

Trends in Women's Educational Advantage and Divorce in East and West Germany*

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Abstract: Couples in which wives have more education than their husbands have been found to be more likely than other couples to divorce. But this relationship varies across time and place. We compare the relationship between spouses' relative education and marital dissolution across four birth cohorts born between 1951 and 1990 in East and West Germany using 37 waves of the German Socio-Economic Panel (1984-2021) and Cox proportional hazard models. The comparison between East and West Germany provides contrasting levels and trends in women's education, employment, and gender cultures, with East Germany persistently being a more gender egalitarian context compared to West Germany. Our results show that marriages in which wives have more education than their husbands are less stable in West Germany, but not in East Germany, where the point estimates indicate that these couples are more stable than other couples, but this association is not statistically significant. We do not find evidence of cohort change in these associations in either East or West Germany. These findings are consistent with the idea that the consequences of non-traditional gender arrangements are weaker in more egalitarian contexts and confirm that notable differences between East and West Germany persist after reunification.

Keywords: Divorce · Educational Homogamy · Hypogamy · East-West Germany

1 Introduction

The expansion of women's education and the emergence of a reversal of the gender gap in education means that women are, on average, more educated than men in many countries around the world (*Esteve et al.* 2016; *Van Bavel* 2012). This change has led to an unprecedented increase in the prevalence of couples in which women

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are more educated than their male partners (*Bouchet-Valat 2018; Klesment/Van Bavel 2017; Esteve et al. 2016; Blossfeld 2009*), and couples in which women have the same level of education as their male partners (*Blossfeld et al. 2024; Uunk 2024*). Past studies have hypothesised that couples avoid forming partnerships where women's status outranks their male partners' status, and that when these partnerships do form, they will be more unstable (e.g., *Bertrand et al. 2015; Ferrari et al. 2024*). This article investigates the stratification of divorce risks by the educational pairing of partners and asks how it varies across geographical and historical contexts, focusing on a comparison of East and West German cohorts.

There are several reasons why the risk of divorce may be higher for couples in which women have more education than their male partners. The functionalist view of families predicts that any deviation from a gendered division of roles will increase instability (*Parsons/Bales 1955*) as this would undermine the functioning of the family (and more generally its role in the social stratification system, *Goldthorpe 1983*). Indeed, in many societies, a gendered division of labour has long been (and continues to be) strongly normatively endorsed. Usually attributed to *Becker (1981)* is the idea that the traditional division of labour is most efficient for families and makes marriages more stable. Because education is related to employment status, type of occupation and earnings, couples in which women have less education than their male partners will be the least likely to divorce. Women's educational advantage may also represent a threat to traditional gender identity for both men and women (*Tichenor 2005*), which may be associated with increased divorce rates.

However, other research suggests that the relationship between marital dissolution and spouses' relative status is both historically and contextually specific. For example, *Gonalons-Pons and Gangl (2021)* found that violations of the male-breadwinner norm are most associated with marital dissolution in countries with more conservative gender cultures. Similarly, *Schwartz and Han (2014)* found that in the United States, while marriages in which wives had more education than husbands were once more likely to dissolve, this was no longer the case among couples married after the 1990s. These shifts are consistent with societal-level changes in gender, marriage, and women's labour force participation. Women's autonomy and active participation in public life are not only much more common, but also more widely accepted nowadays. In addition, in many countries, a second income has become increasingly necessary to make ends meet (*Oppenheimer 1994, 1997; Ruggles 2015; Esping-Andersen 2003*). Thus, we would expect that the negative association between women's educational advantage and marital stability will have declined across cohorts and will be less pronounced in more gender-egalitarian contexts.

Although there is evidence that the association between couples' educational pairings and marital dissolution varies over time within as well as across countries, there is little research that jointly compares both time and country variation. In addition, there are only a few studies of time variation in the association between wives' educational advantage and marital dissolution overall (e.g., *Schwartz/Han 2014*). In this article, we compare trends in the association between wives' educational advantage and marital dissolution between East and West Germany

among cohorts born between 1951 and 1990 and married between 1977 and 2021. Our focus is on birth cohorts as we are interested in social change. Although West Germany is considered a latecomer when it comes to the reversal of the gender gap in education (e.g., *De Hauw et al.* 2017; *Becker* 2014¹), the country average masks important differences in women's educational attainment between former East and West Germany. In their forty years of separation, East and West Germany took very different paths and East Germany developed much more (gender) egalitarian labour market and education patterns than West Germany. Institutional differences gave rise to cultural differences that persist after reunification. We argue that both compositional and cultural differences impact trends and patterns of marital dissolution by spouses' relative educational attainment across these two contexts.

