

Intergenerational Correlations in Women's Work-Family Life Course Trajectories

Introduction

Women's typical life courses underwent substantial changes in the family and work domain in the second half of the 20th century in Germany and in many other societies. Women's educational attainment outpaced men's attainment, women substantially increased their labour force participation and women increasingly entered high-status and well-paid occupations previously reserved for men {England 2010 #4077}. At the same time, the transition into parenthood and further childbearing have been increasingly delayed in most post-industrialised societies leading to overall lower fertility {Frejka 2008 #3842}. Against the backdrop of these fundamental societal changes at the macro level, we ask whether there is persistence in women's life courses in the work and family domains within families at the micro level in Germany. We address two research questions: (RQ1) *Are there continuities in work-family life*

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courses among young women and their mothers? (RQ2) What are the typical work-family life courses with continuity across generations within families?

Given the enduring importance of the family of origin for offspring's life courses {Bengtson 2002 #4073: 144ff}, answering these questions contributes to a better understanding of contemporary female life courses. Despite remarkable changes towards more gender equality, women continue to be the primary caretakers in many families with children. Life courses often remain gendered {Ridgeway 2011 #4074}. One explanation put forward for this stall in the gender revolution {England 2010 #4077} is the intergenerational reproduction and persistence of traditional life course trajectories through the mechanisms of socialisation, social control and status inheritance {Platt 2016 #4060}{van Putten 2008 #4059}. Previous research has identified within-family persistence in family formation patterns {Fasang 2014 #3933}{Liefbroer 2012 #4061}, labour force participation at discrete points in the life course {Platt 2016 #4060}{van Putten 2008 #4059}, as well as intergenerational correlations in gender ideologies {Moen 1997 #3724}{Platt 2016 #4060}. What remains underexplored is how these intergenerational processes potentially intersect to create intergenerational persistence in work-family trajectories of women. It is also little understood how this intergenerational persistence varies by social background and across socio-cultural contexts.

In this study, we extend previous research by combining work and family trajectories and by shedding more light on the strength of intergenerational persistence in women's life courses, as well as on the specific patterns that persist across generations. One pillar of the life course perspective is multidimensionality, as different life course trajectories are closely linked and interrelated. Therefore, it is crucial to examine work and family trajectories together, i.e. the complete sequences of employment and family states in early adulthood {Fasang 2014 #3933}{Liefbroer 2012 #4061}. The study of trajectories emphasizes life course development as cumulative processes, and it has been proved to be a fruitful approach to examine the large shifts as well as continuities in life courses across birth cohorts (Mayer 2009). It follows that

addressing systematic regularities in trajectories across generations and within families extends the scope of intergenerational comparisons from cross-sectional outcomes (such as average age at marriage, completed fertility at the end of reproductive age or occupational status at age 35), to wider processes. This includes the examination of relevant patterns in life course development over long life spans, and the extent to which these persist from one generation to the next. This is important to improve and nuance our understanding of the reproduction of female life courses.

Method

Data and Sample

Our data demands are high as we need to link comprehensive information on work-family trajectories between two generations within families. We use the German Socio-Economic Panel (SOEP; doi: 10.5684/soep.v32.1; {Wagner 2007 #1372}) which is an on-going longitudinal survey representative of East and West German households, since 1984 and 1991 respectively. The survey has a genealogical design in which children are followed if they move out of the parental household. This makes SOEP a good fit for our research purposes, because it enables us to link female survey respondents from two generations within one family. The combination of a prospective panel structure with retrospective employment and family histories allows comparing the two generations over a long period of adulthood.

