Growing Apart: Ideological Polarization between Teenage Boys and Girls

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Abstract

Recent surveys have shown increasing polarization between young men and women in the West. Yet, little is known about whether or how this manifests among teenagers. Drawing on a unique dataset of 130,000 Norwegian high school students (aged 15-18) interviewed in the period 1989-2023, I show that the gender gap in left-right ideology has surged over the past 10 years, reaching its highest recorded level (twice as high as among young adults). I argue that this development is driven in large part by a new wave of politically potent anti-feminism among boys. A growing percentage of boys believe that 'gender equality has gone too far', which is increasingly associated with right-wing identification. Employing a decomposition analysis, I estimate that the gender equality issue accounts for 40-50% of the increased polarization between boys and girls. This result does not appear to be explained by reversed causality (i.e. parties persuading long-time supporters).

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Introduction

Western democracies witnessed a remarkable realignment in the ideological positions of men and women in the second half of the 20th century. While women in the 1950s and 1960s tended to be more right-wing than men, this gender gap was gradually reversed, with women now generally more left-wing than men (Inglehart and Norris 2000, 2003; Abendschön and Steinmetz 2014; Gethin, Martínez-Toledano, and Piketty 2022).

Recent survey data suggest new developments in the ideological gender gap, specifically among young adults. A much-cited analysis by the *Financial Times* showed that the ideological distance between young men and women has accelerated across several countries after 2010, with women going further to the left and men going further right. Similar findings were made by Gallup in the United States (Gallup 2024) and Glocalities in a study spanning 20 countries.[1] Indeed, data from the European Social Survey (ESS), which polled 38 countries between 2002 and 2022, show a similar trend: since 2012, there has been an increasing divergence between young men and women (aged 19-29) on the left-right self-placement scale in Europe. This gap is growing more rapidly than among adults over 30 (see Appendix Figure A1).

While survey evidence points to rising gender-polarization among young adults, much less is known about how this trend manifests in teenagers. Boys and girls in their teens might be experiencing an even more dramatic polarization than young adults—that could have lasting effects on their world-views. The explanations for why young men and women are pulling apart often revolve around social media creating separate online spheres for men and women; the rise of anti-feminism among young men (Off, Charron, and Alexander 2022), in some cases fueled by misogynist influencers such as Andrew Tate;[2] the #MeToo

[1] *Financial Times*, "A new global gender divide is emerging", 26 January 2024; *Glocalities*, "Polarization extends into gender via young adults who lose hope" 12 April 2024. Some examples from the public debate include: *Washinton Post*, "If attitudes don't shift, a political dating mismatch will threaten marriage", 22 November 2023; *The Atlantic*, "Are Gen Z Men and Women Really Drifting Apart?", 11 March 2024; *New York Times*, "The Gender Split and the 'Looming Apocalypse of the Developed World' ", 2 February 2024.

[2] *The Guardian*, "Don't talk to pupils about misogynist Andrew Tate, government urges teachers in England", 29 April 2023

movement; and the election of Donald Trump in the US and similar right-wing populists across Europe. These forces are likely to make a stronger imprint on the minds of teenagers than on adults. First, because social media is their main battlefield, and teenagers continue to be some of the heaviest users of social media (Massarat 2022). This is particularly relevant in recent years, as the COVID-19 lockdown policies led to increased reliance on social media for information (Drouin et al. 2020). And, perhaps most importantly, because teenagers are in their "formative" years—which is typically the time when people's core values are developing, and they are more impressionable than later in life (Niemi and Sobieszek 1977; Marsh 1971; Vollebergh, Iedema, and Raaijmakers 2001; Flanagan 2013; Neundorf, Smets, and García-Albacete 2013).

In this paper, I study how ideological polarization between teenage boys and girls has developed over time in Norway. Norway is an interesting case in this regard because it is one of the world's most gender-equal societies with a long-standing political consensus on progressive gender policies. One might therefore expect Norway to have an extra lawyer of protection against rising gender-based polarization compared to most other countries. Gender-equality norms are deeply entrenched in the culture, meaning that it might be more difficult for politicians to capitalize on a "men vs. women" political cleavage. A less obvious question however, is whether this also holds for more impressionable teenagers in the current hostile online climate.

I leverage a unique dataset of 130,000 Norwegian high school students (aged 15-18) interviewed between 1989 and 2023 in relation to the national *School Elections*: biannual mock elections in which high-schoolers cast their vote for one of the national parties. For comparison, I draw on survey data for 67,000 adults in the period 1957-2023, synthesized from various data sources (such as the regular National Election Studies).

My analysis shows that the ideological gender gap in Norwegian high schools has surged over the past decade, reaching its highest recorded level since the data series began. This sharp rise in polarization has not occurred among young adults (19-29) or older adults (30+),

whose polarization levels have remained relatively stable during the same period. Teenagers are now the most gender-polarized demographic, with a gender gap in voting behavior more than twice that of young adults and three times greater than that of older adults. Movements in left-right self-placement adhere to the same pattern. The polarization entails a significant partisan realignment wherein boys have moved heavily towards the far-right and girls towards the socialist left.

The growing polarization coincides with a remarkable shift in attitudes towards gender equality among the boys. While the vast majority of *adult* males continue to support gender equality, the share of teenage boys who say that gender equality has "gone too far" jumped from 12 to 25 percent over the past decade—a number considerably higher than in any other demographic. I use Kitagawa-Oaxaca-Blinder decomposition to estimate how much of the increased polarization might be attributed to this particular development, as well as a number of others plausible explanations. I find that diverging views about gender equality account for 50% of the polarization in voting behavior and 42% of the polarization in left-right self-placement. This result arises both because the boys have become more skeptical of gender equality, and because gender equality has become an ideological issue associated with left-right positioning—which it did not use to be.

This paper contributes to several strands of research. First, it extends the literature on gender gaps in political ideology (Duverger 1955; Rokkan and Lipset 1967; Inglehart and Norris 2000, 2003; Abendschön and Steinmetz 2014; Koeppl-Turyna 2021; Dassonneville 2021; Gethin, Martínez-Toledano, and Piketty 2022) by focusing on a previously under-explored age group—teenagers. Both Dassonneville (2021) and Gethin, Martínez-Toledano, and Piketty (2022) find that the pace of gender-based polarization in the West has strongly diminished after the year 2000. I show that although this conclusion remains true among adults in Norway (even young adults), teenagers have polarized in a dramatic fashion, independently of the rest of the population in recent years. This finding suggests that the forces driving polarization might be particularly potent for teenagers, especially in an increasingly

polarized online environment. Furthermore, my findings align with those of Bergh (2007) who finds that attitudes about feminism can account for part of the gender gap in voting.

Second, it contributes to the literature on political socialization (Hyman 1959; Greenstein 1960; Sears and Valentino 1997), which has typically focused on how partisanship is transmitted from parents to children. Recent studies in this literature (Iyengar, Konitzer, and Tedin 2018; Tyler and Iyengar 2023) suggest that teenagers have become just as polarized along the partisan dimension as their parents, because they follow in their footsteps. My results show that recent polarization among teenagers is not only partisan but also gendered. And on this gender-dimension, the levels of polarization among teenagers have gone far beyond that of their parent generation—pointing towards other explanations besides familial influence (such as the unique increase in anti-feminism among teenage boys).

Finally, it contributes to the literature on gender attitudes and anti-feminism, particularly the rise of backlash movements against gender equality. Scholars have documented growing resistance to feminist progress, especially among young men (Messerschmidt 2018; Ging 2019), and shown that conservative gender values can predict populist-right voting when the the gender quality issue is salient (Off 2023). This paper shows how these dynamics are reflected in broader trends of political polarization among teenagers, with rising anti-feminism among boys likely playing a significant role in the diverging ideologies of boys and girls.

Research design

Data

To study polarization among teenagers, this paper exploits a vast collection of interviews with Norwegian high school students conducted as part of the Norwegian School Elections. The School Elections are biannual mock elections (held the same years as the national and local elections) intended as a learning experience for high-schoolers, who cast their ballot (secretly)

for one of the national parties. Since 1989, the exercise has been nationally coordinated and all Norwegian high schools (*videregående skoler*) are expected to participate and report results.[3] The elections are held in the weeks before the parliamentary and local elections and usually get a great deal of attention from national media and political observers in Norway. Several countries have the phenomenon of school elections, but not in the extensive, state-organized manner that Norway has (Ødegaard 2015; Civita 2013).

The survey data used in this paper come from the Norwegian School Election Survey (NSES) (SIKT 2024c). The NSES is a survey on political attitudes and vote choice implemented after each school election. All Norwegian high schools are invited to participate. The schools decide themselves whether they want to implement the survey (either fully or partially), and participation on the part of the students is voluntary. The survey's target population is "pupils in Norwegian high schools" for the calender year of the school election. To make the sample maximally representative, the data provider took a stratified sample out of the full pool of opt-in interviews. The sample was stratified by region and study program to match the national distributions. This was the procedure used for the years 1989-2021, whereas in 2023, all the interviews are provided in the data file and a post-stratification weight (based on the same variables) is included.

Nearly all high schools students are between the ages of 15 and 18 when they take part in the school elections. Technically, they can be outside this range (either younger or older), but this is seldom the case. For example, in the NSES data for 2023, 95 percent of respondents are born in years that would make them between 15 and 18 years of age at the time of the school election (which is always in the autumn).[4] Turnout in the school elections

[3]In practice, almost all high schools participate. For 2023, there were 419 high schools in Norway, of which 391 (93%) were registered for the school elections, and 368 (88%) submitted results within the deadline. See https://sikt.no/skolevalg and https://www.udir.no/tall-og-forskning/statistikk/statistikk-videregaende-skole/elevtall-i-videregaende-skole/elevtall-fylker-og-skoler/, accessed 27 June 2024.

