

LETTER

The Gendered Persistence of Authoritarian Indoctrination

Nourhan A. Elsayed¹ , Hanno Hilbig² , Sascha Riaz³  and Daniel Ziblatt^{4,5}

¹Independent Researcher, Berlin, Germany, ²Department of Political Science, University of California, Davis, USA, ³Department of Political and Social Science, European University Institute, Fiesole, Italy, ⁴Department of Government, Harvard University, USA and ⁵Director, WZB Berlin Social Science Center, Germany

Corresponding author: Hanno Hilbig; Email: hhilbig@ucdavis.edu

(Received 15 October 2024; revised 23 June 2025; accepted 30 June 2025)

Abstract

A large literature has studied the effects of socialization under authoritarianism on political attitudes. In this research note, we extend this literature by demonstrating striking gender disparities in the post-transition persistence of these effects. We study the case of authoritarian indoctrination in the German Democratic Republic (GDR) using a regression kink design for causal identification. First, we draw on a unique survey fielded right before reunification to show that education under authoritarianism substantially reduced support for democratic capitalism and reunification with the West. In the second step, we triangulate multiple contemporary data sources to trace the persistence of these effects over time. More than two decades after the fall of the GDR, the attitudinal effects of authoritarian socialization persist only among men, but not women. Our results highlight considerable heterogeneity in the persistence of authoritarian legacies, raising critical questions about post-authoritarian ‘re-socialization’ and gendered adaptability.

Keywords: indoctrination; autocratic education; GDR; political socialization; regression kink design

Introduction

Does socialization in an authoritarian regime have persistent effects on political attitudes and behavior? Earlier scholarship on the legacies of authoritarianism analyzed macro-level outcomes, such as the structure of the post-authoritarian regime (Jowitt 1992; Beissinger and Kotkin 2014; Simpser et al. 2018). A second generation of work has focused on the micro-level attitudinal and behavioral legacies of authoritarian regimes (Alesina and Fuchs-Schündeln 2007; Bernhard and Karakoç 2007; Neundorf 2010; Pop-Eleches and Tucker 2014; Pop-Eleches and Tucker 2017; Cheruvu, 2023; Pop-Eleches and Tucker 2020; see also Neundorf and Pop-Eleches 2020).

The latter literature has made the important contributions of not only showing that the political attitudes and preferences that emerged out of an undemocratic era endure beyond regime change, but that the persistence of these attitudes varies with how different subgroups experienced authoritarian socialization efforts. While authoritarian regimes try to effectively ‘indoctrinate’ their populations, there is variation in the intensity at which different groups are exposed to the regime’s efforts, as well as the degree to which their interests are aligned with the regime (Neundorf and Pop-Eleches 2020). In addition, individual characteristics of citizens, such as education, religion, and gender (see, for example, Pop-Eleches and Tucker 2014; Paglayan 2021;

Pop-Eleches and Tucker 2020), can make some more susceptible to indoctrination than others. In particular, Pop-Eleches and Tucker (2020) find that women were marginally less affected by autocratic indoctrination efforts and test a number of potential explanations that relate to gender differences in life experiences under authoritarianism (for example, higher church attendance). Taken together, to date, the existing literature has demonstrated that the heterogeneity of socialization experiences under authoritarianism drives post-transition heterogeneity of attitudes.

In this article, we join this literature (especially Pop-Eleches and Tucker 2017; Neundorf and Pop-Eleches 2020) to highlight two points. First, drawing on evidence from the case of the formerly communist East Germany (German Democratic Republic [GDR]), we show that East German political attitudes towards capitalism and democracy reflect historical patterns of socialization from the communist era. These results mirror the findings by Cheruvu (2023), who, using a similar empirical strategy, finds that education under democracy increased public support for political institutions in East Germany. Relatedly, we find evidence in support of the ‘impressionable years’ or ‘formative years’ hypothesis, which states that attitudinal patterns established early in life tend to endure into adulthood (see, for example, Neundorf et al. 2013; Brum 2018; Neundorf and Pop-Eleches 2020).