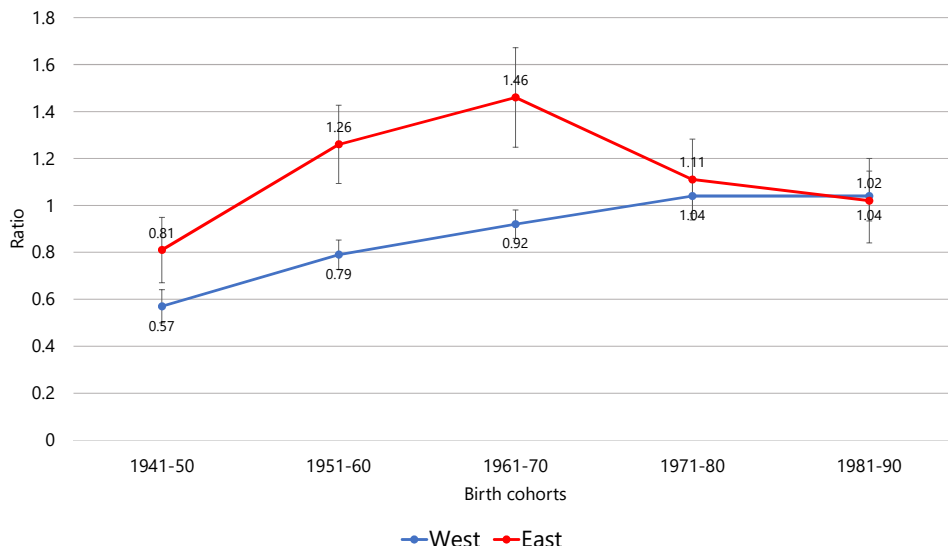
2 Background

Germany is known for its strong internal differences due to the country's division into the Federal Republic of Germany (FRG or West Germany) and the German Democratic Republic (GDR or East Germany) for more than 40 years after the Second World War. The fact that the former FRG and GDR belonged to two different political regimes before their reunification in 1990 had implications for many areas of life, including the organisation of the family and women's education and employment, leading to the emergence and diffusion of different gender divisions of labour within families. The differences between the two Germanies before and after reunification are well documented (*Mayer et al.* 1997, 1999; *Rosenfeld et al.* 2004; *Trappe* 1996, 2014; *Trappe et al.* 2015). Favoured by state socialism and family policies, women in East Germany achieved higher levels of education and were more often active in the labour market, also on a full-time basis. In contrast, the male-breadwinner and modified male-breadwinner (that is, couples with full-time employed men and part-time employed women) arrangements remained more common in West Germany.

The prevalence of more egalitarian gender roles in East Germany is also reflected by the fact that women's education started to exceed men's much earlier than in West Germany. Figure 1 shows the ratio between the share of women who achieved at least upper secondary education, the corresponding share of men and related confidence intervals for these estimates. In East Germany, the share of women with at least secondary education had already surpassed men's share (i.e., ratio > 1) among the 1951-60 birth cohort. By contrast, women's educational advantage has increased steadily in West Germany, and thus, differences between East and West Germany diminished across cohorts. The ratios in East and West Germany are similar among the most recent birth cohorts. In line with the structural changes in the marriage market due to the narrowing of the gender gap in education and the increasing

¹ *Becker* (2014) reports a reversal of the gender gap in credentials to access tertiary education from the cohort born 1969-78 onwards in West Germany, net of social origin.

Fig. 1: Gender gap in education by cohort in West and East Germany: Ratio of percent of women with at least upper secondary education / percent of men with at least upper secondary education



Notes: The sample is comprised of respondents with German nationality born between 1941 and 1990 ($N = 49,929$). Ratios are calculated via a Poisson regression that estimates the ratio between men's and women's percentages of completing at least an upper secondary education (Barros/Hirakata 2003). It includes an exposure term for the different numbers of men and women by country and cohort (the denominators), uses cross-sectional individual-level weights so that estimates are representative of the population, and uses robust standard errors to calculate 95% confidence intervals.

Source: Authors' calculations from SOEP37 data.

length of time spent in education, Blossfeld and Timm (2003) report increasing levels of educational homogamy in West Germany.

Greater gender equality in the East is also reflected in differences between the GDR's and FRG's female employment rates, the former of which reached 89 percent in 1989, compared to only 56 percent in the latter (Rosenfeld et al. 2004). These differences were accompanied by different perceptions of gender roles and values. Even today, gender-egalitarian values are more common in the East than in the West, although the differences have narrowed as the West has caught up with more egalitarian values (Ebner et al. 2020; Zoch 2021). At the same time, East German cohorts who socialised after reunification appear to hold less egalitarian views compared to those socialised before reunification (Ebner et al. 2020). After reunification, there has been a tendency towards re-traditionalisation in East Germany, with a decline in dual full-time working households in favour of a "modified" male breadwinner model with full-time employed men and part-time employed women, especially among couples with children (Trappe et al. 2015).