[4]It would perhaps be ideal to remove the small segment of high-schoolers outside the 15-18 age range (in case these are not in fact "teenagers"). Yet, this is not possible for the full time series, since the NSES only started asking about birth year in 2017. Fortunately however, regression results reported in Appendix Table A5 and A6 on the 2017-2023 data demonstrate that it makes very little difference whether we include or exclude this segment. Estimates of polarization are nearly identical.

has varied in the range of 69-84% over time (with a mean of 78%; similar to the national elections) with no clear trend (see Appendix Figure A2).

The Norwegian School Elections provide a valuable window to study recent polarization between teenage boys and girls for at least two reasons. First, because the school elections are taken quite seriously in Norway (with school election campaigns, debates, and national media coverage), the students are strongly primed to think thoroughly through their political beliefs and participate in democracy—in a way that is not often the case for teenagers. Second, the large number of student interviews—totaling 130,697 from 1989 to 2023—means that we can measure polarization and explore its drivers for this particular demographic with much higher statistical precision than what is usually possible with a general population survey.

In order to compare trends among high school students with the general population, I constructed a dataset consisting of 67,516 adults surveyed between 1957 and 2023. The data were synthesized from four different sources: The Norwegian National Election Surveys (N = 31,297; 1957-2021) (Norway and Bergh 2024), the Local Election Surveys (N = 18,959; 1995-2019) (Institute for Social Research et al. 2022), the European Social Survey (N = 17,397; 2002-2022) (SIKT 2024a), and the national survey for the 2023 school election (N = 1,000; 2023) (SIKT 2024b).[5] These sources all ask about voting behavior in either the national or local elections, which is what is compared to the school election voting behavior of the high-schoolers in the vote-based analyses reported below.

Measuring polarization

My main measure of ideological polarization between the genders is based on actual voting behavior and measures the gender gap in net left-right vote, calculated in the following way:

$$\Delta LR = (\%R_{\text{boys}} - \%L_{\text{boys}}) - (\%R_{\text{girls}} - \%L_{\text{girls}})$$

[5]Appendix Table A1 provides an overview of the distribution of observations across years for all data sources used in the paper. Appendix Section 1 provides details on how the datasets were harmonized.

Where $\%R_{\text{boys}}$ is the percentage of boys voting for right-wing parties, $\%L_{\text{boys}}$ is the percentage of boys voting for left-wing parties, and the same for girls. Hence, ΔLR is interpreted as a percentage point difference which ranges from -100 (all boys left, all girls right) to 100 (all boys right and all girls left). Positive values suggest that boys vote more right-wing than girls. I count Labor (*AP*), Socialist (*SV*), Communist (*R*, and *NKP*), and Greens (*MDG*) as left-wing parties, and Conservative (*H*), Radical Right (*FRP*, and *Demokratene*), and Extreme Right (*Alliansen*, *Hvit Valgallianse*, and *Vigrid*) as right-wing parties. To estimate ΔLR and the associated standard error over time, I use the regression coefficients from simple OLS models where the dependent variable is an individual-level version of LR and the independent variable is a gender-dummy interacted with year-dummies.[6]

The advantage of measuring ideological polarization through actual voting is that voting arguably represents a stronger expression of preferences than opinions. The downside is that there might be other reasons besides ideology to vote for a party (e.g., to communicate approval/disapproval about the current government). If those reasons resonate differently with boys and girls, it might generate gender-gaps in voting behavior that are not attributable to ideological differences. Therefore, I employ a second measure of polarization based on a well-known survey question asking respondents to place themselves on a left-right scale (from 0 to 10) where low numbers indicate that the respondents is left-leaning and high numbers that the respondents in right-leaning.[7] The polarization measure simply takes the difference in means between boys and girls on this variable.

Decomposing polarization

To try to understand the underlying reasons for gendered polarization among teenagers, I employ Kitagawa-Oaxaca-Blinder Decomposition (KOB) (Kitagawa 1955; Oaxaca 1973; Blinder 1973) to decompose the observed level of polarization at different points in time.

[6] To calculate LR at the individual level, I construct a numeric variable that takes the value 100 if the respondent voted right, -100 if the respondent voted left, and 0 if they voted for one of the center parties not classified as left or right.

[7] See Appendix Section 1 on harmonization of this variable across survey waves.

This method is popular in labor economics, where it has been used for decades to decompose the gender pay gap into factors such as differences in experience and education; but it has seen little use in political science. This method allows me to partition the difference in mean left-right position between boys and girls into a part that is explained by gender gaps in a set of opinion variables, and a part that is not explained by such differences. The notion of "explained" here refers to the reduction in predicted left-right gap when counterfactually assuming that girls and boys hold the same mean opinion on a particular issue.

The decomposition is estimated in two steps. First, net left-right position is regressed on the predictors (opinion variables) separately for boys and girls, like so:

$$LR_i = \begin{cases} \beta^{\text{girl}} X_i + \epsilon_i^{\text{girl}} & \text{if girl} \\ \beta^{\text{boy}} X_i + \epsilon_i^{\text{boy}} & \text{if boy} \end{cases}$$

Where β is a vector of regression coefficients for the predictors X, which also includes intercepts. In the second step, the parameter estimates from these models are used to estimate how much of the outcome difference is contributed by gender gaps in variable *levels* (explained), and how much is contributed by gender gaps in variable coefficients, intercepts and the levels and coefficients of unobserved variables (unexplained), like so:

$$\Delta\overline{LR} = \underbrace{(\overline{X}^{\text{girls}} - \overline{X}^{\text{boys}})\beta^{\text{ref}}}_{\text{explained}} + \underbrace{\overline{X}^{\text{girls}}(\beta^{\text{girls}} - \beta^{\text{ref}}) + \overline{X}^{\text{boys}}(\beta^{\text{ref}} - \beta^{\text{boys}})}_{\text{unexplained}}$$

As reference coefficients (β^{ref} in the equation above), I employ the coefficients from a pooled regression model, as recommended by Jann (2008). This has the attractive quality that in the simplest decomposition—with only one predictor—the percentage of polarization attributed to that predictor is identical to the number we would obtain if we were to specify a bivariate regression model with left-right position as dependent variable and a gender-dummy as independent variable, then add the predictor as a control variable, and calculate the subsequent reduction in the effect size of the gender-dummy. The added benefit of

the KOB-decomposition is that it can use the same logic to attribute explained portions of the gender gap among multiple predictors—which would not be possible using simple comparisons of regression models before and after controls.[8]

Polarization Between Boys and Girls

To start with, Figure 1 depicts how ideological polarization between high school boys and girls has developed over time in comparison with the same kind of polarization in the general public.

Figure 1 shows several interesting patterns. First, there has been a rapid increase in ideological polarization in Norwegian high schools in recent years. The elections in 2021 and 2023 saw gender gaps of +48 and +42 points respectively—almost double what it had been in the preceding two decades (the average gap was +25 points in the period 2003-2019). The level of polarization in 2021 is the highest on record since the time series began in 1989, and 2023 is the second highest. That said, polarization was comparatively high also around 2000 (almost reaching +40), but it was clearly on a downward trajectory from then on, with boys and girls voting more and more similarly in the 2000's. Something caused it to spike again in 2021.

Figure 1 also documents that the recent spike in polarization among high school boys and girls is not at all shared by young adults (aged 19-29) or older adults (aged 30 years and above). Polarization in the latter group evolved gradually from around -5 in the 1960's to around +15 in the 1990's, at which point it stabilized (aside for some year-to-year fluctuations). The trend for young adults is more difficult to make out, because—due to comparatively low numbers of observations for this demographic—the estimates are less precise and more volatile over time. However, there is no detectable trend of increasing polarization,

[8]This simpler approach, comparing bivariate and multivariate models, is highly intuitive, but it is not valid when there are multiple predictors because the order in which predictors are added to the model will influence how much of the gap is attributed each predictor. KOB-decomposition does not have this problem as it is path-independent.

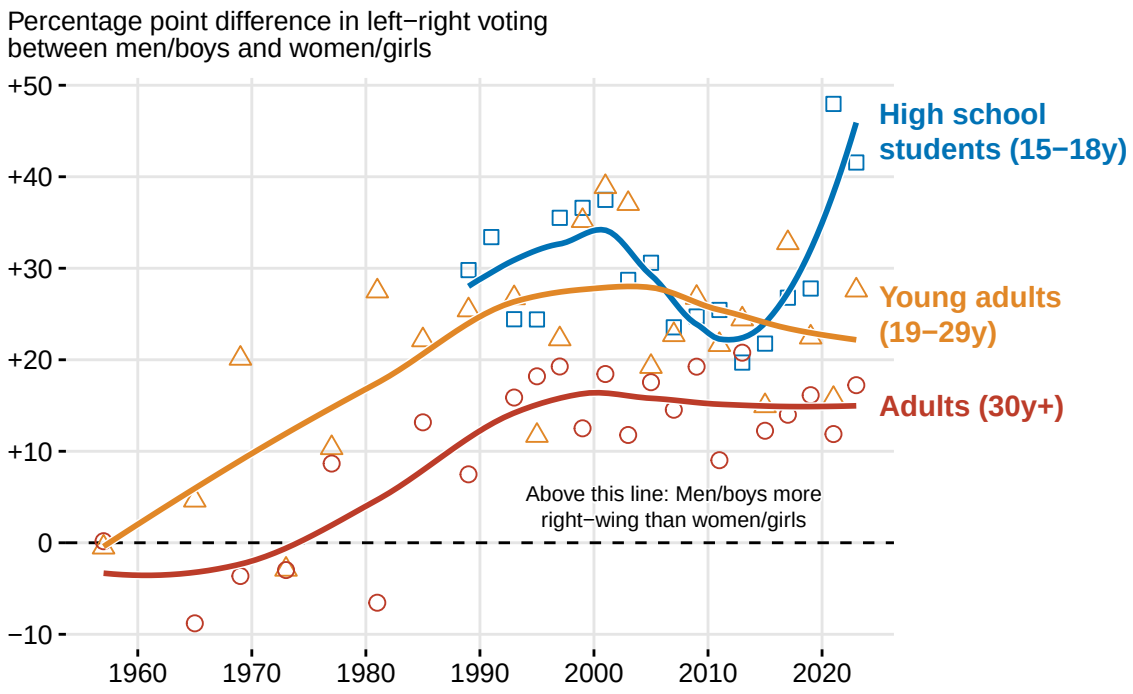

Figure 1: Ideological Gender Gap Over Time

Note: Trend lines estimated with locally weighted scatterplot smoothing.

and over the past two decades, most estimates are in the order of +20 to +30.