Our main sample consists of female respondents who are daughters (which we label the younger or daughter generation) or mothers (older or mother generation) of another survey participant, being part of the same household for at least one survey participation. We restricted the sample to daughters born between 1965 and 1979, as they experienced substantive shifts in female life courses compared to prior generations. In our sample, their mothers were born between 1922 and 1961 with more than half of them born in the 1940s decade, featuring a post-

war female life course. Additionally, for sample inclusion mothers and daughters have to be observed at least until age 35 to do not have missing information on key analytical variables, to do not have an (in-) direct immigration background and to have lived either in East Germany or in West Germany prior to reunification in 1989. After exclusions, our sample consists of 592 daughters and their 511 mothers, which is comparable to other studies using a similar approach (Fasang & Raab 2014).² While 399 daughters lived in West Germany in 1989, 192 daughters lived in East Germany in 1989. For our analytical purposes, we also need to match respondents of the daughter generation with unrelated women from a random sample of survey respondents with mother's same quinquennial age group and region of residence in 1989. Our sample of unrelated women of the mother generation amounts to 3,608, and includes actual mothers from our daughters as well as other women (including mothers and non-mothers).

Measurement

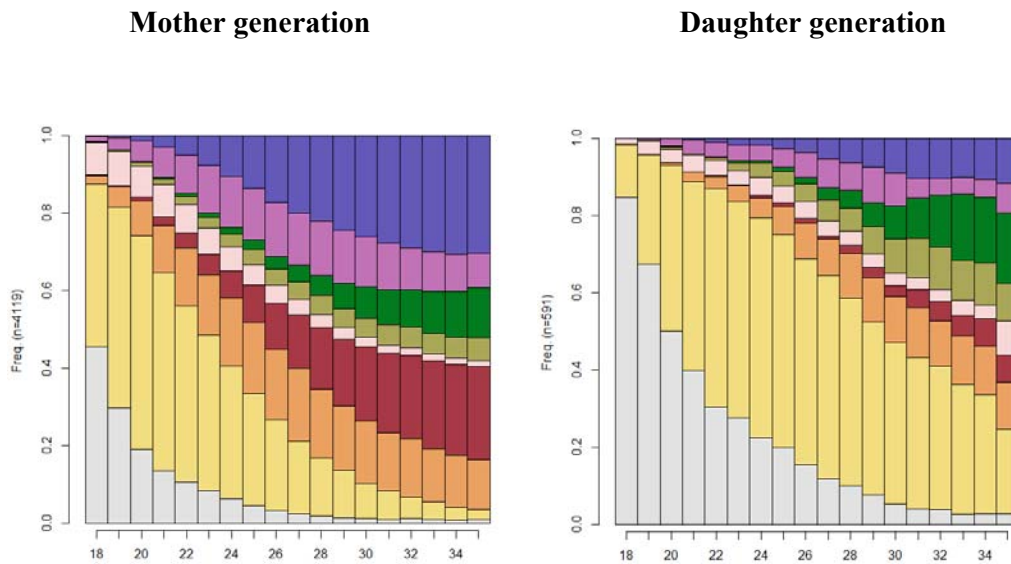
We use a yearly calendar from age 18 to age 35 to describe work-family trajectories. We choose the lower age limit due to the compulsory schooling age in Germany. Extending the life courses up to age 35 enable us to examine early and continued work-family development during young adulthood. We combine information regarding children parity (no child, one child, two or more children) and employment activity (education, full-time employed, part-time employed, not employed) of women to build state sequences.³ We disregard partnership status in our combined work-family states so that the number of possible state sequences is manageable for our analysis. Since partnership status has less consequences than childbearing

² We note that several daughters are linked to the same mother.

