

Public Childcare Expansion and Changing Gender Ideologies of Parents in Germany

Gundula Zoch¹ and Pia S. Schober²

¹ Bamberg Graduate School of Social Sciences, University of Bamberg

² University of Tübingen and German Institute for Economic Research (DIW Berlin)

This is a pre-copyedited, author-produced PDF of an article accepted for publication in *Journal of Marriage and Family* following peer review. The version of record [Zoch, G. and Schober, P. S. (2018) Public Childcare Expansion and Changing Gender Ideologies of Parents in Germany, *Journal of Marriage and Family*, published online May 2018] is available online at:

<https://doi.org/10.1111/jomf.12486>

Abstract

This study investigates whether the expansion of public childcare for under-threes in Germany has been associated with individual-level change in gender ideologies. We extend the literature by developing and testing a theoretical framework of short-term impact of family policy institutions on attitude change over the life course. The analysis links the German Family Panel pairfam (2008 to 2015) with administrative records on county-level childcare provision for under-threes and applies fixed effects panel models. Our findings show that the childcare expansion has been associated with moderate changes towards less traditional gender ideologies only among mothers in West Germany and mostly so among mothers without a college degree. Surprisingly, in East Germany, we found tentative evidence of more traditional gender ideologies among mothers without a college degree as the childcare reform unfolded. The results provide evidence that policy reforms may alter gender ideologies also in the short-term over the life course.

Over the past decades, many Western countries have invested increasingly in family policies to facilitate the combination of employment and childcare and to reduce persistent gender differences in domestic and paid work (International Network of Leave Policies & Research, 2016). Comparative studies have highlighted the importance of family policy institutions, particularly the availability of non-parental childcare (Ciccia & Bleijenbergh, 2014; Steiber & Haas, 2012), not only for shaping opportunity structures but also for influencing gender culture within society. Additionally, recent longitudinal studies provide evidence that the formation of gender ideologies is not completed in early adolescence but remains subject to the influence of later life course events, such as marriage or childbirth (e.g., Baxter, Buchler, Perales, & Western, 2015; Brooks & Bolzendahl, 2004; Author, 2012). However, to date, little evidence exists as to whether institutional reforms can alter gender culture and ideologies only in the long-term via cohort replacement or also in the short-term (Ellingsæter, Kitterød, & Lyngstad, 2017; Gangl & Ziefle, 2015; Unterhofer & Wrohlich, 2017). Additionally, few studies have investigated through which channels family policy reforms may alter gender ideologies in the short-term. The recent expansion of childcare provision for under-threes in Germany provides a unique opportunity to investigate the short-term impact of family policy change on individual-level gender ideologies.

Investigating gender ideologies is important to understand their formation and, thus, persistent gender inequalities in related behavior, such as the gender division of domestic and paid labor (see Davis & Greenstein, 2009 and Steiber & Haas, 2012 for an overview). We contribute to the literature on cultural change and ideology formation within the life course by investigating whether the recent expansion of public childcare for under-threes in Germany has been associated with a change in gender ideologies, particularly with increased acceptance of maternal employment due to role exposure or normative policy effects. We use the term *gender ideologies* to denote individuals' level of support for the division in paid and domestic work based on

the belief in (multiple) gendered separate spheres (Grunow & Veltkamp, 2016), whereas *gender culture* refers to macro-level gender ideologies and social norms. The latter have been defined as clusters of self-fulfilling expectations (Schelling, 1980), which are sustained through people's conditional preferences for conformity and through the belief that other people will conform (Bicchieri, 2017). The term *gender role attitudes* only refers to empirical measures which aim at capturing the multi-dimensional concept of individual-level gender ideologies (see Davis & Greenstein, 2009 for an overview). While we acknowledge the increasing complexity of different combinations of egalitarian and traditional gender ideologies (Grunow & Veltkamp, 2016; Knight & Brinton, 2017), this study concentrates particularly on gender ideologies with respect to the sphere of maternal employment. Thereby, it relies on the continuum of traditional and less traditional gender ideologies much in the same way as previous research on gender ideologies focusing on the gendered division of paid and domestic work (see Davis & Greenstein, 2009 and Steiber & Haas, 2012 for an overview). For our empirical analyses we combine longitudinal individual-level information on parents' ideologies with annual administrative records on county-level childcare for under-threes, and thus exploit regional and temporal variation in the expansion of public childcare.

Background

Institutional and Cultural Context in East and West Germany

Persistent East-West differences in the acceptance of maternal employment and formal childcare have long been explained by different family policies before the German reunification (e.g., Adler & Brayfield, 1997; Banaszak, 2006; Bauernschuster & Rainer, 2012; Goerres & Tepe, 2012; Lee, Alwin, & Tufis, 2007). Before 1990, the institutional setting in West Germany was characterized by long but low-paid parental leave entitlements, and a lack of public childcare services. Together with the joint taxation for couples and a family health insurance, still existing, this has frequently been classified as supported familialism (Hook, 2015) and is considered to suppress employment of second earners and, thus, reinforce gender inequality.

New mothers tended to interrupt their employment for several years and often returned to the labor market only part-time. By contrast, in the German Democratic Republic shorter parental leave and extensive provision of formal care for very young children encouraged a fast and full-time return to the labor market of mothers (Rosenfeld, Trappe, & Gornick, 2004).

Since reunification, employment trends among mothers with young children have converged somewhat and part-time employment has become the most prevalent arrangement to combine employment and family care in both regions (Konietzka & Kreyenfeld, 2010). Yet, historical East-West differences are still reflected in longer employment interruption durations, lower maternal employment participation and more traditional gender ideologies of parents towards maternal employment and using formal childcare for young children in West Germany compared to East Germany (e.g., Banaszak, 2006; Bauernschuster & Rainer, 2012; Gangl & Ziefle, 2015). Additionally, the reunification process has resulted in long-lasting labor market consequences, with persistently lower wages and higher unemployment in East Germany (Blien, Möller, Hong Van, & Brunow, 2016).

Since the mid-2000s, reforms of parental leave and childcare policies in Germany indicate a paradigm shift from the previous model of supported familialism (Hook, 2015). They aimed at improving the compatibility of employment and family care, speeding up maternal labor market return, and increasing paternal childcare involvement. Before a major reform in 2007, parents on parental leave were eligible to receive a child-rearing benefit of about 300 Euros per month for the first six months and depending on household income, parents could extend this until the child's second birthday. In 2007, the German government introduced an income-related parental leave of twelve months and an individual 'use-it-or-lose-it' entitlement of two months of leave for each parent. As before, each parent has been entitled to three years of leave in total. However, the more generous and income-related compensation for a shorter period provided incentives for faster maternal labor market return. In 2007, about one third of

mothers returned to work within the second year after childbirth when leave entitlements expire, while among those mothers about half worked less than 20 hours a week. Among mothers with a child aged two to three about 44 percent worked, although again predominantly in part-time employment (BMFSFJ, 2017).

To further increase maternal labor force participation, Germany has made notable public investments in formal childcare. The recent expansion of public childcare provision for under-threes has increased overall childcare attendance rates tremendously in East and West Germany, albeit starting from lower levels in West Germany. The expansion started with the Daycare Expansion Act (Tagesbetreuungsbaugesetz) in 2005, which provided extra funding and granted prioritized access for children with parents in employment or education. Furthermore, the 2008 Child and Youth Welfare Act (Kinderförderungsgesetz) stipulated a legal right to a place in formal care for all children aged one year or older from August 2013. Between 2006 and 2014, the average attendance rate for children aged under three years subsequently increased from 8 to 27 percent in West Germany and from 40 to 52 percent in East Germany (Strunz, 2015). At the same time, mothers increasingly substituted informal childcare, such as care by relatives, friends or neighbors, with formal childcare (Author, 2017).

However, because federal states' and counties are responsible for implementing and financing childcare services, considerable differences exist with regard to provision levels, hours of care provided, parental fees and childcare quality across Germany. Thus, average changes mask great regional variation in attendance rates ranging from 14 to 47 percent in West German counties and from 45 to 63 percent across counties in East Germany in 2014 (Strunz, 2015). Similar, in 2015, almost 40 percent of under-threes in East Germany attended full-time childcare, i.e. more than 7 hours a day, compared to only 13 percent in West Germany (Federal Statistical Office, 2015). Childcare fees are often income dependent and well below OECD average (Author, 2015) and recent research shows that during the expansion period, parents' childcare expenditures have significantly increased only for households with higher incomes

(Schmitz, Spieß, & Stahl, 2017). Furthermore, childcare quality standards vary across Germany, particularly when it comes to the regulation of structural aspects, such as minimum teacher-child ratios, group sizes, opening hours or supervision and training requirements for staff. In East Germany, child-teacher ratios and group sizes are larger compared to West Germany, and sometimes larger than usually recommended for under-threes (Author, 2015).