The divergence between the high school demographic and the rest of the population is striking. For most of the past 30 years, the magnitude of the ideological gender gap in high schools has been indistinguishable from that among young adults. Yet, averaging over the past two election years (2021 and 2023), the gender gap at the high school level is now double the gap that exists among young adults (+120%) and three times higher than among older adults (+221%) (see Table 1). These differences are estimated precisely enough to clearly distinguish the estimate for teenagers from the other two demographics (p-values at 0.005 and <0.001 respectively).[9] Additional analyses reported in Table A12 shows that among the teenagers, polarization is highest for the youngest ones (the 15-16 year olds).

Figure 2 panel B provides an alternative measure of ideological polarization, using left-right self-placement. This leads to the same conclusion as the vote-based measure: Po-

[9]The data in Table 1 is periodized with reference to national elections (2013, 2017, 2021) in order to increase statistical power.

Table 1: Comparison of ideological polarization across age groups

	2013-2016	2017-2020	2021-2023
Gender gap in net left-right vote in %-points			
High-schoolers (15-18y)	21.0 (1.8)	27.2 (1.7)	42.7 (1.3)
Young adults (19-29y)	22.3 (6.6)	27.1 (5.5)	19.4 (8.2)
Older adults (30y+)	19.1 (2.8)	15.3 (2.3)	13.3 (3.2)
High-schoolers vs. young adults			
Absolute difference	-1.3 (6.9)	0.2 (5.7)	23.3 (8.3)
p-value	0.853	0.979	0.005
Relative difference	-6%	+1%	+120%
High-schoolers vs. older adults			
Absolute difference	1.9 (3.3)	12.0 (2.9)	29.4 (3.5)
p-value	0.562	<0.001	<0.001
Relative difference	+10%	+78%	+221%
N respondents	14323	15226	18709

Note:
Standard errors in parentheses. Parameters estimated using OLS. Full regression results reported in Appendix Table A2.

larization between teenage boys and girls has increased dramatically in recent years. The only notable difference is that according to this measure, polarization started to accelerate already in 2017 (as opposed to 2021 for the vote-measure, which is plotted in Panel A for comparison). In comparison with adults, teen polarization on left-right self-placement is quite similar before 2020. But in the period 2021-2023, the polarization is 166% higher than among young adults ($p<0.001$) and 157% higher than among older adults ($p<0.001$) (see Appendix Tables A3 and A4).

Who is driving the recent trend in polarization? Panels C and D in Figure 2 depict the raw time series for boys and girls both in terms of left-right voting and left-right self-placement. Looking at both panels, the short answer seems to be that the boys have moved far to the right, and while the girls did go in the same direction in 2023, they did not move nearly as far to the right as the boys. In fact, the girls were still slightly left-leaning in their voting in 2023 (as they have been every year of the time series, except for 2013). For the

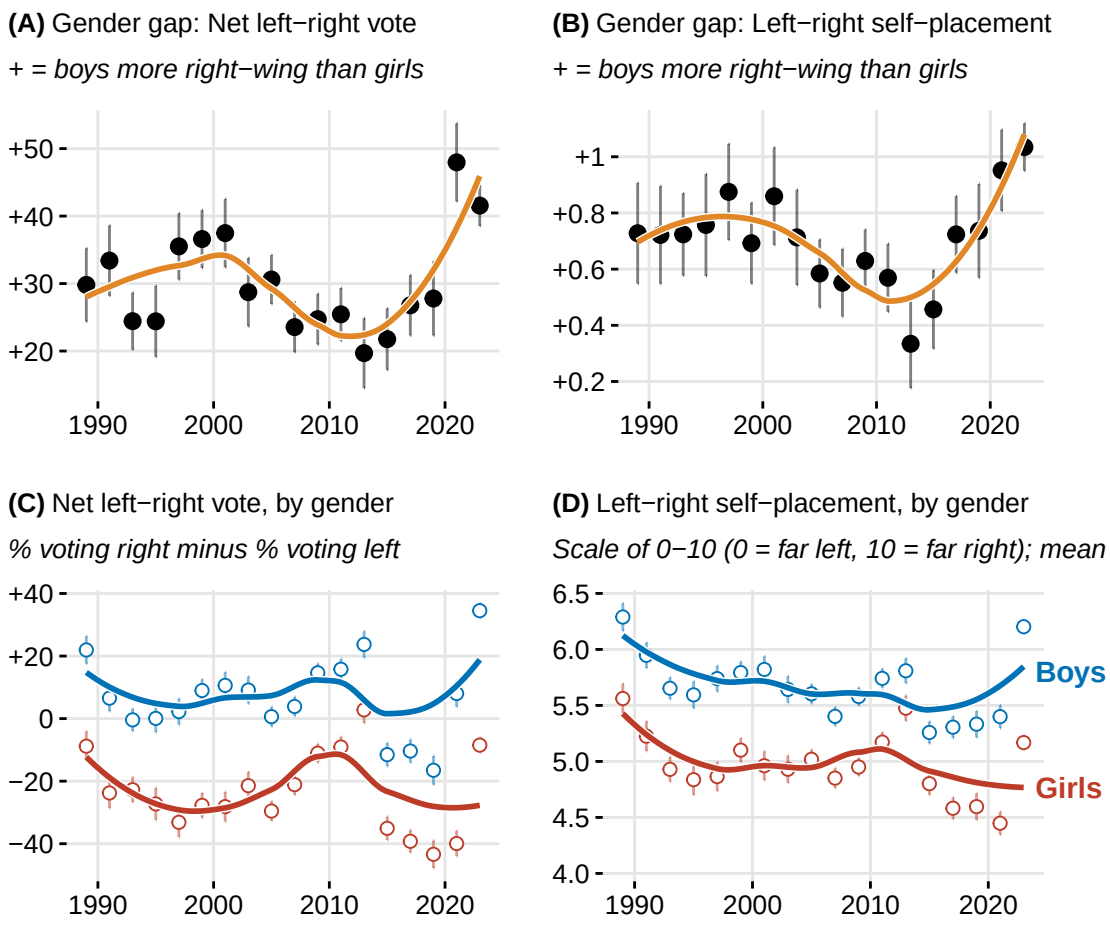

Figure 2: Ideological Gender Gap in High Schools

Note: Point estimates with 95 percent confidence intervals. Panel A simply shows the difference between the lines for boys and girls in Panel C, and Panel B does the same for Panel D.

boys, 2023 is their most right-skewed year on record in terms of voting, and the second most right-skewed year on left-right self-placement (only marginally surpassed by 1989 during the 80's right-wing wave).

Which parties are the boys and girls voting for? Table 2 provides an overview of how boys and girls used to vote (2011-2019) and how they have voted in the last two elections (2021-2023). What is immediately apparent is that the recent right-wing shift among the boys is driven not by the traditional conservative party (who in fact saw a slight decline over time), but by the radical-right (which is now, by substantial margin, the largest party).

Table 2: Vote Distribution for Boys and Girls over Time

	Boys (%)			Girls (%)		
	2011-2019	2021-2023	Diff.	2011-2019	2021-2023	Diff.
Right-wing						
Conservative	20.0	18.9	-1.1	17.7	15.8	-1.9
Radical Right	16.6	27.4	+10.8	9.1	8.6	-0.5
Extreme Right	*0.3	1.9	+1.6	*0.2	0.1	-0.1
Left-wing						
Labor	25.5	17.2	-8.3	32.6	24.6	-8.0
Socialist	5.0	5.3	+0.3	9.4	16.7	+7.3
Communist	4.3	2.9	-1.4	4.3	2.7	-1.6
Greens	3.9	2.3	-1.6	7.0	4.7	-2.3
Other	24.6	24.1	-0.5	19.8	26.7	+6.9

Note:
The table shows average vote shares (adjusted with post-stratification weights) for different party families among high school boys and girls in different periods, with years in those periods weighted equally. *This estimate for the extreme right represents only 2019 as there is no data for other years in this period (however, election results data show that the extreme right party Alliansen did run in 2017 and recieved 0.9 percent of the combined girl/boy vote).

The other significant development among the boys is the growth of the extreme right party *Alliansen* (from 0.3% to 1.9%) — a party with ties to the Norwegian neo-Nazi scene.[10] In stark contrast, both the radical right and extreme right lost ground among the girls over the same period, who increasingly voted for the socialist party.