We come, however, to a second finding that departs from many existing works by showing that the attitudinal patterns visible at the end of the authoritarian period have persisted in a starkly gendered way. In particular, attitudinal patterns established among men during the authoritarian period persisted until decades later, whereas for women, they did not. This suggests an intriguing conclusion. Scholars have suspected that individual-level post-authoritarian heterogeneity (based, for example, on gender or religion) reflects differing experiences *during* authoritarianism. Our evidence shows that both men and women exited communism with similar attitudinal patterns but diverged only *after* authoritarianism, which suggests that while authoritarian socialization affected both men and women, the process of post-authoritarian ‘competing socialization’ (Neundorf and Pop-Eleches 2020) has been more significant for women than men.

Our empirical analysis triangulates multiple survey datasets to trace the legacy of authoritarian indoctrination, as proxied by education, in the former GDR. First, we draw on a unique survey of East Germans collected right before and right after the dissolution of the GDR. Using these data, we observe attitudes towards capitalism, socialism, and reunification with West Germany in 1989/1990. To trace the persistence of these attitudes over time, we draw on contemporary survey data on attitudes towards capitalism, views of the GDR regime, and party preferences. We analyze these data using a regression kink design (RKD) – a causal identification strategy that has rarely been used in political science but has recently gained traction in labor economics (Card et al. 2015; Ganong and Jäger 2018).

We find consistent evidence that autocratic education had a pronounced negative effect on support for the democratic capitalist order right before the collapse of the GDR. GDR schooling reduced support for capitalism in the GDR in 1989/1990, and likewise reduced support for reunification with the West German Federal Republic (GFR). These initial effects are independent of gender, that is, we observe similar results for men and women. In the second step, we examine the persistence of these effects over time using contemporary survey data. Here, we find pronounced gender differences: more than two decades after the collapse of the GDR, we only find evidence for the persistence of authoritarian socialization among men, but not women. Men exposed to more GDR schooling view the GDR in a more positive light, are more critical towards the market economy, and show higher levels of support for the illiberal, anti-establishment party Alternative für Deutschland (AfD). Notably, the effects of education under autocracy do not persist among women. To address concerns about other confounding factors that are unrelated to autocratic indoctrination (for example, age- or cohort-specific effects), we demonstrate null results for West German men and women across a series of placebo tests. In sum, we find that the

effects of education under autocracy exhibit pronounced temporal variation, and this variation is gendered in nature.

While a comprehensive test of the mechanisms underlying these results is beyond the scope of this article, we provide suggestive evidence for gendered differences in adaption to the new social order – evidence that points the way towards further systematic research on this topic. We consider a process whereby women's views diverge from men's in a post-authoritarian context through the 'competing socialization' framework (Neundorf and Pop-Eleches 2020). In this framework, Neundorf and Pop-Eleches (2020) argue that the long-term effects of autocracies on the attitudes and behaviors of their subjects depend on the nature and strength of the various existing socializing forces, which either reinforce or compete with one another in socializing individuals. In this framework, autocratic institutions can have differential impacts on different demographic groups. We develop this insight further to contend that in reunified democratic capitalist Germany, women were either more exposed to competing mechanisms of anti-authoritarian socialization than men, or adapted more successfully to changes in political conditions and the counter-socialization of the new system. Empirically, we find that after reunification, East German women increasingly outperformed men in the democratic education system, suggesting higher adaptability to new social institutions among women.

Our article contributes to the literature on authoritarian legacies in several distinct ways. First, we introduce a new identification strategy, the regression kink design, to study how living under communism left an enduring imprint on voters' views of politics and economics (Wittenberg 2006; Pop-Eleches and Tucker 2017; Neundorf and Pop-Eleches 2020). Second, we pinpoint one important source of this socialization, namely schooling, and, like Dinas and Northmore-Ball (2020), show evidence that schools are a key site of indoctrination in authoritarian regimes. Third, like Pop-Eleches and Tucker (2017) and Pop-Eleches and Tucker (2020), we find remarkable persistence of these effects. But here we depart company with existing accounts by pointing to a stark gender divide in persistence that the existing literature has not to date recognized. We conclude by exploring some causal mechanisms that might explain why women might be more available for a post-authoritarian 're-socialization', proposing this as a promising research agenda moving forward.

Data and Empirical Strategy

Data

In line with prior research on authoritarian legacies (Neundorf and Pop-Eleches 2020), we seek to measure the effects of authoritarian efforts at indoctrination on support for what we term *democratic capitalist order*. To do this, we triangulate multiple data sources and selected outcomes that proxy for attitudes towards both liberal democracy and capitalism, both right before the dissolution of the GDR and today. We elaborate on our data sources and the variables we use below.

