German women since the East German women in our data have been shaped by a very different gender culture (e.g. Pfau-Effinger 1996; Grunow/Müller 2012). Even 25 years after the fall of the Iron Curtain, the situation of women in East and West Germany is still very different. Modelling intra-German differences as well as the complexity of change after reunification would go beyond the scope of our empirical study. Additionally, we restrict our analyses not only to West German but also to mothers of two because two children are still prevalent in Germany – in both normative and empirical terms (Goldstein/Kreyenfeld 2010). Hence, we will be able to study the impacts exerted by features of both the incisive family formation and the similarly relevant family extension in its predominant pattern in Germany. To measure women's career development, we will use information on their occupational prestige as described by the Standard International Occupational Prestige Scale (SIOPS) (for more information, see research design and methods below). The aim of this specific operationalization is to avoid biases resulting from different sectors and job mobility which may emerge from, e.g., monetary measures.

In our article, we proceed as follows. First, we present the framework of our empirical analyses by first outlining the West German context, previous research findings as well as general theoretical considerations. Based on this discussion, we then elaborate our research design, our data and our methodological approach. In the next step, we present the results of empirical analyses of our study and, thereafter, conclude by summarizing and discussing our findings.

2. Theoretical considerations and empirical implications

Institutional context and previous research results

In order to understand the relationship between childcare and female employment in West Germany, one has to be aware of the specific family policies that have been influencing women's lives. Generally, following the Christian concept of a conservative welfare state (Esping-Andersen 1990), West Germany has been relying on the principle of subsidiarity in family policy issues. In line with that, the family, including children, is regarded to be one unit that arranges its matters itself. In order to support this self-regulation, the state subsidizes marriages – assuming that this provides the precondition to having children – by enabling a married couple's joint taxation. This instrument facilitates a financial benefit from high income differences between spouses and therefore promotes intra-familial division of labor into housework on the one hand and a gainful employment on the other. Particularly if there are children involved, the state traditionally leaves the care-intensive upbringing of the (young) offspring to the family. Although today public childcare can be provided for almost 20% of children under the age of three (Institut für Arbeit und Qualifikation 2014), this fairly high rate results from very recent developments that mark a partial change in policy paradigms (e.g. Bujard 2013). For many decades up until the early 2010s, in contrast, the rate of small children that could be cared for institutionally was at 3% at the most (Matysiak/Steinmetz 2006; Aisenbrey et al. 2009) – a legal claim to public childcare places was only admitted to at least three year olds and only since the mid-1990s. Also, even at times when a vast majority of older children attended kindergartens, most institutions' opening hours required for one parent to care for the offspring from the early afternoon onwards – just as, subsequently, by far most schools have been doing, too (ibid.). Normatively, and for a long time even legally[3], the resulting division of employment vs. household and reproductive tasks has been gender-specific: not parenthood taken as a whole, but specifically motherhood has been assumed to be a demanding responsibility that requires much time and devotion to the offspring. As a result, the majority of families have been living in a family model of a male breadwinner and a female carer that works in a part-time job at most. Female employment has been a given, but only given that there are no children that need to be cared for (Falk/Schaeper 2001; Rosenfeld et al. 2004; Brose 2008).

To protect women against a double burden while facilitating a secured time and room for childcare, West Germany started to introduce labor market policies that ascertain a partly paid parental (and in the beginning even exclusively maternal) leave along with a guarantee to be able to return to their old jobs after less than one year in the late 1970s. In the subsequent decades, these regulations were extended to three years of granted leave with compensatory payments being granted for up to two years. Only rather recent policies of the late 2000s reversed this development by restricting higher compensatory payments to little more than a year and by explicitly incentivizing the other parent to go on leave as well. Hence, though formally orienting towards women's return to the labor mar-

3 Up until 1977, the Civil Code ruled in § 1356 BGB (1) that a woman was in the first place responsible for housekeeping, any employment was secondary and only permitted if the first could be guaranteed.

ket after periods of unpaid caregiving, these policies facilitated long and even increasing occupational breaks of mothers.

Economically, women's thereby fostered familial responsibilities have been assumed to occur at the expense of occupational commitment and productivity (Becker 1960, 1981) while a discontinuous employment could even result in a depreciation of mothers' human capital (Becker 1985). While this may not be the case for all women, the productivity-abating relation is often also anticipated by employers, at worst resulting in statistical discrimination (Phelps 1972; Arrow 1973). Indeed, research has shown that these policies can work against mothers in the labor market. For West Germany, Gangl and Ziefle (2009) provide evidence for women's weakened position in the labor market due to the higher costs for the employer which they indirectly pass on to mothers, putting all women as potential mothers into an adverse bargaining position (see also Hirschle 2011; Ochsenfeld 2012).

On the whole, the described institutional framework along with mothers' associated bargaining position on the labor market reflects empirically in a low employment rate of mothers with young children in Germany (Matysiak/Steinmetz 2006; Aisenbrey et al. 2009; Berninger 2009; Frodermann et al. 2013). Although studies indicate a gradual rejection of that pattern in younger cohorts, fostered by the increasing importance of part-time jobs (Grunow et al. 2006; Frodermann et al. 2013), historically, extensions of parental leave regulations have been countered quickly by mothers' extension of their time in unpaid childcare (Grunow et al. 2011). Within the legal framework of job security, mothers are entitled to re-enter their previous position upon their (part-time) return. Nonetheless, they often choose a job that leads to downwards mobility for the sake of flexibility, the compatibility of family and career, and proximity to home (Engelbrech 1997; Gangl/Ziefle 2009; Hirschle 2011). But even after re-entering the previous job, the employment interruption is likely to result in a considerably lower income, particularly in the long run (Ziefle 2004). This is only partly due to the loss in experience; a large share of the total penalty in terms of wage and career cannot be explained by women's actual labor market behavior (Gangl/Ziefle 2009; Ochsenfeld 2012).

One particularly relevant aspect regarding mothers' careers is their educational level. The higher women's education, the higher the opportunity costs associated with childcare and with the difficulties in combining family and career: highly educated women stand to either lose or gain a lot. As a result, it has been found that one fourth of women with a high schooling degree remain childless whereas this applies to only one eighth of women with a low degree (Aisenbrey et al. 2009; see also Bauer/Jacob 2010). Nonetheless, those highly educated women who decide in favor of children have considerably higher rates of returning to the labor market after childbirth – they even disproportionally refrain from taking parental leave altogether (Matysiak/Steinmetz 2006; Hanel/Riphahn 2011; Drasch 2011; Grunow et al. 2011). Beyond that, they are more likely to return into full-time positions (Matysiak/Steinmetz 2006). These quicker returns as well as their higher education itself facilitate higher chances of upward occupational mobility, even as mothers (Aisenbrey et al. 2009).

But what do these deliberations imply to the present study's focal points? How does mothers' career develop in the long term, particularly depending on the period prior to family formation and with special regard to women's educational level? Theoretical and empirical considerations (e.g. Gangl/Ziefle 2009; Aisenbrey et al. 2009; Hirschle 2011; Ochsenfeld 2012) point to a rather minor, possibly even negative career development once women are mothers. Hence, we generally can expect their career developments to be

primarily dependent on the period prior to family formation and women's achievements during that time. A higher education, however, seems to enable mothers to further climb up the career ladder – due to both their human capital and their birth-related behavior.

The highlighted empirical results convey an impression of the pervasive incision motherhood poses to women's careers. However, they do not allow us to understand the impact exerted by the various specific ways in which women arrange and embed their births into the course of their careers. Hence, it is exactly this issue which our empirical study on West German women will address. Specifically, we aim at understanding the following: how does women's *timing* of the first birth after labor market entry[4] affect their subsequent careers? How does the *spacing* of the family expansion, meaning the time that elapses until women have their second births, impact women's possibilities to secure their career after family formation? How do activities between first and second child birth affect women's career chances? And finally, do the effects of timing and spacing vary by educational level? In other words: Is a specific timing and spacing of births more important for some women's career development than for that of others? However, before assessing these questions empirically, we will first approach them theoretically.