Decomposing the Recent Polarization

Why has polarization between high school boys and girls increased in the rapid fashion documented above? The hypothesis examined here is that it has done so largely because of rising disagreement about the issue of gender equality. Before testing this proposition, it is helpful to recall that, in general, for a variable to account for rising polarization between the genders, it must satisfy three criteria from a statistical point of view: (1) the variable must itself have a gender gap; (2) the variable must be related to ideology; and (3) either nr. 1 or nr. 2 (or both) must have increased over time. In other words, a variable might be a strong predictor of ideology (e.g. views about privatization), but this matters little if there is no gender gap. And, even if there is a gender gap, either that gap or the strength of the variable's relationship with ideology must have changed over time in order for it to help explain an over-time change in polarization. This is a tall order, and as we shall see below, only a few of the attitudinal variables measured by the NSES fit the bill—most of all, views about gender equality.

Four times over the past 30 years, respondents in the NSES were asked the following question about gender equality:

> In recent years, great emphasis has been placed on creating equality between women and men. Would you say that gender equality should be continued, has

[10]The leader of Alliansen has stated that he agrees with much of the ideology of Anders Behring Breivik (who committed the 2011 Terrorist Attack). They received only 0.1% of the vote in the regular 2021 parliamentary election. See https://filternyheter.no/filter-avslorer-slik-kobler-alliansen-tenaringer-med-nynazister-i-valgkampen/ and https://valgresultat.no/valg/2021/st, accessed 24 June 2024.

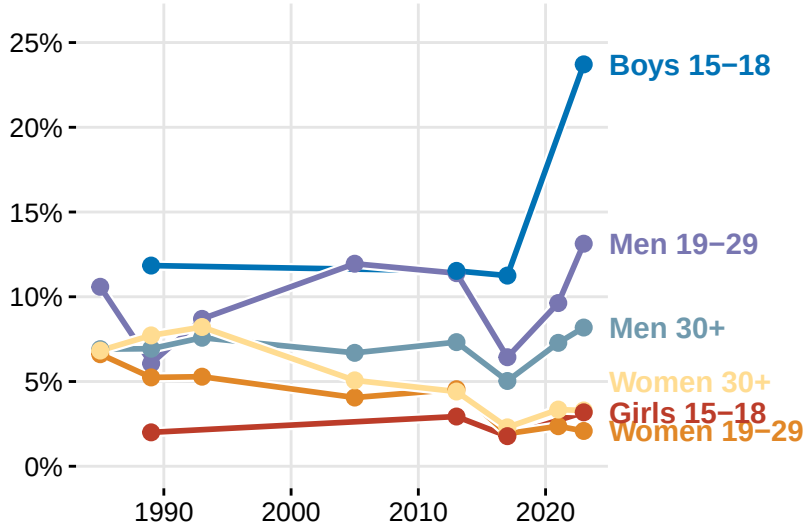

Figure 3: Percentage who think 'gender equality has gone too far', over time

it gone far enough, has it gone too far, or do you have no opinion on this matter?

This same question has also been asked on multiple occasions in the regular NES, allowing for comparison between answers among high school students and the general population.

Figure 3 shows the percentage of respondents in six gender-age groups who answered that gender equality has "gone too far", over time. For more than 30 years, this was a fringe attitude across all the groups. Although more common among boys/men than girls/women, the opinion was held by no more than 12% in any of the groups at any point in time in the period 1985-2021. Then, in 2023: a clear shift among high schools boys. A full 24% now expressed this kind of opposition to gender equality—more than double what it was in 2017. Meanwhile, all the other gender-age groups were still below 12% (with high schools girl at 3%). To be sure, the idea that gender equality has "gone too far" has also gained traction lately among adult men, but not nearly as much as among boys.[11]

[11]The dip for all adult groups in 2017 is likely related to the #MeToo movement that year. The reason that there is no noticeable dip for high school boys might be because all interviews that year were conducted in the period 30 August - 9 September, before the #MeToo news story broke in October. Meanwhile, the general NES was conducted in the period 12 September - 31 December, with many of the interviews after #MeToo.

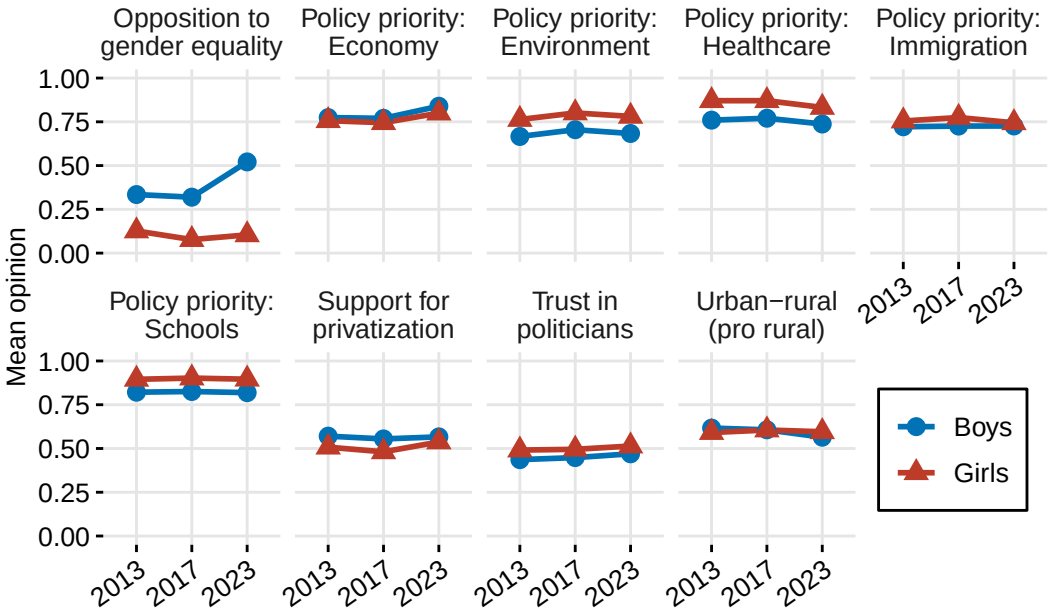

Figure 4: Comparison of boys and girls on different opinion variables over time

Note: All variables are rescaled from their original scales to range from 0 to 1.

The suspicion that the recent gender-polarization is linked to the issue of gender equality is bolstered by the evidence presented in Figure 4. This figure depicts the size and over-time change of gender gaps on all political opinion variables that have been measured over time in the NSES. In addition to views about gender equality, they capture several factors plausibly related to the recent polarization, including: how important different issues were for the respondent's vote choice (economy, health care, environment, schools, and immigration); views about privatization of public services; views about whether central authorities in the capital pay too little attention to other parts of the country (the urban-rural dimension); and trust in politicians. To simplify comparisons, all the variables have been rescaled from their original scales to range from 0 to 1. So for example, the gender equality variable takes the value 1 for gender equality "gone too far", 0.5 for "gone far enough" and 0 for "gender equality should be continued".[12]

[12]The questions about issue importance (translated from Norwegian) reads: "Can you indicate how impor-

Table 3: Relationship between opinions and voting

	Dependent variable: Net right-wing vote		
	2013	2017	2023
Opposition to gender equality	0.003 (0.022)	0.095 (0.020)	0.087 (0.015)
Policy priority: Economy	0.069 (0.022)	0.104 (0.020)	0.172 (0.013)
Policy priority: Environment	−0.146 (0.023)	−0.174 (0.020)	−0.217 (0.014)
Policy priority: Healthcare	0.002 (0.025)	−0.003 (0.022)	−0.037 (0.014)
Urban-rural (pro rural)	0.013 (0.021)	0.046 (0.018)	−0.072 (0.013)
Policy priority: Schools	0.006 (0.025)	−0.100 (0.022)	−0.005 (0.014)
Policy priority: Immigration	0.037 (0.022)	0.059 (0.019)	−0.040 (0.013)
Trust in politicians	−0.015 (0.022)	0.032 (0.018)	0.020 (0.013)
Support for privatization	0.332 (0.021)	0.240 (0.018)	0.236 (0.012)
Constant	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
R2 Adj.	0.193	0.195	0.291
Num.Obs.	1933	2588	4938

Note:
Ordinary least squares paramater estimates with standardized regression coefficients (standard errors in parentheses). The models include fixed effects for study program, region, parental education, and immigrant background. See Appendix Section 1 for details about these variables.

Figure 4 demonstrates two important points. First, compared with the other issues, gender equality is the issue where boys and girls hold the most dissimilar opinions. Second, it is also the variable that has seen the largest gender gap *increase* among the ones examined here. The other variables either show modest gender gaps in the first place, little divergence over time, or both. These results suggest that the gender equality issue has the most potential to account for over-time changes in ideological polarization—if such views are related to ideology.

The degree to which different issues are related to ideology is investigated in the fixed-effects regression models reported in Table 3. Here, the dependent variable is net left-right

tant the following issues are to your choice of party?" (originally a 4-point answer scale from "not important at all" to "very important"). The question about privatization: "Many public activities could be carried out both better and cheaper if they were left to the private sector." (5-point answer scale from "completely disagree" to "completely agree"). And the urban-rural question: "Where would you place yourself on a scale from 0 to 10, where 0 means that central authorities in Oslo pay too little attention to other parts of the country, while 10 means that central authorities in Oslo pay too much attention to other parts of the country?" (this was reversed to that 1 is most pro-rural).

vote (higher values indicating right-wing voting), which is regressed on the same opinion variables as those explored in Figure 4. The first column of Table 3 suggests that views on the gender equality issue used to be unrelated to whether teens voted left-wing or right-wing in the school elections. The standardized regression coefficient of 0.003 in 2013 is about as close to zero as one can get. However, by 2017 the association had grown to a coefficient of 0.095, and fell only slightly, to 0.087, in 2023. The positive sign indicates that respondents who are skeptical of gender equality vote more right-wing. The standardized effect size ranks in the middle of the bunch among the opinion variables. Within the context, the effect size appears to be substantial, representing about 40% of the effect of views about privatization—a quintessential left-right issue in Norwegian politics. Additional analyses reported in Appendix Tables A10 and A11 present parallel models for boys and girls. They show similar coefficients on the gender equality variable for 2013 and 2017, but a stronger association for boys than girls in 2023.