Attitudes towards reunification and capitalism before reunification

We measure attitudes towards democratic capitalism right before the fall of the GDR using a survey of about 5,000 East Germans in 1989/1990. The survey was conducted by the Zentralinstitut für Jugendforschung (ZIJ; Central Institute for Youth Research). The aim of the survey was to measure attitudes towards the 'renewal' taking place in the GDR and its future political and economic development. Specifically, we observe (1) support for capitalism, (2) support for 'reformed' socialism, and (3) opposition to the unification of the GDR and West Germany. We provide more details on this data source and the survey items we use in section A.2.1 in the Supplementary Information (SI).

Contemporary attitudes towards the GDR and capitalism

We draw on two data sources. First, we use 2017 survey data from the survey company Civey to measure attitudes towards the GDR. Specifically, we observe whether respondents view the GDR as a dictatorship – a proxy for attitudes towards the former autocratic system. We provide additional details on this data source in SI section A.2.2. In addition, we use data from the 2016 Politbarometer survey (Forschungsgruppe Wahlen 2017). We observe a binary indicator for whether respondents are satisfied with ‘social capitalism’ (*soziale Marktwirtschaft*) in Germany.

Support for the illiberal AfD party

We leverage individual-level data on the vote intentions of more than 614,000 eligible voters surveyed between 2017 and 2019. The data were originally collected by Forsa, a survey company that conducts daily telephone interviews on a cross-section of about 500 eligible voters. Using these data, we code a binary indicator that equals one for respondents who intend to vote for the illiberal Alternative für Deutschland. AfD support proxies for anti-system, anti-democratic attitudes.¹ We provide additional details on these data in SI section A.2.3.

Empirical Strategy

To estimate the causal effect of education under autocracy on political preferences and attitudes, we use a regression kink design. This design leverages slope changes in the relationship between the running variable – year of birth in our setting – and the treatment to identify causal effects (Card *et al.* 2015). In contrast to the regular regression discontinuity design, which tests for a discontinuity in levels at the cut-off, RKD tests for changes in the *derivative* of the outcome variable with respect to the running variable before and after the cut-off (kink) point. Below, we provide intuition for causal identification using the RKD design. We provide a more formal discussion of identification in the RKD setup in section A.3 of the SI.

The key insight behind the RKD approach in our setting is that the average number of years individuals spent in GDR schools is a deterministic and continuous function of their birth year. We illustrate this relationship between the running variable and the treatment assignment in Figure A.1 in the SI. There are two key takeaways from this graph. First, the relationship between birth year and GDR education is constant up until 1971. Regardless of their precise year of birth between 1945 and 1971, individuals spent a total of about twelve years in GDR schools (see section A.1).² This changes around 1971. When the Berlin Wall fell in 1989, students born in 1971 were 18 years old and had just completed upper secondary education. From 1971 onwards, however, each later birth year corresponds to reduced exposure to GDR education. The average number of years spent in GDR schools decreases linearly between the birth years 1971 and 1984. The derivative of GDR education with respect to birth year changes from zero to negative one around the kink point in 1971.

The regression kink design leverages this kink in the relationship between birth year and GDR education for causal identification and captures the following intuition: while the relationship between year of birth (cohort) and political preferences captures a variety of mechanisms prior to and after 1971, the only one of these explanatory factors that changes around the kink point in 1971 is authoritarian education in the GDR.³ Accordingly, the RKD allows us to separate the

¹A 2022 German court ruling affirmed that the AfD can be monitored by state intelligence services due to concerns that it may undermine the liberal-democratic order (Blanke *et al.* 2022).

²In the GDR, schooling lasted a maximum of twelve years. Most students reached this by combining ten years of secondary education with two years of vocational school (*Betriebsberufsschule*) or by completing grades eleven and twelve at an upper secondary school (*Erweiterte Oberschule*).

³To further substantiate this assumption, we conduct a placebo population test using West-German respondents (see Table 3).

effects of GDR education from general age or cohort effects (see section A.3.3). Empirically, the causal effect is estimated by (1) estimating the derivative of the outcome variable with respect to the running variable (year of birth) separately to the left and right of the kink point, (2) calculating the difference between the estimated derivatives left and right of the kink point, and (3) scaling this difference by the slope change in the treatment assignment function after the kink point (-1 in our case). We provide details on each of these steps in section A.3 in the SI. In a nutshell, the RKD tests whether a discrete slope change in the relationship between the running variable and the treatment coincides with a change in the relationship between the running variable and the outcome.