Timing the first birth

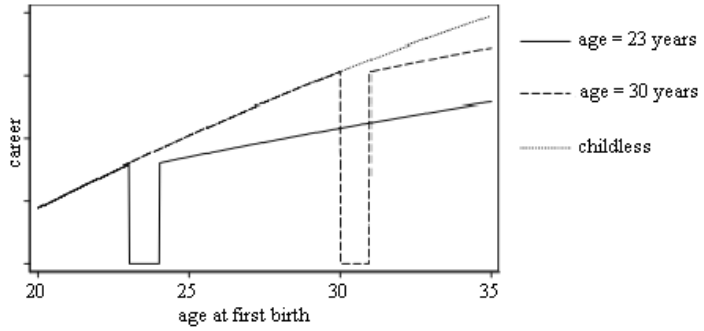
When it comes to the optimal timing of a first birth in the course of a career, there are several opposing theoretical considerations that contribute to a woman's decision. According to a dynamic model of fertility (Gustafsson 2001), the utility of an early birth concerns the precious time as a family: the earlier the child is born the more time will be left to a parent to enjoy with the child or even grandchildren. Most career-related considerations, however, contrast this aspect. As a later timing allows for a longer time of human capital accumulation, childbirth entails a smaller chance of an incisive depreciation, even during longer breaks. Furthermore, as a career can be assumed to develop positively yet diminishingly when approaching its zenith, the expectable subsequent profit becomes smaller, decreasing women's returns and thus their motifs to further invest into human capital: thus a late birth is more beneficial than one earlier in life (see also Miller 2011; Figure 1). In terms of the most profitable timing for a woman's career, it seems that the farthest possible postponement of the first birth decreases its costs. This can be assumed to be particularly true for West Germany. Since family policies regarding parental leaves and public childcare facilitate long breaks of unpaid caregiving and thereby bring occupational aspirations to an almost certain halt, family formation is a very costly decision. A postponement of the first birth would hence enable women to entirely focus on their career for several years and stabilize their occupational position before withdrawing from the labor market for the child's upbringing (Blossfeld/Huinink 1991).

Empirically, however, this clear-cut suggestion does not necessarily encounter evidence, neither internationally nor in West Germany. Some studies do indeed yield results that support a late timing's profitability, emphasizing late mothers' higher labor market in-

4 In many studies, the timing is measured following a life-course perspective, depicting the time since a woman's birth. With regard to this study's subject, however, we choose a more career-oriented approach.

volvement and income because of the higher respective achievements before birth (Troske/Voicu 2009; Miller 2011). However, other findings suggest that late mothers experience disproportional wage penalties, reinforced by either the shorter time to compensate for the loss in the long term (Putz/Engelhardt in this volume) or by the associated shorter spacing that affects the career negatively due to a longer consecutive leave (Karimi 2014b).

Figure 1: effect of first birth on career, depending on timing



Note: figure abstracted and adjusted from Miller (2011).

All in all, the theoretical implications and the empirical results do not convey a clear picture of the timing's impact on female careers. Instead, they seem to point to an inversely u-shaped effect: at the beginning, the effect of the birth postponement is increasingly positive, yet this relation turns at some point and changes into the opposite. To test if this supposition holds true, we will assess the relationship between women's timing and their careers empirically.

While these considerations address the timing's overall impact, we can assume educational differences in the timing's effect on the career. Concerning these, however, no precise indication for assumptions could be extracted from previous work. What has been established is a longer postponement of births of higher educated women, partly because of their greater range of (occupational) opportunities (e.g. Weber 2004; Timm 2006; Bauer/ Jacob 2010), partly because of their higher aspirations regarding the child's education and wellbeing for which they aspire to meet the perceived material requirements (Gustafsson 2001). This already indicates that higher educated women plan their births more thoughtfully, thoroughly weighing both their high opportunity costs and their chances to combine work and family (Beets 2011), especially in the light of insufficient institutional opportunities to sustain their previous pursuit of career. As a result, we can expect higher educated women's timing to have a more positive effect on their career than what applies to less educated women – possibly even independent from the actual timing.

Spacing the second birth

As has already been implied, the spacing between the first and the second birth is similarly relevant for a mother's career. A major influencing factor in this regard is mothers'

time allocated to childcare, be it in two consecutive parental leaves or in a subsequence of breaks that are intermitted by episodes of employment.

Theoretically, a long spacing is assumed to allow for a better balanced use of opportunities and alternatives to childcare, enabling occupational continuity and smoothing consumption by shortening the time women spend away from the labor market (Newman 1983; Troske/Voicu 2009). Nonetheless, the cost effectiveness of children is assumed to increase strongly by a second child (Newman 1983): while the transition to the first child is a major incision into a woman's career, the second child is supposed to be not much of an additional hindrance as many arrangements have already been made.

Presumably, the Swedish government has been following this thought when it decided to pay a speed premium to first-time mothers in order to support a quick second birth before reentering the labor market. Nonetheless, Karimi (2014a) was able to show with a Swedish sample, that a longer spacing is more and increasingly beneficial for women's income as it enables them to return to the labor market between births – which results in a higher and profitable attachment to the labor market (see also Miller/Xiao 1999; Troske/ Voicu 2009). West Germany's institutional framework, however, has been setting considerable constraints to such a quick return to the labor market after the first birth. The structural and financial incentives to go on parental leave for up to three years on the one hand and the lack in (all-day) public childcare for young children on the other hand made women withdraw from the labor market for several years after their first birth. To successfully return to the labor market before giving birth to their second child, mothers would have to space their two children very widely, bringing many years of age difference between the siblings. Firstly, such a long spacing and a labor market return in the meantime can be presumed to reduce the cost effectiveness usually associated with a second child. Secondly, it can be supposed that not only one but two occupational breaks of several years would impair a woman's career substantially. As a result, it seems reasonable for West German women to space their births shortly in order to return rather quick and definitely after only one occupational break, merged for both children.

Nonetheless, the scarce national and international evidence points at the profitability of a long spacing that is intermitted by episodes of employment, particularly when these are pursued full-time. Especially in light of an easier access to part-time jobs in the German context, a full-time employment between births indicates a considerably higher occupational commitment (Frodermann et al. 2013; Hipp/Stuth 2013). Thereby it facilitates the continuity of tasks and experience and protects better against dequalification, downward mobility and, hence, income loss (Vogel 2009). Assumedly, this also mirrors for prestige measures in the data: mothers' chances to maintain or even raise their prestige after having children can be expected to be highest for those who space their births widely in order to return to the labor market – particularly if they show high occupational commitment by working full-time.

When relocating the focus from the spacing's overall impact of women's careers to educational differences, however, evidence is again rather scanty. In terms of the spacing itself, children are assumed to benefit from a longer spacing (Newman 1983) as it decreases siblings' direct competition for parental resources and therefore leaves more time to allocate to each child's individual fostering. This can be expected to be in accordance with the wishes of highly educated women in particular. Nonetheless, higher educated women have been found to space their births more shortly. One major reason given for this behavior is a pro-

cess of self-selection: in light of their high opportunity costs, highly educated first-time mothers prove a relatively high family orientation that also leads to a quick family expansion (Kreyenfeld 2002; Bernhard/Kurz 2007; Brose 2008). Again, however, it remains as yet unclear what these results imply for the spacing's impact on differently educated women's careers. In line with the previous argument regarding the timing, we assume a particularly high reflective faculty in higher educated women who consider the compatibility of family and career as well as opportunity costs more thoughtfully (Beets 2011). As a result, a longer spacing in order to enable beneficial occupational continuity would be an especially attractive and valuable instrument for them, particularly since higher educated women have been found to reenter the labor market more quickly after their first birth, to be more likely to return into full-time employment, or to waive their entitlement to parental leave altogether (Matysiak/Steinmetz 2006; Hanel/Riphahn 2011; Drasch 2011; Grunow et al. 2011). However, their spacing has been found to be rather short. This behavior could arise from a rationality that strives for a relatively short occupational interruption for both children in quick succession – in order to return to the labor market quickly, definitely and successfully. As both assumptions appear valid, they have to be collocated in our analysis.

To follow up the posed research questions and elaborated hypotheses, we approach the topic empirically. In order to do so, the following section introduces the underlying analytic design, the chosen data as well as the methods to elaborate on the issue.

2. Research design, data and methods

Research design

The aim of our empirical analyses is to understand if and how West German women's careers are influenced by their birth behavior, specifically the timing of the first birth and the spacing of the second one. To model women's career development across time, we observe mothers of two at different time points in their careers. We assess their occupational prestige, described by the Standard International Occupational Prestige Scale SIOPS (Treiman 1975), at labor market entry, one year before their first birth, and finally at the age of 45. We decided for the age of 45 as our observation's last point in time for several reasons: firstly, additional analyses with our sample have shown that if women have not returned to employment until this age, they barely return thereafter. Hence, our analyses are able to capture those mothers who intend to combine family and work. Secondly, research has shown that the age of 45 usually marks the high point in individuals' careers. Up to that age, the most and most important steps on the career ladder have been taken and the approaching retirement yields the danger that additional investments may not pay off anymore (Schippers 2011). Thirdly, women's fertility usually comes to a standstill at about the age of 45. Therefore, most women have completed their family formation and expansion by that point.