The fact that the last decade has seen a large and increasing gender gap on the issue of gender equality (Figure 3), coupled with the transformation of this issue from non-ideological to clearly ideological (Table 3), suggests that the issue at least partially explains the increased ideological polarization between boys and girls evident over the same period of time. Using Kitagawa-Oaxaca-Blinder Decomposition (KOB), we can quantify the explanatory power of this issue (as well as all the other variables) in accounting for the increased polarization. Table 3 reports the results from running the decomposition analysis for the years 2013, 2017 and 2023, using the familiar set of opinion variables, as well as the background variables (not shown here) to account for possible changes in the composition of boys and girls as groups. The estimates in Table 3 show for each predictor (for a given year) how many percentage points of the left-right gender gap disappears if we impute the same mean value for girls and boys. Negative numbers indicate that the gender gap would be even larger than it actually is if means were the same.

The third column of Table 3 shows that in 2023, it was indeed diverging views about

Table 4: Kitagawa-Oaxaca-Blinder Decomposition of Ideological Polarization Among High Schoolers

	2013	2017	2023	Difference (2013-2023)	Share of increase
Raw gender gap (left-right voting)	23.0	28.2	41.1	18.1	100%
Portion of total gap					
Views about gender equality	0.2 (1.4)	5.8 (1.4)	9.3 (1.4)	9.1	50%
Policy priority: Economy	1.0 (0.5)	1.1 (0.4)	6.4 (0.6)	5.4	30%
Unexplained portion	3.8 (4.9)	6.5 (3.5)	6.9 (2.5)	3.1	17%
Policy priority: Environment	5.3 (0.9)	5.0 (0.7)	8.0 (0.7)	2.7	15%
Policy priority: Healthcare	-0.1 (1.2)	0.1 (0.9)	2.1 (0.6)	2.2	12%
Views about urban-rural relation	0.1 (0.2)	0.1 (0.1)	1.1 (0.3)	1.0	6%
Policy priority: Schools	-0.2 (0.8)	3.1 (0.7)	0.1 (0.5)	0.3	2%
Policy priority: Immigration	-0.3 (0.3)	-0.7 (0.3)	0.0 (0.1)	0.3	2%
Trust politicians	0.3 (0.5)	-0.3 (0.2)	-0.3 (0.2)	-0.6	-3%
Views about privatization	7.5 (1.3)	6.7 (1.0)	4.7 (0.6)	-2.8	-15%

Note:
Bootstrap standard errors in parentheses. Study program, country region, parental education and immigrant background are included in the model as sets of dummy variables, but not shown here. Full results are reported in Appendix Table A7.

gender equality that accounted for the largest portion of the gender gap in voting. The model estimates that the raw gender gap in net left-right vote (41.1 points) would be 9.3 points lower (or 23 percent) if boys and girls had the same mean value on this variable. More importantly, this portion of the gender gap has grown from a meager 0.2 points, meaning that its contribution to the gender gap has increased by 9.1 points over time. This change represents a full 50 percent of the overall increase in the gender gap (18.1 points) over the same decade.

The next-best explanation is the importance of economic issues for the vote (with boys increasingly emphasizing the economy), which explains 30 percent of the increased gender gap. Other factors account for 15 percent or less. Attitudes towards privatization of public services used to be the main factor explaining the gender gap in 2013. Yet, the contribution of this variable has only diminished over time—because of the opinion convergence between boys and girls on that particular issue shown in Figure 4. Had this counter-trend not happened, the model estimates that the gender gap would have increased an additional 2.8 points from 2013 to 2023.

Appendix Table A8 repeats the decomposition analysis using left-right self-placement instead of left-right voting as the outcome of interest. In this analysis, views about gender equality account for 42 percent of the time trend, which is the largest contribution of any of the variables in the model.

As was shown back in Figure 1, gendered polarization in Norwegian high schools has been relatively high also in the past—not at the current level, but certainly higher than it was in 2013. To check whether views about gender equality also can account for past episodes of polarization, we can decompose the gender gap in the year 1989. In that year, respondents in the NSES were asked the same question about gender equality, but a different set of questions about other issues. With this discrepancy in mind, the analyses reported in Appendix Table A9 show a relatively high gender gap (at 35.9 points). But only a small fraction of this gap (2.3 points, or 6 percent) is attributable to the gender equality issue. In

other words, while there certainly has been high levels of teen polarization before, it is not well-explained by the gender equality issue—unlike the present-day polarization.

Discussion: Polarization Driven by Anti-Feminism?

My analysis has documented an unprecedented rise in ideological polarization between teenage boys and girls in Norway between 2013 and 2023. This polarization appears to be largely attributable to the fact that boys have become increasingly skeptical towards gender equality, producing an ideologically potent disagreement with the girls. In combination with the fact that such views have become increasingly associated with right-wing voting, the gender equality issue accounts for 40-50 percent of the increased polarization. It is tempting to interpret the results as polarization being *driven* by this issue. Yet, such an inference hinges on a causal interpretation of the issue coefficients reported in Table 3. Are these coefficients likely to reflect the causal impact of issues on vote choice, or something else?

While we lack the data necessary to produce direct causal evidence, the fact that my statistical models control for multiple other attitudinal variables relevant for the vote, and includes fixed effects for a number of background variables, does eleviate some of the concern about omitted variable bias. The greater threat to causal inference in my case is arguably that of reversed causality. Scholars since the 1970's have noted that correlations between issue positions and vote choice (even after controls) do not necessarily imply "issue voting", but could very well reflect a process in which citizens first choose (or are socialized into) their party allegiance, and afterwards learn the issue positions they are "supposed to have" as supporters of the party (Brody and Page 1972; Achen and Bartels 2017). There is an ongoing empirical debate about the direction of the causal arrow (e.g. Ansolabehere, Rodden, and Jr 2008; Lenz 2012; Barber and Pope 2019), hampered by the challenge noted by Lenz (2012) that in most cases, the two mechanisms are observationally equivalent. While this

is certainly a relevant point in my case as well, there are ways to shed some light on the direction of causality.

The most obvious—albeit naive—approach would be to simply ask the high-schoolers which factor was most important for their vote choice. This sort of question has been put to the respondents in the NSES several times, allowing them to choose between "your position on one or more political issues", "your general attitudes towards a political party", or "your perception of a certain politician". The distribution of answers has been quite stable over time with around half choosing issues, a third choosing general attitudes towards the party, and the rest choosing their perception of a politician (in 2023, the distribution was 50-37-13% respectively). Taken at face value, these responses suggest that the voting behavior of the students are chiefly decided by issue positions. But of course, this assumes both that students know what influenced their decision—which might not be obvious; and that they answered the question in an unbiased way—which might not be realistic.

We can do a more elaborate test of the causal direction by exploiting the timing of the students' decision of whom to vote for in the school elections. As has been documented in other contexts (Willocq 2019), the share of teens who postpone the decision until late in the campaign has increased steadily over time. In 2023, half of all respondents in the NSES (49 percent) said that they decided on election day (with 18 percent deciding inside the polling station). On the other hand, 15 percent said that they had "always supported one party". For my purposes here, an important difference between these two groups is that the teens who decided on election day obviously had much less time to learn about and adopt the positions and priorities of their party after their decision, compared to those who have "always" had their party allegiance.[13] Therefore, to the degree to which the associations I estimate between political opinions and votes reflect the students being "persuaded" by their preferred party, the relationships should be stronger for the "always supported"-group (who has had ample time to be molded into loyal partisans), than for the election day group.

[13]Data collection for the NSES is conducted over a 1-2 month period starting directly after the school elections.

Table 5: The gender equality issue and left-right voting, by timing of voter decision

	Dependent variable: Net right-wing vote		
	2013	2017	2023
Decided on election day			
Opposition to gender equality	-0.052 (0.045)	0.044 (0.038)	0.084 (0.026)
Controls and fixed effects	Yes	Yes	Yes
R2 Adj.	0.064	0.080	0.180
R2 Adj. (opinions only)	0.027	0.051	0.122
Num.Obs.	543	839	1957
Always supported party			
Opposition to gender equality	0.066 (0.043)	0.191 (0.041)	0.094 (0.034)
Controls and fixed effects	Yes	Yes	Yes
R2 Adj.	0.368	0.355	0.446
R2 Adj. (opinions only)	0.314	0.288	0.387
Num.Obs.	427	503	899

Note:
Ordinary least squares paramater estimates with standardized regression coefficients (standard errors in parentheses).

Sure enough, Table 5 shows that the statistical associations are generally stronger for those who always supported the party. Within this group, the political opinion variables accounted for about 39 percent of the variation in left-right voting—in contrast with only 12 percent for those who decided on election day. This would suggest a substantial amount of persuasion going on. Yet, the gender equality issue does not follow the same pattern—at least not in 2023, when polarization was high. For this year, the standardized coefficient for opposition to gender equality was 0.084 for the election day deciders—only slightly lower than the 0.094 for the long-term supports (and given the standard errors, we cannot say for certain that it was different at all). Even more importantly, the *rise* of this coefficient over time—part of the reason for the high percentage attributed the gender equality issue in my decomposition analysis—does not appear to be driven by the long-term supporters. In fact, the election day-deciders saw a larger increase in this coefficient over time (from -0.052 in 2013 to 0.086 in 2023, compared with 0.066 to 0.094 for the other group). These results suggest that although in general, links between political opinions and left-right voting might be largely explained by parties persuading their supporters, this does not appear to be the case with views about gender equality.