We note that our estimation strategy depends on the nature of our data source. When we have a sufficient number of respondents, we estimate the RKD using local polynomial regression Cattaneo et al. (2019). This is the case for the Civey data on contemporary attitudes towards the GDR and the Forsa data on vote intentions. For the Politbarometer and ZIJ 1989/1990 survey data, we estimate the slope change around the 1971 kink point using a parametric ordinary least squares (OLS) specification. We do this because (i) these two datasets only contain relatively few observations around the cut-off point, and (ii) we only observe bins of the year of birth running variable for the Politbarometer data. We note that this approach requires stronger functional form assumptions and uses a fixed, manually selected bandwidth. The inferential results obtained from these specifications thus contain more uncertainty and should be interpreted with greater caution. We provide additional details on this approach in section A.3.2 of the SI.

Before moving on to discuss our results, we note two limitations of our empirical strategy. First, we estimate *local* average treatment effects – similar to the regular regression discontinuity setup. More specifically, we estimate the effect of an additional year of GDR education for individuals born near the kink point (1971). Consequently, our findings may not generalize to cohorts far from the cut-off (for example, those born in the 1940s). In addition, we caution against extrapolating our estimates far away from the cut-off point, as exposure to Marxist theory and state ideology was more intense in the later school years compared to lower grades. For example, the *Staatsbürgerkunde* subject – a key pillar of socialist indoctrination in GDR schools – was taught only in the secondary educational track (see section A.1). As a result, our estimates are likely higher than the average treatment effect across the entire twelve-year school journey.

Second, we only observe respondents' year of birth rather than exact birthdays. This lack of granularity means that our running variable takes on only a moderate number of unique values. This may bias our estimates if the local linear polynomial we fit on both sides of the cut-off is a bad fit for the true underlying conditional expectation function (Lee and Card 2008). The large-scale survey datasets we use to measure contemporary attitudes allow us to choose a relatively small (optimal) bandwidth, which should limit this potential source bias for these analyses (Kolesár and Rothe 2018). As noted previously, the estimates from the parametric RKD specifications using a larger bandwidth should be interpreted with more caution.

Results

Below, we first present the estimated effect of education under autocracy on political preferences measured just before the dissolution of the GDR, and then assess the persistence of these effects among the same cohorts more than two decades later.

Effects of Education Measured Right before Reunification

We begin by assessing how education under autocracy affected support for the democratic capitalist order just before the collapse of the GDR, using the ZIJ data described in the section *Data*. We present the results in Table 1. We dichotomize outcomes such that a given outcome takes the value one if a respondent (i) supports capitalism, (ii) opposes reunification, or

Table 1. Effects of authoritarian education on attitudes measured prior to reunification

Outcome	Sample	$\hat{\tau}_{SRK}$	95% CI	<i>n</i>
Support capitalism	Men	−4.08***	[−5.78, −2.38]	3,267
Support capitalism	Women	−2.57***	[−3.91, −1.23]	3,184
Oppose reunification	Men	6.12***	[4.26, 7.98]	4,218
Oppose reunification	Women	6.66***	[4.80, 8.52]	4,381
Support reformed socialism	Men	5.16***	[3.10, 7.22]	3,267
Support reformed socialism	Women	4.80***	[3.02, 6.58]	3,184

Notes: Results from parametric RKD specifications estimated using OLS (see section A.3.2 for more details). The sample includes respondents born between 1960 and 1975. We provide additional details on the survey data in section A.2.1 in the SI. Significance codes: ***: 0.001, **: 0.01, *: 0.05.