To date, evidence on the impact of increased childcare on maternal employment is limited. Between 2007 and 2015, labor force participation rates of mothers with under-threes increased from 60 to 67 percent, however, particularly among mothers with children aged one to three years. On the contrary, mothers have become less likely to return to work within the first year after birth. Although between 2007 and 2015, employment rates in longer part-time with 20 to 36 weekly working hours have increased from 16 to 29 percent, mothers continue to remain less likely to work full-time when having an under-three-year-old child (12 percent), particularly in West Germany. Thus, East-West differences remain persistent with West German mothers of under-threes working on average about 24.5 hours a week compared to 32.5 weekly working hours in East Germany (BMFSFJ, 2017). In line with the trends in employment rates, micro simulations estimated positive employment effects of increased childcare provision (Geyer, Haan, & Wrohlich, 2015), and Author (2017) found that higher childcare levels were associated with shorter employment interruptions of mothers, particularly for West Germany. Additionally, this study is the first to exploit these temporal and regional variations in increased public childcare to investigate short-term changes in individual-level gender ideologies during the life course of parents with young children.

Previous Studies

Several comparative studies of a small number of countries or cultural contexts have hinted at the importance of family policy institutions in shaping opportunity structures and cultural ideals regarding maternal employment and adequate care for young children (e.g., Banaszak, 2006; Bauernschuster & Rainer, 2012; Sjöberg, 2004). These approaches generally assume that

gender ideologies are formed during childhood in relation to the overall context of parental as well as welfare regime socialization and consider them largely stable over the life course. Cultural change therefore is assumed to be driven by cohort replacement (e.g., Baxter et al., 2015; Bolzendahl & Myers, 2004; Brooks & Bolzendahl, 2004; Sjöberg, 2004; Steiber & Haas, 2012).

A few recent comparative studies using (repeated) cross-sectional data consider more direct measures of institutional support for different work-care arrangements to better disentangle compositional differences at the individual level and cultural or policy variations at the macro level (Kangas & Rostgaard, 2007; Sjöberg, 2004). Based on a cross-sectional comparison of seven European countries, Kangas & Rostgaard (2007) found that a higher level of formal childcare provision in terms of availability, affordability and quality correlated with greater probability of female employment. Sjöberg (2004) found that more generous family policy institutions which support the dual-earner family were associated with less traditional gender ideologies towards maternal employment at the individual level. These studies were unable to estimate any causal effects or disentangle changes in gender ideologies due to cohort replacement from change due to life course transitions.

Although several studies have shown that ideologies are transmitted in childhood and remain relatively stable over time (Cunningham, 2001; Min, Silverstein, & Lendon, 2012; van Putten, Dykstra, & Schippers, 2008), there has been additional support for alterable gender ideologies. Theories of individual change share the common assumption that altered contexts, lifetime events, or practices can lead to changes in ideologies (e.g., Brooks & Bolzendahl, 2004; Kraaykamp, 2012; Stets & Burke, 2000), such as the impressionable years hypothesis (Alwin & Krosnick, 1991), which assumes young adults to have the least stable preferences and to experience substantial change in gender ideologies. Similar, Min et al. (2012) have shown a conditional lagged effect of parental socialization on their children's gender ideologies. When children reach a certain level of maturity and experience certain lifetime events, gender ideologies

which they were previously exposed to might be activated. Thereby, young adults' gender ideologies are not determined solely by their parents' ideologies but shaped by contextual and interactional dynamics, especially during major life course transitions such as marriage, parenthood, and labor force entry or exit (Alwin & Krosnick, 1991; Brooks & Bolzendahl, 2004; Cunningham, 2001). Grunow & Müller (2012) found that East German mothers, living several years in the West prior to childbirth, returned to the labor market more slowly than their East German counterparts did, but faster than other West German mothers did. The authors take this as a sign of moderately stable socialization but also cultural adaptation to a different institutional, particularly to the lack in childcare provision, and cultural setting in West Germany. The study, however, did not directly investigate gender ideologies.

A few authors, applying a repeated cross-sectional design, have attempted to disentangle cultural change due to cohort replacement from short-term changes due to life course transitions, by controlling for period effects or analyzing different periods (e.g., Bolzendahl & Myers, 2004; Davis & Greenstein, 2009; Kraaykamp, 2012). By decomposing inter-cohort and intra-cohort effects, Kraaykamp (2012) has shown considerably larger intra-cohort effects compared to cohort-change for the increase in gender-egalitarian views in the Netherlands. Some single country longitudinal studies of the UK, Australia, and Germany have also provided evidence of changes in gender ideologies after the transition to parenthood (Baxter et al., 2015; Berrington, Hu, Smith, & Sturgis, 2008; Author, 2012). The extent of change appears to correlate with labor market transitions and childcare choices and the extent to which these are in line with prenatal gender ideologies or constrained by economic and institutional factors (Berrington et al., 2008; Author, 2012). These longitudinal studies, however, were unable to consider direct measures of changes in institutional contexts, such as childcare services, over time.

To our knowledge, only a few recent studies have examined short-term influences of work-family policy institutions on gender ideologies. Based on a survey-experimental design, Pedulla & Thébaud (2015) showed that the majority of young adults preferred an egalitarian

relationship structure. Particularly women were significantly more likely to choose a more gender-traditional arrangement when facing institutional constraints without supportive policies, such as gendered workplace cultures and policies which constrain equal sharing of breadwinning, housework, and care giving. Applying a treatment and control design to cross-sectional data from Norway, Kotsadam & Finseraas (2011) found that the introduction of an individual parental leave entitlement was associated with a more gender equal division of housework and less frequent conflict over household labor 15 years after the reform but was not significantly related to changes in gender ideologies. By applying difference-in-difference estimators, Gangl & Ziefle (2015) revealed that several reforms increasing the generosity of parental leave entitlements in Germany during the 1990s and early 2000s were associated with role exposure and norm-setting effects. They provide evidence that parental leave policies resulted in a decline in mothers' work commitment and labor force participation. Unterhofer & Wrohlich (2017) exploit a quasi-experimental setting of a parental leave reform in 2007 in Germany, which introduce income-related leave reimbursement and a fathers' quota while shortening the duration of paid leave. They found that the reform led to a change towards less traditional gender ideologies among respondents, whose son had a child after the introduction of the father' quota. This suggests that the reform induced also indirect effects through social interaction. With regard to childcare policies, Ellingsæter et al. (2017) found that a period of substantial increase in childcare availability in Norway has been associated with a considerable increase in the acceptance of formal childcare among all socio-economic groups and in all parts of the country. Yet, they only examined repeated cross-sectional data at two observation times and were unable to consider a direct measure of childcare availability over time.

Our study adds to this research by investigating the effect of greater childcare provision on parents' gender ideologies using a direct measure of public childcare availability for under-threes. We exploit the temporal and regional variation in the speed at which public childcare

has expanded in both East and West Germany to identify potential influences on changing gender ideologies of parents.

Conceptual Framework

We develop a theoretical framework, which integrates the concept of policy feedback effects with sociological and psychological theories of role exposure and short-term change in individual-level ideologies. The concept of policy feedback effects has been widely applied when investigating whether citizens' ideologies do not only result in future policies but whether these policy changes also result in (feedback) effects on citizens' welfare-state-related ideologies (Kumlin & Stadelmann-Steffen, 2014). The literature emphasizes two causal mechanisms to explain the relationship between policy change and formation of ideologies: i) psychological adaptations to role exposure and ii) cultural diffusion and norm-setting effects (Bicchieri, 2017; Gangl & Ziefle, 2015; Kumlin & Stadelmann-Steffen, 2014). Accordingly, policy change is more likely to affect individuals' ideologies the greater policy visibility and policy proximity. Policy visibility refers to "the degree to which a policy is salient to mass publics", whereas policy proximity is understood as "the extent to which it will affect people's lives" (Ellingsæter et al., 2017, p. 152) and, hence, relates closely to perspectives that explain altered gender ideologies with direct exposure to new roles or interest-based concerns (Bolzendahl & Myers, 2004).

We apply the concept of policy feedback effects to explain how policy change, particularly a change in childcare policies, impact on individual-level gender ideologies through, firstly, changes in role exposure or, secondly, indirect effects through cultural diffusion of new information by media or social networks. Therefore, we draw on identity theories (Stets & Burke, 2000) or cognitive dissonance theory (Festinger, 1957) to formulate hypotheses relating to role exposure effects, whereas we use the elaboration likelihood model (Petty & Cacioppo, 1986) and social norm theory (Bicchieri, 2017) to consider indirect effects through information processing and changing empirical and normative expectations of others' actions.

As a first channel of policy feedback effects the psychological adaptations to role exposure, i.e. policy proximity, may be relevant to explain changes in gender ideologies due to increased childcare for under-threes. According to identity theory and social identity theory (Stets & Burke, 2000), individuals construct both passively and actively new images of themselves whenever they experience new roles or a change in social category or group, respectively. Frequently, such changes occur in the course of life course transitions, including the transition to parenthood or employment transitions. It is particular policies that lift previous constraints to behavior and enables choices, previously not available, which are assumed to alter ideologies (Himmelweit & Sigala, 2004). Thus, previous research has pointed to the importance of childcare policies that expand the choices for mothers and, hence, are likely to create policy feedback effects with respect to altered gender ideologies (id.). Given the comparatively long interruption durations after childbirth, particularly in West Germany, we expect greater childcare availability for under-threes to increase mothers' probability to return to employment. Considering mothers who were already back at work, yet frequently working in marginal or short part-time employment (BMFSFJ, 2017), we expect them to draw on more public childcare support, as suggested by previous research (Author, 2017), and work longer hours than when relying exclusively on informal childcare arrangements. As exposure-based perspectives as well as the policy feedback literature presume a change in role exposure to be accompanied by psychological adaption, these maternal employment transitions are assumed to be linked to a stronger identification with the role as a working mother. Hence, we expect working mothers and their partners to alter their self-concept towards less traditional gender identities and to become more accepting of maternal employment and formal childcare over the course of the childcare expansion.