To approach our research issue empirically, we address them step by step, starting off with the overall development of women's prestige before family formation and across the course of their career. First, descriptive methods of analysis help us to reveal the career developments overall and by educational groups. With the aid of linear regression, we then follow up the relationships and underlying mechanisms across the course of women's career in

more detail. Following up the impact of women's specific birth behavior on their career in a second step, we extend the elaborated models by women's timing of first births and spacing of second births and their associated activities in between. To address the question of education-specific effects, we introduce interaction terms between education and birth behavior. However, as particularly the last step can be expected to raise the complexity of the model's propositions beyond easy comprehensibility, we will, at last, simulate the findings' specific implications to the development of women's long-term careers, based on the obtained results. Since the youngest women hint best at more recent developments that may have taken place and hence carry a particular contentual weight, we will pay special regard to the youngest birth cohort in most of our analyses. Firstly, we do so by adducing them as reference in our multivariate estimations. Secondly, we adjust our simulations to the youngest cohort by drawing from the results estimated before as well as applying the cohort's specific prestige measures (see section 4). This approach is supported by the sample's composition: most women were born during the most recent observable years as can be examined in Table 2.

Data

Our empirical analysis is based on data from the German National Educational Panel Study (NEPS) (Blossfeld et al. 2011). Adapting a precursive study in 2007/08, the survey has been collecting detailed retrospective data at every person's first interview and panel data on a yearly basis since 2009/10. The relevant adult sample with cohorts between 1944 and 1986 consists of altogether 11 932 people who have been surveyed in computer-assisted telephone (CATI) and personal interviews (CAPI) by the latest considered panel wave in 2011/12.

Though the NEPS data also offers information for persons born in East Germany, we restrict our analyses to West German women because the employment behavior of East and West German women is even today hardly comparable. The East German gender culture is far more modern (e.g. Pfau-Effinger 1996), also childcare patterns vary strongly. Modeling such complex intra-German differences as well as the complexity of change after reunification would go beyond the scope of our empirical study. Because of the specific research interest of our study, which is to analyze the effect of family formation and expansion on women's careers, and because two children are normatively and empirically still the prevalent family model, we additionally restrict our sample to mothers of two and biological motherhood only.

To assess these women's career development, we observe women at three time points of their career, precisely at career entry, one year before the birth of their first child and finally at the age of 45[5]. This means we exclude women that were unemployed or inactive, e.g. as housekeepers, at any of these time points. We are aware that, based on this sample definition, we are not able to picture the lives of *all* women and mothers. However, as our specific research interest is in studying the effects of family formation and expansion on women's career developments, we have to restrict our analyses 'by definition'

5 As the prerequisite for the women in our sample is to have already reached the age of 45 at the last interview, we restrict our sample to the women born between 1944 and 1966. We will use the dummies for cohorts in our models mainly as control variables and will not interpret these effects as the focus of our study is not on cohort changes.

to women who indeed combined family *and* employment. We also exclude women that had their first child prior to their career entry, which is a rare event[6]. Additionally, we exclude those very occasional cases with an implausible short spacing between the two births of less than nine months as well as mothers of multiples. Based on these definitions, our sample comprises 570 women with two (biological) children which represent approximately 70%[7] of the women with two children in our dataset.

Method

In order to get an impression of women's career developments and their influencing factors, we apply both descriptive and multivariate methods. First, after a very basic descriptive analysis of the sample's mean prestige developments, we aim to describe the interrelation of women's career steps before and after family formation, overall and across educational groups. To do so, we cluster our women along their prestige differences between the beginning of their career and the first cut-off one year before the first birth as well as between the latter and their prestige at age 45.

In a second step, we aim at examining women's career development as a function of the timing of their first births, the spacing of their second births, the related activities, and their education. Specifically, we do so by calculating a robust stepwise OLS on the difference between their occupational prestige at career entry and their prestige at the age of 45. In choosing this method, we take advantage of the opportunity to model the effects induced by the full employment and family biography up to the relevant age. As most of the independent variables describe the length of women's time in either a familial (childless, with only one child) or an activity state (e.g., employment, unemployment, unpaid caregiving before birth timing or during birth spacing), they can enter the model as continuous variables.

Thirdly, we aim to illustrate ideal type careers and prestige developments by performing simulations. To do so, we apply the estimated regression effects to meaningful combinations regarding birth behavior, associated activities and women's educational level. The pursuit of these simulations is to visualize the results' implications to women's careers and the impact of embedded family- and work-related decisions.

The occupational prestige is obtained from NEPS's computation of SIOPS-08, the current edition of the Standard International Occupational Prestige Scale (cf. Treiman 1975). The scale integrates public prestige evaluations on an international average, guided by ISCO-08's[8] occupational unit groups. Though the score actually ranges from 0 to 100, jobs realistically cluster between 20 and 80. Paying tribute to this non-ratio scale, we center the prestige at career entry at the sample's mean value. The further transfer of the SIOPS measure to the central career variables as well as the operationalization of the other relevant factors are summarized in Table 1.

6 Approximately four percent have their first child prior to their first job.

7 The share of women does not vary considerably by cohort and only slightly by educational level with a higher percentage of intermediately educated women.

8 International Standard Classification of Occupation by the International Labour Organization (ILO)

Table 1: operationalization of relevant variables to women's career development

prestige at career entry	SIOPS of most prestigious job at labor market entry, centered around the sample's mean
prestige development before the first birth	difference between most prestigious jobs' SIOPS at labor market entry and one year before the timing of the first birth [if the first birth is timed less than one year after career entry, we consider the first job's SIOPS]
prestige development across the career	difference between most prestigious jobs' SIOPS at labor market entry and at the age of 45
educational level	general and academic school leaving degrees: no or lower secondary degree *(Haupt-/Volksschulabschluss)* middle secondary degree *(Mittlere Reife)* upper secondary degree *(Abitur)* tertiary degree *(Fachhochschul-/Universitätsabschluss)*
control: cohorts	aggregated birth cohorts: 1944 to 1949 1950 to 1954 1955 to 1959 1960 to 1966
timing	elapsed time between labor market entry and the first birth
spacing	elapsed time between the first birth and the second birth
activities before the first birth/during spacing:	duration variables calculated from monthly event data between labor market entry and the first birth or between the first birth and the second birth
employment	episodes of one or more occupations, net of interruptions due to parental leaves yet including occupations that are taken up during parental leave
full-time employment	employment episode with working hours that add up to the equivalent to one employment with reportedly more than part-time or full-time employment
part-time[9] employment	employment episodes with working hours that add up to the equivalent to one employment with reportedly less than part-time or part-time employment
other/flexible employment	episodes of employments in which at least one job is reported to have flexible hours or all jobs are reported to need no time effort at all
unpaid caregiving	episodes of parental leave or housekeeping
unemployment	episodes of unemployment
education	episodes of education in school, university or vocational training
other	episodes of miscellaneous activities

To provide an overview of the variables' numerical composition, Table 2 conveys detailed descriptive statistics. As can be seen, the sample's employment pattern is characterized by high levels of full-time employment before the first births: only a minority participated in other activities, e.g. housekeeping, often only for a few months. The employment pattern between the births of the first and the second child is influenced by the selectivity of our sample which, in turn, results from our examination of women who combine family and employment. Hence, these women participate disproportionally in (full-time) employment.

9 Regarding the working hours, the NEPS dataset only contains information at the beginning as well as at the end of an employment. While this only tells us *if* women changed their working hours but does not offer any indication as to *when* they did it, we assume this to happen in the wake of a birth and the normative responsibilities related to it.

Table 2: descriptive statistics to relevant variables to women's career development

occupational prestige[10]	**mean**	**std. dev.**
prestige at career entry	44,8	10,5
prestige one year before first birth	46,1	10,0
prestige at age 45	44,9	11,7

educational level	**N**	**%**
no or lower secondary degree	169	29,7%
middle secondary degree	249	43,7%
upper secondary degree	63	11,1%
tertiary degree	89	15,6%
total		*100%*

control: cohorts	**N**	**%**
1944-49	96	16,8%
1950-54	90	15,8%
1955-59	148	26,0%
1960-66	236	41,4%
total		*100%*

birth behavior	**mean**	**std. dev.**
timing	6,8	3,7
spacing	3,8	2,4

activities[11]	**N**	**%**
before first birth:		
employment	570	100,0%
of which:		
full-time	532	93,3%
part-time	52	9,1%
other/flexible	49	8,6%
unpaid caregiving	87	15,3%
unemployment	58	10,2%
education	68	11,9%
other	39	6,8%
N=		

	N	**%**
during spacing:		
employment	384	67,4%
of which:		
full-time	235	61,2%
part-time	161	41,9%
other/flexible	31	8,1%
unpaid caregiving	436	76,5%
unemployment	61	10,7%
education	14	2,5%
other	42	7,4%
		570

4. Results

Women's career before and after the first birth's timing

Our first research question aims at systematically reconstructing West German women's career development across their career as well as in relation to their development prior to family formation. We expect the first birth to be a major incision into women's careers, resulting in an only slightly positive or even negative prestige development after family formation. Instead, we expect the period before family formation to play the major part in women's overall career development.