³ Our approach recognizes local interdependence between family and work states, that is, the two dimensions develop jointly and affect each other at any given age or point in time. This aligns well with previous findings that suggest that changes in employment and family life courses are often simultaneous. An alternative procedure is to examine each dimension as separate sequences, and assess their relative importance in their joint development by assigning weights. However, formulating a weighing scheme can be rather arbitrary, though, as we lack strong theory or empirically driven procedure to assign the weight of each dimensions to female life course development. Additionally, by examining separately each dimension, this strategy does not handle well their relationships (Robette et al. 2015).

for the intersections between work and family, we believe that leaving this aside will have little effect on our outcomes. Additionally, we do not differentiate being in education by parity because of very few observed cases in education with children for the two generations, arguably due to societal norms about the order of these events. Numbers are relatively low among childless women in part-time employment, and for that reason we include them together with non-employed childless women in a combined state that reflects low attachment to the labor market. After this considerations, our sequence alphabet consists of nine differentiated states: “in education”, “full-time employed with no child”, “full-time employed with one child”, “full-time employed with two or more children”, “not full-time employed with no child”, “part-time employed with one child”, “part-time employed with two or more children”, “not employed with one child”, “not employed with two or more children”.

Fig. 1. State distribution plots of work-family life courses by respondent's generation



<input type="checkbox"/> In education	<input type="checkbox"/> Full-time work, 2+ children	<input type="checkbox"/> Part-time work, 2+ children
<input type="checkbox"/> Full-time work, no children	<input type="checkbox"/> Not in full-time work, no children	<input type="checkbox"/> Non-employed, 1 child
<input type="checkbox"/> Full-time work, 1 child	<input type="checkbox"/> Part-time work, 1 child	<input type="checkbox"/> Non-employed, 2+ children

Data: SOEP (1984-2015). Notes:

Figure 1 shows the yearly sample distributions (as proportions) of the nine work-family states between ages 18 and 35 for the mother and the daughter generations. As prior research has shown, the daughter generation spent more time in education and in full-time employed status before motherhood than the mother generation. Women of the older generation transitioned early to first and second child while either remaining full-time employed –in East Germany– or moving out of the labour force –in West Germany. Compared to the older generation, most women of the younger generation had less children before age 35, and were in part-time employment after motherhood.

Analytical strategy

To address the three research questions, our analysis proceeds in several steps. First, we compute similarities in work-family trajectories between each pair or sequences for the complete sample. To this end, we deploy two state-of-the-art distance metrics for sequence comparison, and assess how our results vary if we assess sequences by the timing of work-family states (Dynamic Hamming Distance metric) and by the order and duration of work-family states (Longest Common Subsequence metric). We then extract similarities relating to each pair of sequences of related mother-daughter dyads –where daughters are matched to their mothers– and for unrelated mother-daughter dyads –where daughters are matched to random, non-related women from the generation of mothers (within the same five-year age group and region). For related mother-daughter dyads, average within-dyad similarities reflect the degree of within-family persistence in work-family life course trajectories. For unrelated dyads, average within-dyad similarities reflect general cross-generational continuity in work-family

life courses. Comparing both average within-dyad similarities, we address the question of whether work-family trajectories persist within families, beyond wider societal processes that lead to cross-generational persistence in life course development (RQ1). On average, if individuals within families (i.e. related mother-daughter dyads) are more similar to each other than two unrelated individuals (i.e. unrelated mother-daughter dyads), this will be evidence for within-family persistence and *vice versa*. We present bootstrapped standard errors (1,000 replications) and confidence intervals to assess statistical significance on differences in average similarities across types of dyads.

Additionally, we extract and normalize distances (to generate similarities) relating to each pair of sequences of unrelated dyads of two women of the younger generation –where daughters are matched to random non-related women from their own generation of same age group and region– and compare their average within-similarity with those of cross-generational dyads. These comparisons add some more light on the relevance of intergenerational continuities of work-family life courses given wider societal shifts. On average, if two individuals of the contemporary generation (i.e. unrelated daughter-daughter dyads) are more similar to each other than two individuals of the same family, across generations (i.e. related mother-daughter dyads), this will be evidence for higher relevance of intergenerational shifts –arguably due to societal openness– over intergenerational persistence in work-family life course, and *vice versa*.