Given that the expansion of childcare services will support mothers' labor market participation, mothers are less likely to alter their self-concept to identify with the homemaker role after childbirth. According to cognitive dissonance theory, life course events can also lead to

change in ideologies, whenever circumstances are constrained and one's beliefs are at odds with new unchangeable behaviors or arrangements connected to these new circumstances (Festinger, 1957). Some authors have suggested that a lack of childcare services increases cognitive dissonance among young mothers with work-oriented values prior to childbirth, raising the likelihood of them adapting their gender ideologies in line with the more traditional division of labor (Baxter et al., 2015; Author, 2012). Thus, we expect adaptation towards traditional gender ideologies to become less likely the more public childcare is expanded.

As a second channel of policy feedback effects, policy visibility to the wider public may be relevant to understand policy-induced changes in ideologies and social norms due to indirect effects through information processing and changing empirical and normative expectations of others' actions (Bicchieri, 2017). According to the elaboration likelihood model (ELM) (Petty & Cacioppo, 1986), communication about experiences of significant others or new information may alter ideologies. The model assumes that individuals process information at different levels of thought, called elaboration, and proposes that peripherally processed information may induce only temporary ideological change, whereas changes as a result of centrally processed, carefully elaborated information are assumed to be longer-lasting and predictive of behavior. According to Bicchieri's (2017) theory of social norms, information about policy changes and increasing take-up will, in turn, alter people's empirical expectations of how likely other parents are to use formal childcare for young children and normative expectations as to what other people will think of one's uptake of formal childcare.

In Germany, the exceptional increase in childcare for under-threes was accompanied by a sophisticated media strategy (Bujard, 2014) and continued high level of media coverage, supported by at least annual childcare coverage reports of the Federal Statistical office (Federal Statistical Office, 2015). An evaluation study of various family policies in Germany showed that about 57 percent of the total population and about 73 percent of parents knew about the

possibilities of formal care for young children already in 2010 (Haumann, 2014). Given the increase in media reporting about formal childcare and in information received from social interactions about the experience of childcare use and employment of mothers with young children, we assume that policy visibility of the childcare expansion, and thus, indirect norm-setting effects of the policy change through cultural diffusion of new information by media or social networks and changing expectations have been high. Hence, in line with policy feedback and social norm theories and the elaboration likelihood model, we expect that the childcare expansion has been associated with a change towards growing acceptance of formal childcare and maternal employment not only among the target group of parents with young children and, hence, close proximity, but may also change social norms among parents with older children.

Based on the combination of the policy feedback concept with approaches based on role exposure, information processing and social norms, we expect that the increase in public childcare places is overall positively associated with short-term changes towards less traditional gender ideologies (Hypothesis 1). Following exposure-based theories, we hypothesize that maternal labor market returns will partly mediate the associations of the childcare expansion with less traditional gender culture (Hypothesis 2). As women are more likely to experience a greater change in roles or might have experienced role constraints themselves in the past, we assume the childcare expansion to have greater policy proximity for mothers compared to fathers, and thus, to more strongly alter mothers' gender ideologies (Hypothesis 3).

Furthermore, given persistent East-West differences, with less traditional gender ideologies and higher levels of acceptance as well as actual maternal employment and formal care use already before the childcare expansion in East Germany, a certain degree of saturation might reduce the potential of further short-term change towards less traditional gender ideologies. Consequently, we expect West German fathers and mothers to show a more pronounced increase in

support of egalitarian gender ideologies (Hypothesis 4). Additionally, even within West Germany the positive effects of greater childcare availability may have been non-linear with larger changes in gender ideologies among parents in counties, which started from very low pre-reform childcare coverage levels.

Moreover, given increased educational disparities in maternal employment (Author, 2017) and, according to the ELM-model, the importance of individuals' motivation and ability for information processing, one may also expect heterogeneous changes in gender ideologies according to educational qualifications. The direction of such differences is, however, difficult to predict a priori. Previous research found that college educated mothers have increased their disagreement with traditional gender ideologies and their take-up of and exposure to formal childcare more than other groups during the expansion period (Author, 2017). Given these greater changes in role-exposure and the assumption of the ELM-model, on the one hand, the policy change may have facilitated change in gender ideologies more strongly among college-educated mothers. On the other hand, college-educated mothers indicated greater work commitment and acceptance of maternal employment and formal childcare for young children (Drasch, 2013; Gangl & Ziefle, 2015) and were probably better informed about potential benefits of formal childcare for children already prior to the reform. Thus, one could expect mothers with low educational attainment and more traditional gender ideologies prior to the reform to be more responsive to the policy change. We will test empirically whether greater initial acceptance of formal childcare use and better information may go hand in hand with less change among highly-educated parents and offset counteracting effects due to more frequent exposure to childcare institutions and greater potential career gains due to more advantageous labor market opportunities.

Method

Data and Sample

We combined individual-level data on gender ideologies towards maternal employment from the German Family Panel (pairfam) (<http://www.pairfam.de>), release 7.0 (Brüderl et al., 2016) with annual administrative records on county-level childcare provision. The annual panel survey started with about 12,000 randomly selected anchor respondents of three cohorts (1991-1993, 1981-1983, and 1971-1973) in 2008 (Huinink, Brüderl, Nauck, & Walper, 2011). Respondents were interviewed around the turn of the year and the multi-actor design provided information on partners, parents and children, if available. Pairfam is the only German panel dataset, which includes longitudinal measures of gender ideologies every other year. We used all waves that include these measures, that is wave 1 (2008/2009), wave 3 (2010/2011), wave 5 (2012/2013) and wave 7 (2014/2015).

We restricted the sample to repeatedly observed East and West German mothers and their partners, who had at least one child, and thus excluded respondents in full-time education (412 and 380 observations in West and East, respectively) as we expected dynamics in their gender ideologies to be driven by special circumstances. As most of the youngest respondents had not yet experienced a transition to parenthood, we observed only few individuals from the youngest cohort born from 1991 to 1993 (29 and 22 observations in West and East). To restrict variation in the childcare measure to variation due to the policy reform, we further excluded individuals, who moved to another county within the observation period (144 and 69 observations in West and East, respectively). Based on all restrictions, our sample consisted of 2,126 mothers (5,090 observations) and 1,438 fathers (3,598 observations) in West Germany and 1,224 mothers (2,971 observations) and 900 fathers (2,292 observations) in East Germany. In total, we observed mothers in 289 of the 402 counties in Germany. In East Germany, our sample included respondents in 67 of 76 East German counties.

Estimation Strategy

We applied fixed effects panel models, which account for any constant unobserved heterogeneity between the time-varying dependent and independent variables by controlling for the average differences within individuals in any observable or even unobservable factor. By exploiting only within-person variation in the dependent and independent variables, our models examine the relationship between changes in the attitude measures and changes in the provision of childcare as well as other time-variant independent variables. As shown in equation (1), we estimated the association between the variation in the annual county-level childcare provision c_{ct} and the variations in gender ideologies of East and West German mothers and fathers y_{it} living in the same county, respectively. x_{it} and z_{ct} denote vectors of time-varying control variables at the individual, household and county level, respectively. To account for further influences of time-varying unobserved characteristics, we included period dummies denoted by vector p_t . ε_{it} represents random variation at each point in time and u_i captures the combined effect of time invariant unobserved variables on the dependent variable. We computed clustered standard errors on county-level and applied design weights to correct for under- or overrepresentation of the two cohorts in the sample as compared to the population.

$$(1) y_{it} = \beta_{1t} + \beta_2 c_{ct} + \beta_3 x_{it} + \beta_4 z_{ct} + \beta_5 p_t + u_i + \varepsilon_{it}$$

Due to varying starting levels of childcare provision and acceptance of maternal employment prior to the reform, we ran separate models for mothers and fathers in West and East Germany, respectively. As employment transitions have been found to correlate with altered gender ideologies (Author, 2012) and may mediate the relationship with the childcare expansion, we tested mediating relationships with changes in mothers' employment status. Furthermore, we tested interaction effects to examine whether the effects of increased childcare on individual-level change in gender ideologies varied by educational attainment. Additionally, we controlled for county variation in regional labor markets and in overall economic development, which is

likely to influence the provision of childcare and employment participation. Lastly, we applied further sensitivity analyses.

