Cross-Country Trends in Affective Polarization

Levi Boxell, Stanford University*
Matthew Gentzkow, Stanford University and NBER
Jesse M. Shapiro, Brown University and NBER

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Abstract

We measure trends in affective polarization in nine OECD countries over the past four decades. The US experienced the largest increase in polarization over this period. Three countries experienced a smaller increase in polarization. Five countries experienced a decrease in polarization. These findings are most consistent with explanations of polarization based on changes (e.g., the emergence of partisan cable news, growing racial divisions) that are more distinctive to the US, and less consistent with explanations based on changes (e.g., the emergence of the internet, rising economic inequality) that are more universal.

*E-mail: lboxell@stanford.edu, gentzkow@stanford.edu, jesse_shapiro_1@brown.edu. We thank Shanto Iyengar, Yphtach Lelkes, Matthew Levendusky, Neil Malhotra, and Sean Westwood for their comments and suggestions, as well as Dina Smeltz for sharing survey questionnaires. We also thank our many dedicated research assistants for their contributions to this project. We acknowledge funding from the Population Studies and Training Center and the JP Morgan Chase Research Assistant Program at Brown University, the Stanford Institute for Economic Policy Research (SIEPR), the Institute for Humane Studies, the John S. and James L. Knight Foundation, and the National Science Foundation (grant number: DGE-1656518).
1 Introduction

Affective polarization refers to the extent to which citizens feel more negatively toward other political parties than toward their own (Iyengar et al. 2019). Affective polarization has risen substantially in the US in recent decades (Iyengar et al. 2019). In 1978, the average partisan rated in-party members 27.0 points higher than out-party members on a “feeling thermometer” ranging from 0 to 100. In 2016 the difference was 45.9, implying an increase of .72 standard deviations in the 1978 distribution. Affective polarization may have important consequences, including reducing the efficacy of government (Hetherington and Rudolph 2015), increasing the homophily of social groups (Iyengar et al. 2012; Iyengar et al. 2019), and altering economic decisions (Gift and Gift 2015; Iyengar et al. 2019).

There is limited evidence on long-term trends in affective polarization in developed democracies other than the US. Cross-country comparisons are helpful in assessing why affective polarization has been rising in the US. Some explanations, such as the rise in partisan cable news (Levendusky 2013) or the increasingly strong association between race and party (Valentino and Zhirkov 2017), seem peculiarly American, while others, such as the rise of the internet and social media as sources of political information (Lelkes et al. 2017) or the rise in economic inequality (Payne 2017; Pearlstein 2018), are more universal. Determining whether the recent increase in affective polarization is specific to the US could help to adjudicate among these competing explanations.

In this paper, we present the first cross-country evidence on long-term trends in affective polarization, focusing on nine OECD countries over the past four decades. We find that the US exhibited the largest increase in affective polarization over this period. In three other countries—Canada, New Zealand, and Switzerland—polarization also rose, but to a lesser extent. In five other countries—Australia, Britain, Norway, Sweden, and (West) Germany—polarization fell. Focusing on the period after 2000, all countries except Germany and Switzerland exhibit a positive linear trend, and the trend in the US appears less distinctive.

We discuss the implications of our evidence for various potential explanations of the rise in affective polarization in the US. Some trends, such as the introduction of internet, rising economic inequality, and increasing immigration, have been similar in all or most of the countries in our

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1See also Kimball et al. (2018). Commentators expressing related concerns include Obama (2010), Blankenhorn (2015), and Drutman (2017). A 2018 survey shows that more than 70 percent of foreign policy opinion leaders consider political polarization a “critical threat” facing the US, ranking it above issues such as foreign nuclear programs (Smeltz et al. 2018).
sample, and no faster in the countries with rising affective polarization. Other trends, such as the rise of cable news and growing racial divisions, are more distinctive to the US, and receive more support as potential explanations in our data.

A limitation of the survey data that we analyze is that they are not perfectly comparable across countries or within a country over time. The set of years with available survey data differs across countries. Question wording and response scales differ across countries and, in some cases, across survey years for a given country. We include information about question wording and scale in our plots. Because the number and nature of political parties differ across countries and within countries over time, even identically structured survey questions may take on different meanings in different contexts. We analyze the sensitivity of our findings to restricting attention to the top two parties in each country and focusing on periods in which this pair of parties is stable. Our reading of the evidence is that our central conclusion—that the US stands out for the pace of the long-term increase in affective polarization—is not likely an artifact of data limitations.