These differences affect patterns of marriage and divorce. In both parts of Germany, marriage rates have declined (OECD 2023), with a weakening of the importance of marriage (Klärner 2015) and a considerably lower share of religious marriages (Böttcher 2006). After a significant increase in marital instability up to the 1990s, more stable or even declining trends can be observed in recent decades. Before reunification, divorce rates were higher in East Germany, but sharply declined shortly after reunification at which point divorce became more common in West Germany than East Germany (Schmid/Wagner 2023; Engelhardt et al. 2002).

Most of the German literature is concerned with the consequences of divorce (Kreyenfeld/Trappe 2020; Brüggemann 2020 for recent studies) and less with its drivers. Previous studies have documented that those with more education are less likely to divorce (Böttcher 2006; Schmid/Wagner 2023), although not all studies show this relationship to be statistically significant (Härkönen/Dronkers 2006; Arpino et al. 2022). More relevant to our study, previous literature has examined the relationship between partners' educational pairings and union dissolution across countries and regions (e.g. Theunis et al. 2018; Van Bavel et al. 2018). Results are mixed and findings may vary across levels of education. For Germany, Kraft and Neimann (2009), who examine the effect of educational (and religious) homogamy on marital stability, report that contrary to their expectations, homogamy per se does not increase marital stability but higher education (and religiosity) does. In a data driven approach controlling for life-satisfaction and personality traits, Arpino et al. (2022) report no evidence for education or assortative mating to matter for divorce risks. Blossfeld (2018) shows that among highly educated women educational hypogamy is associated with an increased risk of divorce compared to educational homogamy.

As argued above, there are likely to be important changes over time in the relevance of hypogamy for divorce. In addition, little attention has been dedicated specifically to an East-West comparison. Due to the overall greater gender egalitarian norms and division of labour in the East, we expect hypogamy to be associated with the risk of divorce in West Germany but not in East Germany. Moreover, given the re-traditionalisation of East Germans socialised after reunification (Ebner et al. 2020; Trappe et al. 2015), and the spread of gender egalitarian values in the West, we may see a change in the risk of divorce for hypogamous unions among the youngest cohorts of East and West Germany.

Previous work supports the idea of different predictors of divorce in West versus East Germany as well as different timing in changes in these predictors, but none has examined the relationship between hypogamy and divorce. Schmid and Wagner (2023), following the idea of changing gender equilibria developed by Esping-Anderson and Billari (2015), argue that trends in divorce risks depend on the (un) equal division of labour within couples, both in paid employment and in family work. The authors show that "the association between women's employment and divorce risk has changed across marriage cohorts, and that this trend started earlier in East Germany" (Schmid/Wagner 2023: 212). For the youngest cohort, female full-time employment is no longer associated with higher divorce risk in West Germany. Lippmann et al. (2020) focus on earnings and show that while in West Germany the risk of divorce increases when wives earn more than their husbands, this is not the

case in East Germany. *Cooke* (2006) and *Bellani and Esping-Andersen* (2020) report that a more equal division of household tasks is associated with a higher risk of divorce in West Germany, but increased couple stability in the United States. *Schmid and Wagner* (2023) do not find a destabilising effect of the male partner taking on more household tasks in East Germany. These authors attribute their findings to the strong prevalence of the male breadwinner-female homemaker model in West Germany and the higher level of gender equality in the East (and the United States).

To summarise, given theory and previous findings on the changing association between couples' relative education and divorce, as well as on the evolving differences between former West and East Germany, we expect:

Hypothesis 1: A positive association between women's educational advantage and marital union dissolution in West Germany.

Hypothesis 2: No association between women's educational advantage and marital union dissolution in East Germany.

Linked to the spread of more gender-egalitarian values in the West and re-traditionalisation in the East we have two additional hypotheses:

Hypothesis 3: The positive association becomes weaker across birth cohorts in West Germany.

Hypothesis 4: The association becomes more positive across birth cohorts in East Germany.²

3 Data and methods

We use data from the German Socio-Economic Panel (SOEP), a nationally representative longitudinal survey of private households (*Goebel et al.* 2019). The panel began in 1984 with a sample from West Germany and a sample from East Germany was added in 1990. We use data from 1984 to 2021 for West Germany and from 1990 to 2021 for East Germany.³ We excluded the migrant and refugee samples, as well as "Sample Q" (queer sample) from the analysis, given that the hypotheses pertain to different-gender couples. We selected different-gender married couples for which information on both partners was available and in which women held German nationality, and were born between 1951 and 1990 between the ages of 18 and 65.

We limit our primary analysis to married couples for several reasons. First, the meaning of cohabitation differs in the two parts of Germany (*Hiekel et al.* 2015; *Klärner/Knabe* 2017), which could in turn limit the comparability of the two groups between samples. Second, the theoretical "glue" that binds cohabitators' and married couples' relationships is very different (*Brines/Joyner* 1999). *Brines and Joyner* (1999),

² Note that it is possible that the overall association between hypogamy and marital dissolution may be non-significant in East Germany (H2), but the association may become more positive across birth cohorts (H4). If this is the case, we would not interpret the results as null results, but as consistent with cohort change in the association.