Operationalization of Dependent and Independent Variables

To investigate how the gradual expansion of childcare provision may have impacted parental ideologies over time, we focused on two items relating to gender ideologies towards maternal employment. Previous research has pointed towards the existence of multidimensional gender ideologies that do not comfortably fall onto a continuum of traditional and egalitarian gender ideologies (Knight & Brinton, 2017). We narrow the perspective and concentrate only on two items that are closely related to maternal employment: (1) “Women should be more concerned about family than about career” and (2) “A child under age 6 will suffer from having a working mother”. The response scale ranged from 1 (*strongly disagree*) to 5 (*strongly agree*), so that higher values represent more traditional gender ideologies. By examining these two separate items, we are unable to differentiate between different types of egalitarianism, as liberal egalitarians, egalitarian familists and flexible egalitarians are all likely to disagree with these statements (Knight & Brinton, 2017). While previous research has found traditionally slanted gender role attitude items to produce clearer country differences, the applied items may be less suitable to capture attitude change over time among a sample with relatively egalitarian views (Braun, 2008), such as East German parents. As respondents with non-traditional gender ideologies will predominantly fall into the highest category, these items might not capture small changes in non-traditional gender ideologies over time. However, unfortunately no other panel data set includes measures on gender ideologies. We analyzed the two items separately, as the relationships with the childcare expansion rate varied somewhat. To facilitate comparability of the effect sizes, we standardized the dependent variables in the multivariate analyses.

Table 1 displays mean values for mothers and fathers in East and West Germany across all four periods of observation. In line with previous research (e.g., Adler & Brayfield, 1997;

Banaszak, 2006; Bauernschuster & Rainer, 2012; Lee et al., 2007), for all items, patterns of response revealed significantly more traditional gender ideologies among parents in West Germany compared to East German parents. Whereas a reduction in mean values, that is a moderate change in mean values towards less traditional ideologies, was seen for most items among West German parents, in East Germany ideology change seemed less pronounced. Although the means provided little evidence, in particular in East Germany, Table 2 displays that the majority of respondents altered their gender ideologies by at least one point on a five-point scale between two years of observation in both East and West Germany. For example, in West Germany about 27 percent of mothers increased their agreement with the traditionally slanted statement that mothers should focus on family rather than career (see Table 2), while, conversely, 29 percent of mothers decreased their agreement and, thus, changed towards less traditional gender ideologies. Among the latter group about 73 percent of mothers reduced their score by about one unit between two points of observation, whereas 28 percent even decreased their score to the conservative statement by two or more points on the five-point scale. Overall, East German fathers showed the most stable gender ideologies, whereas West German mothers exhibited greater change.

Our key independent variable was the provision of county-level public childcare, measured as the annual percentage of under-threes who were enrolled in publicly funded childcare services in relation to the total population of under-threes in March of each year. Due to substantial excess demand for childcare places (BMFSFJ, 2015), this may also be interpreted as a measure of childcare supply or availability (Andronescu & Carnes, 2015). The childcare measure included half-day and full-day slots. For each respective pairfam wave, primarily collected between October and May of the following year, we combine the county-level public childcare rate from preceding March, hence, for all respondents the childcare measure is lagged for at least 7

months. The gradual increase over time as well as observed East-West differences in the childcare attendance rate in our sample were in line with the overall development of childcare provision (Strunz, 2015) (see Table 3).

We included the following time-varying control variables at the individual and household level: Respondent's age and age squared, age group of the youngest child (0-3 years /4-6 years /7 years and older) as well as pre-generated variables on the number of all present children in the household and respondents' relationship status, differentiating between living apart together, cohabiting, and married respondents. By differentiating between economically inactive, part-time and full-time employed mothers based on the provided labor force status, we tested for a mediating effect of maternal labor market participation. We also considered a dummy variable of paternal employment and a logged indicator of the monthly net equivalence income according to the German council of Economic Experts, adjusted for inflation with base year 2010. The latter includes all sources of income and is provided by pairfam. Furthermore, we controlled for county variation in regional labor markets and the overall economic situation by including the regional unemployment rate, GDP per capita and the number of public servants per 1000 inhabitants because the public service sector is an important employer, particularly for women. To further account for regional differences in employment opportunities but also disparities in municipal budgets between urban and rural areas as well as more traditional gender cultures in rural areas, we included an index for the share of a county's population that lives in communities with a very low population density. All regional indicators were annual figures provided by the Regional Database Germany and were lagged by one year. To account for further unobserved influences, which changed uniformly across regions over time, we included period dummies in all models.

Results

Table 4 shows results of the fixed effects regression models of mothers' and fathers' change in gender ideologies in West and East Germany, respectively. The final models include a curvilinear specification of the childcare measure. We present full models including control variables at the individual, household and county level, and year dummy variables, as intermediate modeling steps did not alter the associations with the childcare expansion rate significantly.

Among mothers in West Germany, the expansion in childcare provision was significantly associated with a decrease in the support of the traditionally slanted attitude statements considering women's careers and employment of mothers with preschool children (Table 4). The relationships appeared to be curvilinear with greater change towards less traditional ideologies in counties where childcare availability increased from lower levels, i.e. between 5 and 24 percent of childcare take-up, whereas gender ideologies remained more stable in counties with higher levels of childcare provision above 24 percent. The curvilinear relationship was statistically significant only for West German mothers. For fathers in West Germany and for mothers and fathers in East Germany the expansion of childcare availability was not significantly associated with changes in gender ideologies (Table 3).

The significant results for West German mothers provided only partial support for Hypothesis 1, assuming that the increase in public childcare provision was associated with a change towards less traditional gender ideologies. The effect sizes were modest ranging between 3 and 4 percent of a standard deviation, which corresponds to the mostly moderate influences of similar regional-level indicators found in previous studies (e.g., Grunow & Müller, 2012; Author, 2015; Author, 2016). Among West German mothers, a 10-percentage point increase in childcare provision was associated with a 29-percent decrease in attitudinal support towards less traditional gender ideologies towards women's careers, which corresponded to a decrease of 0.33 points on the five-point scale. The observed patterns among East German

mothers and fathers in Table 4 contradicted Hypothesis 1. East German parents' views regarding women's careers and negative consequences of maternal employment for young children appeared to have become more conservative in counties where childcare provision expanded, although the coefficients were statistically not significant.

Partly in line with Hypothesis 2 and exposure-based explanations, maternal transitions into part-time or full-time employment correlated negatively and employment exits positively with agreement with the traditionally phrased attitude items in several models for mothers and fathers in West Germany (Table 4). However, shifts in gender ideologies were not consistently stronger for full-time compared to part-time employment across various models. Furthermore, we did not find any mediating or moderating influences of maternal employment status (results of stepwise models and interaction terms are available from the authors). In East Germany, maternal employment transitions were mostly not significantly related to attitudinal changes.

In line with Hypothesis 3, joint models with a gender interaction term confirmed that the increasing childcare provision was associated with significantly greater change towards less traditional gender ideologies on the maternal employment item for mothers than for fathers in West Germany. For the other item and for East Germany, no significant gender differences were found (results available on request).

Hypothesis 4 predicted a greater potential of an expansion of childcare availability to shape gender ideologies in West Germany than in East Germany. Overall, the results for mother's ideologies towards women's careers were in line with this hypothesis. Joint models with an interaction term for East Germany confirmed a significant change towards less traditional gender ideologies towards women's careers and consequences of maternal employment for child wellbeing among West German mothers (results available on request). For fathers we did not find any statistically significant differences between East and West Germany.

Table 5 shows the results of models including interaction terms of the childcare attendance rate with a dummy variable indicating whether the respective parent has completed a college degree. The interaction effects suggested that in West Germany the expansion of childcare provision was associated with stronger change towards less traditional gender ideologies regarding the ‘career item’ among mothers with lower levels of education compared to college-educated mothers. With regard to East Germany, the negative interaction terms for the ‘child item’ suggested that the expansion of childcare provision was accompanied by a stronger change towards more egalitarian gender ideologies among college-educated mothers than among those with lower levels of education, whose ideologies became more traditional. Among fathers in East and West Germany, none of the interaction terms reached statistical significance at the 5-percent level.

Sensitivity Analyses

As a robustness check, we tested a potential mediating influence of actual use of part-time or full-time formal childcare in addition to maternal employment participation. As information on childcare use has only been collected for waves 3 to 7, we could not include this measure in our main models. Including the use of formal childcare, however, did not alter our main findings for West German mothers (see supplemental Table A1). The association of county-level changes in childcare provision and mothers’ gender ideologies towards the consequences of maternal employment ceased to be significant but this was due to the reduction in sample size. In addition, we tested regional variation in the provision of full-day care slots but did not find any statistically significant associations. Moreover, we found no indication that our results are driven by a particular state or a group of federal states or changes in respondents’ absolute and relative domestic work and childcare share. We found significant differences between the oldest and younger cohorts only for West German parents and only with respect to the ‘child item’, with a stronger change towards less traditional gender ideologies for the oldest cohort of

mothers as well as a smaller increase in more traditional gender ideologies for the oldest cohorts of fathers. We also checked whether the effects varied by youngest child's age, parent's migration background or family status but found no evidence of this.

Concluding Discussion

Focusing on a major public childcare expansion in Germany, this study provides evidence that a pronounced change in childcare policy has been associated with short-term changes in individual-level gender ideologies. Our results show that gender ideologies of West German mothers have become less traditional when experiencing a pronounced increase in childcare provision for under-three-year-olds in counties with low levels of provision (below 25 percent). This effect was driven by mothers without a college degree. By contrast, we find tentative evidence that less educated mothers in East Germany became more traditional in their gender ideologies towards employment of mothers with young children as childcare provision expanded in their counties. We did not find significant associations for fathers in East and West Germany. Despite a strong association of maternal employment transitions with gender ideologies among parents in West Germany, we did not find that employment transitions mediate or moderate the relationship of the childcare expansion with changes in gender ideologies. This may point to indirect mechanisms through changes in information about childcare provided by media and social network.