Previous comparative work on affective polarization has been cross-sectional (e.g., Carlin and Love 2018; Westwood et al. 2018; Martini and Torcal 2019) or has relied on data from the Comparative Study of Electoral Systems (CSES) including a maximum of four survey modules per country beginning in 1996 (Reiljan Forthcoming; Gidron et al. 2019; Ward and Tavits 2019). An exception is work by Iyengar et al. (2012), who compare how individuals in the US and UK between 1960 and 2010 feel about their children marrying across party lines, finding larger increases in displeasure for the US. Among previous comparative work on non-affective dimensions of mass polarization, Draca and Schwarz (2018) use three waves of the World Values Survey and find that the US experienced the largest increase in ideological polarization among the 17 countries considered.\(^2\)

The remainder of the paper is organized as follows. Section 2 describes our data sources and measure of affective polarization. Section 3 presents our main findings and sensitivity analysis. Section 4 concludes and discusses implications for the possible causes of the recent rise in affective polarization in the US.

\(^2\)Some previous studies examine long-term trends in mass polarization in individual countries outside the United States, including Canada (Kevins and Soroka 2018), Germany (Munzert and Bauer 2013), Britain (Adams et al. 2012a, b), and the Netherlands (Adams et al. 2011). These studies do not report trends in affective polarization.
2 Data and measure of affective polarization

We use data from 1975 through 2017 for the US, Canada, Britain, Germany, Australia, New Zealand, Norway, Sweden, and Switzerland. We selected these countries because they each have an established democracy and a national public opinion survey with a long-standing tradition of asking affect-based questions for multiple parties. The set of survey years differs across countries. Appendix A.3 details the data sources and question wording for each country and survey year.

We extract each respondent’s party identification, and exclude “leaners” who only choose a party identification in response to a second survey prompt.

We extract a measure of each respondent’s affect towards the parties in her country. Questions about affect vary across surveys, commonly asking respondents how they feel towards a given party, how much they like the party, or to what extent they sympathize with the party. Numerical response scales also differ across surveys. We apply an affine transformation to the responses in each survey so that the minimum response is 0 and the maximum response is 100. We refer to the transformed response as the reported affect.

We also extract a survey weight associated with each respondent.

To define affective polarization, fix a given survey and let $\mathcal{P}$ denote the set of parties about which respondents are asked their affect. Let $\mathcal{N}$ denote the set of respondents who provide a valid party identification and a valid affect for their own party and at least one other party. For each respondent $i \in \mathcal{N}$, let $p(i) \in \mathcal{P}$ denote the party with which the respondent identifies and $\mathcal{P}_i \subseteq \mathcal{P}$ denote the set of parties for which respondent $i$ gives a valid response regarding affect. Let $A^p_i \in [0, 100]$ denote the reported affect of respondent $i$ towards party $p \in \mathcal{P}_i$. Finally, let $w_i \geq 0$ denote the survey weight of respondent $i \in \mathcal{N}$ and let $W(\mathcal{P}') = \sum_{i \in \mathcal{N}: p(i) \in \mathcal{P}'} w_i$ denote the weighted number of respondents in any set of parties $\mathcal{P}' \subseteq \mathcal{P}$, with $W(\mathcal{P})$ denoting the weighted number of respondents in $\mathcal{N}$.

Denote by $\pi_i$ the partisan affect of respondent $i$, defined as

$$\pi_i = \sum_{p' \in \mathcal{P} \setminus \{p(i)\}} \frac{W(p')}{W(\mathcal{P}_i) - W(p(i))} \left( A^p_i - A^{p'}_i \right).$$

Partisan affect $\pi_i$ reflects the extent to which respondent $i$ expresses a more favorable attitude towards her own party than towards other parties.

\[\text{Druckman and Levendusky (2019) study the interpretation of such questions.}\]
We define affective polarization $\Pi$ as the weighted average of respondents’ partisan affect:

$$
\Pi = \frac{1}{W (P)} \sum_{i \in N} w_i \pi_i.
$$

If there are two parties and all respondents state their affect towards both, then affective polarization $\Pi$ is the difference between weighted mean own-party affect and weighted mean other-party affect, as in Iyengar et al. (2019).\(^4\)

We obtain data on various potential explanatory variables at the level of the country and year from a range of sources that are detailed in Appendix A.5.

### 3 Comparison of trends in affective polarization

Figure 1 shows the time path of affective polarization in each of the nine countries that we study. Each plot depicts an estimated linear time trend and reports its slope and standard error. Plot markers indicate the response scaling in the original survey question. Appendix Figure 1 shows uniform confidence bands for the estimated affective polarization series. These bands do not contain the linear fit, indicating that the linear fit is rejected by the data and should therefore be taken only as a convenient summary of the average change, not as a complete description of the dynamics of the series.