(iii) supports reformed socialism (for more information on these survey items, see section A.2.1). We multiply point estimates by 100, such that the estimates in Table 1 can be interpreted as percentage point changes in support or opposition. Across six specifications, we find that education under autocracy reduces support for the democratic capitalist order, both for men and for women. The effect size magnitude is sizable, ranging from −4.08 percentage points to 6.66 percentage points.⁴

Like other papers in this literature, we utilize cohort-specific variation in exposure to education under autocracy. Typically, such analyses rely on respondents surveyed years or decades after democratic transitions and are therefore not able to distinguish whether the effects are driven by *more* education in an authoritarian system or by *less* education in the democratic successor state. Notably, our analyses shown in Table 1 can address this issue since they are derived from survey responses that were collected in late 1989 and 1990, *before* the GDR regime collapsed. For these respondents, less schooling in the GDR does *not* imply more schooling in democratic Germany. The analysis compares eighteen-year-old East Germans to younger East Germans who received less exposure to authoritarian education but had not yet received education following the West German curriculum. As shown in Table 1, we find that this comparison already provides evidence for an indoctrinating effect of education in the GDR. Our analyses, therefore, allow us to separate the effects of education in the two systems. We conclude that *more* education in autocratic systems can indoctrinate citizens, even when it is not accompanied by *less* education in democratic successor states.⁵

Contemporary Attitudes and Vote Intentions

In the previous section, we observed that education under autocracy had pronounced negative effects on support for the democratic capitalist order just before the demise of the GDR. We now examine whether these patterns persist after German reunification. In Table 2, we present results based on vote intentions, attitudes towards the GDR, and satisfaction with the capitalist market economy. We find that the negative relationship between education under autocracy and support for the democratic capitalist order persists among men, but not among women. As before, all outcomes are binary, and we multiply point estimates by 100, which means that the estimates can be interpreted as percentage point changes.

⁴Figure A.2 presents conditional outcome means. Figure A.3 shows estimates from an additional specification comparing post-1970 cohort-specific outcome averages to the mean of the three ZIJ outcomes for cohorts born in 1970 or earlier. Consistent with the results in Table 1, we find that, compared to fully exposed cohorts, those only partially exposed to the GDR education system are less supportive of reformed socialism, more supportive of capitalism, and less likely to oppose reunification. This pattern is most pronounced for the 1974 and 1975 cohorts and does not vary by respondent gender.

⁵We note that our evidence does not imply that education after the transition has no effect on attitudes (see also our discussion of differences in the post-transition trajectory of men and women in section mechanisms). Rather, we argue that at least some of the total variation can be explained by pre-transition education.

Table 2. Contemporary effects of education under autocracy

Outcome	Sample	$\hat{\tau}_{\text{SRK}}$	95% CI	h_{MSE}	n
Voting					
AfD support	Men	* 2.32	[0.39, 4.26]	7	6,136
AfD support	Women	−0.22	[−1.63, 1.18]	7	6,184
Attitudes					
GDR was a dictatorship	Men	−6.96**	[−11.14, −2.78]	4	3,066
GDR was a dictatorship	Women	−1.18	[−5.96, 3.6]	6	1,818
Satisfaction: market economy	Men	−3.54 *	[−6.77, −0.31]		4,691
Satisfaction: market economy	Women	0.73	[−2.8, 4.25]		4,281

Notes: We present point estimates from the sharp regression kink design (see section ‘Data and Empirical Strategy’). Each point estimate represents the effect of one additional year of education under autocracy for East Germans. Point estimates can be interpreted as percentage point changes. We estimate separate bandwidths for each outcome and sample, as recommended by Cattaneo et al. (2019). Rows 1–2 are estimates based on the Forsa data, while rows 3–4 present estimates based on Civey data. Rows 5–6 use Politbarometer data. The Politbarometer results stem from a parametric RKD specification (see section A.3.2). ***: 0.001, **: 0.01, *: 0.05.

For men, we find that education under autocracy increases support for the radical-right AfD and lowers satisfaction with the market economy. The magnitude of the negative point estimate for satisfaction with the market economy is comparable to the point estimate for support for capitalism right before reunification in Table 1, suggesting that the anti-capitalist effect of autocratic education persists over time. We further observe persistent pro-GDR effects for men – education under autocracy renders men significantly less likely to espouse the view that the GDR was a dictatorship. In contrast, point estimates for women are consistently statistically insignificant, between five and ten times smaller, and much closer to 0.⁶ We further test whether the difference between the estimated coefficients for men and women is statistically significant. *P*-values for the difference in coefficients are: (i) 0.037 for the AfD support outcomes, (ii) 0.074 for the GDR dictatorship outcome, and (iii) 0.039 for the market economy satisfaction outcome. The former two *p*-values are calculated assuming coefficients are independent, that is, the variance of the difference is assumed to be the sum of the variances of the coefficient estimates. This is because the local polynomial approach (Cattaneo et al. 2019) does not allow us to estimate the covariance. The third *p*-value is obtained from a parametric interaction specification that mirrors the main specification for this outcome variable (see section A.3.2). We provide additional details on how *p*-values are calculated in SI section A.3.4.

