Intergenerational Patterns of Family Formation in East and West Germany

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Abstract:

Why is intergenerational transmission of family formation weaker in some country contexts than in others? This paper employs the historically unique situation of the German division to study country context effects on intergenerational regularities in family formation. We use the German Socio-Economic Panel (SOEP) to analyze the longitudinal family formation trajectories from age 15-35 of children born 1953-1978 and their mothers. Findings show that East German mother-child family formation trajectories are more dissimilar than West German mother-child family formation trajectories. Further, East German mother-child dyads are more likely to be categorized as patterns of intergenerational contrast, whereas West German mother-child dyads are more likely to display strong transmission. To account for these differences in intergenerational transmission of family formation between East and West Germany, we propose to combine multichannel sequence analysis, multinomial logistic modeling and decomposition methods for nonlinear probability models. This new methodological approach enables us to show that differences in parental education and children's educational mobility in East and West Germany mediate the strength of intergenerational transmission and contribute to explaining differences in intergenerational patterns of family formation in the two contexts. We conclude that the proposed approach is promising to disentangle cross-national differences in intergenerational regularities in family formation.

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I. Introduction

The transmission of family demographic behavior, e.g. marriage, fertility and divorce, from one generation to another has been extensively studied. Research has demonstrated that mothers' age at first birth is significantly associated with their children's age of birth in the United States (Barber 2001). Similarly, intergenerational transmission of fertility patterns have been established in Britain (Booth and Kee 2009) and other European countries (Murphy and Wang 2001; Fasang 2015; Murphy 2013). Vast research has also shown the association between parental divorce and children's likelihood to marry and divorce in the United States (Amato 1996; Amato and DeBoer 2001; Wolfinger 2003) as well as in other countries, such as Finland (Erola, Härkönen, and Dronkers 2012). However, the degree of intergenerational transmission of fertility (Murphy 2013) and divorce (Härkönen and Dronkers 2006) varies considerably across countries.

A number of studies have investigated the extent of intergenerational transmission of family behavior in East and West Germany. Fasang (2015) found rather strong evidence for intergenerational fertility transmission in West Germany, but none in the former German Democratic Republic (GDR). Similarly, Engelhardt and coauthors (2002) demonstrated that the extent of intergenerational divorce transmission is lower in East Germany, and that this difference is mediated by marriage age, age at first birth and religiosity in the two sub-societies. These studies conceptualize the separation and later the unification of East and West Germany as a natural experiment, which can be exploited to investigate the micro mechanisms that account for intergenerational transmission within different macro-structural contexts in terms of social policies and economic development while holding important cultural and normative factors constant.

Several studies pertaining to the intergenerational transmission of family formation has shifted from "point in time" towards "process" outcomes (Abbott 2005). The intergenerational transmission of family formation trajectories or patterns adds important information to the study of single indicators, e.g. completed fertility. Parents and their children might strongly resemble one another in one indicator, e.g. age at first marriage but vastly differ on others, such as completed fertility or subsequent union dynamics of separation and partnering. Studies on the intergenerational transmission of single indicators of family formation are unable to show, whether multiple behaviors as well as their timing and sequencing – holistic family formation patterns - are transmitted from one generation to the next. However, from a theoretical point of view, it is

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particularly information about different potential mechanisms of intergeneration transmission, whether children emulate the entire process of family formation they observe in their parents or simply happen to be similar on one or two indicators. Liefbroer and Elzinga (2012) analyzed similarities of parents and children's longitudinal family formation sequences and concluded that there is intergenerational continuity in the family demographic trajectories in the United States. Fasang and Raab (2014) went beyond investigating the similarity between family formation trajectories of parents and their children, and established three salient patterns of intergenerational transmission of longer-term family formation processes between ages 20 and 40 for middle class American families: strong transmission, moderated transmission and intergenerational contrast. Using the conceptual and analytical framework of transmission patterns, they were able to identify different predictors associated with specific patterns of transmission.

The aim of this paper is to determine the extent of intergenerational regularities in family formation in East and West Germany, and further to investigate the mechanisms that account for the transmission differential between East and West.

We make three contributions to the existing literature. First, we apply the conceptual and analytical framework of intergenerational patterns of family formation as a longitudinal process outcome to nationally representative data in East and West Germany and thereby systematically compare them in different macro-structural contexts. Specifically, we use the German Socio-Economic Panel (SOEP) to analyze family formation trajectories from age 15-35 of children born 1953-1978 and their mothers. In East Germany, most of the mother child dyads experienced their active family formation phase under vastly different macro-structural conditions, where the mothers established families during the early years of the communist GDR, whereas the daughters experienced most of their family formation in reunified Germany after 1990. Using multichannel sequence and cluster analysis, we establish three patterns of intergenerational transmission that correspond with those identified by Fasang and Raab (2014) for their selected sample of middle class American families: strong transmission, moderate transmission and intergenerational contrast. The family formation patterns of mothers and their children that display strong transmission experience the same process at the same speed, e.g. entering marriage and parenthood at the same age. Moderate transmission is exemplified by children that have similar family formation processes as their mothers, but delay family formation. Mothers and children with different family formation processes follow patterns of intergenerational contrast.