Consistent with the existing evidence, Figure 1 shows that affective polarization grew rapidly in the US over the sample period. The estimated linear trend is 4.8 points per decade (se = 0.6). For comparison, the standard deviation in partisan affect in the base period of 1978 was 26.3.

Three other countries—Canada, Switzerland, and New Zealand—exhibit a smaller positive trend. Canada’s is the largest trend of the three, with a slope of 3.9 points per decade (se = 1.3). We cannot reject that the US and Canada ($p = 0.530$), that the US and Switzerland ($p = 0.562$), or that the US and New Zealand ($p = 0.088$) have equal slopes (see Appendix Table 1).

The remaining five countries—Australia, Britain, Norway, Sweden, and Germany—exhibit a negative trend. The trend is statistically significant in the case of Sweden and Germany. Germany exhibits the largest negative trend, equal to 4.0 points per decade (se = 0.3), which can be compared

\(^4\)In this case:

$$
\Pi = \frac{1}{W (P)} \left( \sum_{i \in N} w_i A^{p(i)}_i \right) - \frac{1}{W (P)} \left( \sum_{i \in N} w_i A^{P \setminus p(i)}_i \right).
$$
to a standard deviation in partisan affect in the base period of 1977 of 25.4. We can reject the equality of the slopes between the US and each of these countries (Australia, \( p < 0.001 \); Britain, \( p = 0.005 \); Norway, \( p < 0.001 \); Sweden, \( p < 0.001 \); Germany, \( p < 0.001 \)).

Focusing on the period after 2000, all countries except Germany and Switzerland exhibit a positive linear trend, and the trend in the US appears less distinctive (see Appendix Figure 2).

Appendix Figure 3 shows the time path of affective polarization when restricting attention to the two largest parties in each survey round and to the largest set of surveys with the same two largest parties. In part due to the restriction to the recent time period, the linear trend in Canada, New Zealand, and Switzerland is more positive than in our baseline estimates, with Canada outpacing the US with a slope of 14.5 points per decade (se = 1.6).

### 4 Interpretation

Let \( \Pi_{ct} \) be the affective polarization in country \( c \in \{1, ..., C\} \) in time \( t \in \{1, ..., T\} \) and suppose that this obeys

\[
E (\Pi_{ct} | \alpha_c, x_c) = \alpha_c + \beta x_{ct}
\]

where \( x_{ct} \) is some explanatory variable with coefficient \( \beta \) and associated vector \( x_c = \{x_{ct}\}_{t=1}^T \), and \( \alpha_c \) is a country-specific intercept. The model in (1) can readily accommodate sampling error in the measurement of affective polarization.\(^5\)

Pick some country of interest \( c^* \), say the US, with \( (\Pi_{c^*,T} - \Pi_{c^*,1}) > 0 \). We can say that a given variable \( x_{ct} \) explains the increase in affective polarization in \( c^* \) if

\[
\Delta_{c^*,T} = \frac{\beta (x_{c^*,T} - x_{c^*,1})}{(\Pi_{c^*,T} - \Pi_{c^*,1})}
\]

is close to unity. As this requires that \( \beta \neq 0 \), suppose that \( \beta > 0 \). Then the variable \( x_{ct} \) must be increasing over time in country \( c^* \), \( (x_{c^*,T} - x_{c^*,1}) > 0 \). Moreover, from (1):

1. Affective polarization is expected to increase in a country \( c \) if \( (x_{c,T} - x_{c,1}) > 0 \). In particular,

\(^5\)Suppose that we observe measurement \( \Pi_{ct} \) of true affective polarization \( \Pi_{ct}^* \) where

\[
E (\Pi_{ct} - \Pi_{ct}^* | \alpha_c, x_c) = 0
\]

as would plausibly be the case for measurement error driven by survey sampling. Then it is immediate that

\[
E (\Pi_{ct} | \alpha_c, x_c) = E (\Pi_{ct}^* | \alpha_c, x_c)
\]

and hence that (1) holds for \( \Pi_{ct} \) if its analogue holds for \( \Pi_{ct}^* \).
if \((x_{c,T} - x_{c,1}) > 0\) for all countries \(c\), then affective polarization is expected to increase everywhere.

(ii) Affective polarization is expected to increase faster in country \(c'\) than in country \(c\) if 
\[
(x'_{c',T} - x'_{c',1}) > (x_{c,T} - x_{c,1}).
\]

The implications are reversed if instead \(\beta < 0\).