Summarizing the results, we find strong evidence that autocratic education ‘worked’ in the sense that it had a pronounced negative effect on support for the democratic capitalist order right before the collapse of the GDR. The initial effects of indoctrination are independent of gender – we observe similar effects for both men and women. Using contemporary data, we then show that this effect persists among men but not among women. For men, education under autocracy continues to reduce support for the market economy, induces more positive views of the GDR, and increases support for the illiberal AfD party. For women, we observe that the initial effects of indoctrination in the GDR education system do not persist over time.

Robustness Tests

First, we examine whether the results of Table 2 could be driven by compositional differences due to selective out-migration after the fall of the GDR. In section A.4.5 of the SI, we rely on additional panel data to show that women who were born in the GDR do not become more or less likely to move to West Germany if they were born just after the 1971 cohort cut-off. This suggests that the

⁶Among neither men nor women do we find increased support for Die Linke (the Left Party), the successor to the socialist ruling party of the GDR (see SI Table A.3).

Table 3. Placebo tests using West German respondents

Outcome	Sample	$\hat{\tau}_{\text{SRK}}$	95% CI	h_{MSE}	n
Voting					
AfD support	Men	0.04	[−0.36, 0.45]	9	47,977
AfD support	Women	0.18	[−0.31, 0.68]	6	28,963
Attitudinal outcomes					
GDR was a dictatorship	Men	−0.02	[−0.72, 0.67]	8	23,422
GDR was a dictatorship	Women	−1.16	[−3.01, 0.69]	6	5,816
Satisfaction with market economy	Men	2.09	[−0.24, 4.42]		7,430
Satisfaction with market economy	Women	−0.51	[−3.06, 2.04]		6,606

Notes: We present point estimates from the sharp regression kink design (see section ‘Data and Empirical Strategy’). Point estimates can be interpreted as percentage point changes. We estimate separate bandwidths for each outcome and sample (Cattaneo *et al.* 2019). The Politbarometer results stem from a parametric RKD specification (see section A.3.2). ***: 0.001, **: 0.01, *: 0.05.

observed lack of persistence among women is not driven by selective out-migration around the 1971 kink point.

Second, we conduct a ‘placebo population test’ using West German respondents following Eggers *et al.* (2024). We do this to test whether our results could be driven by other unobserved factors (for example, policies or cohort effects) that exhibit a kink around the 1971 birth year cut-off. To the extent that such unobserved factors U are common to all Germans, we would expect significant treatment effect estimates $\hat{\tau}_{\text{SRK}}$ in the placebo population (West Germans). Reassuringly, we do not find statistically significant effects among West German men or women (Table 3), who were not subject to authoritarian indoctrination in the GDR. We interpret this as evidence against the idea that our findings are driven by other, unobserved factors that vary around the 1971 cut-off.

Finally, we test for potential discontinuities in covariate levels around the 1971 cohort cut-off using a standard regression discontinuity design. We use the contemporary Forsa data and estimate separate models for men and women. While we find no evidence for such discontinuities, we note that almost all covariates available to us (except gender) are measured post-treatment and could be affected by exposure to GDR education. Therefore, the results of this test should be regarded with caution.

Mechanisms

A key conclusion of our analysis is that gendered variation in the effects of indoctrination efforts likely stems from experiences *after* the democratic transition. Given the research note format, an exhaustive and systematic discussion of potential mechanisms that explain this gendered heterogeneity is beyond the scope of this article. Pointing the way for future research, we briefly discuss a number of potential mechanisms below. We provide additional details and corresponding evidence in section A.6 in the SI.

First, it might be the case that the heterogeneity we observe between men and women is driven by different economic trajectories post-reunification. However, we do not find effects of GDR education on either employment status, income, or welfare dependence among either gender in the 1990s, 2000s, or 2010s. Second, we argue that compulsory military service cannot account for our results, as we do not observe gender differences right before reunification in 1989/1990.