10 The prestige measures are reported in absolute values only, not as centered figures or as differences.

11 The percentages describe the shares of women who participated in specific activities during the observed periods. Since many women participate in different consecutive activities during these periods, the percentages sum up to well above 100%.

We approach this issue by starting off with a broad examination of women's careers. To do so, Table 3 provides a first impression of our sample's prestige at career entry (i.e. before the observed women have had two children), their development before family formation (that is, one year before the birth of the first child) and the prestige they attain by the age of 45 in relation to their prestige at entry. The table reveals the mean values of both the absolute prestige at career entry and the developmental career measures. Additionally, it symbolizes the shares of women's prestige developments before the first births as well as across their career. Positive progresses are indicated by upward arrows, career descents are reported next to downward arrows, and the shares in which comparing the prestige scores of the respective two points in time do not yield any differences are shown above horizontal arrows[12].

Table 3: women's occupational prestige and prestige development

occupational prestige SIOPS	mean	shares in positive and negative prestige development		no development
prestige at career entry	44.8			
prestige development before the first birth	1.3	15.3% ↗	9.8% ↘	74.9% →
prestige development across the career	.1	29.0% ↗	29.0% ↘	41.9% →
N=				***570***

Note: prestige at career entry reported in absolute values, not centered.

On average, the sampled women first enter into a job with a prestige score of almost 45. Such a prestige is, for example, assigned to nursing associate professionals, retail managers, and car mechanics. Upon their first births' timing, only about 25% of our women show any prestige development compared to their prestige at career entry. Of those that do, however, the majority – that is 15.3% in absolute values – report a positive career progression. Additional yet unreported analyses yield that these 'high flyers' gain an average of 13.9 prestige points, lifting them into prestige scores that are assigned to, e.g., dispensing opticians, therapeutic equipment technicians and ship engineers. The 9.8% of women that report prestige impairment before their first births, in contrast, lose a mean of 8.6 points, resulting in a prestige that is similar to that of hotel managers, library clerks and blacksmiths. The higher share of positive prestige developments raises the overall mean to a prestige enhancement of 1.3.

At the peak of mothers' career at age 45, the results yield that the share of women that do not show any career development has decreased remarkably to 41.9%. Hence, the share of women that report prestige changes rises considerably after family formation, suggesting that the occupational episode after transiting to motherhood is, on average, much more important to mothers' careers than expected. In line with our assumptions, though, the period after family formation is much more characterized by negative prestige developments, reflected by the fact that the prestige developments before family formation – which are positive on average – cannot hold their ground. The shares and developmental magnitudes of

12 The premise of comparing prestige scores at two points in time involves the risk of underestimating developments that again reverse in the course of time.

those with positive and negative prestige developments across their careers balance each other (each amounting to 29%). Unreported analyses show that both groups develop by between eleven and twelve prestige points on average. Comparing these results to the developments before family formation suggests that, on average, most prestige enhancements women achieve before having their first child disappear after their transition to motherhood.

In addition to this overall picture, Table 4 approaches our research question concerning educational differences in women's career development. Our assumption was that a higher education smoothens the career development before and after family formation by enabling higher educated women to even climb up the career ladder once they are mothers. A comparison between the mean prestige developments of the period before the first birth to those across the long-term career does yield some support to that assumption: the values become increasingly positive in both periods the higher women's education is and the average loss of the attained prestige after family formation is only slightly smaller for higher educated women.

The total values in the two aforementioned tables are, however, not able to convey an impression of if and how this subsequent balancing is related to the development prior to family formation in the individual cases. To follow up this question, Figure 2 provides a first overview of the developments' interrelations. To do so, it illustrates – again with the aid of upward, downward and horizontal arrows – women's shares of prestige developments before family formation and, proceeding from these, their further development after their first births. Although these shares do give an impression of the proportional relevance of respective developments, they do not convey the developments' exact magnitudes.

Table 4: women's occupational prestige and prestige development by educational group[13]

occupational prestige SIOPS	means			
	no or lower secondary education	middle secondary education	upper secondary education	tertiary education
prestige at career entry	40.5	43.8	45.8	55.2
prestige development before the first birth	.0	1.5	1.8	2.7
prestige development across the career	-1.3	.3	1.1	1.6
N=				***570***

Note: prestige at career entry reported in absolute values, not centered.

As already could be seen in Table 3, Figure 2 again yields that the vast majority of women show no prestige development at all before family formation, and most of the remaining part report positive career developments. Yet, these paths already taken are not necessarily reflected in the occupational period after the first births. During this period, all three groups – those with positive, negative and null development – report primarily stability. Beyond that, however, it seems that the more positive the development was before transiting to motherhood, the higher are the risks of losing prestige afterwards: among those women that gained

13 For the youngest cohort, the women we refer to most in our analyses, prestige measures are slightly different. Particularly, this applies to the prestige at career entry: for women with no or lower secondary education, it averages to 36.61 (e.g. library clerks, market salespersons), for those with intermediate education to 44.2 (e.g. nursing associate professionals, keyboard operators), for those with upper secondary education to 46.28 (e.g. midwifery professionals, insurance representatives), and for tertiary educated women to 53.54 (e.g. social work professionals, archivists).

(15.3%) or did not report any development before family formation (74.9%), more women forfeit occupational prestige afterwards (6.0% resp. 20.4%) than (further) accumulating it (2.8% resp. 15.1%). Of those that lost prestige between career entry and first birth, instead, the figures prove the contrary (1.6% vs. 3.7%). Hence, it does not indicate that the achievements before the first birth guarantee a further climbing up on the career ladder or even an ensured prestigious position, but it seems that the transition to motherhood introduces new insecurities and possibly penalties. This also reflects in the, in sum, higher share of women that report negative prestige developments after the first births (27.9%[14]) than positive ones (21.6%[15]) – quite the opposite picture compared to the developmental distribution before.

In addition to this overall picture, Figure 2 follows up the educational differences in Table 4 that yielded some support to the assumption of a less severe impact of the first birth on higher educated women's career. The figure shows that there are major differences between educational groups. During the period before family formation, higher educated women succeed distinctly more often in terms of prestige – even though educational groups do not vary considerably in their timing of first births: for all groups approximately seven years[16] pass after career entry. Altogether, a positive career emerges for 20.6% to 22.5% of women with upper secondary or tertiary education prior to their first birth – compared to a respective figure of only 10.7% for low educated women. Additionally, a higher education helps to at least maintain these achievements, even during motherhood: though the chances of further accumulating prestige is universally low across educational groups – only between 1.8% and 4.8% of women manage to gain consistently across their career – the shares of women that forfeit their before acquired prestige after their first births (between 5.9% and 6.4%) does not grow proportionally with the share of women who are successful before their first births (between 10.7% and 22.5%). Hence, higher education seems to facilitate both a prestige gain before family formation and the ability to secure this achievement beyond the transition to motherhood.

Besides that, particularly women with tertiary education seem to be by far least likely to show no prestige development before family formation at all: in contrast to the other educational groups – in which between 74.0% and 79.1% report a null development – only 65.2% of tertiary educated women display prestige stability. Apparently, for highly educated women, the episode before family formation is very rich in occupational opportunities and thus mobility. Those that did not seize these opportunities, however, seem to have considerably lower chances of making up for the omission after becoming mothers: only very few women (4.5%) manage to gain prestige after their first births even though they did not report any development before.

Subsequent to the highly educated women's eventful episodes before their first births, however, these women show the highest share of prestige-neutral career developments: in sum, 65.2%[17] of women with tertiary education do not report any (further) development after transiting to motherhood, in contrast to 53.4% and 55.6%[18], respectively, of women

14 6.0% + 20.4% + 1.6%

15 2.8% + 15.1% + 3.7%

16 Additional yet unreported analyses yield that the youngest cohort's timing ranges between 6.74 (upper secondary education) and 7.18 years (middle secondary education).

17 12.4% + 46.1% + 6.7%

18 6.0% + 44.2% + 3.2% resp. 9.5% + 44.4% + 1.6%

with middle or upper secondary education. Low educated women, however, constitute a distinct exception in this respect: there is no registered prestige change after the first births for as little as 36.7%[19]. Apparently, the risks and chances to their prestige seem to be largest after family formation – while the risks seem to prevail. In line with our supposition, this suggests that lower educated women are penalized the most for their motherhood, not only in terms of their expectable prestige but seemingly also with regard to the reliability of their jobs. The highly educated, in contrast, appear to attain a long-term occupational security before their first births which they can rely upon as mothers.