The model in (1) is restrictive. It implies that the conditional expectation of affective polarization is linear in the explanatory variable with a coefficient that does not vary across countries. A causal interpretation of the coefficient \(\beta\) further requires econometric exogeneity of the explanatory variable \(x_{ct}\). It is unlikely that these conditions hold in our setting, and if they fail, then a given explanatory variable \(x_{ct}\) can have an important role in explaining the rise in affective polarization in the US even if it fails to satisfy implications (i) and (ii). However, in our view, asserting an important role for an explanatory variable that fails to satisfy implications (i) and (ii) should ideally involve asserting a specific plausible violation of (1) that reconciles the explanation with the facts.

Figure 2 plots average trends in each explanatory variable separately for the groups of countries with rising or falling affective polarization. Appendix Figure 4 plots the individual series for each of the explanatory variables that we consider.

Internet and broadband penetration increased in all countries over the sample period, yet affective polarization did not. This is inconsistent with implication (i). Moreover, internet penetration appears to have risen faster in countries with falling polarization. This is inconsistent with implication (ii).

Income inequality, as measured by the Gini coefficient, increased in all sample countries except Switzerland, for which we have limited data. This is inconsistent with implication (i). Moreover, the data do not exhibit evidence of implication (ii).

Openness to trade, as measured by the trade share of GDP, likewise increased fairly broadly over the sample period, with no clear evidence of a faster increase in those countries with increasing affective polarization.

All countries experienced an increase in the foreign-born share of the population over the period for which we have data, and differences in the rate of growth do not appear to align with differences in the trends in affective polarization.

In our view, the data do not support the hypothesis that these factors played an important role in the rise in affective polarization in the US in the sense of equations (1) and (2).
Other explanations are more consistent with our data. For example, 24-hour partisan news emerged during the period we study and arguably played a much larger role in the US than elsewhere. The timing of the introduction of Fox News appears roughly consistent with an acceleration of the growth in affective polarization during the 1990s, as well as the observation that older demographic groups both consume more partisan cable news and have polarized more quickly than younger demographic groups in the US (Boxell et al. 2017; Martin and Yurukoglu 2017). Interestingly, the five countries with a negative linear slope all devote more public funds per capita to public service broadcast media than three of the countries with a positive slope (Benson and Powers 2011, Table 1).6

Growing racial divides provide another potential explanation. Scholars have hypothesized that rising affective polarization in the US is driven by the growing difference in the racial composition of the two parties, possibly itself a consequence of the growth in the non-white share of the population (see, e.g., Valentino and Zhirkov 2017; Abramowitz 2018; Mason and Wronski 2018).7 With the caveat that it is difficult to define and compare racial composition across countries and time periods (see Appendix A.5), it is noteworthy that the US, Canada, and New Zealand all have experienced particularly large increases in the non-white share over the sample period (see Appendix Figure 4), and that the increase in the non-white share has been twice as large in countries with rising affective polarization as in those with falling affective polarization (see Figure 2).8

6See also Benson et al. (2017). The US devotes the least amount of public funding per capita among the 14 countries considered in Benson and Powers (2011), which include all of the countries in our data except Switzerland.

7See also Westwood and Peterson (2019). The literature on the connection between party and race relates to a broader literature on the connection between party and other social identities (e.g., Lelkes 2018; Mason 2018).

8Data availability itself may reflect the salience of race and ethnicity within a society (Kertzer and Arel 2002). Three (US, Canada, and New Zealand) of the four countries with positive linear slopes include an ethnic enumeration in their national censuses circa 2000, whereas only two (Australia and Britain) of the five countries with negative linear slopes include such information (Morning 2008; UN 2017).
References


Munzert, Simon and Paul C. Bauer. 2013. Political depolarization in German public opinion,


Reiljan, Andres. Forthcoming. ‘Fear and loathing across party lines’ (also) in Europe: Affective polarisation in European party systems. *European Journal of Political Research*.