Third, East German women may have adapted more quickly to the new political and social order after reunification. They might have been less attached to the authoritarian values of the GDR, making them more open to the democratic capitalist system – that is, more receptive to capitalist-democratic counter-socialization after 1990 (see also our discussion of the ‘competing socialization’ framework [Neundorf and Pop-Eleches 2020] in the Introduction). We find suggestive evidence in support of this mechanism in the realm of education. Although men and

women born before 1971 have similar educational outcomes, younger East German women – who completed parts of their education after reunification – increasingly outperform their male counterparts (see Figure A.12 and Table A.4). In fact, East German women in the most recent cohorts shown in Figure A.12 approach similar levels of education to those who were West German born in the same years, even though East German women born in the 1960s and early 1970s clearly underperform West German women. These findings hint that women may be more adaptable to the new social order after the democratic transition. However, because women born before 1971 did not have access to these opportunities, we cannot observe their potential for adaptability. Thus, while this mechanism may explain our findings, our evidence for it remains suggestive.

Discussion

In this research note, we have demonstrated pronounced gender differences in the persistence of attitudes emerging from the project of authoritarian indoctrination. While authoritarian socialization initially reduced support for the democratic capitalist order among both men and women, a striking divergence emerged over the subsequent decades, with these attitudes enduring among men but not women. This result suggests that women have been more susceptible to what we conceptualize as a process of ‘competing socialization’ in the post-authoritarian period.

The findings push the comparative literature ahead in several ways. Prior research suggests that backlash to an autocratic regime’s dominant ideology can lead to a counter-ideological shift. For example, a population ruled by a right-wing regime (as in Pinochet’s Chile) may swing left after its collapse (Dinas and Northmore-Ball 2020). By contrast, following a socialist regime like the GDR, one might expect a rightward shift. However, because women are, on average, less inclined to support radical-right parties (Givens 2004), this shift could be more pronounced among men, potentially amplifying the gender gap in such contexts. Conversely, if a right-wing dictatorship transitions to democracy, both men and women might move left to similar degrees, since there is less evidence that women resist left-leaning positions. To date, important studies on gender polarization (Retzl et al. 2024) have not yet focused on how democratic transitions affect the partisan gap between female and male voting.

A second comparative contribution is the demonstration that a focus on authoritarian attitudinal legacies is not sufficient to understand how voters behave in a post-transition setting. Rather, as Neundorff and Pop-Eleches (2020) make clear, the ‘competing socialization’ offered by a new democratic regime can be consequential. The findings in this paper show precisely where such democratic counter-socialization can be effective (for example, women) and where less so (for example, men). A scope condition of this paper at first appears to be that East Germany, like no other case of democratic transition in the world, received the ‘ready-made’ political institutions of West Germany immediately upon authoritarianism’s collapse (Kitschelt et al. 1999). This distinctiveness, however, makes it a particularly revealing case where the competing socialization mechanism ought to *most likely* take root. If, even in this most promising condition, attitudinal legacies of authoritarianism have endured, this suggests that the interplay of attitudes from the past and socialization efforts of the present are an important area of study more generally.

Indeed, our results highlight a promising direction for future research examining the sources of heterogeneity in the persistence of autocratic legacies, focusing on mechanisms of competing socialization after the transition. In doing so, future research can provide a more nuanced understanding of the challenges and opportunities for democratic consolidation and resilience in the aftermath of regime transitions.

Supplementary material. To view supplementary material for this article, please visit: <https://doi.org/10.1017/S0007123425100720>

Data availability statement. Replication data for this article can be found in Harvard Dataverse at: <https://doi.org/10.7910/DVN/MYZFJJ>

Acknowledgements. We thank Grigore Pop-Eleches as well as audiences at Harvard University and APSA for helpful comments.

Financial support. This research received no specific grant from any funding agency, commercial, or not-for-profit sectors.

Competing interests. The authors declare none.