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Second, we demonstrate that intergenerational transmission of family formation trajectories is not only quantitatively lower in East Germany compared to West Germany, but that the qualitative patterns of transmission also differ. East German children are significantly more likely to display intergenerational contrast or moderate transmission rather than strong transmission compared to West German children. We show that children's gender, parental educational level, children's educational mobility, and size of family of origin are significantly associated with the likelihood to display intergenerational contrast or moderate transmission rather than strong transmission.

Third, we propose to combine the sequence analysis approach with the Karlson, Holm and Breen (2010; Breen, Karlson, and Holm 2013) decomposition method (KHB method) for nested nonlinear probability models to uncover factors that mediate the differential patterns of intergenerational transmission in East and West Germany. We demonstrate that the increased likelihood for intergenerational contrast or moderate transmission in East Germany is accounted for by compositional differences in parents' educational level and children's educational mobility as well as the size of the family of origin, which are related to the different education and mobility systems, as well as family policies in East and West Germany for our study cohorts. The higher likelihood of contrast or moderate transmission patterns in the East may result from educational policies in the former GDR that increased parental education levels more than in the Federal Republic of Germany (FRG), while both states fostered upwards educational mobility for children.

2. The German Comparison

Between 1949 and 1990 Germany was divided into two sub-societies with marked contextual differences in the welfare state, economic system and family policies between the communist German Democratic Republic (GDR) in the East and the democratic social market economy in the Federal Republic of Germany (FRG) in the West. These differences set the stage for family formation of the mother generation in our analyses that experienced family formation in the early and middle years of the German division. In 1990 Germany was reunified by adapting the institutional model of the FRG to the former GDR. The child generation in our study experienced most of their active family formation phase in reunified Germany. Note that even 20 years after the reunification, a number of major macro-structural differences persist in the former East and West that remain relevant for family formation of the child generation (Goldstein and Kreyenfeld 2011).

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However, the mother-child dyads in our East German sample all experienced a sudden break in political and economic regime. As a result the early adult life courses of mothers and children developed in vastly different opportunity structures. In contrast, there is far more continuity and gradual change in the macro-structural contexts in which the family life courses of mothers and their children in West Germany were situated for our study generations.

The state socialist system and centrally planned economy in the GDR promoted a classless society in which access to education and employment was strongly regulated by the state. In addition, mothers of our study generation were expected to combine work and family in a dual earner model (Engelhardt, Trappe, and Dronkers 2002). Family policies were strongly pro-natalist and conditioned access to state-controlled resources, including housing, on marriage and parenthood (ibid.). Normative pressure to have children was coupled with generous financial incentives for parenthood and practically universal public child care. Female labour market participation was around 90% (Huinink et al. 1995), but wages were rather low. In practice, marriage and parenthood often remained the quicker and more viable route to obtain housing and generous loans from the state than trying to accrue such privileges through labour market activity.

In contrast, the mother generation in the FRG experienced their active family formation phase in a society that was governed by a democratic multiparty parliament, functioned as a social market economy, and provided a corporatist conservative welfare state (Rosenfeld, Trappe, and Gornick 2004). The FRG represents a fairly unequal stratification system that was strongly transmitted through education from one generation to the next (Huinink and Mayer 1995; Pollak 2011). Social policies comprehensively set strong incentives for a traditional male breadwinner–female carer household division of labour and the financial dependence of women on men (Brückner 2004; Prince Cooke 2011). Family policies were foremost *pro-traditional*, including joint taxation of married couples that discouraged employment of a second earner and the absence of public child care particularly for children under the age of three (Prince Cooke and Baxter 2010; Aisenbrey, Evertsson, and Grunow 2009). The arguably purest implementation of the male breadwinner model (Prince Cooke and Baxter 2010) resulted in female labour market participation around only 50%, of which much was part time for the mother generation in our study.

In 1990 the West German institutional model was abruptly and unexpectedly applied to a population with markedly different compositional features in the East compared to the West. For

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instance joint taxation for married spouses remained a much stronger incentive for marriage in the West, where earnings between husbands and wives were more unequal than in the East with its legacy of a dual-earner model. Initial expectations of a quick convergence of the two sub-societies did not materialize (Schneider, Naderi, and Ruppenthal 2012). Even in 2008, 18 years after the reunification, East Germany still had significantly lower rates of property ownership, lower average earnings, higher rates of female employment and a higher proportion of children in public care (Goldstein and Kreyenfeld 2011). While the intergenerational transmission of social status has increased in East Germany after the reunification, it remains notably lower than in the former West (Pollak 2011). Further, the former East continues to be one of the most secularized regions of Europe with 74 percent reporting no religious affiliation in 2008 compared to only 16 percent in the West (ibid: 457). While total fertility rates have converged (Goldstein and Kreyenfeld 2011), within Europe the two sub-societies remain on opposite ends of the continuum for a number of family demographic indicators, including a proportion of non-marital birth above 70 percent in the East compared with only around 12 percent in the West in 2007, and higher rates of cohabitation in the East. As a result opportunity structures of family formation remained markedly different for the child generation in our study in the former East and West. However, the sudden and massive change in institutional context, often referred to as the shock of reunification, was uniquely experienced by the mother child dyads in the former East, but not in the West (see also Fasang 2015).