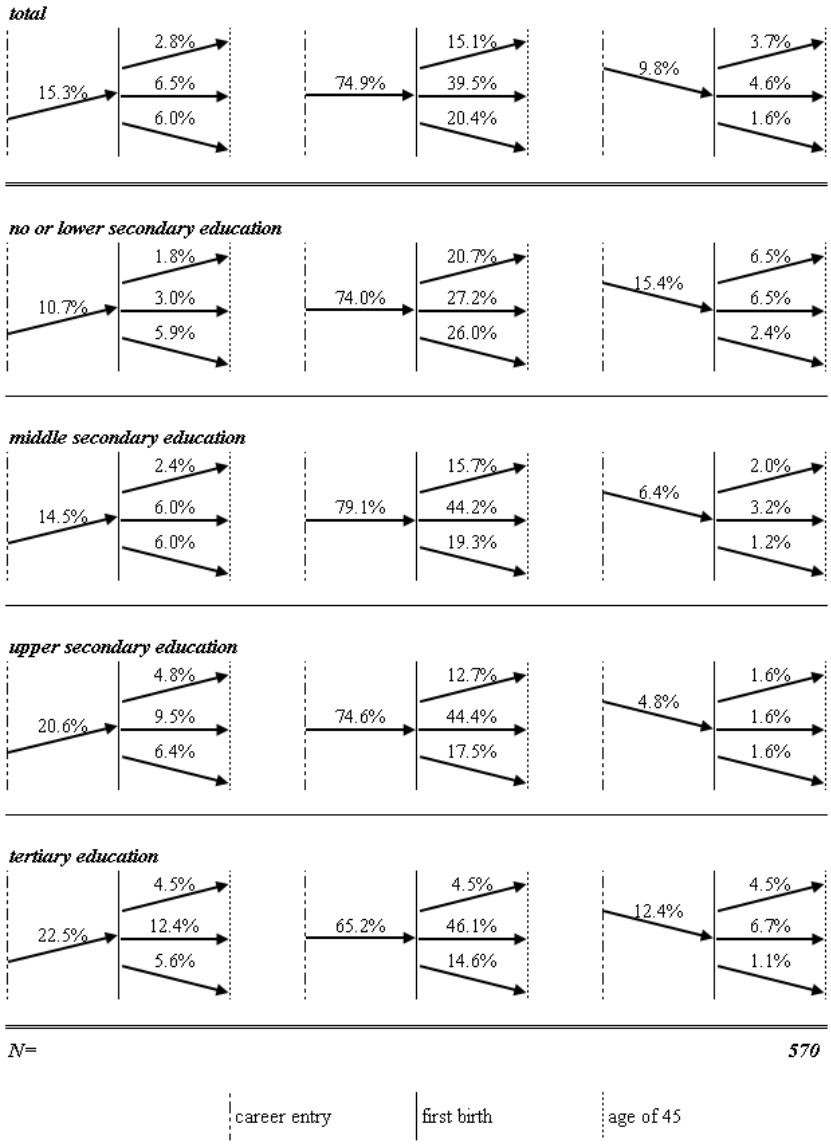
These descriptive results provide a first interesting insight into prestige developments, particularly with regard to the differences across educational groups. To get an even deeper understanding of West German women's career developments before and after their first births, we assess the impactful factors multivariately by regressing prestige, education and controlling measures to the prestige development between career entry and the career's high point at age 45 in Table 3.

In a first step, we further concentrate on how mothers' careers develop overall, particularly in relation to their career before family formation. With regard to the shares of women whose prestige develops positively, descriptive analyses have shown that the overall proportion of women that report prestige developments rise considerably after family formation. Also, while the shares of positive developments outnumber those of negative ones during the period before the first births, the opposite is true for the period afterwards. However, no specific pattern shows behind these developments: the results did not convey specific paths taken before the first births of which women keep track afterwards. To examine the magnitudes of developments beyond their shares, Model 1 estimates the impact of both the mean-centered prestige at career entry and its subsequent development until just before a woman's first birth.

Assuming a zero development for the latter, which has proven to reflect the career of almost 75% of women, shows that the higher the occupational prestige is at career entry, the smaller is mothers' career enhancement by age 45. At first sight, this seems natural as the prestige score is constrained by lower and upper bounds which offer limited opportunities to occupational ascents and descents. However, the constant suggests that already entering the career at a prestige score of the average 44.8 leads on to a slight loss across the career. Of every additional prestige point that women secure at career entry, one quarter will be lost by the age 45. A positive career prior to the first birth, instead, raises the lifelong career gain by .62 per prestige point. This means that of the prestige women manage to gain before forming a family, more than one third will be lost after they have become mothers of two. Hence, gaining prestige before the first birth does not guarantee its preservation into motherhood – neither does it indicate an ongoing prestige gain. Also, glancing at the model's power to explain the variance, it becomes apparent that those two variables account for as much as 32% of women's variance in their career at age 45 – an indeed sizeable impact. It supports the high relevance of the period before the first child for women's long-term career – yet still, a considerably greater role seems to be left to other factors, possibly the period after family formation.

19 3.0% + 27.2% + 6.5%

Figure 2: development of occupational prestige before and after timing in total and by educational level



The second part of our research question regarding women's career development before and after the first birth concerns education-specific differences. Preliminary analyses have suggested that the relevance of the occupational period before family formation varies by educational group: greater shares of highly educated women gain during that period and manage to secure their achievements beyond their transition to motherhood – while at the same time lower educated women seem to be confronted with an increased insecurity re-

sulting from their first birth. To get a deeper understanding of the processes, in Models 2 to 4 we pay special attention to the already evinced educational differences.

In a first step, we consider the further prestige development across educational groups, controlled for cohort effects (Model 2). For the time after family formation, no or a lower secondary education reduces the expectable prestige gain after family formation in comparison to intermediately educated women – despite the high amount of changes. Mothers' upper secondary education, in contrast, does not raise the expectable prestige gain above that of the reference category, even though descriptive analyses yielded high chances of prestige enhancement before the first births. Instead, only a tertiary degree pays off across the career as a mother – presumably, this is primarily because they manage to maintain the prestige they have attained before first births better than other educational groups. Nonetheless, the educational pay-off is enormous and further adds to the higher prestige of women with tertiary education at career entry: in the youngest cohort, it exceeds intermediately educated women's entry prestige by a mean of more than nine points.

Beyond these differences, however, education-specific impacts of attainments before family formation are rather complex in nature. Precisely, in Model 3 there is some marginally significant[20] support to the result that women with tertiary education benefit more from prestige gained between career entry and their first births: they seem to be able to maintain an additional one fifth of every gained prestige point – given that the prestige at career entry and the gained prestige before the first birth are similar to that of intermediately educated women. As this is hardly the case, however, Model 4 proves that there is even more to this picture: an education-specific interaction of prestige at career entry and prestige development prior to timing suggests a slightly smaller gain from the latter for both women with no or lower secondary and tertiary education. While the magnitude seems rather small at first sight, applying the very different means of the youngest cohort's prestige measures for the concerning educational groups (see section 3) sheds light upon the interaction's relevance. Starting from their considerably lower average prestige at career entry, mothers with no or lower secondary education are influenced considerably more by the prestige they gain or forfeit between career entry and their first birth: every additional prestige point predicts two thirds of a prestige point at the age of 45. While this means they are considerably more prone to continue losing prestige as mothers if they have taken that path before their transition to motherhood, it also implies that they would profit remarkably from the prestige they manage to attain during that period. Mothers with tertiary education, in contrast, start off at a considerably higher prestige level at career entry and have been shown to have a period before their transition to motherhood that is considerably more eventful, presumably because of a greater variety of opportunities. After transiting to motherhood, however, the prestige gained or forfeited during that time has fairly little influence on their long-term prestige development; it seems that their career is stabilized.

These results emphasize the insecurity lower educated women face on the labor market once they have become mothers: they are influenced heavily from their attainments or omissions before family formation. The higher women's education and hence the higher their prestige and additional attainment before family formation is, the smaller is this influence, suggesting an increasingly stabilized career once these women are mothers.

20 $p = .11$

The depicted analyses aimed at systematically reconstructing West German women's career development in relation to the period before the first birth. Secondly, they intended to answer the question of education-specific differences in these developments. The results have shown that the period after family formation is indeed fairly detrimental to women's prestige; the on average positive attainments before the transition to motherhood do not ensure stability. This seems to be particularly true for women with no or lower secondary education: the data suggests that they face the highest amount of insecurity as mothers. Although they show, on average, very little prestige development before family formation, their attainments as well as omissions influence their long-term career considerably. Highly educated women, in contrast, often profit from an episode of many occupational opportunities between career entry and their first birth: they on average manage to attain prestige additionally to their high prestige at career entry. After their transition to motherhood, these attainments seem to offer long-term occupational security.