Next, we identify typical work-family trajectories to address the specific life course patterns where persistence within families is higher (RQ2). Using cluster analysis on the matrix of distances, without prior normalization,⁴ we generate two typologies to identify typical work-family life courses of the generation of the mother, on the one hand, and of the generation of

⁴ Two cluster analyses were conducted; each is specific to sequences of the same generation. We have refrained then from the above-mentioned distance normalization to avoid clusters to be affected by cross-generation interdependencies.

the daughter, on the other hand. The decision on the number of cluster types is based on both, empirical fit measures, using cluster cut-off criteria, as well as construct validity, using work-family trajectories suggested by the literature. We conduct an OLS regression analysis of the within-family similarity index on the mother's work-family life course cluster type to offer a sophisticated description the specific patterns of persistence. Additional predictors such as maternal education, maternal birth cohort, number of siblings or region of residence in 1989, are included in the regression estimation to adjust for relevant compositional differences in life course development. We also conduct a multinomial logistic regression analysis of the daughter's work-family life course cluster type on the within-dyad similarities and the aforementioned predictors. Results from the multinomial regression will raise evidence on contemporary work-family trajectories which more likely persisted across generations and within families.

Results

We first show results to answer the first research question: *are there continuities in work-family life courses among young women and their mothers?* Table 1 shows averages and bootstrapped standard errors with 95 percent confidence intervals of normalized Dynamic Hamming (DH) distances and normalized Longest Common Subsequence (LCS) distances for three types of dyads consisting of respondents for the daughter generation and (i) their mothers (related dyad), (ii) unrelated respondents of the mother generation (Unrelated dyad – daughter-mother), and (iii) unrelated respondents of the daughter generation (Unrelated dyad – daughter-daughter). Based on normalized DH distances, the average similarity within dyads of related daughters and mothers is of about 0.24, with a 95 percent bootstrap confidence interval of 0.22 and 0.25. This average is not substantively nor statistically different from the average similarity within dyads of unrelated daughters and mothers, which is also about 0.24, with a 95 percent

bootstrap confidence interval of 0.22 and 0.25. Results based on LCS distances show overall larger similarity for all dyads that do not change the conclusions based on DH distances: no average difference in the similarity across generations within dyads of related respondents (LCS distance average: 0.33; CI: 0.31 and 0.34) and unrelated respondents (LCS distance average: 0.32; CI: 0.30 and 0.33). We do not find, therefore, evidence for life course persistence across generations to be higher within families than in the wider society, because comparable work-family trajectories for daughters are as likely to be observed among their mothers as among any other unrelated person from the generation of the mother.

On average, the similarity across generations is more than 10 percentage points lower than the similarity in the daughter generation. The average similarity is 0.37, using DH distances, and 0.45, using LCS distances, within dyads of unrelated respondents of the daughter generation. The result was expected since contemporary women experienced cohort-specific patterns of expansion of education and delay of family formation that are evident in their work-family life courses.

Table 1. Average similarity in work-family life courses (dyadic normalized distances)

	Normalized DH distance				Normalized LCS distance			
	Average	SE	95% CI		Average	SE	95% CI	
			LB	UB			LB	UB
Related dyad – daughter-mother	0.2351	0.0078	0.2198	0.2503	0.3266	0.0085	0.3100	0.3432
Unrelated dyad – daughter-mother	0.2362	0.0066	0.2232	0.2491	0.3147	0.0075	0.3026	0.3322
Unrelated dyad – daughter-daughter	0.3655	0.0087	0.3483	0.3826	0.4474	0.0077	0.4322	0.4626

Data: SOEP (1984-2015). DH= Dynamic Hamming distance; LCS= Longest Common Subsequence distance.