References

- Alesina A and Fuchs-Schündeln N (2007). Good-bye Lenin (or not?): The effect of communism on people's preferences. *American Economic Review* **97**, 1507–1528.
- Beissinger M and Kotkin S (2014) *Historical Legacies of Communism in Russia and Eastern Europe*. New York, NY: Cambridge University Press.
- Bernhard M and Karakoç E (2007) Civil society and the legacies of dictatorship. *World Politics* **59**, 539–567.
- Blanke P, Steffen T, Kammer A and AFP and DPA (2022). “Verwaltungsgericht Köln: Verfassungsschutz darf AfD beobachten.” *Die Zeit*.
- Brum M (2018). Do dictatorships affect people's long term beliefs and preferences? An empirical assessment of the Latin American case. *Serie Documentos de Trabajo*; 18/18. <https://hdl.handle.net/20.500.12008/20427>
- Card D, Johnston A, Leung P, Mas A and Pei Z (2015). The effect of unemployment benefits on the duration of unemployment insurance receipt: New evidence from a regression kink design in Missouri, 2003–2013. *American Economic Review* **105**, 126–130.
- Card D, Lee DS, Pei Z and Weber A (2015). Inference on causal effects in a generalized regression Kink design. *Econometrica* **83**, 2453–2483.
- Cattaneo MD, Idrobo N and Titiunik R (2019). A Practical Introduction to Regression Discontinuity Designs: Foundations. *Elements in Quantitative and Computational Methods for the Social Sciences*.
- Cheruvu S (2023). Education, public support for institutions, and the separation of powers. *Political Science Research and Methods* **11**(3), 570–587.
- Dinas E and Northmore-Ball K (2020). The ideological shadow of authoritarianism. *Comparative Political Studies* **53**, 1957–1991.
- Eggers AC, Tuñón G and Dafoe A (2024). Placebo tests for causal inference. *American Journal of Political Science* **68**, 1106–1121.
- Elsayed NA, Hilbig H, Riaz S and Ziblatt D (2025). Replication Data for The Gendered Persistence of Authoritarian Indoctrination. <https://doi.org/10.7910/DVN/MYZFJJ>, Harvard Dataverse, V1.
- Forschungsgruppe Wahlen M (2017). Politbarometer 2016 (Cumulated Data Set). GESIS Data Archive, Cologne. ZA6888 Data file Version 1.0.0, <https://doi.org/10.4232/1.12824>.
- Ganong P and Jäger S (2018). A permutation test for the regression kink design. *Journal of the American Statistical Association* **113**, 494–504.
- Givens TE (2004). The radical right gender gap. *Comparative Political Studies* **37**, 30–54.
- Jowitt K (1992). *New World Disorder: The Leninist Extinction*. Berkeley, California: University of California Press.
- Kitschelt H, Mansfeldova Z, Markowski R and Tóka G (1999). *Post-Communist Party Systems: Competition, Representation, and Inter-Party Cooperation*. Cambridge Studies in Comparative Politics. Cambridge: Cambridge University Press.
- Kolesár M and Rothe C (2018). Inference in regression discontinuity designs with a discrete running variable. *American Economic Review* **108**, 2277–2304.
- Lee DS and Card D (2008). Regression discontinuity inference with specification error. *Journal of Econometrics* **142**, 655–674.
- Neundorff A (2010). Democracy in transition: A micro perspective on system change in post-socialist societies. *The Journal of Politics* **72**, 1096–1108.
- Neundorff A and Pop-Eleches G (2020). Dictators and their subjects: Authoritarian attitudinal effects and legacies. *Comparative Political Studies* **53**, 1839–1860.
- Neundorff A, Smets K and García-Albacete G (2013). Homemade citizens: The development of political interest during adolescence and young adulthood. *Acta politica* **48**, 92–116.
- Paglayan AS (2021). The non-democratic roots of mass education: Evidence from 200 years. *American Political Science Review* **115**, 179–198.
- Pop-Eleches G and Tucker JA (2014). Communist socialization and post-communist economic and political attitudes. *Electoral Studies* **33**, 77–89.
- Pop-Eleches G and Tucker JA (2017). *Communism's Shadow: Historical Legacies and Contemporary Political Attitudes*. Vol. 3. Princeton, NJ: Princeton University Press.

- Pop-Eleches G and Tucker JA** (2020). Communist legacies and left-authoritarianism. *Comparative Political Studies* **53**, 1861–1889.
- Rettl P, Bolet D, De Vries CE, Cremaschi S, Abou-Chadi T and Pardos-Prado S** (2024). “A gender backlash: Does exposure to female labor market participation fuel gender conservatism?” Harvard Business School Working Paper, No. 25-022.
- Simpser A, Slater Dan and Wittenberg J** (2018). Dead but not gone: Contemporary legacies of communism, imperialism, and authoritarianism. *Annual Review of Political Science* **21**, 419–439.
- Wittenberg J** (2006). *Crucibles of political loyalty: Church institutions and electoral continuity in Hungary*. Cambridge, UK: Cambridge University Press.