But how do these careers depend on women's birth behavior concerning their first births' timing as well as their second births' spacing? What role do the activities play, especially during the spacing? And in what way are the elaborated educational differences due to education-specific timing and spacing decisions? In the next step, we follow up these questions by multivariately controlling for their impact on women's careers.

Table 5: impact of previous prestige measures and education on prestige at age 45

	1	2	3	4
	b	b	b	b
prestige at career entry	-.25**	-.40**	-.41**	-.40**
prestige development before the first birth	.62**	.49**	.37**	.47**
control: cohort groups (Ref: 1960-66)				
1944-49		3.13**	3.28**	3.32**
1950-54		2.22*	2.16+	2.32*
1955-59		1.39	1.49	1.39
educational level (Ref: middle secondary education)				
no or lower secondary education		-2.96**	-3.18**	-3.10**
upper secondary education		1.70	1.44	1.52
tertiary education		5.09**	4.72**	4.50**
interaction effects				
prestige at career entry*				
no or lower secondary education			.17	
upper secondary education			.17	
tertiary education			.21	
prestige at career entry*				
prestige development before the first birth*				
no or lower secondary education				-.02*
upper secondary education				-.01
tertiary education				-.01**
constant	-.68+	-1.86**	-1.71*	-1.85**
N	570	570	570	570
R^2	.321	.362	.366	.367

Note: + p<.10, * p<.05, ** p<.01

The general and education-specific effect of timing and spacing on women's careers

Since the pending research question is very complex in nature, we divide the analysis of the effect of women's birth behavior and the underlying education-specific effects into three separate, yet interwoven parts. Firstly, we focus on the effect of women's timing and spacing on their career and the underlying effect of the associated activities they participate in. In a second step, we set our focus on education-specific differences between the effects of women's timing and spacing decisions on their careers. At last, we abstractly simulate ideal type courses of female careers by applying the results established before in order to clarify and illustrate the interaction of timing, spacing and the related activities on the one hand and the educational effects on the other hand.

Timing, spacing, and the activities in-between

In the following, we focus on the effect of women's birth behavior and the activities related to it on their career. In Table 6, we gradually integrate variables that measure the timing – starting with career entry –, the spacing as well as the associated activities into the main model established before, keeping developments before the timing and general educational expectancies constant. We start off with assessing the – potentially non-linear – effect of the timing in Model 1 as well as the respective effect of the spacing in Model 2. We assumed an inversely u-shaped effect of the timing as well as a profitable prolongation of the spacing for women's careers. For neither of the two measures, however, there is any straightforward evidence for a duration-dependent effect. Apparently, above what women have achieved in terms of prestige, neither the timing of the first births nor the spacing of the second yield an effect on a mother's career. For the timing, it seems reasonable that this effect falls short of revealing underlying educational differences for which we test in a subsequent step. Women's activities before the transition to motherhood, in contrast, predominantly encompass their employment: only rather few women spend some (short) time outside the labor market at all (cf. section 3). Hence, the data does not seem to leave room for activity-specific differences of the timing's impact. For the spacing, however – considering the West German institutional and normative framework which facilitates several years of unpaid caregiving – we assume an underlying effect of women's activities between births.

To follow up the assumption regarding the activities during birth spacing and to review our argumentation of an activity-unspecific timing, we test for effects of women's activities in Models 3 to 7. Model 3 shows that, as expected, women's employment prior to family formation does not alter the timing's effect on their career. As by far most women spend their time before family formation in employment, this is not surprising. With regard to the spacing, it seemed theoretically reasonable to space births widely in order to intermit the associated episodes of unpaid caregiving with periods of employment. However, since the West German framework encourages mothers to stay at home for several years, the positive effect of a wide spacing could be blighted by this arrangement. To examine this ambiguity, Models 4 and 5 first assess the effects of the general activities during spacing, without controlling for the duration of women's participation in these activities. We contrast mothers that spend their time between births with unpaid caregiving to those that choose to pursue an employment. As Model 4 suggests, there is no significant effect of generally participat-

ing in either of those activities. Regarding the respective group of activities by the spacing's duration, however, Model 5 adds valuably to that picture. It reveals that a very small spacing – the conditional main effects[21] are estimated for the solely analytical spacing of zero years – proves to be much less detrimental if it is spent with unpaid caregiving exclusively. This effect is declining steeply, however, lowering the expectable prestige at 45 by at least one and a third points every year women spend outside the labor market without giving birth to a second child. For some years, participating in an employment between births seems to be even more harmful to a career. It is only after two and a half years that the strong interaction effect of employment and spacing suggests that the penalizing impact of a prolonged spacing can be suspended – although not reversed – by re-entering the labor market. If women space their births beyond that duration, an employment can help to keep the second child penalty to a minimum at about minus three to four prestige points at age 45. The results suggest that the effect of the spacing is indeed dependent upon women's activities between births: contrary to our assumption, a short spacing in unpaid caregiving seems to be the most profitable arrangement. Spacing births widely and intermitting them with an employment, however, appears to secure some of women's prestige if they decide for a spacing that is longer than two to three years.

To get a deeper understanding of the processes, particularly with regard to women's occupational commitment in full- or part-time employments between births, we assess the more specific duration effects of these activities in Models 6 and 7. As Model 6 shows, there is no significant effect for the duration of any activity during the birth spacing in general: the effect of working full-time or part-time for, e.g., one year between births is not the same during a short and a long spacing. It is, again, only the specific employment in relation to the spacing's duration that proves influential (Model 7). Despite the significant interaction effects for the births' spacing and women's employment variables themselves[22], there are two other aspects that command attention upon integrating the terms. Firstly, the spacing's squared effect gains considerably in strength and is not far from the defined limit of significance anymore[23]. This suggests that the observed effects lose in intensity across time. Secondly, the conditional main effect of a full-time employment's duration does not vary significantly from the main spacing effect that reflects periods of unpaid caregiving. In combination with a fairly weak positive interaction effect, this suggests that during a spacing's first years it is rather indifferent whether women return to the labor market full-time or if they stay at home to care for the child. Apparently, a full-time employment only proves beneficial after several years of postponing the second child. The respective main effect of a part-time employment's duration, in contrast, falls considerably, outlining a remarkable negative effect of working at short hours. This effect is particularly strong if women return part-time soon after the first births. Then, according to the comparatively weak interaction effect, these detriments balance only after several years.

21 The conditional main effect of an employment during spacing is close to significance at $p = .12$.
22 The interaction effect of spacing and full-time employment is at $p = .101$.
23 $p = .13$

Table 6: impact of timing, spacing, and the related activities on prestige at age 45

	1	2	3	4	5	6	7
	b	b	b	b	b	b	b
prestige at career entry	-.41**	-.42**	-.42**	-.42**	-.43**	-.41**	-.41**
prestige development before the first birth	.49**	.48**	.50**	.50**	.49**	.50**	.50**
control: cohort groups (Ref: 1960-66)							
1944-49	3.16**	3.22**	3.46**	3.51**	3.48**	3.43**	3.28**
1950-54	2.24*	2.46*	2.87*	2.87*	3.09**	2.82*	2.71*
1955-59	1.41	1.51	1.59	1.54	1.54	1.48	1.40
educational level (Ref: middle secondary education)							
no or lower secondary education	-2.95**	-2.90**	-3.00**	-2.97**	-2.68**	-2.91**	-2.92**
upper secondary education	1.75	1.66	1.48	1.58	1.70	1.47	1.42
tertiary education	5.18**	4.98**	5.33**	5.29**	5.51**	5.26**	5.22**
timing	.26	.18	.13	.14	.19	.22	.23
squared timing	-.02	-.01	-.01	-.01	-.01	-.01	-.01
spacing		-.44	-.49	-.58	-1.33*	-.64	-.14
squared spacing		.01	.01	.01	-.02	.01	-.08
duration of activities before the first birth (ref: employment)							
education			-.59	-.56	-.53	-.65+	-.64+
unemployment			3.94+	3.72	3.78	4.39+	4.22+
unpaid caregiving			-1.06	-1.02	-.89	-.94	-.93
other			-.49	-.50	-.63	-.58	-.63
group of activities during spacing (ref: unpaid caregiving exclusively)							
employment				.96	-3.17		
other activities				1.85	1.96		
interaction effects							
employment*spacing					1.33*		
duration of activities during spacing (ref: unpaid caregiving)							
education						1.72	1.82
unemployment						-.35	-.35
other						-.54	-.65
full-time employment						.27	-.26
part-time employment						.13	-1.22+
other/flexible employment						.19	.49
interaction effects							
spacing*							
duration of full-time employment							.10
duration of part-time employment							.21**
constant	-2.74+	-.84	-.90	-1.35	.84	-.96	-1.14
N	570	570	570	570	570	570	570
R^2	.362	.368	.378	.380	.387	.382	.388