3. Theoretical Background

In this section, we introduce three micro mechanisms that are theorized to facilitate the intergenerational transmission of family demographic behavior. Further, we theorize on how these micro mechanisms may generate different levels of intergenerational transmission within different macro-structural contexts, specifically the former GDR and FRG.

First, intergenerational transmission of family formation patterns may be a byproduct of intergenerational status transmission (McLanahan and Bumpass 1988). It has been shown, at least in western societies, that children "inherit" the socio-economic status of their parents to a certain degree (Breen 2004). Children are embedded in similar contexts and opportunity structures as their parents during their early life course, including similar partner and marriage markets as well as

similar socioeconomic conditions for childbearing. *Social status inheritance or immobility is expected to be associated with a pattern of strong intergenerational transmission.*

The 20th century was characterized by unprecedented structural shifts in national economies and educational systems, which facilitated upward mobility rather than mere socioeconomic inheritance or immobility for many children. Upward mobility is associated with delayed family formation, because individuals exit the educational system at later ages (Fussell and Furstenberg 2005). Further, long durations in tertiary education may also foster alternative family demographic behavior associated with post-materialism and the second demographic transition (Lesthaeghe 2010). *Upward status mobility is expected to be associated with a pattern of moderate intergenerational transmission or intergenerational contrast.*

Levels of intergenerational status transmission were lower in the "classless society" of the GDR (Huinink et al. 1995) and continue to remain lower than in West Germany even after reunification (Pollak 2011). *If the transmission of family formation is a byproduct of status transmission, then intergenerational transmission of family formation is expected to be stronger in West Germany.*

Second, parents may socialize their children and transmit values, norms and expectations specific to family formation. Parental influence through socialization may occur unconsciously when children internalize parental roles, or more explicitly through parental control of their children's actions by setting incentives (Barber 2000; 2001; Bernardi 2003). A central mode of value transmission with regard to "ideal" family formation patterns lies in the realm of religious practice and belief (Heaton and Goodman 1985; Berghammer 2012). *Religious parents are expected to be associated with strong patterns of intergenerational transmission.*

During state socialism, East Germany was the most secularized country in the world (Froese and Pfaff 2005) and remains so after the reunification (Goldstein and Kreyenfeld 2011) with the highest percentage of professed atheists. *If the central mode of family formation transmission occurs through the transmission of religious values, then intergenerational transmission of family formation is expected to be stronger in West Germany.*

Third, family structure during childhood may influence whether children decide to replicate the family structure during adulthood or choose alternative paths (Merz 2012). While some argue that socially accepted family structures are more likely to be transmitted from one generation to the

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next, the literature on divorce transmission indicates that "deviant" family behavior is more likely to be transmitted to the next generation (Wolfinger 1999). Fertility transmission has been found to be strongest for higher-parity families, i.e. families with three or more children (Booth and Kee 2009; Fasang 2015), which can be conceived as an nonstandard family structure in societies characterized by low fertility (Boehnke, Hadjar, and Baier 2007). *Strong patterns of intergenerational family formation transmission are expected to be associated with higher-parity families of origin.*

Although the total fertility rate was higher in East compared to West Germany during state socialism due to pro-natalist policies (Fodor et al. 2002; Kreyenfeld 2004), higher-parity families were more common in West Germany (Goldstein et al. 2010). *If strong family formation transmission results from high-parity family structure during childhood, then intergenerational transmission of family formation is expected to be stronger in West Germany.*

4. Data & Methods

4.1 Definition of Family Formation Sequences

We use data from the German Socio-Economic Panel (SOEP) to operationalize the family formation trajectories of children and their mothers as sequences. The SOEP is a nationally representative longitudinal survey of households in the Federal Republic of Germany, which began collecting a variety of prospective and retrospective social, economic and demographic information in 1984 in West Germany and in 1990 in East Germany (Wagner, Frick, and Schupp 2007). We can utilize SOEP data to match the family formation processes of mothers and their children, because children born in SOEP households are followed after they leave the parental home and asked to found new, second generation SOEP households.

We identify 6,140 children born before 1978 to 3,995 SOEP mothers that can be potentially observed until age 35. Unfortunately, only 2,167 of these children participate in SOEP in their adult lives, and our analysis sample is further reduced to 1,524 (29%) mother-child dyads due to missing values on key variables (see Table 1). We use SOEP marital and birth biographical data to construct family formation sequences for each child and their mother. These sequences consist of 20 consecutive, annual states from age 15 to 35. Each state is defined as either single (S), married (M)

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or divorced (D) without children or single with children (SC), married with children (MC) or divorced with children (DC). We restrict the sample to children born after 1952 to keep the cohort range relatively narrow. This allows for a more rigorous comparison between East and West Germany, because we ensure that parents experienced active family formation in divided Germany.