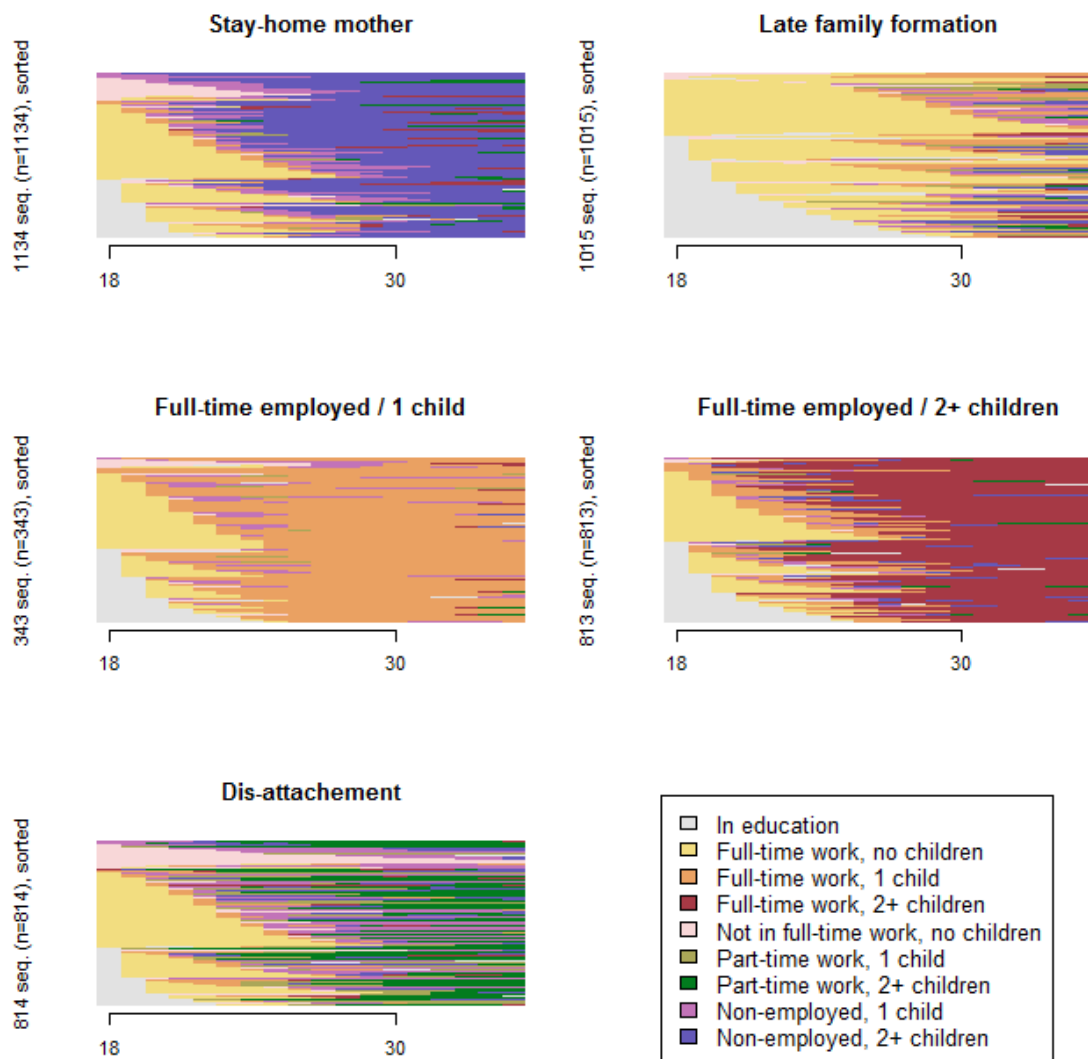
Next, we address our last research question: *What are the typical work-family life courses with continuity across generations and within families (RQ2)?* Using cluster analysis, we have generated two typologies of work-family life course patterns that are specific for the mother generation and for the daughter generation. Empirical support using cluster cut-off

criteria (see Fig. A1 in Appendix) suggested optimal cluster solutions between 4 and 6 groups for both, the mother and the daughter generations. We finally decided for 5-group cluster solutions in both cases because it was the optimal trade-off between group size and theoretical interpretation of resulting groups. The grouped sequences are visually represented in Fig. 2, for the mother generation, and in Fig. 3, for the daughter generation. The visual description is interpreted with support of additional information presented in Table 4, including the group percentage share of the daughters' sample, and the group's composition of context and mother's education.