Note: + p<.10, * p<.05, ** p<.01

Disconcertingly, these results imply that a (part-time) employment between births can be much less positive for a career than interrupting the participation in the labor market altogether. This relationship contrasts any assumptions that suggest a benefit from occupational commitment and continuity. Presumably, the particularly negative effect of a quick part-time return reflects a specific behavior and decision-making process that has already been

observed in previous research (Engelbrech 1997; Hirschle 2011): mothers that decide[24] to return part-time enter a specific track which they follow for a substantial time. Although this track often enables a high flexibility and compatibility of career and family, these benefits apparently come at enormous long-term costs. Not even a full-time return soon after the first birth seems to signal occupational commitment in an outstanding way. Possibly, both effects are a result of women's institutionally and normatively encouraged multi-year parental leave that is typical for the West German conservative regime: even those women that are highly occupationally oriented withdraw from the labor market for about three years and return strongly committed afterwards. Therefore, the signals a full-time employment soon after the first birth sends and the continuity it facilitates are not inherent to occupationally ambitious women. A committed return after a period of unpaid caregiving can have the same effect – which is why we cannot observe a remarkable difference in the data.

Education-specific effects of timing and spacing

In order to follow up the question how timing and spacing effects vary by educational level, in Table 7 we enter interaction terms of educational level and the respective birth behavior into the model established before. Our assumptions suggest that higher educated women profit stronger from their timing and spacing behavior, because they take their decisions more thoughtfully due to their high opportunity costs and greater reflexivity.

In Model 1, we first assess education-specific effects of the first births' timing. Even though women with middle and upper secondary education have proven to be very similar in their influential factors for a career so far, it is only the latter that benefit substantially from postponing their family formation. The result suggests that these women, who have not fully exhausted their high educational potential in the tertiary sector, make up for this omission on the job. Hence, they seem to have some necessity to establish in the labor market before forming a family in order to make a career.

Beyond that, the integration of the interaction terms also yields that the tertiary education's formerly very positive main effect becomes insignificant conditionally. This result suggests that a timing right after career entry would nullify their high education's positive impact on their career. Apparently, their timing is of major relevance and contributes substantially to their occupational success. Although a precise indication of the educational group's specific timing cannot be derived from the results, highly educated women seem to manage to time their first births individually in a way that is occupationally very beneficial. This interpretation gives some hints to confirming our assumption of a more positive timing effect for highly educated women.

24 That decision could be driven by either a deliberate job change or by some involuntarily necessity due to not finding an access back into one's initial profession – which might urge women to bridge with minor or even marginal employments.

Table 7: impact of education-specific timing and spacing on prestige at age 45

	1	2
	b	b
prestige at career entry	-.41**	-.42**
prestige development before the first birth	.50**	.49**
control: cohort groups (Ref: 1960-66)		
1944-49	3.27**	3.38**
1950-54	2.71*	2.62*
1955-59	1.42	1.48
educational level (Ref: middle secondary education)		
no or lower secondary education	-4.32*	-2.58
upper secondary education	-2.39	5.76*
tertiary education	3.08	10.06**
timing	.04	.25
squared timing	-.01	-.01
spacing	-.22	.27
squared spacing	-.07	-.10+
duration of activities before the first birth (ref: employment)		
education	-.75+	-.73*
unemployment	4.44+	4.24+
unpaid caregiving	-.73	-.88
other	-.92	-.47
duration of activities during spacing (ref: unpaid caregiving)		
education	1.88	2.43
unemployment	-.35	-.38
other	-.55	-.63
full-time employment	-.23	-.26
part-time employment	-1.27+	-1.42*
other/flexible employment	.50	.49
interaction effects		
spacing*		
duration of full-time employment	.09	.09
duration of part-time employment	.22**	.27**
timing*		
no or lower secondary education	.20	
upper secondary education	.56+	
tertiary education	.32	
spacing*		
no or lower secondary education		-.12
upper secondary education		-1.23+
tertiary education		-1.50+
constant	.35	-2.48
N	570	570
R^2	.391	.395

Note: + p<.10, * p<.05, ** p<.01

To follow up the assumption of educationally differing spacing-effects, we insert interaction effects of educational levels and their spacing in Model 2. As a result, the picture becomes even more interesting: pursuing the before complex impact of the spacing and its related activities exposed before, the educational level of women also plays a significant role. In fact, controlling for the interaction uncovers a much more positive conditional

main effect for all women. Particularly women with at least upper secondary education would profit enormously from a very short spacing, yet every year of postponing the second births proves more detrimental to the expectable prestige at age 45. Women with low education would be able to make up for some of their disadvantages they have compared to intermediately educated women by spacing their births more shortly. At first glance, this suggests that they forfeit some opportunities by spacing their births the way they do – although a spacing of zero years as represented in the data is, of course, impossible.

Drawing upon previous research helps to comprehend that picture. The spacing of highly educated women has been found to be considerably shorter than that of women with no or lower education (e.g. Kreyenfeld 2002). So far, this has been explained by a partner effect and self-selectivity: firstly, their short spacing is due to their higher material security that is provided by their homogamous partner and, secondly, to the higher family orientation they display when they decide in favor of motherhood despite their high opportunity costs. Our results, however, suggest an additional explanation: higher educated women space their two births more closely in order to better seize their occupational opportunities by returning to the labor market more quickly. Since the West German institutional and normative framework somewhat puts obstacles to returning to the labor market soon after the first birth, they instead opt to return as soon as possible after their period of childcare. To keep the resulting interruption of their employment short, they space their births more closely – though they still lose some chances to accumulate prestige through their spacing of about two to three years.

Birth spacing, the related activities and the underlying educational effects

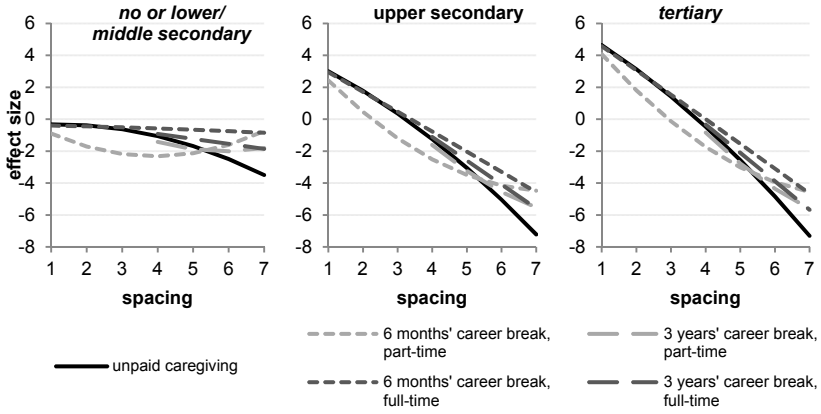
The profoundly examined results of Tables 6 and 7 in the previous sections have already yielded an in-depth impression of the impact exerted by women's particular birth behaviors, the associated activities as well as their educational level on their career development. This picture was shown to be particularly complex for women's spacing between the first and the second births: on the one hand, the spacing's effect was highly dependent upon women's activities between births. While reentering into a part-time employment soon after the first birth has generally turned out to be very detrimental to women's long-term career, participating in unpaid caregiving before having the second child within only a few years has been shown to be the occupationally most beneficial choice. On the other hand, education-specific results concerning the spacing of births have shown that there are indeed considerable differences between women of various educational groups: particularly highly educated women benefit substantially from a shorter spacing of births.

However, since it is very hard to understand how these different effects of women's activities during their spacing and their education coincide with one another, we aim to add some clarification to this complex picture in the following. Focusing on the youngest cohort, we simulate some of women's ideal type career developments by applying the results established before (Model 2 of Table 7) to abstract compositions of female education, birth behavior, and activities. Drawing upon these ideal type figures, at first we pay attention to the specific effects different spacing behaviors and activities have on women's prestige development between career entry and the age of 45. Secondly, we illustrate the impact these ideal type behaviors have, realistically, on women's prestige at the age of

45. To do so, we visualize the effects in relation to the average prestige measures of differently educated women before family formation, precisely their prestige at career entry and their prestige development before their first births. To provide these pictures of the youngest cohort's ideal type birth spacing behaviors and activities by education, we calculate the effects of different spacing durations, exemplarily applying a continuous episode of unpaid caregiving, an employment interruption of six months followed by part-time or full-time employment and a respective interruption of three years.