Figure 1: Trends in Affective Polarization by Country

Note: The plot shows our estimates of affective polarization $\Pi$ as defined in section 2. In each plot, one point represents one survey. The red line displays a fitted bivariate linear regression line with affective polarization as the dependent variable and survey year as the independent variable. Each plot reports the estimated slope (change per year) and the standard error of this estimate.
Figure 2: Trends in Potential Explanatory Variables

Note: Each plot shows the change in the average value of the given explanatory variable $x_{ct}$ in the group of countries $c$ in which affective polarization increases (“rising”) and the group of countries in which affective polarization decreases (“falling”) as defined by Figure 1. For each country, the data are first averaged by half-decade bins. The averages of these half-decade bins are then taken across countries in each group. For ‘Non-white Share’ decade bins are used. Only bins with observations from all countries in a group are reported, except for the inequality plot where Switzerland is excluded throughout due to data limitations. The set of years used for each country varies according to the available data. See Appendix Figure 4 for plots of the available data for each country and driver. The average level of the explanatory variable in the base period is reported in parentheses with the legend. See Appendix A.5 for additional details on data sources and construction.
# Appendix for Online Publication

## Appendix Table 1: Hypothesis Tests

<table>
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<tr>
<th>Country</th>
<th>Slope</th>
<th>SE</th>
<th>(p)-value for Test of Equality w/ US</th>
<th>(p)-value for Test of Equality w/ Zero</th>
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</thead>
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<tr>
<td>US</td>
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<td>0.0317</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Note: The \(p\)-value reported for the test of whether the slope for country \(k\) is equal to that for the US is given by

\[
2 \left[ 1 - \Phi \left( \frac{|b_{US} - b_k|}{\sqrt{s_{US}^2 + s_k^2}} \right) \right]
\]

where \(b_k\) is the estimated slope and \(s_k\) is the estimated standard error. The \(p\)-value reported for the test of whether the slope for country \(k\) is equal to zero is given by

\[
2 \left[ 1 - \Phi \left( \frac{|b_k|}{s_k} \right) \right].
\]


A.1 Sensitivity analysis

Appendix Figure 1: Trends in Affective Polarization by Country – Uniform Confidence Bands

Note: The plot shows our estimates of affective polarization \( \Pi \) as defined in section 2. In each plot, one point represents one survey. The red line displays a fitted bivariate linear regression line with affective polarization as the dependent variable and survey year as the independent variable. Each plot reports the estimated slope (change per year) and the standard error of this estimate. The error bars display a 95% uniform confidence band for affective polarization in the given country, constructed following the plug-in sup-t method described in Olea and Plagborg-Møller (2019), under the assumption that estimates are independent across surveys. These calculations use 1000 simulation draws and estimate the standard error of affective polarization in a given survey as

\[
\sqrt{\sum_{i \in N} \left( \frac{w_i}{W(P)} - \pi_i \right)^2}.
\]
Appendix Figure 2: Trends in Affective Polarization by Country — Post-2000

Note: The plot shows our estimates of affective polarization $\Pi$ as defined in section 2. In each plot, one point represents one survey. The black line displays a fitted bivariate linear regression line with affective polarization as the dependent variable and survey year as the independent variable for the period before 2000 (inclusive). The red line displays the fitted line for the period after 2000 (exclusive). Each plot reports the estimated slopes (change per year) and the standard errors of these estimates.
Appendix Figure 3: Trends in Affective Polarization by Country – Top Two Parties

Note: The plot shows our estimates of affective polarization $\Pi$ as defined in section 2. In each survey, we restrict the universe of parties $P$ to the two parties $p$ with the largest weighted number $W(p)$ of respondents identifying with that party. We plot only those surveys in which the set of top two parties coincides with the modal set across all survey years for the given country. In each plot, one point represents one survey. The red line displays a fitted bivariate linear regression line with affective polarization as the dependent variable and survey year as the independent variable. Each plot reports the estimated slope (change per year) and the standard error of this estimate.
A.2 Plots of potential explanatory factors

Appendix Figure 4: Potential Explanatory Factors – Plots

**Panel A: Affective Polarization**

**Panel B: Internet Penetration**

**Panel C: Broadband Penetration**

**Panel D: Inequality (Gini)**

Note: Countries are sorted from left to right in descending order of the estimated linear time trend of affective polarization. Panel A plots the measure of affective polarization along with the estimated linear time trend for each country; Panel B plots the share of households with internet access in each country; Panel C plots the number of broadband connections per 100 inhabitants in each country; and Panel D plots the Gini coefficient for each country. See Appendix A.5 for additional details on data sources and construction.
Appendix Figure 4: Potential Explanatory Factors – Plots, cont.