The non-linear relationship with the childcare attendance rate in combination with the different findings for West and East Germany may suggest that pronounced change in gender ideologies among mothers is more likely in previously relatively traditional contexts. However, as we observe only a few mothers in West German counties with a particularly pronounced increase in childcare availability to over 35 percent, the curvilinear relationship must be interpreted with caution. Differentiated analysis by parental education revealed stronger change towards less traditional gender ideologies among lower educated mothers in West Germany. This

might suggest that less educated mothers in West Germany who held the most traditional values (Author, 2017) and showed a comparatively weak attachment to the labor market before the childcare expansion (Drasch, 2013; Konietzka & Kreyenfeld, 2010), were receptive to information about newly available childcare services. In combination with the finding of persistent and low levels of childcare take-up and employment of less educated mothers (Author, 2017) across the reform period, this result may suggest that their take-up may have been restricted because of priority access to dual-earner parents or due to personal preferences of longer labor market interruptions. The weaker effects on fathers' gender ideologies in West Germany are in line with the policy effect literature that suggests that changes in childcare practices and associated changes in maternal employment have been of greater impact for mothers' gender ideologies, who have been more directly affected in their work and care arrangements (Himmelweit & Sigala, 2004). Additionally, more traditional gender ideologies of fathers might reflect an increase in family work due to mothers increased labor market participation.

While one may assume a certain degree of saturation effect with regard to further short-term changes towards less traditional gender ideologies among East German parents due to the high level of rejection of traditional ideologies prior to the reform, our results surprisingly suggest a change towards more traditional gender ideologies among mothers with less than college education. Although East German parents probably internalized the dominant role of a working mother through early socialization before the German reunification, they also most likely experienced persistent gender inequalities in the domestic sphere as well as a period of an increased work-family conflict due to social and economic insecurity following reunification (Banaszak, 2006). Against the background of these experiences, for some less educated mothers, who held non-traditional values before the reform, further employment-promoting family policies in combination with persistently lower job prospects in the East German labor market might reduce mothers' career ambitions (Author, 2017). In addition, increasing discussions about low

levels of quality of formal childcare institutions, particularly in East Germany (Bock-Famulla, Strunz, & Löhle, 2017), might impact negatively on maternal employment transitions and reduce cultural acceptance of formal care use for young children. Previous research has shown a significantly negative association between larger group sizes and maternal employment participation specifically for mothers in East Germany (Author, 2015). Thus, from a broader perspective, the reduced cultural acceptance might be in line with findings on cultural norms against the labor market participation of mothers with very young children and an increasing loss of confidence in institutional childcare in other post-socialist countries in Eastern and Central Europe (Lovász, 2016) as well as previously observed re-traditionalizing effects among mothers with higher educational attainment in Austria (Berghammer, 2014).

Overall, our results lend support to the literature on the relevance of life course effects on gender ideologies, particularly to the impressionable years hypothesis (Alwin & Krosnick, 1991) which assumes that preferences and gender ideologies of young adults may be subject to considerable change. From a broader perspective, our results confirm previous cross-national comparisons (Kangas & Rostgaard, 2007; Sjöberg, 2004), which found childcare provisions to predict variations in individuals' gender ideologies. In line with a few recent evaluations of family policy reforms (Ellingsæter et al., 2017; Gangl & Ziefle, 2015; Kotsadam & Finseraas, 2011; Unterhofer & Wrohlich, 2017), this study provides evidence that family policy reforms, in this case an expansion of childcare services, may facilitate attitude change not only across cohorts but also over the life course. However, our findings emphasize that the impact of this institutional change seems to be of modest size, which is in line with effect sizes of regional indicators in previous studies (e.g., Author, 2015; Author, 2017), and concentrated among counties with low levels of previous childcare provision and among respondents with greater policy proximity due to a higher likelihood of role exposure and social interaction with other individuals from the policy target group. In contrast to most previous studies on employment oriented family policy reforms (e.g., Ellingsæter et al., 2017; Gangl & Ziefle, 2015), we also

find some tentative evidence of re-traditionalizing effects of the childcare expansion on less educated mothers within the relatively egalitarian gender culture of East Germany. This may, however, be in line with findings of increasing egalitarian familist ideologies, in particular, in former socialist countries of Eastern Europe. Egalitarian familism is characterized by dual beliefs that women should be active in the labor force and that the children and family are essential to women's identities (Knight & Brinton, 2017). Future research should seek to shed light on how changing policies and institutions have contributed to the increasing diversity in non-traditional gender ideologies in European post-industrial societies.

Finally, a number of important limitations need to be considered. Firstly, we had to rely on a few traditionally slanted gender role attitude items. These attitudinal measures were available only every other year, which might have hindered us from capturing all relevant individual trajectories in order to control for any other potential sources of attitudinal change. We also lacked data to measure childcare use at all points of observation as well as to consider the quality of regional childcare provision, which, however, remained roughly stable over time (Schilling, 2014). Whereas it is always difficult to disentangle the association between institutional change and cultural change, the longitudinal data in combination with regional measures on childcare provision are unique to identify attitudinal changes during the corresponding childcare expansion period. However, due to data limitations we were not able to account for any delayed attitudinal change across time, which might have been enforced by the previous change in parental leave legislation. For this reason, our results might capture not only effects of the childcare expansion but also more general social change accompanying the paradigm shift in German family policy. By applying fixed effects regression models, we account for time-invariant unobserved heterogeneity at the individual level, yet, there remains a small risk of bias due to other unobserved time-varying characteristics at the county level which correlate with the childcare expansion.

Despite these limitations, the study makes an important contribution by emphasizing the relevance of short-term changes in gender ideologies within the life course. As this is one of the first studies investigating the association between social policy and cultural change, future research should look more into direct as well as indirect mechanisms related to policy proximity and policy visibility. These include increasing receipt of different forms of information from media or social network and changing exposure and daily practices of how policy reforms may impact gender ideologies. Additionally, future research should carefully evaluate how policy reforms may alter the increasingly complex mix of gender ideologies among different groups and further account for effect heterogeneity with respect to individual and couples characteristics as well as pre-reform ideologies.

References

- Adler, M. A., & Brayfield, A. (1997). Women's Work Values in Unified Germany: Regional Differences as Remnants of the Past. *Work and Occupations*, 24(2), 245–266. doi:10.1177/0730888497024002006
- Alwin, D. F., & Krosnick, J. A. (1991). Aging, Cohorts, and the Stability of Sociopolitical Orientations Over the Life Span. *American Journal of Sociology*, 97(1), 169–195. doi:10.1086/229744
- Andronescu, C. G., & Carnes, M. E. (2015). Value coalitions and policy change: The impact of gendered patterns of work, religion and partisanship on childcare policy across German states. *Journal of European Social Policy*, 25(2), 159–174. doi:10.1177/0958928715573480
- Banaszak, L. A. (2006). The Gendering State and Citizens' Attitudes toward Women's Roles: State Policy, Employment, and Religion in Germany. *Politics & Gender*, 2(1), 29–55. doi:10.1017/S1743923X06060016
- Bauernschuster, S., & Rainer, H. (2012). Political regimes and the family: how sex-role attitudes continue to differ in reunified Germany. *Journal of Population Economics*, 25(1), 5–27. doi:10.1007/s00148-011-0370-z
- Baxter, J., Buchler, S., Perales, F., & Western, M. (2015). A Life-Changing Event: First Births and Men's and Women's Attitudes to Mothering and Gender Divisions of Labor. *Social Forces*, 93(3), 989–1014. doi:10.1093/sf/sou103
- Berghammer, C. (2014). The return of the male breadwinner model? Educational effects on parents' work arrangements in Austria, 1980-2009. *Work, Employment & Society*, 28(4), 611–632. doi:10.1177/0950017013500115
- Berrington, A., Hu, Y., Smith, P. W. F., & Sturgis, P. (2008). A graphical chain model for reciprocal relationships between women's gender role attitudes and labour force participation. *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, 171(1), 89–198. doi:10.1111/j.1467-985X.2007.00510.x
- Bicchieri, C. (2017). *Norms in the wild: How to diagnose, measure, and change social norms*. New York, NY: Oxford University Press.