In Figure 3, we first illustrate the specific effects of the different spacing behaviors and acitivites by educational groups. Since controlling for an education-specific birth spacing (Model 2 of Table 7) has been accounting for differences between women with no or lower and middle secondary education, we summarize these educational groups and hence compare women with no or lower/middle secondary, upper secondary and tertiary education in Figure 3.

Figure 3: effect on career across different activities during spacing, by educational degree



Note: timing constant at seven years.

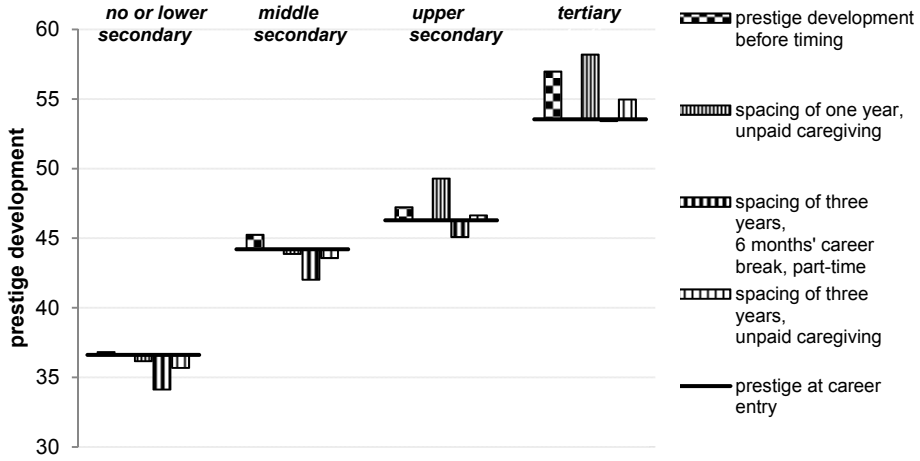
It becomes apparent that there are both major activity-specific and education-specific differences. At first regarding the latter, the graphs impressively demonstrate the enormous career impairments women with at least upper secondary education face with every additional year of postponing the second birth. The activity between births plays, in contrast, a comparatively subordinate part – the most important aspect in order to affect their career is the birth spacing's duration.

Beneath, however, there are still activity-specific differences that are particularly meaningful for mothers with no, lower and middle secondary education. The figure yields that the effects of episodes of unpaid caregiving and full-time employment do not vary considerably from one another during the first three years. It is only after that time that both slopes diverge increasingly and a full-time employment – particularly one that has been entered as soon as half a year after the first birth – proves to be noticeably less detrimental than unpaid caregiving. A part-time employment soon after birth, however, decreases the expectable prestige at age 45 immensely right from the start; the effect even intensifies during the first three to four years. It is only after as much as five years of birth spacing that the slopes

of unpaid caregiving and part-time employment intersect. This implies that the concerning part-time occupational period starts to become less detrimental for the career than having stayed at home for those five years plus of birth spacing. By that time, however, the effect is of rather theoretical nature as most women will have already given birth to a second child.

Although Figure 3 has already contributed greatly to comprehending the effect of differently educated women's birth spacing behavior and the associated activities, what remains is the central question concerning the all-encompassing impact of these behaviors on women's career developments. Figure 4 helps to clarify the picture by illustrating all educational groups' mean prestige base levels and achievements before timing as well as their long-term progression depending on birth spacing and activity behaviors, again drawing upon exemplary combinations of birth spacings and activities. Specifically, we single out birth spacing behaviors of one or three years, both spent exclusively with unpaid caregiving. For the birth spacing duration of three years, we additionally look into a return into part-time employment after half a year. The impact of any full-time employment, in contrast, has to be neglected as its effect does not differ from that of unpaid caregiving during the exemplarily observed birth spacings of up to three years (cf. Figure 3).

Figure 4: ideal type career development between career entry and age 45, by educational level and activity during a one and three year spacing



Note: timing constant at seven years.

Particularly for women with intermediate education who, on average, gained noticeably before family formation, Figure 4 shows that the occupational child penalty is strong and not effectively compensable: whatever spacing and activity they choose, the expectable prestige at age 45 falls below the average prestige at career entry. Only higher educated mothers of two seem to have chances of further accumulating prestige between career entry and the age of 45. However, gaining prestige beyond what they have attained during the most beneficial time before family formation appears to be only possible if they space their two children very shortly. Already a spacing of as little as three years contributes to a loss of prestige compared to what they were able to attain before their first births on av-

erage. Still, assuming a birth spacing of three years at the maximum, the most diminishing behavior for all educational groups is to participate in a part-time employment soon after the first birth: the expectable prestige at the career's high point at age 45 is far lower than it had been before those women decided for their first child and mostly even below the prestige level they started off with at career entry.

5. Summary and conclusion

Although research has already addressed the issue of how women in West Germany reconcile family and career and in what way their family obligations impact their careers (e.g. Engelbrech 1997; Grunow et al. 2006; Matysiak/Steinmetz 2006; Aisenbrey et al. 2009; Gangl/Ziefle 2009; Grunow et al. 2011), what has been underrepresented in the academic debate up to now is if and how women's careers are influenced by the way women embed their birth decisions into their life courses. Precisely, since two children are normatively and empirically prevalent in Germany, this question applies to timing the first birth as well as spacing the second. Hence, the central aim of our study was to understand the impact exerted by these two birth decisions on West German women's long-term careers. Specifically, we reconstructed (1) West German women's career development up to the age of 45 in general as well as before and after first birth and (2) the role of the timing of the first birth and the spacing of the second for women's career development. In both cases, a special focus was placed on the question if and how women's education alters the influences exerted by family formation and birth behavior on their careers.

Regarding women's career developments before and after the first birth, we could show that the period after family formation is firstly unexpectedly influential and secondly highly detrimental to women's careers. Even positive prestige attainments before the first births cannot ensure career stability afterwards. Particularly women with no or lower secondary education face the highest amount of insecurity once they are mothers. Considerable career developments before their first births, however, although being generally rather rare, can influence their long-term career remarkably. Highly educated women, in contrast, can chose from a variety of opportunities before family formation. The prestige drawn from these opportunities depicts a long-term career security beyond their transition to motherhood.

With respect to the impact exerted by the timing of the first births and their spacing of the second on women's careers, the analyses did not yield a general effect of the birth behavior itself. Instead, particularly for the spacing, the activities women participated in between both births have proven to be of major, yet very unexpected relevance: while bridging the births' spacing by exclusively caring for the first child for some years was shown to be the occupationally most rational decision, reentering the labor market part-time soon after the first birth has turned out to be highly detrimental in most cases. A full-time employment, instead, only pays off after participating in the labor market for several years while postponing the second birth. Apparently the West German institutional and normative framework, which encourages mothers to stay at home for several years to care for their children, confounds the positive consequences from labor market continuity and occupational commitment that could be obtained by returning quickly after the first child's

birth. Additionally, the prestige diminishing effect of a part-time employment suggests the existence of a 'mommy track': even though working part-time often enables mothers to flexibly combine family and career, these benefits apparently come at considerable long-term costs to the career (see also Engelbrech 1997; Hirschle 2011).

Regarding educational differences in the effects wielded by women's birth timing and spacing, it could be shown that education indeed influences the way in which women impact their career through their birth behavior. Firstly, the results suggested that higher educated women are able to time their first births in a way that proves to be beneficial, in terms of prestige, in the long term. Secondly, we found that the overall shorter spacing of highly educated women can be explained by their very high occupational profit from spacing births shortly: while the West German institutional and normative framework discourages returning to the labor market during the first years after the first birth, highly educated women seem to circumvent these obstacles to labor market continuity and commitment by keeping the period of consecutive childcare short. This finding adds valuably to the literature that researches the reasons for higher educated women's short birth spacing (e.g. Kreyenfeld 2002; Bernhard/Kurz 2007). A short spacing of births even gives highly educated women the chance to accumulate prestige beyond the high attainment they achieve before their family formation – while mothers of two children with low education seem to fall beneath their prestige at career entry in any event.

Although answering many open questions, our study also leaves some questions still unanswered to future research. Firstly, since the period after family formation has proven to be very influential and has not been fully explained so far, a closer look particularly at the activities after the consecutive periods of childcare, i.e. women's labor market behavior after their last births, would be worthwhile. Another focal point of interest would be to examine the impacts wielded by birth behavior on long-term career for both East and West German women. Particularly interesting in this regard is a long-term comparison, specifically after German reunification and in the light of the latest changes in paradigm concerning Germany's family policies (e.g. Bujard 2013).

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