Panel A (repeated): Affective Polarization

Panel E: Trade Share of GDP

Panel F: Foreign-born Share

Panel G: Non-white Share

Note: Countries are sorted from left to right in descending order of the estimated linear time trend of affective polarization. Panel A plots the measure of affective polarization along with the estimated linear time trend for each country; Panel E plots the trade share of GDP in each country; Panel F plots the share of foreign born individuals in each country; and Panel G plots the proportion of the population that is non-white in each country. See Appendix A.5 for additional details on data sources and construction.
A.3 Partisan affect question wording

The assigned question wording category for each country-year below is in parentheses after the year. Survey years with similar wording are grouped together and a single example is given. Some question wordings are translated. See Appendix [A.4](#) for disclaimers and citations related to these studies.

A.3.1 Australia

Data comes from the Australian Election Study[^9] (https://australianelectionstudy.org/). We exclude online survey respondents from 2001. Surveys were conducted in English.

- **1993** (favourable): Finally in this section, we would like to know your feelings about the political parties. Please show how you feel about them by circling a number from 0 to 10. 10 is the highest rating, if you feel very favourable about a party, and 0 is the lowest rating, for parties you feel very unfavourable about. If you are neutral about a particular party or don’t know much about them, you should give them a rating of 5.

- **1996/1998/2001/2004/2007/2010/2013/2016** (like): Finally in this section, we would like to know what you think about each of our political parties. Please rate each party on a scale from 0 to 10, where 0 means you strongly dislike that party and 10 means that you strongly like that party. If you are neutral about a particular party or don’t know much about them, you should give them a rating of 5.

A.3.2 Britain

Data comes from the British Election Study (https://www.britishelectionstudy.com/). Surveys were conducted in English.

- **1979** (like): Let’s say that you gave each of the parties a mark out of ten points—a mark according to how much or how little you like it. You can give each party any mark from 0 out of 10 for the least like, to 10 out of 10 for the most liked. What mark out of 10 would you give the [Insert Party Name]?

- **1987/1992** (favour-against): Please choose a phrase from this card to say how you feel about the ____ Party? (Strongly in favor, In favor, Neither in favour/nor against, Against, Strongly against, DK/Can’t say)

[^9]: Hosted at the Australian Data Archive (https://dataverse.ada.edu.au/).
• **1997/2001/2005/2010/2015 (like):** I’m now going to ask a few questions about political parties. On a scale that runs from 0 to 10, where 0 means strongly dislike and 10 means strongly like, how do you feel about the ____ Party?

A.3.3 **Canada**

Data comes from the Canadian Election Study ([https://www.queensu.ca/cora/our-data/data-holdings](https://www.queensu.ca/cora/our-data/data-holdings)). Surveys were conducted in English and French. We cite the English questions here.

• **1988/1993 (favourable):** Now let’s talk about your feelings towards the political parties, their leaders and their candidates. I’ll read a name and ask you to rate a person or a party on a thermometer that runs from 0 to 100 degrees. Ratings between 50 and 100 degrees mean that you feel favourable toward that person. Ratings between 0 and 50 degrees mean that you feel unfavourable toward that person. You may use any number from 0 to 100 to tell me how you feel. How would you rate the ____ Party?

  – 1993 clarifies “federal ____ Party”

• **1997/2000/2004/2008/2011/2015 (like):** Now the political parties. On the same scale, where zero means you really dislike the party and one hundred means you really like the party. How do you feel about the federal ____ party?

A.3.4 **(West) Germany**

Data comes from the Politbarometers ([https://www.gesis.org/en/elections-home/politbarometer/recent-time-series/](https://www.gesis.org/en/elections-home/politbarometer/recent-time-series/)). We drop observations in some months of 1982, 1987 and 1988 where multiple versions of the questionnaire were used (see variable v79 in the data outlining these observations). Surveys were conducted in German. We translate the question ourselves.

• **All years (think highly):** Imagine a thermometer that goes from +5 to -5 with a 0 point in between. With this thermometer, tell me what you think of the individual parties. +5 means that you think highly of the party. -5 means you don’t think anything of it at all. With the values in between, you can give your opinion in stages.

A.3.5 **New Zealand**

Data comes from the New Zealand Election Study ([http://www.nzes.org/](http://www.nzes.org/)). Surveys were conducted in English and Maori. We cite the English questions here.
• **1990/1993** (support-oppose): Regardless of what their chances were in winning your particular electorate, or even winning any seats at all, how do you feel about these political parties? (Strongly Support = 1, Support = 2, Neutral = 3, Oppose = 4, Strongly Oppose = 5)

• **1996/1998/2002/2005/2008/2011/2014/2017** (like): We would like to know what you think about each of these political parties. Please rate each party on a scale from 0 to 10, where 0 means you strongly dislike that party and 10 means that you strongly like that party. If you haven’t heard about that party or don’t know enough about it, please circle ‘99’ under ‘don’t know’. How do you feel about: [Insert Party Name]

A.3.6 Norway

Data comes from the Norwegian Election Research Programme (https://nsd.no/nsddata/serier/norske_valgundersokelser_eng.html). Surveys were conducted in Norwegian. We cite the official English translation here.