³ Samples included: A, B, C, E, F, G, H, J, K, L1, L2, L3, N, O, and P.

for example, use economic theory to argue that similarity of characteristics will be associated with stability for cohabitators whereas specialisation will be associated with stability for married couples. Thus, combining cohabitators and married couples may lead to an underestimation of negative hypogamy effects on marital stability. Third, limiting the analysis to married couples facilitates comparisons of the results to prior literature on the consequences of assortative mating and union instability as this literature concentrated on divorces (*Schwartz/Han* 2014) including the few West and East Germany comparisons (e.g. *Lipmann et al.* 2020; *Schmid/Wagner* 2023). Nevertheless, because of changes in selection into marriage over this period and the rise of cohabitation, we report the results of sensitivity tests combining cohabiting and marital unions.

Our sample includes women who married no earlier than eight years prior to the panel survey. We do this to lessen the impact of left truncation but allow for a larger sample size compared with restricting the sample to those who begin marriages during the panel. There are 7,619 marriages among women born between 1951 and 1990 who married during the panel or not earlier than eight years prior to the survey. Of these marriages, we have information on both partners for 6,832. After dropping marriages in which information on one or the other partner's education was missing, the final (unweighted) sample contains 6,796 marriages (5,044 in West Germany, 1,752 in East Germany), of which 919 ended in divorce during the panel (659 in West Germany, 260 in East Germany).

We distinguish women from former East and West Germany using the information regarding where they lived in 1989, i.e., the year before Germany's reunification.⁴ For those who were born in 1990, who answered "abroad," or did not answer this question (4 percent of the married sample), we used information on the region of residence at the first observation as married. To examine social change, we distinguish four birth cohorts: 1951-1960, 1961-1970, 1971-1980, and 1981-1990. More recent cohorts are too young to observe their marriage history for a sufficient period. The time-to-event of interest is marital dissolution, which we code as the year of divorce or separation in case divorce was preceded by a separation. Union duration is measured in years.

Our explanatory variable of primary interest – women's educational advantage – is captured by wives' (W) education relative to husbands' (H) education and distinguishes women who have a lower level of education than their husbands (Hypergammy, "W<H"), the same level of education as their partner (Homogamy "W=H"), or a higher level of education (Hypogamy "W>H"). Wives' and husbands' education is measured as the highest level attained by respondents during the panel and is coded into five categories from the CASMIN classification (Compulsory education = 1a + 1b, Basic vocational = 1c, Lower secondary = 2a + 2b, Upper secondary = 2c_ge + 2c_voc, Tertiary education = 3a + 3b). Following previous

⁴ A large majority of women are in homogamous marriages based on residence in 1989. Only 3 percent of West German women in our sample are married to East German men and 15 percent of East German women are married to West German men.

studies (*Schwartz/Han 2014*), in addition to the level of education of both partners, we also control for the size of the absolute difference between spouses' education ($| \text{wife's education} - \text{husband's education} |$), her and his age at union formation, squared ages at union formation, and the woman's order of marital union (first or higher).

We estimate Cox proportional hazard models separately for West and East Germany to examine the association between couples' relative education and the risk of union dissolution. To check the proportional-hazards assumption of the Cox model, we used Schoenfeld residuals, which shows that the assumption holds for all the variables considered in the East sample, and for the relative education variable in the West sample. To test for changes in the relevance of partners' relative education we interact our measure of relative education with birth cohort.

4 Results

Table 1 shows descriptive statistics for the variables in our analytical sample for East and West Germany. The table moreover shows the test of differences in means and proportions among the two samples, and the descriptive statistics of the overall sample of East and West Germany. Overall, divorce is somewhat more prevalent in the sample for East than for West Germany (16 percent vs. 15 percent of couples). Levels of education among husbands tend to be higher in West than in East Germany (39 percent vs. 27 percent have at least upper secondary education). We also notice a higher share of tertiary-educated wives in the East (27 percent vs. 20 percent in the West). The percentage of couples in second or higher-order marriages is similar between the West (17 percent) and East (18 percent) as is the average age at marriage.

Table 1 also shows that in both parts of Germany homogamy is the most common pattern, with 42 percent of couples in the West and 53 percent in the East. In West Germany, couples are more likely to be hypergamous ($W < H$) compared to East Germany (29 percent vs. 17 percent), whereas the difference in the share of hypogamous ($W > H$) couples is not significant (both about 30 percent). How has this varied across birth cohorts? Figure 2 shows that in the West German sample, the share of hypogamous couples increased across cohorts (from 26 percent in the 1951–60 birth cohort to 32 percent in the 1981–90 birth cohort), whereas the share of homogamous couples stayed roughly constant, around 41–45 percent. In East Germany, trends are less clear. Consistent with the re-traditionalisation hypothesis, there appears to be a re-emergence of male educationally advantaged couples for those born after 1970, with a respective decline of both homogamous and hypergamous couples. The small sample size especially in East Germany, however, comes with high statistical insecurity, so these results should be interpreted with caution.