4.2 Dependent Variables – Sequence Distance & Cluster Analysis

The first aim of our paper is to determine the extent of family formation transmission between children and their mothers in East and West Germany. To this end, we first calculate pairwise *distances* between children's family formation sequences and the sequences of their mothers. We use dynamic Hamming's distance (DHD) to measure the dissimilarity between sequences. DHD assigns substitution operations time-dependent costs, which are inversely proportional to state transition frequencies (Lesnard 2010). Thus DHD pairwise distances will emphasize the timing of sequence states and their temporal order, which is important to capture intergenerational differences between family trajectories that stem from delayed family formation of children. Small distances indicate strong intergenerational transmission and large distances indicate weak intergenerational transmission.

Fasang and Raab (2014) demonstrated that different mechanisms are associated with different patterns of intergenerational transmission. A continuous measure of transmission that is based on comparing means for subgroups, such as distance, cannot account for the distribution of distance and may hide important qualitative differences in the transmission of family formation between children and their mothers. This would in turn make it difficult to identify factors that are associated with specific patterns of intergenerational transmission, if similar mean values in fact conceal very different distributions of distance or distinct qualitative patterns of transmission, e.g. early marriage and high parities or delayed and protracted family formation as two possible patterns of family formation. We use multichannel sequence analysis to compare every mother-child dyad with all other mother-child dyads (Pollock 2007; Gauthier et al. 2010) and generate a pairwise DHD distance matrix. We then enter this matrix in hierarchical cluster analysis, specifically the Ward method. According to cluster solution quality criteria, the mother-child dyads are reasonably well structured into three clusters (Kaufman and Rousseeuw 2008; ASW = 0.29). These cluster match those established by Fasang and Raab (2014) as *strong transmission*, *moderate transmission* and *intergenerational contrast*.

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Table 1: Summary Statistics of Sample

	West	East	Germany
Mother-Child	38.98	44.73	40.40
DHD Distance	(19.85)	(18.02)	(19.57)
Cluster			
Membership			
Contrast	0.406	0.422	0.410
	(0.491)	(0.495)	(0.492)
Moderate	0.314	0.393	0.333
Transmission	(0.464)	(0.489)	(0.472)
Strong	0.280	0.185	0.256
Transmission	(0.449)	(0.389)	(0.437)
Parental	10.90	12.73	11.35
Education	(2.281)	(2.373)	(2.433)
Educational	1.697	1.020	1.530
Mobility	(2.684)	(2.510)	(2.657)
Religious	0.441	0.150	0.370
Attendance	(0.497)	(0.358)	(0.483)
Family Parity	3.116	2.364	2.930
	(1.744)	(1.219)	(1.662)
N*	1203	321	1,524
(%)	(75.34)	(24.66)	

Note: Averages and standard deviations displayed; *Frequencies not weighted; Data weighted

4.3 Independent Variables & Analytical Strategy

The second aim of our paper is to investigate factors that account for the different degree of intergenerational transmission of family trajectories in East and West Germany. Mother-child dyads are considered *East* German if children were located in the former GDR in 1989 and West German if they were located in FRG in 1989.

We measure status transmission as highest *parental education* in years and children's *educational mobility* as the difference between children's education and their parent's highest education in years. Socialization and value transmission of traditional family demographic behavior is measured through an indicator of mother's *religious attendance*, which is one if mothers attend religious

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services at least weekly and zero if mothers attend religious services at least monthly or less.[2] Family structure during childhood is measured as *family parity*, i.e. number of children in the family of origin. We also include the child's gender and birth year as additional control variables in the statistical analyses.

Our analytical strategy consists of three steps. First, we descriptively analyze the distribution of distance and cluster membership in East and West Germany to establish the extent of intergenerational transmission of family formation in both regions of Germany. Second, we estimate OLS regressions on mother-child sequence distance and multinomial logistic regressions on cluster membership to estimate the effects of parental education, educational mobility, mother's religious attendance and family parity on intergenerational transmission.

Finally, we use the KHB decomposition method for nonlinear probability models (Karlson, Holm, and Breen 2010; Breen, Karlson, and Holm 2013) to identify the factors that mediate the differential intergenerational transmission pattern membership in East and West Germany. Specifically, we use the KHB method to test whether compositional differences between East and West Germany with regard to parental education, educational mobility, religious attendance and family parity account for the differential likelihood of pattern membership between East and West Germany. While mediation effects can be estimated easily using OLS regressions by adjusting regression models stepwise, unobserved heterogeneity and constant error terms in logit and probit models prohibit the estimation of mediation effects in a similar fashion (Mood 2010). The KHB method enables the decomposition of unadjusted effects in multinomial logistic regression models into two effects: a direct effect, i.e. the adjusted effect, and an indirect effect, i.e. the difference between the unadjusted and adjusted effect. Studies commonly combine sequence analysis and multinomial regression analysis to explore associations between life course patterns and individual characteristics, which theoretically arise on account of specific institutional arrangements. We take advantage of the fact that institutional and cultural differences between societies generate the compositional differences between societies that are associated with specific life course patterns. The KHB decomposition method provides hitherto unknown insights on the institutions foremost associated with societal differences in life course patterns.