- Blien, U., Möller, J., Hong Van, P. t., & Brunow, S. (2016). Long-Lasting Labour Market Consequences of German Unification. *Journal of Economics and Statistics*, 236(2), 181–216. doi:10.1515/jbnst-2015-1013
- Bock-Famulla, K., Strunz, E., & Löhle, A. (2017). *Länderreport Frühkindliche Bildungssysteme 2017: Transparenz schaffen – Governance stärken*. Gütersloh: Bertelsmann Foundation.
- Bolzendahl, C., & Myers, D. J. (2004). Feminist Attitudes and Support for Gender Equality: Opinion Change in Women and Men, 1974-1998. *Social Forces*, 83(2), 759–789. doi:10.1353/sof.2005.0005
- Braun, M. (2008). Using Egalitarian Items to Measure Men's and Women's Family Roles. *Sex Roles*, 59(9-10), 644–656. doi:10.1007/s11199-008-9468-5
- Brooks, C., & Bolzendahl, C. (2004). The transformation of US gender role attitudes: cohort replacement, social-structural change, and ideological learning. *Social Science Research*, 33(1), 106–133. doi:10.1016/S0049-089X(03)00041-3
- Brüderl, J., Hank, K., Huinink, J., Nauck, B., Neyer, F. J., Walper, S., ... (2016). The German Family Panel (pairfam). doi:10.4232/pairfam.5678.7.0.0
- Bujard, M. (2014). *Elterngeld: Wie Agenda-Setting und neue Interessenkoalitionen den familienpolitischen Paradigmenwechsel ermöglichten*. Retrieved from <http://regierungsforschung.de/neue-fallstudie-elterngeld-wie-agenda-setting-und-neue-interessenkoalitionen-den-familienpolitischen-paradigmenwechsel-ermoglichten-von-martin-bujard/>
- Bundesministerium für Familie, Senioren, Frauen und Jugend (BMFSFJ). (2015). *Fünfter Bericht zur Evaluation des Kinderförderungsgesetzes*. Berlin: BMFSFJ.
- Bundesministerium für Familie, Senioren, Frauen und Jugend (BMFSFJ). (2017). *Familienreport 2017. Leistungen, Wirkungen, Trends*. Berlin: BMFSFJ.
- Ciccia, R., & Bleijenbergh, I. (2014). After the Male Breadwinner Model?: Childcare Services and the Division of Labor in European Countries. *Social Politics*, 21(1), 50–79. doi:10.1093/sp/jxu002
- Cunningham, M. (2001). The influence of parental attitudes and behaviors on children's attitudes toward gender and household labor in early adulthood. *Journal of Marriage and Family*, 63(1), 111–122. doi:10.1111/j.1741-3737.2001.00111.x
- Davis, S. N., & Greenstein, T. N. (2009). Gender Ideology: Components, Predictors, and Consequences. *Annual Review of Sociology*, 35(1), 87–105. doi:10.1146/annurev-soc-070308-115920
- Drasch, K. (2013). Educational Attainment and Family-Related Employment Interruptions in Germany: Do Changing Institutional Settings Matter? *European Sociological Review*, 29(5), 981–995. doi:10.1093/esr/jcs076
- Ellingsæter, A. L., Kitterød, R. H., & Lyngstad, J. (2017). Universalising Childcare, Changing Mothers' Attitudes: Policy Feedback in Norway. *Journal of Social Policy*, 46(01), 149–173. doi:10.1017/S0047279416000349
- Federal Statistical Office. (2015). *Kindertagesbetreuung regional 2015. Ein Vergleich aller 402 Kreise in Deutschland*. Wiesbaden: Federal Statistical Office Germany. Retrieved from http://www.statistikportal.de/statistik-portal/kita_regional.pdf
- Festinger, L. (1957). *A theory of cognitive dissonance* (1. publ). Stanford, Calif.: Stanford University Press.
- Gangl, M., & Ziefle, A. (2015). The Making of a Good Woman: Extended Parental Leave Entitlements and Mothers' Work Commitment in Germany. *American Journal of Sociology*, 121(2), 511–563. doi:10.1086/682419

- Geyer, J., Haan, P., & Wrohlich, K. (2015). The effects of family policy on maternal labor supply: Combining evidence from a structural model and a quasi-experimental approach. *Labour Economics*, 36, 84–98. doi:10.1016/j.labeco.2015.07.001
- Goerres, A., & Tepe, M. (2012). Doing It for the Kids?: The Determinants of Attitudes towards Public Childcare in Unified Germany. *Journal of Social Policy*, 41(2), 349–372. doi:10.1017/S0047279411000754
- Grunow, D., & Müller, D. (2012). Kulturelle und strukturelle Faktoren bei der Rückkehr in den Beruf: ostdeutsche, westdeutsche und ost-west-mobile Mütter im Vergleich. *Zeitschrift für Familienforschung, Special Issue 2012*, (9), 55–78.
- Grunow, D., & Veltkamp, G. (2016). Institutions as reference points for parents-to-be in European societies: a theoretical and analytical framework. In D. Grunow & M. Evertsson (Eds.), *Couples' Transitions to Parenthood. Analysing Gender and Work in Europe*. (pp. 3–33). Cheltenham, UK, Northampton, MA: Edward Elgar Publishing.
- Haumann, W. (2014). Die Akzeptanzanalysen: Staatliche Familienleistungen aus Sicht der Bevölkerung. *Vierteljahrshefte zur Wirtschaftsforschung*, 83(1), 101–120. doi:10.3790/vjh.83.1.101
- Himmelweit, S., & Sigala, M. (2004). Choice and the Relationship between Identities and Behaviour for Mothers with Pre-School Children: Some Implications for Policy from a UK Study. *Journal of Social Policy*, 33(3), 455–478. doi:10.1017/S0047279404007779
- Hook, J. L. (2015). Incorporating 'class' into work-family arrangements: Insights from and for Three Worlds. *Journal of European Social Policy*, 25(1), 14–31. doi:10.1177/0958928714556968
- Huinink, J., Brüderl, J., Nauck, B., & Walper, S. (2011). Panel Analysis of Intimate Relationships and Family Dynamics (pairfam): Conceptual framework and design. *Journal of Family Research*, 23(1), 77–100.
- International Network of Leave Policies & Research. (2016). Total statutory leave (including additional childcare leaves). Retrieved from <http://www.leavenetwork.org/>
- Kangas, O., & Rostgaard, T. (2007). Preferences or institutions? Work family life opportunities in seven European countries. *Journal of European Social Policy*, 17(3), 240–256. doi:10.1177/0958928707078367
- Knight, C. R., & Brinton, M. C. (2017). One Egalitarianism or Several?: Two Decades of Gender-Role Attitude Change in Europe. *American Journal of Sociology*, 122(5), 1485–1532. doi:10.1086/689814
- Konietzka, D., & Kreyenfeld, M. (2010). The growing educational divide in mothers' employment: An investigation based on the German micro-censuses 1976-2004. *Work, Employment & Society*, 24(2), 260–278. doi:10.1177/0950017010362140
- Kotsadam, A., & Finseraas, H. (2011). The state intervenes in the battle of the sexes: Causal effects of paternity leave. *Social Science Research*, 40(6), 1611–1622. doi:10.1016/j.ssresearch.2011.06.011
- Kraaykamp, G. (2012). Employment status and family role attitudes: A trend analysis for the Netherlands. *International Sociology*, 27(3), 308–329. doi:10.1177/0268580911423046
- Kumlin, S., & Stadelmann-Steffen, I. (2014). Citizens, policy feedback, and European welfare states. In S. Kumlin & I. Stadelmann-Steffen (Eds.), *Globalization and Welfare series. How Welfare States Shape the Democratic Public. Policy Feedback, Participation, Voting, and Attitudes* (pp. 3–18). Cheltenham: Edward Elgar Publishing.
- Lee, K. S., Alwin, D. F., & Tufis, P. A. (2007). Beliefs about women's labour in the reunified Germany, 1991-2004. *European Sociological Review*, 23(4), 487–503. doi:10.1093/esr/jcm015

- Lovász, A. (2016). Childcare expansion and mothers' employment in post-socialist countries. *IZA World of Labor*, (319), 1–11. doi:10.15185/izawol.319
- Min, J., Silverstein, M., & Lendon, J. P. (2012). Intergenerational transmission of values over the family life course. *Advances in Life Course Research*, 17(3), 112–120. doi:10.1016/j.alcr.2012.05.001
- Pedulla, D. S., & Thébaud, S. (2015). Can We Finish the Revolution? Gender, Work-Family Ideals, and Institutional Constraint. *American Sociological Review*, 80(1), 116–139. doi:10.1177/0003122414564008
- Petty, R. E., & Cacioppo, J. T. (1986). *Communication and Persuasion: Central and Peripheral Routes to Attitude Change*. Springer Series in Social Psychology. New York, NY: Springer New York.
- Rosenfeld, R. A., Trappe, H., & Gornick, J. C. (2004). Gender and Work in Germany: Before and After Reunification. *Annual Review of Sociology*, 30(1), 103–124. doi:10.1146/annurev.soc.30.012703.110531
- Schelling, T. C. (1980). *The strategy of conflict* (9. [print.]). Cambridge, Massachusetts: Harvard University Press.
- Schilling, M. (2014). Es sind noch Wünsche offen! Die frühkindliche Bildung, Betreuung und Erziehung im Jahr des Rechtsanspruchs für 1- und 2-Jährige. *KomDat - Kommentierte Daten der Kinder- & Jugendhilfe*, 3/14, 1–3.
- Schmitz, S., Spieß, K. C., & Stahl, J. F. (2017). Day Care Centers: Family Expenditures Increased Significantly at Some Points between 1996 and 2015. *DIW Economic Bulletin*, 42, 411–423.
- Sjöberg, O. (2004). The Role of Family Policy Institutions in Explaining Gender-Role Attitudes: A Comparative Multilevel Analysis of Thirteen Industrialized Countries. *Journal of European Social Policy*, 14(2), 107–123. doi:10.1177/0958928704042003
- Steiber, N., & Haas, B. (2012). Advances in explaining women's employment patterns. *Socio-Economic Review*, 10(2), 343–367. doi:10.1093/ser/mwr039
- Stets, J. E., & Burke, P. J. (2000). Identity Theory and Social Identity Theory. *Social Psychology Quarterly*, 63(3), 224–237.
- Strunz, E. (2015). *Kindertagesbetreuung vor Ort – Der Betreuungsatlas 2014. Eine Analyse lokaler Unterschiede*. Dortmund: Eigenverlag Forschungsverbund DJI/TU Dortmund an der Fakultät 12 der Technischen Universität. Retrieved from http://www.akjstat.tu-dortmund.de/fileadmin/Analysen/Kita/Betreuungsatlas_2014_final.pdf
- Unterhofer, U., & Wrohlich, K. (2017). Fathers, Parental Leave and Gender Norms. *DIW Discussion Paper No. 1657*, 1–27.
- van Putten, A. E., Dykstra, P. A., & Schippers, J. J. (2008). Just Like Mom? The Intergenerational Reproduction of Women's Paid Work. *European Sociological Review*, 24(4), 435–449. doi:10.1093/esr/jcn030