In the analytical sample of married couples, when focusing on the absolute level of education of husbands and wives by cohorts, married women in East Germany have on average higher levels of education compared to their husbands

Tab. 1: Descriptive statistics, East and West Germany

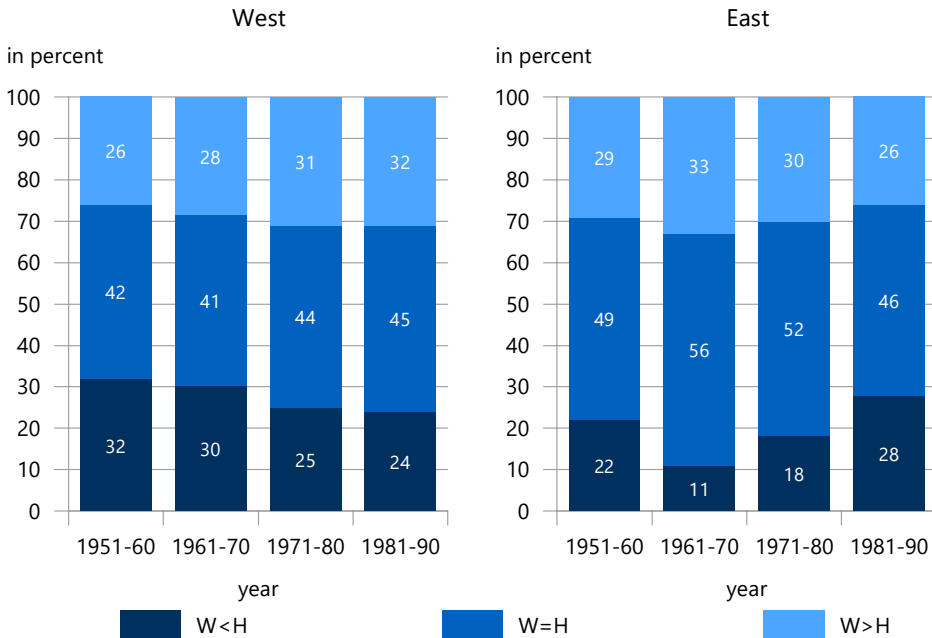
	West	East	Test of difference in means/proportions	Total
Number of cases	5,044	1,750		6,794
Percentages:				
Divorced	14.71	16.02		14.97
Relative education				
W<H	28.86	16.81	***	26.43
W=H	42.33	52.62	***	44.40
W>H	28.82	30.58		29.17
Wives' education				
Compulsory education	7.18	1.96	***	6.13
Basic vocational	22.24	7.68	***	19.31
Lower secondary	35.59	55.72	***	39.64
Upper secondary	15.24	7.53	***	13.69
Tertiary education	19.75	27.11	***	21.23
Husbands' education				
Compulsory education	5.82	2.00	***	5.05
Basic vocational	33.12	16.81	***	29.84
Lower secondary	22.41	53.71	***	28.71
Upper secondary	11.07	6.67	***	10.19
Tertiary education	27.58	20.81	***	26.22
Birth cohorts				
1951-60	25.97	16.58	***	24.08
1961-70	38.78	43.32		39.69
1971-80	22.24	26.95	**	23.19
1981-90	13.01	13.16		13.04
Union Order				
First marriage	82.87	81.82		82.66
Higher order marriage	17.13	18.18		17.34
Wife's age at marriage (mean)	29.65	29.81		29.68
Husband's age at marriage (mean)	32.7	32.8		32.72

Notes: Weighted statistics based on the analytical sample, using cross-sectional individual-level weights. Two-tailed t-tests (for means) and z-tests (for proportions) are given, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: Authors' calculations from SOEP37 data.

(Appendix Table A2, see total by cohort), while the opposite is true for the West German sample (Appendix Table A1, see total by cohort). Educational attainment of the married samples of East and West Germany hence resembles those of the general population described in Figure 1 (drawn based on all SOEP respondents with German nationality), thus suggesting that there are no large selection processes into marriage by education. Across cohorts, descriptively, hypogamous couples have the highest percentage of divorces in West Germany (Appendix Table A1). On the contrary, no clear pattern emerges in the East German sample (Appendix Table A2).

Fig. 2: Percentage distribution of couples' educational pairings by birth cohort for East and West Germany



Notes: Weighted statistics based on the analytical sample, using cross-sectional individual-level weights.

Source: Authors' calculations from SOEP37 data.