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[2] We use the mode value if mother's religious attendance was observed more than once. If there were two modes, then we prioritize more frequent religious attendance.

5. Results[3]

5.1 Descriptive Results – Intergenerational Transmission in East & West Germany

There are substantial differences in the distribution of dyadic sequence distances between East and West Germany, as displayed in Figure 1. On average, distances between children's family sequences and the sequences of their mothers are larger in East Germany, which indicates weaker intergenerational transmission. Further, the distribution of mother-child sequence distance in West Germany resembles a bimodal distribution, where large portions of the population either exhibit very strong or very weak intergenerational transmission. In East Germany, the distribution is strongly negatively skewed, indicating that only a small proportion of the population exhibit strong transmission patterns.
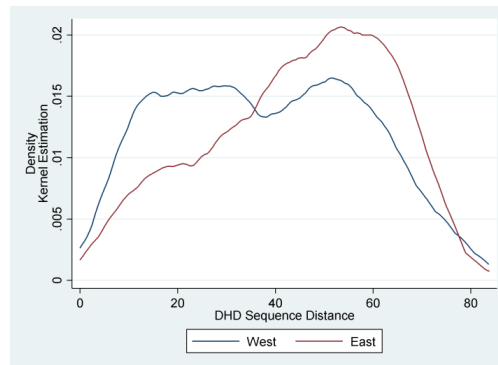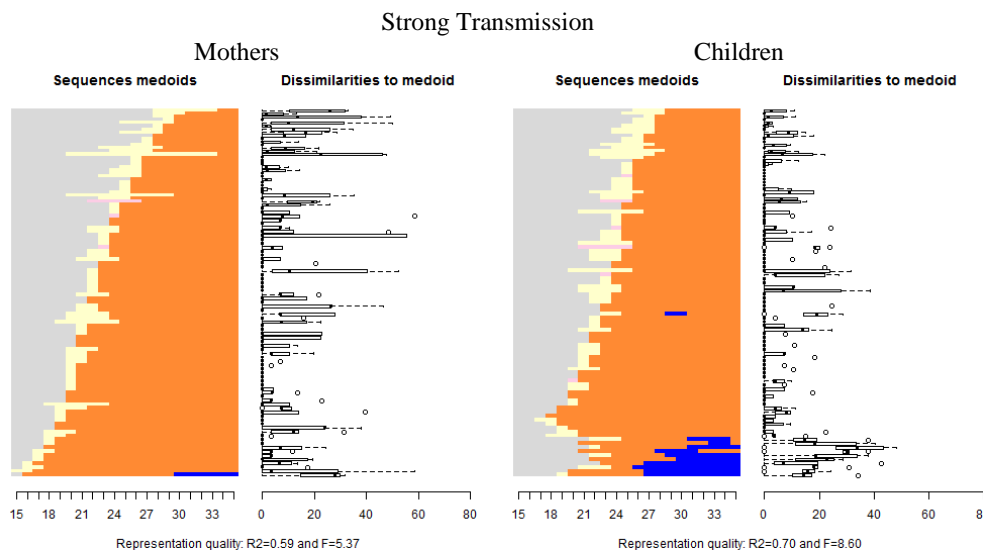

Fig. 1: Distribution of Mother-Child Sequence Distance in East and West Germany

The different distance distributions in East and West Germany are reflected in the distribution of cluster membership. The family formation sequences of mothers and children found in the three

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[3] We use the `TraMineR` (Gabadinho et al. 2011) package to calculate sequence distances and the `WeightedCluster` (Studer 2013) package to perform cluster analyses on the sequence based distance matrixes in R, version 3.2.0. The decompositions are calculated using the `khb` (Kohler, Karlson, and Holm 2011) command in STATA, version 14.

clusters are displayed in Figure 2 as relative frequency sequence index plots that select representative sequences from each cluster to avoid visual distortions through over-plotting the graphs with too many sequences (Fasang and Liao 2013).[4] The family trajectories of the mothers in all clusters are very similar pointing to a strong standardization of family formation for the mother generation in line with previous studies (Brückner and Mayer 2005). They are all characterized by early marriage coupled with parenthood within marriage. Single parenthood and divorce are not common. The family trajectories of the children in the strong transmission cluster resemble the family formation patterns of their mothers, but single parenthood and divorce are somewhat more common. More than half of the children in the moderate transmission cluster marry, and most have children within marriage, but later than their parents. The cluster also comprises a notable share of childless marriage and single parenthood. The family trajectories of children in the intergenerational contrast cluster exhibit a dominant pattern of living single without children.
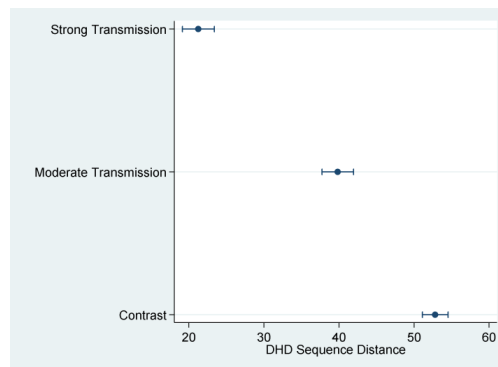