• **1981/1985/1989/1993** (like): We want to know how much or little you like the different parties. On this card is a scale that we call “sympathy thermometer.” At 50-degrees-line position the parties that you neither like or dislike. A party that you like to have a location from 50 to 100 degrees. The better you like the party, the higher position. However, if it is a party you do not like, it should be placed between 0 and 50 degrees, with 0 as the expression of at least sympathy.

• **1997/2001/2005/2009/2013** (like): After I read the name of a political party, please rate it on a scale from 0 to 10, where 0 means you strongly dislike that party and 10 means that you strongly like that party.

A.3.7 Sweden

Data comes from the Swedish National Election Studies (https://valforskning.pol.gu.se/english). Surveys were conducted in Swedish. We cite the official English translation here.

• **1979/1982/1985/1988/1991/1994/1998/2002/2006/2010** (like): On this card there is a kind of scale. I would like you to use it in order to state how much you like or dislike the parties. If you like a party, use the “plus” figures. The better you like a party the higher the “plus” figure. For parties you dislike, use the “minus” figures. The more you dislike a party, the higher the “minus” figure. The zero point on the scale indicates that you neither like nor dislike a party. Where would you like to place the ___? (Ranges from -5 to 5.)
A.3.8 Switzerland

Data comes from the Swiss Election Study (https://forscenter.ch/projects/selects/). Surveys were conducted in German, French and Italian. We translate the questions ourselves.

- **1975** (like): Here is a scale we call a favorability thermometer. Please give a score between 0 and 100 indicating how much you like the following groups and organizations. 100 means that you like them very much, 0 means that you do not like them at all. If you don’t particularly like or dislike them... give a score of 50. What score would you give to [Insert Party Name]?

- **1995/1999** (sympathy): Now I would like to know what you think of our political parties. When I read the name of a political party to you, please indicate where you place it on a scale from 0 to 10, with 0 meaning “no sympathy at all”, and 10 meaning “a lot of sympathy”.

- **2007** (like): We would now like to know what you think of some of the political parties. Please place the _______ on a scale from 0 to 10. 0 means that you do not like this party at all. 10 means you like this party very much.

- **2011** (sympathy): Could you indicate, on a scale of 0 to 10, how much sympathy you feel for the following parties.

The documentation states that “In 1975, the scale was originally from 0 to 100, but 0 was later recoded wrongly to . (no value) and then to -1, so we don’t know which -1 are originally 0’s and which are really missings.” In the main analysis, we treat the 1975 coding as-is. In Appendix Figure 5 below, we instead replace all out-party missing or -1 codings with 0 for the affect score and leave in-party affect scores as-is for the four parties for which affect questions were asked.
Note: The plot shows our estimates of affective polarization \( \Pi \) as defined in section 2. One point represents one survey. The red line displays a fitted bivariate linear regression line with affective polarization as the dependent variable and survey year as the independent variable. The estimated slope (change per year) and the standard error of this estimate are also reported. For the data in 1975, we replace all out-party missing or -1 codings with zero for the four affect questions asked. We leave all in-party responses to the affect questions as-is.

A.3.9 US

Data comes from the American National Election Study [https://electionstudies.org/](https://electionstudies.org/). Surveys were conducted in English. Spanish and French translations did occur. We cite the English question here.

- **All Years** (favorable and warm): We’d also like to get your feelings about some groups in American society. When I read the name of a group, we’d like you to rate it with what we call a feeling thermometer. Ratings between 50 degrees-100 degrees mean that you feel favorably and warm toward the group; ratings between 0 and 50 degrees mean that you don’t feel favorably towards the group and that you don’t care too much for that group. If you don’t feel particularly warm or cold toward a group you would rate them at 50 degrees. If we come to a group you don’t know much about, just tell me and we’ll move on to the next one.
A.4 Data references and disclaimers

A.4.1 Australia

Those who carried out the original analysis and collection of the data bear no responsibility for the further analysis or interpretation of it.