The most common pattern among women (including actual mothers and childless women) of the mother generation (27.5 percent) is the "Stay-home mother" with women entering motherhood early, having two or more children, leaving any employment activity by the time of the first or second child, and remaining non-employed until age 35. Restricting numbers to actual mothers in our sample, we find that one third of all daughters had a mother that followed this pattern (34.4 percent), which was largely concentrated among West German women (93.9 percent) with relatively lower levels of education (66.6 percent). The second most common pattern among women of the mother generation (24.6 percent) is the "Late family formation" with women boasting relatively longer periods of education and full-time employment, and delaying childbearing after age 30 while showing varied employment patterns after motherhood. Interestingly, only 15.8 percent of daughters had a mother who followed such a pattern, which suggest that childlessness might have been more prominent among these women. This is the only life course pattern that was evenly distributed by social background and socio-cultural context. The third and fourth groups are similar in that women start families soon, but remain in full-time employment. The main difference is that women of the former group, smaller in size (8.3 percent), had only one child ("Full-time employed/ 1 child"), while women of the latter group, larger in size (19.3 percent), had two or more children ("Full-time employed/ 2+ children"). Mothers following these patterns were highly educated (around 27

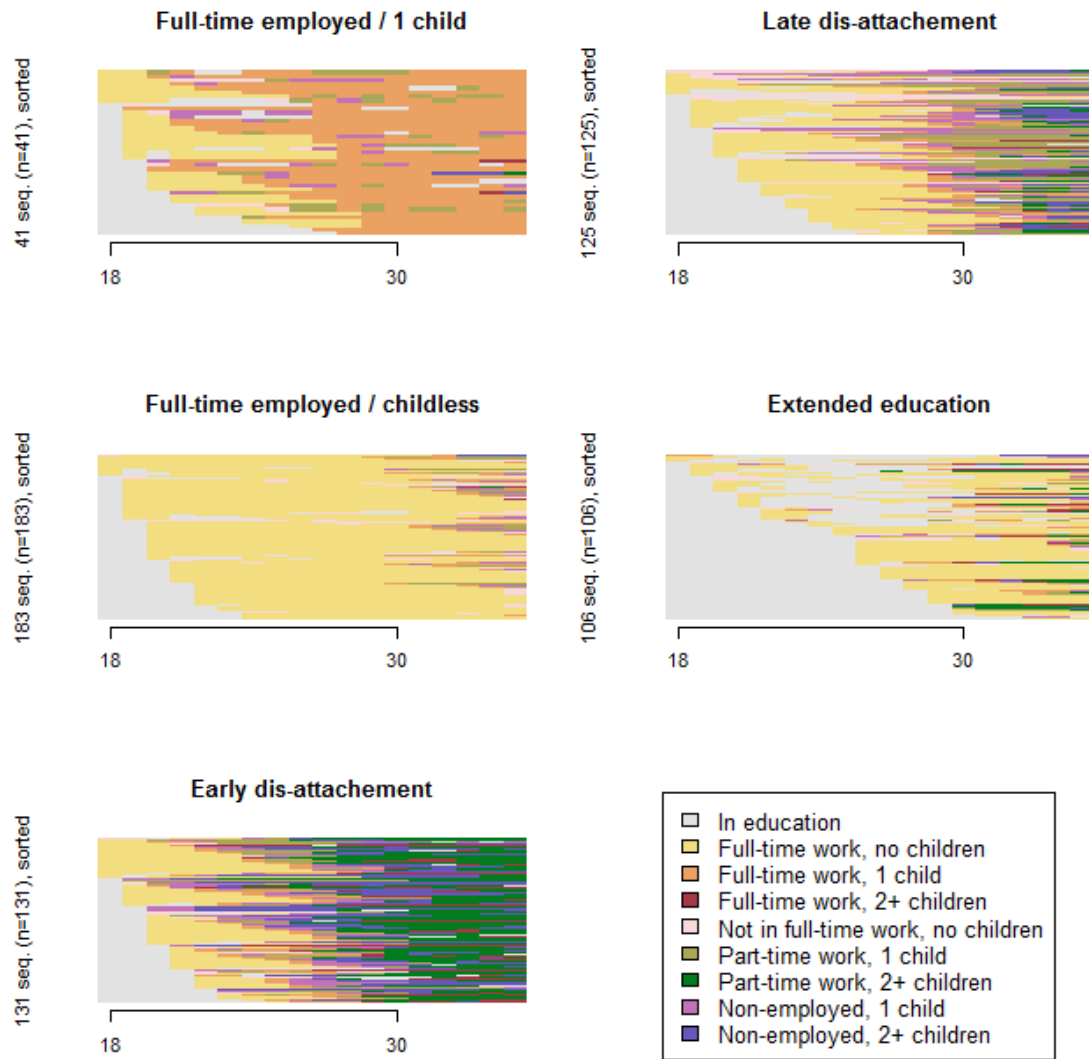
percent) and concentrated in East-Germany, more the group with two or more children (73.6 percent) than the group with one child (52.7 percent). The last group, consisting of one fifth of women of the mother generations, is one of dis-attachment in that women combined spells of part-time work and non-employment after family formation. This patter is more typical in West-Germany, among non-highly educated mothers.