Future research—perhaps employing experimental methods—could presumably test more directly the extent of a causal effect. In the meantime, it seems reasonable to suppose that the association estimated here between views about gender equality and left-right voting at least partially reflect the causal impact of opinions on votes. Consequently, the evidence taken as a whole would suggest that the growing anti-feminism among teenage boys has partially driven the recent gender-polarization in ideology.

It is important to highlight that this finding does not imply that views about gender equality are now the main political issue that teenage boys and girls care about. In fact, when we look at the predictors of left-right ideology (either pooled, or for boys and girls separately), gender equality is trumped by issues such as privatization, the environment and the economy. Yet on those issues, boys and girls look remarkably similar, both in terms

of opinions and the electoral relevance of those opinions—meaning that they are of limited help in accounting for gender *differences* in ideology. What makes the gender equality issue such a powerful explanation for the growing polarization is the substantial and increasing divergence in attitudes between boys and girls.

It remains to be seen whether the broad ideological shifts documented here among Norwegian teens will linger or disappear over time. On one hand, teenagers are in their formative years and thus the values they develop in this period is likely to shape their world-views and political behavior into adulthood. If so, the gender-based polarization we are witnessing among teenagers could be foreshadowing a deep ideological divide that will characterize the future electorate as generational replacement proceeds. On the other hand, people typically moderate radical attitudes as they grow older, suggesting that the teenagers of today need not be as polarized as they are now throughout adulthood. Additionally, the rather sudden spike in polarization among Norwegian boys and girls is, for now, only observable in two elections (2021 and 2023). If this development turns out to be a temporary fluke, its long-term political consequences might be more limited.

The empirical analysis presented here raises several important questions for future research. For one, it is unclear why teenage boys both in Norway and elsewhere seem to have become increasingly critical of gender-equality and feminism. Potential explanations are many—including anti-feminist online influencers, backlash against the #MeToo movement, or backlash against women's rights in general—and it will be a challenge to disentangle their causal effect from each other. Yet, this seems like a worthwhile endeavor given the political consequences of such attitudes documented in the present study.

Finally, it is an open question how the results would look in other contexts. Has other Western countries experienced the same sort of rapid polarization among its teens as Norway has? One one hand, Norway's achievements on gender equality would seem to make it a "least likely case" for an anti-feminism-driven polarization—suggesting that other countries could potentially have even more polarization. On the other, if there is a sort of backlash

effect going on, then Norway's achievements in this area might be precisely the reason for the polarization—which would suggest less extraordinary results in other, less gender-equal, contexts.

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Appendix

Methodological details

Left-right self-placement variables in the regular National Election Survey

The National Election Survey (NES) has used slightly different answer scales over the years when asking respondents to place themselves on a left-right scale. For example, the extremes of the scale vary between "left" vs. "right", "far-left" vs. "far-right", and "radical" vs. "conservative" (with an elaboration in the text that radical is on the left and conservative is on the right). Although these differences in formulation might have some unknown effect on responses, there is no reason to think that it would have different effects on men and women. Therefore, it does not seem problematic for drawing inferences about the gender gap in left-right orientation over time.

There are also slight variations over the years in the numbers scales used (e.g., 0-10, 1-9, 1-10). I harmonize these different scales by linearly transforming all to 0-10.

Adjusting ESS year-variable

All the data sources that make up the synthesized survey dataset for the general population have in common that they ask about actual voting behavior (i.e. "which party did you vote for in the last election?") in relation to either the national parliamentary elections or the local elections. However, the European Social Survey is the only data source that have asked this sort of question in non-election years. In my analyses that track polarization in voting behavior over time, this fact is accounted for by adjusting the year-variable for the ESS so that instead of the year of survey implementation, the year-value refers to the election-year that was asked about in the survey.

Background variables in the National School Election Survey

The following are the questions and recoding procedures for the background variables that are used in the analyses covering the years 2013, 2017 and 2023.

Study program: Question: "What educational program are you attending?" The 2013 and 2023 data files provides exact program, while 2017 only provides a broader categorization. Therefore, I harmonize the data by applying the 2017 categorization to the data for the other two years. The five categories are (1) *Specialization in general studies*; (2) *Gym and arts*; (3) *Vocational: Construction, electro, etc.*; (4) *Vocational: Design, health, etc.*; (5) *Vocational: Farming, restaurants, service, etc.*

Country region: Regional categorizations vary over the years and only the 2023 data files contain the country name. I harmonize the data by using the most granular common denominator. This yields the following categories: (1) *East*; (2) *South*; (3) *West*; (4) *Central*; (5) *North*.

Parental education: Question: "What is the education level of your parent/guardian with the highest level of education?" (1) *Elementary*; (2) *High school, vocational*; (3) *High school, general*; (4) *University/college*.

Immigrant background: Question: "Do you have an immigrant background?" (1) *No*; (2) *Yes, from a country in Western Europe/North America*; (3) *Yes, from another part of the world*.

Additional results

Table A7: KOB-Decomposition of Ideological Polarization Among High Schoolers, full results

	2013	2017	2023	Difference (2013-2023)	Share of increase explained

Raw gender gap (left-right voting)	23.0	28.2	41.1	18.1	100%
Views about gender equality	0.2 (1.3)	5.8 (1.3)	9.3 (1.5)	9.1	50%
Policy priority: Economy	1.0 (0.4)	1.1 (0.4)	6.4 (0.7)	5.4	30%
Unexplained portion	3.8 (4.3)	6.5 (3.9)	6.9 (2.4)	3.1	17%
Policy priority: Environment	5.3 (1.0)	5.0 (0.8)	8.0 (0.8)	2.7	15%
Policy priority: Healthcare	-0.1 (1.3)	0.1 (0.9)	2.1 (0.6)	2.2	12%
Views about urban-rural relation	0.1 (0.2)	0.1 (0.2)	1.1 (0.2)	1.0	6%
regionEast	-0.1 (0.3)	-0.2 (0.3)	0.4 (0.3)	0.5	3%
edu_programVocational: Farming, restaurants, service, etc.	-0.2 (0.3)	0.0 (0.1)	0.2 (0.2)	0.4	2%
immigrantYes, from other parts of the world	0.2 (0.5)	0.3 (0.4)	0.6 (0.4)	0.4	2%
Policy priority: Schools	-0.2 (0.8)	3.1 (0.8)	0.1 (0.4)	0.3	2%
Policy priority: Immigration	-0.3 (0.3)	-0.7 (0.3)	0.0 (0.1)	0.3	2%
parents_eduHigh school, general	0.0 (0.2)	0.1 (0.3)	0.2 (0.2)	0.2	1%
regionSouth	-0.1 (0.4)	0.2 (0.4)	0.0 (0.1)	0.1	1%
regionNorth	0.0 (0.1)	0.1 (0.1)	0.0 (0.1)	0.0	0%
parents_eduUniversity/college	0.2 (0.5)	0.0 (0.3)	0.1 (0.3)	-0.1	-1%
regionWest	0.0 (0.1)	0.0 (0.3)	-0.1 (0.1)	-0.1	-1%
parents_eduHigh school, vocational	-0.3 (0.5)	0.0 (0.2)	-0.4 (0.2)	-0.1	-1%

immigrantYes, from Western Europe/North America	0.0 (0.1)	-0.3 (0.2)	-0.2 (0.1)	-0.2	-1%
Trust politicians	0.3 (0.4)	-0.3 (0.2)	-0.3 (0.2)	-0.6	-3%
edu_programSpecialization in general studies	-0.1 (0.8)	-2.2 (0.7)	-1.1 (0.3)	-1.0	-6%
edu_programVocational: Design, health, etc.	-0.3 (1.5)	-0.6 (0.8)	-1.5 (0.5)	-1.2	-7%
edu_programVocational: Construction, electro, etc.	6.3 (2.9)	3.3 (1.9)	4.7 (0.7)	-1.6	-9%
Views about privatization	7.5 (1.5)	6.7 (1.0)	4.7 (0.6)	-2.8	-15%

Note:

Bootstrap standard errors in parentheses.