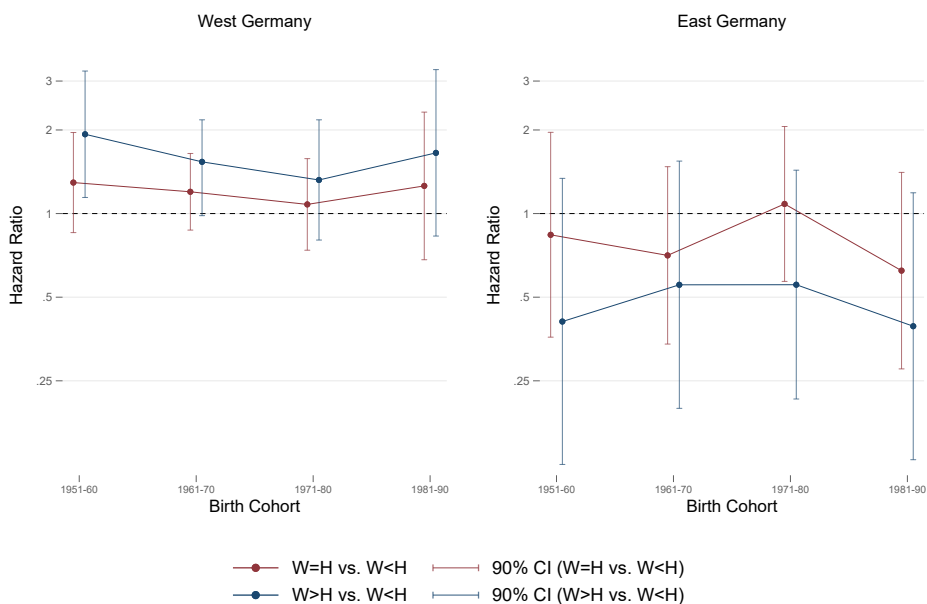
Table 2 shows hazard ratios of marital dissolution by spouses' relative education, jointly for all cohorts, based on Cox proportional hazard models. The results are relative to hypergamous couples, as the most "traditional" pairing. In West Germany, when the data are pooled across birth cohorts, hypogamous couples are significantly more likely to dissolve their marriages than hypergamous couples, with a hazard of dissolution being 1.55 times higher ($p < 0.1$). This is not the case in East Germany. On the contrary, in East Germany, the hazard of divorce for hypogamous marriages is 0.56 times lower than for hypergamous marriages (result not statistically significant). These results are in line with our expectation that hypogamy will be positively associated with divorce in West Germany (Hypothesis 1) but that there will not be an association in East Germany (Hypothesis 2) – if anything these couples are more stable in the East.

Although not the main subject of this article, we also find that higher levels of education are associated with greater marital stability, in line with past research (Hogendoorn *et al.* 2022). Interestingly, it is the wife's level of education that is significantly associated with stability in the West while it is the husband's level in the East.

Tab. 2: Hazard ratios of marital dissolution for East and West Germany

	West	East
Relative education (Ref: Hypergamy)		
Homogamy	1.19 (0.19)	0.85 (0.28)
Hypogamy	1.55* (0.39)	0.56 (0.30)
Cohort (Ref: 1951-60)		
1961-70	1.39*** (0.15)	1.31 (0.29)
1971-80	1.06 (0.13)	1.40 (0.33)
1981-90	0.79 (0.13)	1.65* (0.45)
Wife's age at union formation	0.96 (0.04)	0.86** (0.06)
Wife's age at union formation squared	1.00 (0.00)	1.00 (0.00)
Husband's age at union formation	0.97 (0.04)	1.13* (0.08)
Husband's age at union formation squared	1.00 (0.00)	1.00 (0.00)
wife's education – husband's education ^a	0.99 (0.08)	1.00 (0.17)
Wife's education (Ref: Compulsory)		
Basic vocational	0.51*** (0.09)	1.24 (0.52)
Lower secondary	0.46*** (0.10)	1.26 (0.65)
Upper secondary	0.45*** (0.13)	1.65 (1.06)
Tertiary education	0.42** (0.14)	1.31 (0.98)
Husband's education (Ref: Compulsory)		
Basic vocational	0.82 (0.14)	1.01 (0.38)
Lower secondary	1.02 (0.22)	0.44* (0.20)
Upper secondary	1.05 (0.30)	0.35 (0.23)
Tertiary education	0.69 (0.23)	0.31* (0.22)
Union order (ref: First marital union)		
Higher order union	1.78*** (0.21)	2.23*** (0.43)
Observations	5,044	1,752

Notes: Hazard Ratios (HR) based on Cox regression; S.E. in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; ^a Absolute value of the difference between wife's education and husband's education.
Source: Authors' calculations from SOEP37 data.

Fig. 3: Hazard ratios of marital dissolution by spouses' relative education and birth cohort

Notes: Hazard ratios based on Cox proportional hazard models. Point estimates are offset slightly for legibility of confidence intervals but correspond to the same birth cohorts. Parameters are shown in Table A4. Table A3 reports the full model. W>H are hypogamous marriages, W=H are homogamous marriages, W<H are hypergamous marriages.

Source: Authors' calculations from SOEP37 data.