Fig 2. Sequence index plots of work-family life courses (mother generation)



Data: SOEP (1984-2015)

Fig 2. Sequence index plots of work-family life courses (Daughter generation)



Data: SOEP (1984-2015)

Work-family life course trajectories among daughters are partly contrasting with those of women of the mother generation (Fig. 2). We find that the “Full-time employed / 1 child” pattern is replicated also for a small proportion of the sample of daughters (7.1 percent) who have highly educated mothers as well (24.4 percent) and concentrated in Eastern Germany (70.7 percent). The dis-attachment group is also replicated, but we have re-labelled it as “Early dis-attachment” because a similar pattern with later childbearing timing is observed, which we have named “Late dis-attachment”. Both groups are evenly distributed across East and West Germany, and the “Early dis-attachment” group consists of women whose mothers were not highly educated. The other two remaining patterns are those of contrast. One pattern features women that spent most of their young adulthood full-time employed and childless, and most of them remain so by age 35. We have named this pattern “Full-time employed (childless)” and it is the most common pattern among daughters (30.6 percent). The other pattern features an extended period of education and, as a result, a generalized delay in childbearing. We have named this pattern “Extended education”, which involves 18.3 percent of daughters. We note that patterns of contrast are evenly distributed across East and West Germany, and only the pattern of extended education relates to mothers with higher levels of education (26.7 percent).

Table 4. Cluster frequencies and characteristics by respondent's generation

	Cluster type		Residence in 1989	Mother education	
	N	%	% East Germany	% Medium	% High
Mother's cluster					
Stay-home mother	198	34.4	6.1	28.3	5.1
Late family formation	91	15.8	42.8	32.9	16.5
Full-time employed (1 child)	36	6.3	52.7	36.1	27.7
Full-time employed (2+children)	133	23.1	73.6	35.3	27.1
Dis-attachment	117	20.4	17.1	35.0	4.2
Overall	575	100	32.4	32.5	13.2
Daughter's cluster					
Full-time employed (1 child)	41	7.1	70.7	26.8	24.4
Late dis-attachment	124	21.6	34.4	29.0	14.5
Full-time employed (childless)	176	30.6	27.3	30.1	5.7
Extended education	105	18.3	26.4	38.1	26.7
Early dis-attachment	129	22.4	30.5	36.4	7.6
Overall	575	100	32.4	32.5	13.2

Data: SOEP (1984-2015). Similarity measures are based on normalized Dynamic Hamming distances.