Strong Transmission

Mothers   Children

Representation quality: R2=0.59 and F=5.37   Representation quality: R2=0.70 and F=8.60

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[4] Relative frequency sequence index plots solve the problem of "over plotting" individual sequences, i.e. different sequences occupy the same plot space, by displaying a representative subset of sequences. Relative frequency sequence index plots are generated by 1) sorting the sequences, 2) dividing the sorted sample into subgroups, 3) choosing mediod sequences from the subgroups, 4) plotting the mediod sequences and dissimilarities from the mediod sequences as box-plots. R^2 and F statistics that evaluate the goodness of fit of the chosen mediod sequences are additionally displayed. We sort the sequences using the first factor derived from multidimensional scaling and divide the sample into 100 subsamples. Mediod sequences are chosen using DHD distance. The plots were created with the `seqplot.rf` function developed by Matthias Studer, Anette Fasang and Tim Liao using R, version 3.2.0.

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Fig. 2: Relative Frequency Sequence Index Plots of Strong, Moderate and Contrast Patterns of Intergenerational Family Formation Transmission

The strong transmission pattern has the lowest average mother-child sequence distance (see Figure 3) and is much more common in West Germany than East Germany. While an estimated 28% of mother-child dyads display a pattern of strong intergenerational transmission in West Germany, only 18.5% of East German dyads belong to this cluster (see Table 1). Patterns of moderate transmission and intergenerational contrast are more common in East Germany than in West Germany, however the difference is quite small with regard to the intergenerational contrast pattern.

Fig. 3: Average Mother-Child Sequence Distance of Strong, Moderate and Contrast Patterns of Intergenerational Family Formation Transmission

5.2 Regression Results – Predicting Intergenerational Transmission

The OLS regression results on mother-child sequence distance are displayed in Table 2. The results corroborate the descriptive findings and indicate that, when adjusting only for children's gender and birth year, East German mother-child family formation sequences are significantly more dissimilar than West German dyads. Mother-son dyads are significantly more distant than mother-daughter dyads, and mother-child dyads have become significantly more dissimilar over time.

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Table 2: OLS Regression on Mother-Child DHD Sequence Distance

	(1)	(2)	(3)	(4)	(5)
Region	5.318**	5.471**	3.757*	5.180**	3.938*
(Ref.: West)	(1.774)	(1.741)	(1.821)	(1.810)	(1.786)
Gender	5.442***	5.409***	5.730***	5.464***	5.715***
(Ref.: Female)	(1.530)	(1.528)	(1.495)	(1.522)	(1.486)
Birth Year	0.309*	0.321*	0.291*	0.305*	0.309*
	(0.149)	(0.149)	(0.144)	(0.151)	(0.145)
Parental		-0.029			-0.078
Education		(0.378)			(0.373)
Educational		-0.282			-0.209
Mobility		(0.406)			(0.384)
Educational		0.116*			0.114*
Mobility^2		(0.058)			(0.058)
Religious			-5.563**		-5.654**
Attendance			(1.771)		(1.769)
Family Parity				-0.198	-0.085
				(0.523)	(0.504)
Constant	-572.120+	-595.959*	-534.816+	-563.359+	-569.781*
	(294.073)	(292.376)	(283.305)	(297.985)	(284.388)
N	1524	1524	1524	1524	1524
R^2	0.039	0.044	0.057	0.040	0.063

Note: Sig: + $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$; Unstandardized coefficients and robust standard errors in parentheses displayed; Data weighted

Children's educational mobility and religious attendance are significantly associated with mother-child sequence dissimilarity. In line with our expectations, educational mobility is nonlinearly associated with dyadic distance when adjusted for parental education: dyads are least distant for educationally immobile children, somewhat more distant for downwards mobile children and most distant for upwards mobile children. Further, mother-child dyads are significantly less distant for children whose mothers attended religious services at least weekly. The significant difference between East and West German dyads remains, although reduced, in a fully specified model.