Table 1. *Mean Attitudes and Differences across Waves of Mothers and Fathers in East and West Germany*

Variable	Mothers			Fathers		
	W 1	W 7	N	W 1	W 7	N
<i>West Germany</i>						
(1) Women should be more concerned about family than about career	3.0	<i>-0.12***</i>	2.8 5090	2.9	<i>-0.23***</i>	2.7 3598
(2) A child under age 6 will suffer from having a working mother	2.7	<i>-0.32***</i>	2.4 5074	3.0	<i>-0.24***</i>	2.8 3588
<i>East Germany</i>						
(1) Women should be more concerned about family than about career	2.6	<i>-0.07</i>	2.5 2971	2.5	<i>-0.01</i>	2.5 2292
(2) A child under age 6 will suffer from having a working mother	2.0	<i>-0.19***</i>	1.9 2968	2.1	<i>-0.07</i>	2.0 2284

Note: Higher values indicate stronger agreement with the statements, i.e. more traditional attitudes. Numbers shown in italics represent mean differences in attitudes among waves with t-Test. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: pairfam, waves 2008-2015.

Table 2 *Within-Person Changes in Attitude Scores across Waves in percent*

	(1) Family vs. Career					(2) Child will suffer				
	Decrease	Increase	No change	Total	Individuals	Decrease	Increase	No change	Total	Individuals
<i>West Germany</i>										
Mothers	29.11	26.82	44.06	100	2126	29.00	25.46	45.54	100	2125
Fathers	29.61	25.41	44.98	100	1438	28.49	26.94	44.57	100	1439
<i>East Germany</i>										
Mothers	28.41	26.84	44.75	100	1224	24.78	22.82	52.40	100	1225
Fathers	26.93	27.15	45.92	100	900	25.14	25.57	49.29	100	898

Note: Higher attitude scores indicate stronger agreement with the statements, i.e. more traditional attitudes.

Source: pairfam, waves 2008-2015.

Table 3. *Descriptive Statistics of Dependent and Independent Variables*

Variable	West Germany				East Germany			
	Mothers		Fathers		Mothers		Fathers	
	M/%	SD	M/%	SD	M/%	SD	M/%	SD
<i>Individual level variables</i>								
Attitude family vs. career	2.92	1.13	2.85	1.11	2.60	1.17	2.54	1.10
Attitude child suffers	2.56	1.33	2.91	1.34	1.97	1.17	2.12	1.21
Age	35.69	5.16	38.23	5.43	34.52	5.32	37.32	5.52
Age squared	1300.55	354.47	1490.64	409.22	1219.98	361.74	1423.11	411.80
Migration background	0.24	0.43	0.20	0.40	0.11	0.31	0.08	0.27
Education low (ref.)	0.12	0.32	0.07	0.25	0.07	0.26	0.05	0.22
Education middle	0.59	0.49	0.51	0.50	0.62	0.49	0.62	0.49
Education high	0.30	0.46	0.42	0.49	0.31	0.46	0.33	0.47
Number of children: 1	0.30	0.46	0.28	0.45	0.39	0.49	0.34	0.47
Number of children: 2	0.46	0.50	0.48	0.50	0.45	0.50	0.49	0.50
Number of children: 3 or more	0.23	0.42	0.24	0.42	0.16	0.37	0.17	0.38
Age of youngest child 0-3 (ref.)	0.42	0.49	0.44	0.50	0.44	0.50	0.43	0.50
Age of youngest child 4-6	0.22	0.41	0.22	0.41	0.20	0.40	0.21	0.41
Age of youngest child 7-	0.36	0.48	0.34	0.47	0.37	0.48	0.36	0.48
Living apart together (ref.)	0.04	0.20	0.01	0.10	0.05	0.22	0.02	0.13
Cohabitation	0.09	0.29	0.08	0.28	0.29	0.46	0.28	0.45
Married	0.87	0.34	0.91	0.29	0.65	0.48	0.70	0.46
Net equivalence income (Euro)	1717.95	1014.61	1783.45	1170.14	1512.93	781.44	1578.02	798.79
Father employed	0.96	0.21	0.96	0.20	0.92	0.27	0.92	0.27
Mother not employed (ref.)	0.32	0.47	0.32	0.47	0.30	0.46	0.28	0.45
Mother part-time employment	0.53	0.50	0.53	0.50	0.33	0.47	0.34	0.47
Mother full-time employment	0.15	0.36	0.15	0.36	0.37	0.48	0.38	0.49
<i>County level variables</i>								
Childcare rate	20.06	7.18	20.27	7.19	49.72	6.90	49.72	6.92
Childcare rate squared	453.83	311.64	462.60	314.67	2519.43	682.66	2520.49	685.48
Rate of public servants per 10.000	127.69	46.51	126.52	47.14	132.70	55.24	134.37	54.26
Unemployment rate	6.00	2.64	6.03	2.65	11.39	2.61	11.46	2.54
GDP per capita	32.16	12.34	32.15	12.20	23.87	5.66	24.01	5.72
Index for low population density	24.67	27.63	25.44	27.99	36.60	29.52	35.79	29.70

Note: Higher attitude mean scores indicate stronger agreement with the statements, i.e. more traditional attitudes.

Source: pairfam, waves 2008-2015.

Table 4. *Fixed Effects Regression Models for Mother's and Father's Attitudes*

Predictor	Mother's Attitude				Father's Attitude			
	(1) Career		(2) Child		(1) Career		(2) Child	
	M1		M2		M3		M4	
West Germany	<i>b</i>	RSE	<i>b</i>	RSE	<i>b</i>	RSE	<i>b</i>	RSE
County-level childcare rate (%)	-0.029*	0.014	-0.035**	0.014	-0.003	0.016	0.018	0.016
County-level childcare rate squared (%)	0.001*	0.000	0.001**	0.000	0.000	0.000	0.000	0.000
<i>Individual-level controls</i>								
Age Mother	-0.074	0.080	-0.189**	0.062	-0.100	0.087	0.117	0.079
Age Mother squared	-0.001	0.001	0.001+	0.001	-0.001	0.001	-0.001+	0.001
Number of children:2	0.103	0.063	0.095+	0.055	0.053	0.057	-0.016	0.060
Number of children: 3 or more	0.098	0.108	0.206*	0.091	0.138	0.098	-0.005	0.109
Age of youngest child 4-6	0.036	0.039	-0.013	0.038	0.029	0.045	-0.048	0.044
Age of youngest child 7-	-0.006	0.062	0.080	0.054	0.009	0.076	0.076	0.071
Cohabiting	-0.317**	0.114	-0.124	0.096	-0.060	0.139	-0.266	0.201
Married	-0.240*	0.114	-0.031	0.100	-0.054	0.169	-0.165	0.223
Net equivalence income (Euro)	0.058	0.044	0.095*	0.039	-0.030	0.060	-0.043	0.057
Father working	0.041	0.079	0.065	0.067	-0.121	0.096	0.063	0.107
Mother part-time employment	-0.076+	0.039	-0.108**	0.037	-0.051	0.040	-0.152**	0.047
Mother full-time employment	-0.137*	0.068	-0.125*	0.056	-0.100	0.073	-0.165*	0.076
<i>County-level controls</i>								
rate of public servants per 10.000	0.001	0.003	0.002	0.003	-0.002	0.003	-0.003	0.003
unemployment rate	-0.007	0.045	0.015	0.038	0.041	0.041	0.034	0.044
GDP per capita	-0.010	0.011	-0.005	0.008	-0.009	0.010	0.009	0.011
Index for low population density	-0.028	0.029	0.032*	0.015	0.024	0.026	0.021	0.018
Constant	4.072+	2.218	3.640*	1.723	4.250	2.831	-2.912	2.472
Observations N	5090		5074		3598		3588	
Individuals n	2126		2125		1438		1439	
Counties	222		222		206		206	
R2_w	0.015		0.027		0.019		0.023	
F	1.877		4.345		2.235		2.600	
p	0.010		0.000		0.001		0.000	
East Germany	<i>b</i>	RSE	<i>b</i>	RSE	<i>b</i>	RSE	<i>b</i>	RSE
County-level childcare rate (%)	0.015	0.046	0.064	0.040	0.058	0.052	0.083	0.051
County-level childcare rate squared (%)	-0.000	0.000	-0.001+	0.000	-0.001	0.001	-0.001	0.000
<i>Individual-level controls</i>								
Age Mother	-0.024	0.060	-0.046	0.078	-0.077	0.148	0.044	0.102
Age Mother squared	0.002+	0.001	0.002+	0.001	0.001	0.001	-0.000	0.001
Number of children:2	0.077	0.110	0.078	0.073	0.098	0.112	-0.070	0.100
Number of children: 3 or more	0.218	0.218	0.164	0.125	-0.062	0.216	-0.007	0.195
Age of youngest child 4-6	0.003	0.051	0.127*	0.051	0.011	0.052	0.098+	0.058
Age of youngest child 7-	0.212**	0.067	0.201*	0.081	-0.029	0.084	0.181+	0.106
Cohabiting	-0.110	0.117	0.145	0.141	-0.102	0.241	0.168	0.205
Married	-0.096	0.125	0.270+	0.147	-0.020	0.264	0.407+	0.228
Net equivalence income (Euro)	0.030	0.077	-0.035	0.085	-0.001	0.098	-0.048	0.075
Father working	-0.081	0.087	-0.080	0.134	-0.060	0.112	-0.220*	0.105
Mother part-time employment	-0.006	0.057	-0.160*	0.068	-0.020	0.069	-0.080	0.068
Mother full-time employment	-0.035	0.072	-0.051	0.068	-0.068	0.061	-0.093	0.066
<i>County-level controls</i>								
rate of public servants per 10.000	0.004	0.003	0.002	0.004	-0.002	0.002	0.004	0.003
unemployment rate	-0.015	0.034	0.023	0.030	-0.004	0.046	0.021	0.037
GDP per capita	0.013	0.027	-0.027	0.028	-0.003	0.027	0.003	0.038
Index for low population density	-0.007	0.019	0.001	0.018	-0.003	0.014	0.002	0.025
Constant	-1.373	2.114	-1.848	2.147	1.026	5.250	-3.802	3.278
Observations N	2971		2968		2292		2284	
Individuals n	1224		1225		900		898	
Counties	67		67		66		66	
R2_w	0.022		0.021		0.015		0.027	
F	5.030		2.332		3.764		1.967	
p	0.000		0.004		0.000		0.016	