As a second step, we estimate Cox proportional hazard models interacting spouses' relative education with women's birth cohort to examine changes in the association. Figure 3 shows the hazard of marital dissolution for hypogamous ("W>H") and homogamous ("W=H") couples relative to hypergamous ("W<H") by birth cohort (coefficient estimates are presented in Appendix Table A3). In West Germany, the point estimates of the hazard of dissolution for hypogamous and homogamous couples relative to hypergamous couples are greater than 1 for all cohorts while the opposite is generally true in East Germany. In West Germany, the hazard of marital dissolution for women born between 1951-60 and in hypogamous couples is 1.93 times that of hypergamous marriages ($p < 0.05$, Appendix Table A4). Although not statistically significant, the hazard of dissolution for hypogamous couples from the younger three cohorts in West Germany are also higher than one (Fig. 3), meaning that they have a higher risk of dissolution compared to hypergamous marriages among the same birth cohort. Given that Table 2 showed a statistically significant positive association between hypogamy and marital dissolution ($HR = 1.55$) pooled across birth cohorts in West Germany, and that we find no evidence for a cohort change in the association (Table A3, interaction between assortative mating and

birth cohort), the evidence as a whole suggests that hypogamous couples face an elevated risk of marital instability in West Germany.

In East Germany, across all birth cohorts, the hazards of dissolution among hypogamous marriages are below one (Fig. 3 and Table 2), indicating lower divorce risks than that of hypergamous couples, although these differences do not reach statistical significance for any cohort (Table A4 in the Appendix). We thus find no evidence for a cohort change (Table A3).

Thus, women in hypogamous marriages face a higher risk of dissolution compared to women in hypergamous marriages in West Germany but not in East Germany (consistent with Hypotheses 1 and 2). In contrast to our expectations, we do not find sufficient evidence for any relevant change across cohorts in the hazard of divorce for homogamous vs. hypergamous couples in either West or East Germany: neither does the positive association of hypogamy and divorce become clearly weaker in the West (Hypothesis 3), nor does any positive association emerge in the East (Hypothesis 4).

5 Robustness Checks

We conducted a series of robustness checks of our results using different model specifications and samples. First, with the increasing prevalence of non-marital cohabitation across successive birth cohorts, changes in selection into marriage are a concern. One way to account for it is by constructing inverse probability weights of being married versus not being married, separately for the West and the East samples.⁵ These results are presented in Appendix Figure A1 and Table A5. The resulting hazard ratios and the overall patterns are consistent with our main analysis. However, for the oldest and youngest birth cohorts in East Germany, the lower hazards of marital dissolution among hypogamous versus hypergamous couples are now statistically significant, which suggests a selection into marriage of those partnerships who are intrinsically less stable. We come back to this result in the final section of the paper. The fact that the association is significant for the youngest birth cohort provides further evidence against Hypothesis 4, which predicted an increase in the association between hypogamy and divorce in East Germany.

A second way of testing the sensitivity of our results to changes in selection into marriage because of the increasing diffusion of non-marital cohabitation is to conduct an analysis of a pooled sample of cohabiting and marital unions. Results are presented in Appendix Table A6 and Figure A2. Given that the SOEP did not ask for retrospective data on cohabitations before wave 27, we include only those unions (marriages or cohabitations) that started during the panel and in which both partners were surveyed. Hence, this sample comprises unions that were formed between 1984 and 2021. For comparison, Appendix Figure A3 shows the results of

⁵ Among the predictors we include, side by side by birth cohort, education, and highest educational attainment of the respondent's parents and run analysis separately for the East and West sample.

our main analysis with this much smaller sample of marriages formed during the panel. Cohabiting couples are generally more likely to split up compared to married couples (Table A6). Regarding the consequences of educational pairing, the results for West Germany are largely similar to those shown in the main analysis considering only marriages. The point estimates for East Germany, despite still being non-statistically significant, however, became positive. The change in the point estimates when including cohabitation in the East German sample is intriguing and suggests that dissolutions may work quite differently in cohabiting vs. marital unions in East Germany. This finding is worthy of further investigation. For the present analysis, we note that although our results are largely consistent and robust for West Germany across our sensitivity checks, we can be less confident in our “null” results for East Germany.

Lastly, we conducted four additional robustness checks. (1) We limited the age range at union formation to 18-40 to avoid the possible over-representation of marriages at older ages in the oldest cohorts; (2) We selected marriages initiated up to five years before first observing the couple in the panel instead of eight years, as in the main analysis, to determine how variation in left truncation affected our results. (3) We dropped the control variable for the absolute difference in partners’ level of education. (4) We defined our East and West samples using the current region of residence when first observed in the sample rather than by place of residence in 1989. The results of all of these four checks on married couples are consistent with those in our main analysis and are presented in the Appendix (Tables from A7 to A10).