Table 5. OLS regression models of intergenerational persistence of work-family life courses within families

	Model 0	Model 1
Mother trajectories		
Stay-home mother	ref	ref
Late family formation	0.86***	0.62***
Full-time employed (1 child)	0.30(*)	0.09
Full-time employed (2+children)	-0.04	-0.19
Dis-attachment	-0.04	-0.15
Residence in 1989		
East Germany (ref. West Germany)		-0.03
Mother's level of education		
Low		ref
Medium		0.21*
High		0.46***
Mother's birth cohort		
<1941		ref
1941-1950		-0.28*
>1950		-0.34*
Number of siblings		
None		ref
One		-0.21(*)
Two		-0.39(*)
Three or more		-0.62**
Intercept	-2.01***	-2.41***
N	571	571
r ²	0.09	0.15
F	19.35	9.80
p	0.00	0.00

Significance levels: (*) 0.1 * 0.05 ** 0.01 *** 0.001

SOEP data (1984-2015). OLS regression of logged normalized Dynamic Hamming distances across family dyads with clustered standard errors.

Although we find some consistent patterns across generations, we observe differences for similar groups across the two generational typologies in the distributions of daughters and the compositions of socio-cultural contexts and social background. In what follows, we examine what are the specific work-family trajectories of mothers that are more likely to persist among daughters using OLS regression on the similarities of related daughter-mother dyads

(Table 5). We also investigate which patterns of daughters display stronger persistence using multinomial regression (Table 6).¹

Coefficients of Model 0 in Table 5 are OLS estimates of intergenerational persistence (i.e. similarity measure of related daughter-mother dyads) for mother's specific patterns of work-family life courses. Using the "Stay-home mother" pattern –the largest group– as reference category, we find that the "Late family formation" group display about 86 percent higher persistence across generations and the result is statistically significant ($p < .001$). We also find that the "Full-time employed (1 child)" group displays about 30 percent higher persistence across generations, but the result is only marginally significant ($p < .1$). The other groups do not show higher or lower persistence than the reference group.

Coefficients of Model 1 in Table 5 are equivalent to OLS estimates of Model 0 that are further adjusted by compositional characteristics. After multivariate adjustment, we find that only the "Late family formation" group remains as a higher-than-average persistence group with 62 percent higher persistence across generations than the reference group. That is, patterns of delay in family formation, which are associated with long periods of labour force participation in the young adulthood persist more often from one generation to the next.

Conclusions

Despite substantial changes in women's typical life courses in the second half of the 20th century, research evidence suggests an enduring importance of family of origin for family behaviour and socio-economic outcomes. In this paper, we have added to this adopting a trajectory-based approach that acknowledges interdependence between work and family over the life course and across generations. We examined combined work-family trajectories

¹ Group-specific average similarities in work-family life courses and bootstrap 95 percent confidence intervals can be consulted in Table A1, for the typology of the mother generation, and in Table A2, for the typology of the daughter generation, in the accompanying appendices.

between the ages 18 to 35 of two generations of women within the same German families drawn from the Socio-Economic Panel and using a within-dyad approach to sequence analysis.

In the following, we summarize the key findings related to our three research objectives. First, we have assessed how much intergenerational persistence in female life courses occurs within families (and is not the result of persistence in the wider society) by examining combined work-family sequences between ages 18 and 36 across women of two generations. We did not find evidence for persistence in female life courses to be larger within families than in the wider society. Contemporary female work-family trajectories were as likely to be observed among their mothers as among any other unrelated person from the generation of the mother. The result is an indication of wider societal processes of female trajectory persistence that extend within family reproduction.

Second, clustering individual sequences on the basis of their similarities and regression analysis we have examined typical trajectories of the younger and the older generations to shed more light on patterns of within-family persistence. We found persistence in trajectories that combine an earlier career focus of extended participation in education and in the labour market, with a generalized delay of family formation.

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