Note: Higher attitude scores indicate more traditional attitudes. All models include year dummy variables and estimate robust standard errors. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$ Source: pairfam, waves 2008-2015.

Table 5. *Fixed Effects Regression Models for Mother's and Father's Attitudes considering Interactions with Education*

Predictor	Mother's Attitude				Father's Attitude			
	(1) Career		(2) Child		(1) Career		(2) Child	
	M1		M2		M3		M4	
<i>West Germany</i>	<i>b</i>	RSE	<i>b</i>	RSE	<i>b</i>	RSE	<i>b</i>	RSE
County-level childcare rate (%)	-0.038*	0.016	-0.037*	0.016	-0.002	0.020	0.020	0.023
County-level childcare rate squared (%)	0.001*	0.000	0.001**	0.000	0.000	0.000	-0.000	0.001
College. X Childcare rate	0.048*	0.022	0.009	0.018	0.023	0.019	0.017	0.027
College. X Childcare rate squared	-0.001	0.001	-0.000	0.000	-0.000	0.000	-0.000	0.001
Constant	3.751+	2.230	3.574*	1.727	3.681	2.893	-3.370	2.516
Observations N	5090		5074		3598		3588	
Individuals n	2126		2125		1438		1439	
Counties	222		222		206		206	
R2_w	0.018		0.027		0.024		0.026	
F	2.078		4.107		2.469		2.794	
P	0.002		0.000		0.000		0.000	
<i>East Germany</i>	<i>b</i>	RSE	<i>b</i>	RSE	<i>b</i>	RSE	<i>b</i>	RSE
County-level childcare rate (%)	0.038	0.059	0.108+	0.055	0.060	0.053	0.100*	0.049
County-level childcare rate squared (%)	-0.001	0.001	-0.001*	0.001	-0.001	0.001	-0.001*	0.000
College. X Childcare rate	-0.053	0.089	-0.147+	0.076	-0.000	0.089	-0.050	0.067
College. X Childcare rate squared	0.001	0.001	0.002*	0.001	0.000	0.001	0.001	0.001
Constant	-1.764	2.049	-1.984	2.215	0.946	5.339	-4.005	3.280
Observations N	2971		2968		2292		2284	
Individuals n	1224		1225		900		898	
Counties	67		67		66		66	
R2_w	0.024		0.023		0.015		0.031	
F	5.269		2.323		3.522		2.425	
P	0.000		0.003		0.000		0.002	

Note: Higher attitude scores indicate more traditional attitudes. All models estimate robust standard errors and include the following covariates: Mother's Age and Age Squared, number of children, age of the youngest child, marital status, net equivalence income, father's employment, year dummies, the percentile of public servants, unemployment rate, GDP per capita and the index for low population density.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Source: pairfam, waves 2008-2015.

FIGURE A1. PREDICTIVE MARGINS FOR WEST GERMAN MOTHERS

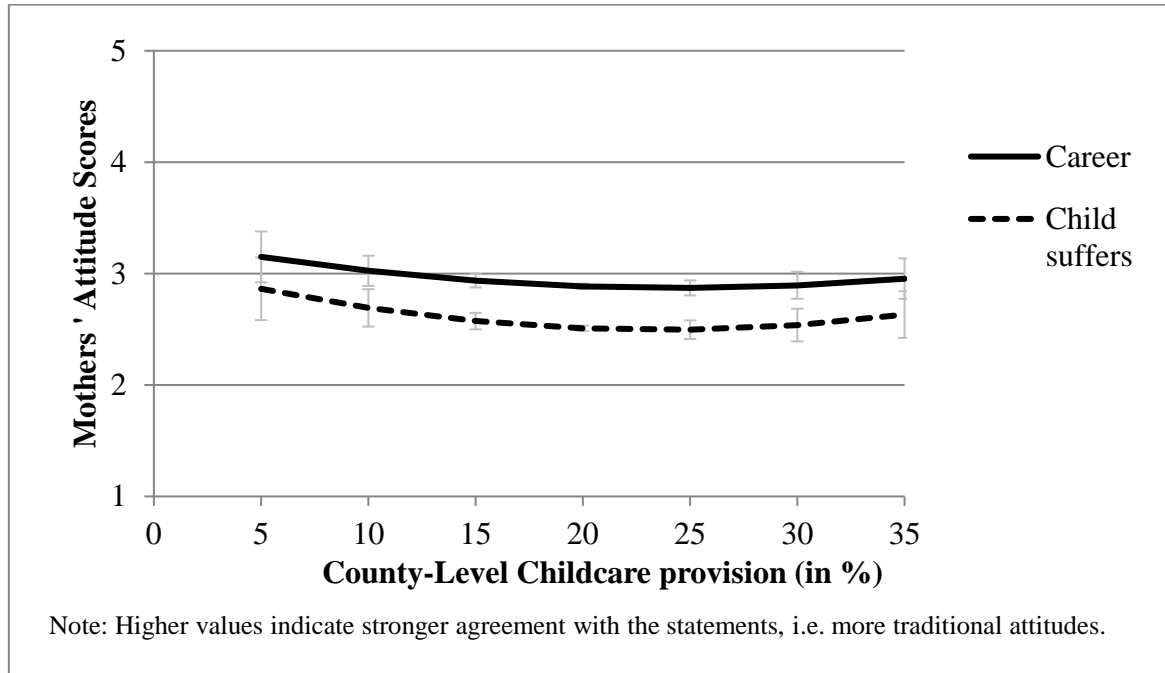


Table A1. Fixed Effects Regression Models for West German Mother's Attitudes including Take-Up of Formal Childcare

Predictor	(1) Career				(2) Child			
	M1		M2		M3		M4	
	<i>b</i>	RSE	<i>b</i>	RSE	<i>b</i>	RSE	<i>b</i>	RSE
Childcare %	-0.028	0.021	-0.028	0.021	-0.014	0.016	-0.014	0.016
Childcare squared %	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Childcare Take-up part-time			-0.057	0.054			-0.040	0.047
Childcare Take-up full-time			-0.034	0.059			-0.023	0.055
Constant	4.115	3.606	3.880	3.549	3.601	2.795	3.440	2.839
Observations N	3461		3461		3452		3452	
Individuals n	1709		1709		1710		1710	
Counties	216		216		216		216	
R2_w	0.015		0.016		0.022		0.023	
F	1.907		1.866		2.234		2.024	
p	0.013		0.013		0.003		0.006	

Note: Higher values indicate more traditional attitudes. All models estimate robust standard errors and include the following covariates: Mother's Age and Age Squared, number of children, age of the youngest child, marital status, net equivalence income, father's employment, year dummies, the percentile of public servants, unemployment rate, GDP per capita and the index for low population density.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Source: pairfam, waves 2008-2015.