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Table 3: Multinomial Logistic Regression on Intergenerational Transmission Pattern
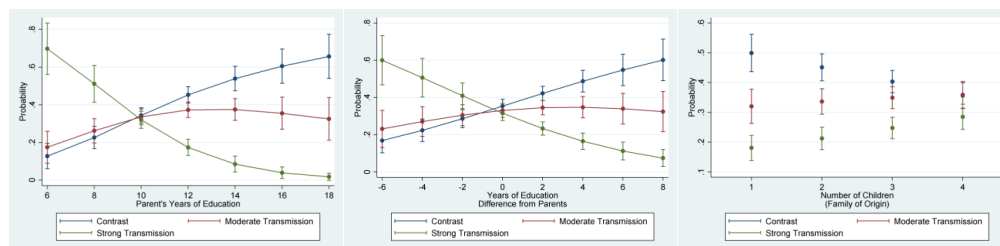
Membership

Contrast					
Region	0.495*	-0.043	0.392	0.315	-0.207
(Ref.: West)	(0.240)	(0.243)	(0.245)	(0.241)	(0.254)
Gender	1.284***	1.303***	1.311***	1.349***	1.367***
(Ref.: Female)	(0.207)	(0.210)	(0.205)	(0.208)	(0.212)
Birth Year	0.019	-0.008	0.018	0.014	-0.009
	(0.018)	(0.019)	(0.018)	(0.019)	(0.019)
Parental Education		0.444***			0.413***
		(0.076)			(0.079)
Educational Mobility		0.267***			0.257***
		(0.052)			(0.055)
Religious Attendance			-0.371		-0.397
			(0.227)		(0.244)
Family Parity				-0.265***	-0.139*
				(0.057)	(0.060)
Constant	-38.353	9.514	-36.170	-27.810	13.623
	(35.940)	(37.473)	(35.783)	(36.491)	(37.831)
Moderate Transmission					
Region	0.669**	0.208	0.687**	0.579*	0.210
(Ref.: West)	(0.258)	(0.257)	(0.258)	(0.259)	(0.263)
Gender	0.535*	0.551*	0.534*	0.566*	0.558*
(Ref.: Female)	(0.226)	(0.224)	(0.227)	(0.225)	(0.225)
Birth Year	0.004	-0.019	0.004	0.002	-0.019
	(0.019)	(0.020)	(0.019)	(0.019)	(0.020)
Parental Education		0.359***			0.343***
		(0.072)			(0.075)
Educational Mobility		0.194***			0.186***
		(0.053)			(0.054)
Religious Attendance			0.050		0.026
			(0.226)		(0.230)
Family Parity				-0.114*	-0.026
				(0.057)	(0.062)
Constant	-7.622	33.480	-7.380	-3.077	34.115
	(37.765)	(38.966)	(37.764)	(37.847)	(39.021)
N	1524	1524	1524	1524	1524
Pseudo R^2	0.034	0.083	0.038	0.047	0.091

Note: Sig: + p < .10, * p < .05, ** p < .01, *** p < .001; Unstandardized coefficients and robust standard errors in parentheses displayed; Strong transmission as base category; Data weighted

The results of multinomial logistic regressions on cluster membership are displayed in Table 3, which can be interpreted as a multiplicative increase in odds when the coefficients are

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exponentiated. When adjusted for children's gender and birth year, the odds that East German mother-child dyads display intergenerational contrast rather than strong transmission increase by 64% compared to West German dyads. The odds that East German mother-child dyads display moderate transmission rather than strong transmission are 95% higher. The odds to display intergenerational contrast rather than strong transmission are 261% higher for mother-son dyads compared to mother-daughter dyads. For mother-son dyads, the odds increase by 70% to display moderate transmission. Patterns of intergenerational contrast and moderate transmission have not become significantly more or less likely than a pattern of strong transmission over time.

Parental education, children's educational mobility and family parity are significantly associated with transmission pattern membership, and the respective predicted probabilities are displayed in Figure 4.[5] The probability to exhibit a pattern of strong intergenerational transmission is highest for educationally downwards mobile children, those with low parental education and those who grew up with a large number of siblings. Intergenerational contrast patterns are most probable for educationally upwards mobile children, those with highly educated parents and those who grew up as single children. Patterns of moderate transmission are also more probable for educationally upwards mobile children, those with highly educated parents, but become slightly more probable for those who grew up with a large number of siblings.

Fig. 4: Predicted Probability of Pattern Membership by Parental Education, Children's Educational Mobility and Family Parity

[5] The predicted probabilities are all estimated using global sample means, expect for children's educational mobility. Educational mobility is modelled independent of parental education, although children of parents with university education cannot be upwards mobile and children of parents without any education cannot be downwards mobile. To account for this, we estimated the predicted probabilities for children's educational mobility using the corresponding mean of the observed parental education values.

5.3 KHB Decomposition Results – Accounting for Transmission in East & West Germany

In the models adjusted for parental education and children's educational mobility, East German mother-child dyads are not significantly more likely to display intergenerational contrast or moderate transmission rather than strong transmission. Further, East German dyads are not significantly more likely to exhibit intergenerational contrast rather than strong transmission if the models are adjusted for family parity. However, it would be a premature conclusion to state that these factors mediate the East/West effect on cluster membership. It is statistically possible that these results stem from unobserved heterogeneity or constant error terms rather than compositional differences. Therefore, we use the KHB decomposition method to test whether these insignificant East/West effects are attributable to compositional differences.