Table A8: KOB-Decomposition of Ideological Polarization Among High Schoolers (left-right self-placement as DV)

	2013	2017	2023	Difference (2013-2023)	Share of increase
Raw gender gap (left-right voting)	0.504	0.734	1.164	0.660	100%
Views about gender equality	0.130	0.156	0.406	0.276	42%
	(0.035)	(0.042)	(0.043)		
Unexplained portion	-0.086	0.198	0.066	0.152	23%
	(0.128)	(0.109)	(0.066)		
Policy priority: Environment	0.170	0.130	0.272	0.102	15%
	(0.029)	(0.021)	(0.023)		

Policy priority: Economy	0.040	0.045	0.133	0.093	14%
	(0.016)	(0.013)	(0.016)		
Policy priority: Healthcare	-0.034	0.009	0.052	0.086	13%
	(0.030)	(0.025)	(0.017)		
Views about urban-rural relation	-0.007	-0.007	0.054	0.061	9%
	(0.007)	(0.009)	(0.011)		
parents_eduUniversity/college	-0.012	-0.019	0.003	0.015	2%
	(0.019)	(0.024)	(0.005)		
edu_programVocational: Farming,	-0.010	0.001	0.003	0.013	2%
restaurants, service, etc.	(0.009)	(0.004)	(0.004)		
immigrantYes, from other parts of	0.002	0.013	0.013	0.011	2%
the world	(0.011)	(0.009)	(0.009)		
immigrantYes, from Western	-0.012	-0.001	-0.004	0.008	1%
Europe/North America	(0.007)	(0.004)	(0.003)		
regionEast	0.001	-0.001	0.009	0.008	1%
	(0.006)	(0.004)	(0.007)		
edu_programVocational: Design,	-0.037	-0.012	-0.030	0.007	1%
health, etc.	(0.038)	(0.026)	(0.012)		
parents_eduHigh school, general	-0.001	0.009	0.005	0.006	1%
	(0.007)	(0.013)	(0.006)		
Policy priority: Immigration	-0.005	-0.033	0.000	0.005	1%
	(0.007)	(0.011)	(0.001)		
edu_programSpecialization in	-0.038	-0.043	-0.034	0.004	1%
general studies	(0.020)	(0.018)	(0.009)		
regionNorth	-0.002	0.000	0.001	0.003	0%
	(0.006)	(0.003)	(0.002)		

regionSouth	-0.002	0.006	-0.002	0.000	0%
	(0.004)	(0.007)	(0.003)		
parents_eduHigh school,	-0.004	0.003	-0.006	-0.002	0%
vocational	(0.015)	(0.011)	(0.006)		
Trust politicians	-0.005	-0.023	-0.010	-0.005	-1%
	(0.011)	(0.010)	(0.005)		
regionWest	0.000	0.002	-0.007	-0.007	-1%
	(0.004)	(0.006)	(0.007)		
Policy priority: Schools	0.009	0.050	-0.001	-0.010	-2%
	(0.021)	(0.024)	(0.014)		
Views about privatization	0.214	0.262	0.153	-0.061	-9%
	(0.041)	(0.030)	(0.023)		
edu_programVocational:	0.194	-0.011	0.088	-0.106	-16%
Construction, electro, etc.	(0.070)	(0.045)	(0.020)		

Note:

Bootstrap standard errors in parentheses.

Table A1: Survey datasets used in the paper (entries are numbers of respondents

	High-schoolers	General population			
Year	School Election Surveys	National Election Surveys	Local Election Surveys	European Social Survey	School Election, National Survey
1957		1527			
1965		1623			
1969		1589			
1973		2389			
1977		1700			
1981		1596			
1985		2180			
1989	4273	2195			
1991	5048				
1993	7446	2194			
1995	4973		3036		
1997	5445	2055			
1999	7424		3191		
2001	5161	2329			
2002				1937	
2003	5039		2724	71	
2004				1674	
2005	9758	2005		20	
2006				1669	
2007	9857		2627		
2008				1455	
2009	9714	1777		26	
2010				1301	
2011	9432		1773	173	
2012				1374	
2013	5073	1982		172	
2014				1365	
2015	6726		1342		
2016				1477	
2017	6712	1966		2	
2018				581	
2019	4732		4208	740	
2021	4473	1840		1078	
2022				270	
2023	16055			1283	1000

Table A2: Full regression results for voting behaviour

Dependent variable: Net Left-Right Vote (-100:100)			
	2013-2016	2017-2020	2021-2023
Male (vs. female)	21.043 (1.796)	27.225 (1.711)	42.735 (1.342)
	p = <0.001	p = <0.001	p = <0.001
Age 19-29 (vs. 15-18)	5.936 (4.696)	3.914 (4.012)	−19.049 (5.953)
	p = 0.206	p = 0.329	p = 0.001
Age 30+ (vs. 15-18)	7.188 (2.349)	28.176 (2.033)	0.220 (2.491)
	p = 0.002	p = <0.001	p = 0.930
Age 19-29 x Male	1.267 (6.858)	−0.150 (5.734)	−23.341 (8.306)
	p = 0.853	p = 0.979	p = 0.005
Age 30+ x Male	−1.929 (3.326)	−11.950 (2.899)	−29.400 (3.510)
	p = 0.562	p = <0.001	p = <0.001
Intercept	−18.907 (1.254)	−42.422 (1.179)	−15.272 (0.926)
	p = <0.001	p = <0.001	p = <0.001
Num.Obs.	14 323	15 226	18 709
R2	0.015	0.036	0.057

Note:
OLS parameter estimates with standard errors in parentheses.

Table A3: Comparison of ideological polarization across age groups (left-right self-placement)

	2013-2016	2017-2020	2021-2023
Gender gap in net left-right vote in %-points			
High-schoolers (15-18y)	0.403 (0.052)	0.729 (0.054)	1.024 (0.036)
Young adults (19-29y)	0.490 (0.177)	0.774 (0.208)	0.361 (0.193)
Older adults (30y+)	0.467 (0.081)	0.448 (0.098)	0.397 (0.086)
High-schoolers vs. young adults			
Absolute difference	-0.088 (0.185)	-0.045 (0.215)	0.664 (0.196)
p-value	0.636	0.835	<0.001
Relative difference	-18%	-6%	+184%
High-schoolers vs. older adults			
Absolute difference	-0.064 (0.096)	0.281 (0.112)	0.627 (0.094)
p-value	0.503	0.012	<0.001
Relative difference	-14%	+63%	+158%
N respondents	13014	11519	21542

Table A4: Full regression results for left-right self-placement

Dependent variable: Left-right self-placement (0:10)			
	2013-2016	2017-2020	2021-2023
Male (vs. female)	0.403 (0.052)	0.729 (0.054)	1.024 (0.036)
	p = <0.001	p = <0.001	p = <0.001
Age 19-29 (vs. 15-18)	−0.112 (0.130)	−0.119 (0.152)	−0.385 (0.142)
	p = 0.387	p = 0.432	p = 0.007
Age 30+ (vs. 15-18)	0.141 (0.069)	0.624 (0.080)	−0.068 (0.067)
	p = 0.041	p = <0.001	p = 0.303
Age 19-29 x Male	0.088 (0.185)	0.045 (0.215)	−0.664 (0.196)
	p = 0.636	p = 0.835	p = <0.001
Age 30+ x Male	0.064 (0.096)	−0.281 (0.112)	−0.627 (0.094)
	p = 0.503	p = 0.012	p = <0.001
Intercept	5.098 (0.037)	4.588 (0.038)	4.980 (0.026)
	p = <0.001	p = <0.001	p = <0.001
Num.Obs.	13 014	11 519	21 542
R2	0.009	0.025	0.042

Note:
OLS parameter estimates with standard errors in parentheses.

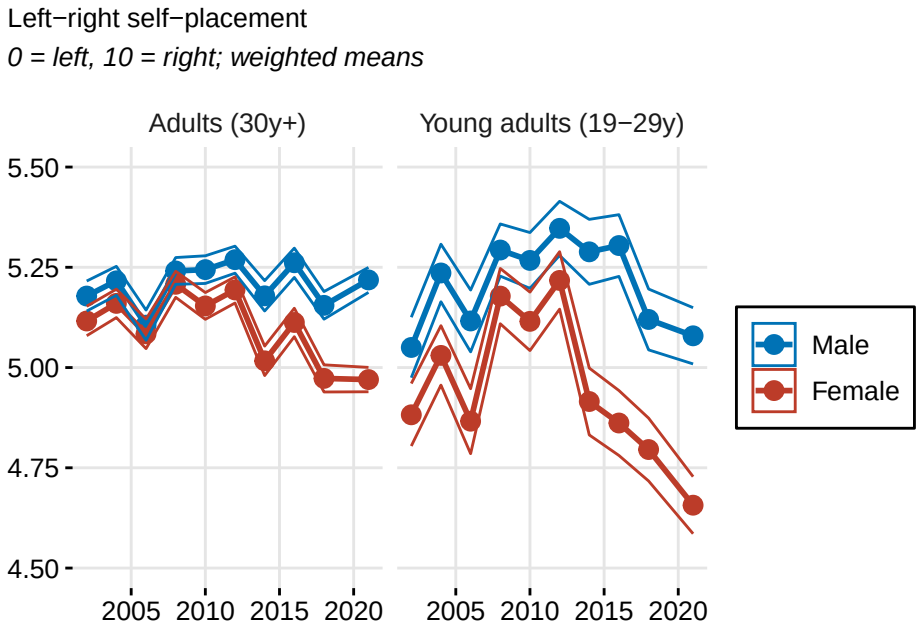

Figure A1: Ideological Polarization Between Men and Women in Europe

Table A5: Regression results for the period 2021-2023 with and without high-schoolers outside the 15-18 age range

	DV = Net left-right vote (-100:100)		DV = Left-right self-placement (0:10)	
	Full HS sample	Excluding pupils not 15-18	Full HS sample	Excluding pupils not 15-18
Male (vs. female)	42.735 (1.342)	43.582 (1.390)	1.024 (0.036)	1.054 (0.038)
	p = <0.001	p = <0.001	p = <0.001	p = <0.001
Age 19-29 (vs. HS)	−19.049 (5.953)	−19.338 (5.939)	−0.385 (0.142)	−0.393 (0.142)
	p = 0.001	p = 0.001	p = 0.007	p = 0.006
Age 30+ (vs. HS)	0.220 (2.491)	−0.069 (2.496)	−0.068 (0.067)	−0.077 (0.067)
	p = 0.930	p = 0.978	p = 0.303	p = 0.249
Age 19-29 x Male	−23.341 (8.306)	−24.188 (8.288)	−0.664 (0.196)	−0.693 (0.195)
	p = 0.005	p = 0.004	p = <0.001	p = <0.001
Age 30+ x Male	−29.400 (3.510)	−30.248 (3.519)	−0.627 (0.094)	−0.657 (0.094)
	p = <0.001	p = <0.001	p = <0.001	p = <0.001
Intercept	−15.272 (0.926)	−14.983 (0.959)	4.980 (0.026)	4.988 (0.027)
	p = <0.001	p = <0.001	p = <0.001	p = <0.001
Num.Obs.	18 709	17 613	21 542	20 120
R2	0.057	0.060	0.042	0.044

Note:
OLS parameter estimates with standard errors in parentheses.