6 Discussion and Conclusion

Our study supports prior findings that the consequences of spouses’ non-traditional gender arrangements vary by social context (e.g., *Gonalons-Pons/Gangl* 2021; *Schwartz/Gonalons-Pons* 2016; *Schwartz/Han* 2014). We examined the relationship between spouses’ relative education and the risk of marital dissolution across contexts (West and East Germany) and over time (birth cohorts spanning forty years). Exploiting forty years of German separation, which led to very different levels of gender equality (including education and employment), we showed differences in the stability of marital unions among women in hypogamous unions. Consistent with our hypotheses, we find that women’s educational advantage is significantly associated with a higher risk of marital dissolution in West Germany (Hypothesis 1), but not in East Germany, where the point estimates indicate a lower risk of marital dissolution but these estimates are not statistically significant and thus, we cannot reject the null hypothesis of no association (Hypothesis 2). Across cohorts, in West Germany, educationally hypogamous couples have a hazard of marital dissolution 1.55 times that of hypergamous couples. In East Germany, hypogamous marriages are less likely to dissolve, but this is not statistically significant.

Further, given that there is evidence showing that West Germans are becoming increasingly more egalitarian (*Ebner et al.* 2020; *Zoch* 2021), and that in East Germany

there seems to be a process of re-traditionalisation, both in terms of women's work (Trappe *et al.* 2015) and gender ideology (Ebner *et al.* 2020), we hypothesised that the positive association between women's educational advantage and marital dissolution would become weaker across birth cohorts in West Germany (Hypothesis 3) and a positive association between women's educational advantage and marital dissolution would emerge in East Germany (Hypothesis 4). We did not find clear evidence for either of these hypotheses in our data. The point estimates do not indicate statistically significant evidence of change across cohorts. Among the limitations of our analysis is the rather small sample size, especially for East Germany, implying low statistical precision. While our results for East Germany are not statistically significant, it is still notable that the magnitude of the hazard of marital dissolution among hypogamous couples is, for all birth cohorts, lower than for hypergamous couple types (HR smaller than 1), whereas for West Germany divorce risks are considerably higher for homogamous than for hypergamous couples. Thus, overall, results are consistent with the idea that the higher gender equality in East Germany avoids instability for non-traditional educational pairings, especially hypogamy. West Germany appears more traditional in this respect even among the youngest cohort. The magnitude of the difference between the results from West and East Germany and the lack of change is interesting and suggests that forty years of separation and different institutional contexts led to enduring differences (Lippmann *et al.* 2020) which are still influencing various aspects of East and West Germans' lives, including the stratification of marital stability.

The lack of evidence for a change in the association between women's educational advantage and divorce found in this paper does not mean that West and East Germany are fixed social realms, but there might be relevant changes outside our somewhat limited window of observation. As our analyses include among the older cohorts only those that grew up under state socialism in the East, we cannot observe changes induced by this enforced egalitarianism, and, likely, dissolution risk was higher among hypogamous couples in East Germany for birth cohorts older than those we examine here. At the same time, our analysis misses more recent changes and, maybe, hypogamous marriages are now no longer more unstable in West Germany among those born after 1991. Future research should explore this relationship including both older and younger birth cohorts.

In this article, we focused on married couples given that theory and previous research identified differences in meaning (Klärner/Knabe 2017) as well as the process of dissolution between married and cohabiting couples (e.g., Brines/Joyner 1999; Hiekel *et al.* 2015). Non-marital cohabitation became increasingly common in both parts of Germany, thereby potentially affecting the selection into marriage, which is why we also tested the sensitivity of our results to these changes. Results for West Germany are robust, but differ for East Germany. Specifically, whereas the results for married couples alone indicate that wives with an educational advantage are less likely to divorce (although this is not significant), including cohabiters in the model reverses this association (although the point estimates remain insignificant). This suggests that the association between partners' relative education and union stability might work differently among cohabiting and marital unions in East

Germany. In addition, in East Germany, when we use inverse probability weights to control for (changes in) selection into marriage, the point estimates resemble those in the main analyses, with a lower risk of divorce for hypogamous couples, but the coefficients of the oldest and youngest cohorts gain significance. Given that women in East Germany have been more likely to be overqualified for their jobs compared to men (*Trappe/Rosenfeld* 1998), in this context, educational assortative mating, and especially hypogamy, may not be linked to a threat to “traditional” gender identity per se. On the contrary, it may be linked to a reduction in economic deprivation. Ultimately, future research should further investigate this relationship. For East Germany especially, future research should consider the relationship between women’s educational advantage and their earnings advantage and how they are associated with divorce (e.g., *Qian* 2017).

Despite the variability of the results in East Germany to sensitivity tests, however, it is worth stressing that none of the results are consistent with the idea that hypogamy is associated with divorce in the East German context, and none of the results suggested that hypogamy is becoming more associated with divorce across birth cohorts in East Germany. This is in contrast to evidence from West Germany of relative stability in the heightened risk of divorce among couples in which wives have more education than their husbands.

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