Table 4: KHB Decomposition Results of Multinomial Logistic Regression on Intergenerational Transmission Pattern Membership for East/West Effect

Effect	Education & Educational Mobility		Mother's Religious Attendance		Parity of Family of Origin	
	Moderate Transmission	Contrast	Moderate Transmission	Contrast	Moderate Transmission	Contrast
Total	1.684*	1.966*	1.642*	1.959**	1.648*	1.932**
	(0.438)	(0.523)	(0.392)	(0.505)	(0.393)	(0.492)
Direct	0.958	1.231	1.480	1.987**	1.371	1.783*
	(0.232)	(0.316)	(0.363)	(0.513)	(0.331)	(0.462)
Indirect	1.757***	1.597***	1.110	0.986	1.202**	1.083$^+$
	(0.283)	(0.226)	(0.074)	(0.062)	(0.080)	(0.050)
N	1524	1524	1524	1524	1524	1524

Note: Sig: + p < .10, * p < .05, ** p < .01, *** p < .001; Exponentiated coefficients and robust standard errors in parentheses displayed; Strong transmission as base category; Data weighted

The results of the KHB decomposition for the East/West effect are displayed in Table 4. The total, i.e. unadjusted, East/West effect is significant in all models. This means that East German dyads are significantly more likely to display intergenerational contrast or moderate transmission rather than strong transmission in all unadjusted models. The direct effects, i.e. East/West effect adjusted

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for additional factors, are insignificant in all models, with the exception of intergeneration contrast adjusted for mother's religious attendance as well as parity in the family of origin. The significant indirect effects signify that at least a portion of the East/West effect is mediated through the adjusted factors. These effects are strongest for the models that adjusted for parental education and children's educational mobility.

6. Discussion & Conclusion

Our aim was to determine the extent of intergenerational family formation regularities in East and West Germany, and to investigate the factors that account for the transmission differential between East and West. We applied the conceptual and analytical framework of intergenerational patterns of family formation (Fasang and Raab 2014) to nationally representative data. Specifically, we used the German Socio-Economic Panel (SOEP) to analyze the family formation trajectories from age 15-35 of children born 1953-1978 and their mothers. We demonstrated that East German mother-child family formation trajectories are more dissimilar than West German mother-child family formation trajectories. Further, East German mother-child dyads are more likely to be categorized as intergenerational contrast and moderate transmission, whereas West German dyads are more likely to display strong transmission.

Based on a theoretical discussion of micro mechanisms that account for the intergenerational transmission of family formation, we developed the following expectations: First, social status immobility is associated with a pattern of strong intergenerational transmission and upward status mobility is expected to be associated with a pattern of moderate intergenerational transmission or intergenerational contrast. Second, religious parents are associated with strong patterns of intergenerational transmission. Third, strong patterns of intergenerational transmission are associated with higher-parity families of origin. According to these expectations, the results indeed show that upward educational mobility is associated with more distant mother-child family formation trajectories and a higher likelihood of intergenerational contrast and moderate transmission patterns. The family formation trajectories of mothers who attend religious services at least weekly are less distant, but the attendance of religious services is not associated with any pattern of intergenerational transmission. Large families of origin are not associated with the

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distance between children's family trajectories and their mother's, but do increase the likelihood of strong intergenerational transmission.

We also discussed theoretically how differences between East and West Germany may account for differences in the extent of transmission. First, if the transmission of family formation is a byproduct of status transmission, then intergenerational transmission of family formation is higher in West Germany due to more mobility. Second, if family formation transmission occurs through the transmission of religious values, then intergenerational transmission of family formation is higher in West Germany due to higher levels of religiosity. Finally, if strong family formation transmission results from high-parity family structure during childhood, then intergenerational transmission of family formation is higher in West Germany due to a higher prevalence of high-parity families. Our results demonstrate that the East/West effect on mother-child family trajectory distance can be partially mediated by compositional differences in educational mobility and parity of family of origin. Further, we demonstrate that parental education and children's educational mobility completely mediate the East/West effect on intergenerational transmission pattern membership. Surprisingly, differences in parental religiosity between the two German regions did not contribute to the mediation of the differential patterns of transmission between East and West Germany.

We make three contributions to the existing literature. First, we applied the conceptual and analytical framework of intergenerational patterns of family formation transmission (Fasang and Raab 2014) to nationally representative data. Second, we demonstrate that intergenerational transmission of family formation trajectories is not only quantitatively lower in East Germany compared to West Germany, but that the qualitative patterns of transmission also differ. Third, we utilize the Karlson, Holm and Breen (2010; Breen, Karlson, and Holm 2013) decomposition method (KHB method) for nested nonlinear probability models to uncover factors that mediate the differential patterns of intergenerational transmission in East and West Germany. We believe that the proposed approach is promising to disentangle cross-national differences in life course domains more broadly.

In conclusion, the higher likelihood of contrast or moderate transmission patterns in the East may result from educational policies in the former GDR that increased parental education levels more than in the Federal Republic of Germany (FRG), while both states fostered upwards educational

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mobility for children. Comparative life course sociologists have long pointed to differences in educational systems, but also to welfare state regimes and labor market institutions, to account for cross-national differences in the prevalence of life course patterns. Our results indicate that educational systems may account for cross-national differences in intergenerational regularities in family formation.

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