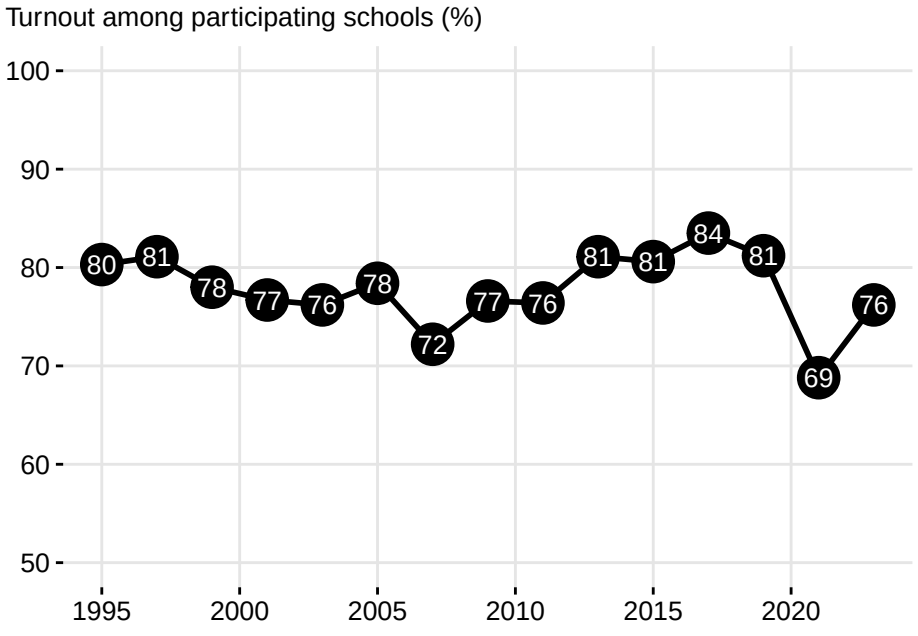

Figure A2: Turnout in School Elections over Time

Table A6: Regression results for the period 2017-2020 with and without high-schoolers outside the 15-18 age range

	DV = Net left-right vote (-100:100)		DV = Left-right self-placement (0:10)	
	Full HS sample	Excluding pupils not 15-18	Full HS sample	Excluding pupils not 15-18
Male (vs. female)	27.225 (1.711)	28.875 (2.322)	0.729 (0.054)	0.734 (0.072)
	p = <0.001	p = <0.001	p = <0.001	p = <0.001
Age 19-29 (vs. HS)	3.914 (4.012)	1.957 (4.195)	−0.119 (0.152)	−0.106 (0.155)
	p = 0.329	p = 0.641	p = 0.432	p = 0.493
Age 30+ (vs. HS)	28.176 (2.033)	26.220 (2.315)	0.624 (0.080)	0.637 (0.086)
	p = <0.001	p = <0.001	p = <0.001	p = <0.001
Age 19-29 x Male	−0.150 (5.734)	−1.800 (6.002)	0.045 (0.215)	0.040 (0.219)
	p = 0.979	p = 0.764	p = 0.835	p = 0.855
Age 30+ x Male	−11.950 (2.899)	−13.600 (3.316)	−0.281 (0.112)	−0.286 (0.121)
	p = <0.001	p = <0.001	p = 0.012	p = 0.019
Intercept	−42.422 (1.179)	−40.466 (1.598)	4.588 (0.038)	4.574 (0.051)
	p = <0.001	p = <0.001	p = <0.001	p = <0.001
Num.Obs.	15 226	11 113	11 519	7772
R2	0.036	0.033	0.025	0.027

Note:
OLS parameter estimates with standard errors in parentheses.

Table A9: Kitagawa-Oaxaca-Blinder Decomposition of Ideological Polarization Among High Schoolers in 1989

	Portion	Standard error
Raw gender gap (left-right voting)	35.9	
Portion of gap explained by ...		
Unexplained portion	13.5	3.3
Views about foreign aid	6.5	1.2
Views about business regulation	5.7	0.8
Views about immigration	3.3	0.8
Views about gender equality	2.3	1.0
Views about grades in school	1.9	0.5
Views about welfare	1.4	0.5
Views about environmental protection	1.2	0.4

Table A10: Separate regression models for boys and girls (voting as DV, standardized coefficients)

	Boys			Girls		
	2013	2017	2023	2013	2017	2023
Opposition to gender equality	0.025	0.101	0.107	−0.019	0.091	0.034
	(0.031)	(0.027)	(0.020)	(0.030)	(0.026)	(0.017)
Policy priority: Economy	0.068	0.121	0.146	0.068	0.084	0.204
	(0.031)	(0.029)	(0.020)	(0.033)	(0.027)	(0.018)
Policy priority: Environment	−0.106	−0.116	−0.207	−0.172	−0.238	−0.214
	(0.032)	(0.029)	(0.021)	(0.031)	(0.027)	(0.018)
Policy priority: Healthcare	0.014	0.006	−0.071	−0.015	−0.008	−0.011
	(0.034)	(0.031)	(0.021)	(0.035)	(0.030)	(0.018)
Urban-rural (pro rural)	0.023	0.059	−0.086	0.006	0.035	−0.061
	(0.031)	(0.027)	(0.019)	(0.030)	(0.026)	(0.018)
Policy priority: Schools	−0.065	−0.142	−0.007	0.076	−0.048	−0.005
	(0.034)	(0.031)	(0.021)	(0.035)	(0.030)	(0.018)
Policy priority: Immigration	0.065	0.085	0.017	0.010	0.035	−0.093
	(0.031)	(0.028)	(0.020)	(0.032)	(0.027)	(0.019)
Trust in politicians	−0.007	0.052	0.008	−0.026	0.006	0.033
	(0.031)	(0.027)	(0.019)	(0.031)	(0.026)	(0.017)
Support for privatization	0.348	0.242	0.235	0.309	0.234	0.244
	(0.030)	(0.027)	(0.019)	(0.030)	(0.026)	(0.017)
Constant	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R2 Adj.	0.184	0.180	0.261	0.194	0.171	0.238
Num.Obs.	979	1259	2191	954	1329	2747

Note:
Dependent variable is net left-right vote (-100-100), higher values indicating more right-wing. Standard errors in parentheses. On the different variables higher values indicate: Higher policy priority, more trust in politicians, more opposed to gender-equality, more in favor of privatization, and more pro-rural.

Table A11: Separate regression models for boys and girls (left-right self-placement as DV, standardized coefficients)

	Boys			Girls		
	2013	2017	2023	2013	2017	2023
Opposition to gender equality	0.120	0.094	0.139	0.039	0.076	0.086
	(0.029)	(0.026)	(0.018)	(0.030)	(0.026)	(0.016)
Policy priority: Economy	0.122	0.141	0.156	0.089	0.106	0.159
	(0.031)	(0.028)	(0.018)	(0.033)	(0.027)	(0.017)
Policy priority: Environment	−0.134	−0.098	−0.255	−0.175	−0.220	−0.238
	(0.031)	(0.028)	(0.018)	(0.031)	(0.027)	(0.017)
Policy priority: Healthcare	0.003	−0.010	−0.060	0.067	−0.005	−0.020
	(0.033)	(0.030)	(0.019)	(0.035)	(0.029)	(0.017)
Urban-rural (pro rural)	−0.025	−0.114	−0.129	−0.036	−0.074	−0.121
	(0.029)	(0.025)	(0.017)	(0.030)	(0.025)	(0.016)
Policy priority: Schools	−0.037	−0.064	−0.004	0.015	−0.049	0.008
	(0.033)	(0.030)	(0.019)	(0.035)	(0.029)	(0.017)
Policy priority: Immigration	0.040	0.128	0.054	0.032	0.058	−0.075
	(0.030)	(0.027)	(0.017)	(0.032)	(0.027)	(0.017)
Trust in politicians	0.034	0.062	0.010	−0.020	0.036	0.040
	(0.030)	(0.026)	(0.017)	(0.031)	(0.025)	(0.016)
Support for privatization	0.368	0.292	0.295	0.279	0.293	0.311
	(0.029)	(0.026)	(0.017)	(0.030)	(0.025)	(0.016)
Constant	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R2 Adj.	0.235	0.208	0.339	0.165	0.195	0.291
Num.Obs.	1014	1321	2598	985	1344	2989

Note:
Dependent variable is left-right self-placement (0-10), higher values indicating more right-wing. Standard errors in parentheses. On the different variables higher values indicate: Higher policy priority, more trust in politicians, more opposed to gender-equality, more in favor of privatization, and more pro-rural.

Table A12: Polarization is highest among the youngest teenagers

	Net Left-Right Vote (standard error)		
Age (years)	Girls/Women	Boys/Men	Difference
16	-18.3 (1.6)	29.6 (1.6)	47.9 (2.3)
17	-11.6 (1.6)	31.8 (1.6)	43.3 (2.2)
18	-15.5 (1.8)	20.9 (2.2)	36.4 (2.8)
19-29	-34.3 (5.9)	-14.9 (5.7)	19.4 (8.2)
30+	-15.1 (2.3)	-1.7 (2.3)	13.3 (3.2)

Note:
The table shows data for the 2021-2023 period.