Jones, Roger; McAllister, Ian; Denemark, David; Gow, David, 2017, “Australian Election Study, 1993”. doi:10.4225/87/ZZ3NOB, ADA Dataverse, V1, UNF:6:3C/DZ94Ci0V2mfL02PVpXw==


Bean, Clive; Gow, David; McAllister, Ian, 2017, “Australian Election Study, 2001” doi:10.4225/87/CALXMK, ADA Dataverse, V1, UNF:6:8dudxHV83HO/5+itv3DNjA==

Bean, Clive; McAllister, Ian; Gibson, Rachel; Gow, David, 2017, “Australian Election Study, 2004” doi:10.4225/87/G9ITIO, ADA Dataverse, V1, UNF:6:Qer+KzJrJC+zIC3Gm6qDmw==

Bean, Clive; McAllister, Ian; Gow, David, 2017, “Australian Election Study, 2007” doi:10.4225/87/ZBUOW0, ADA Dataverse, V1, UNF:6:D7a6fhN+szVMSQF9xIh5+A==


A.4.2 Britain

We acknowledge that the BES and the relevant funding agencies bear no responsibility for use of the data or for interpretations or inferences based upon such uses.


A.4.3 Canada

Data from the 1988 Canadian National Election Study, which was funded by the Social Sciences and Humanities Research Council of Canada (Grant #411-88-0030). The data were collected by the Institute for Social Research, York University for Richard Johnston, André Blais, Henry E. Brady and Jean Crête. The investigators, SSHRC and the Institute for Social Research bear no responsibility for the analyses and interpretations presented here.

Data from the 1993 Canadian Election Study were provided by the Institute for Social Research, York University. The survey was funded by the Social Sciences and Humanities Research Council of Canada (SSHRC), grant numbers 411-92-0019 and 421-92-0026, and was completed for the 1992/93 Canadian Election Team of Richard Johnston (University of British Columbia), André Blais (Université de Montréal), Henry Brady (University of California at Berkeley), Elisabeth Gidengil (McGill University), and Neil Nevitte (University of Calgary). Neither the Institute for Social Research, the SSHRC, nor the Canadian Election Team are responsible for the analyses and interpretations presented here.

Data from the 1997 Canadian Election Survey were provided by the Institute for Social Research, York University. The survey was funded by the Social Sciences and Humanities Research Council of Canada (SSHRC), grant number 412-96-0007 and was completed for the 1997 Canadian Election Team of André Blais (Université de Montréal), Elisabeth Gidengil (McGill University), Richard Nadeau (Université de Montréal) and Neil Nevitte (University of Toronto). Neither
the Institute for Social Research, the SSHRC, nor the Canadian Election Survey Team are responsible for the analyses and interpretations presented here.

Data from the 2000 Canadian Election Survey were provided by the Institute for Social Research, York University. The survey was funded by the Social Sciences and Humanities Research Council of Canada (SSHRC), and was completed for the 2000 Canadian Election Team of André Blais (Université de Montréal), Elisabeth Gidengil (McGill University), Richard Nadeau (Université de Montréal) and Neil Nevitte (University of Toronto). Neither the Institute for Social Research, the SSHRC, nor the Canadian Election Survey Team are responsible for the analyses and interpretations presented here.

Data from the 2004 and the 2006 Canadian Election Surveys were provided by the Institute for Social Research, York University. The surveys were funded by Elections Canada and the Social Sciences and Humanities Research Council of Canada (SSHRC), and was completed for the Canadian Election Team of André Blais (Université de Montréal), Joanna Everitt, University of New Brunswick, Patrick Fournier (Université de Montréal), Elisabeth Gidengil (McGill University), and Neil Nevitte (University of Toronto). Neither the Institute for Social Research, the SSHRC, Elections Canada nor the Canadian Election Survey Team are responsible for the analyses and interpretations presented here.

Data from the 2008 Canadian Election Surveys were provided by the Institute for Social Research, York University. The survey was funded by Elections Canada, and was completed for the Canadian Election Team of Elisabeth Gidengil (McGill University), Joanna Everitt, University of New Brunswick, Patrick Fournier (Université de Montréal), and Neil Nevitte (University of Toronto). Neither the Institute for Social Research, Elections Canada, or the Canadian Election Survey Team are responsible for the analyses and interpretations presented here.

Data from the 2011 Canadian Election Survey were provided by the Institute for Social Research, York University. The survey was funded by Elections Canada, and was completed for the Canadian Election Team of Patrick Fournier (Université de Montréal), Fred Cutler (University of British Columbia), Stuart Soroka (McGill University), and Dietlind Stolle (McGill University). Neither the Institute for Social Research, Elections Canada, or the Canadian Election Survey Team are responsible for the analyses and interpretations presented here.

Data from the 2015 Canadian Election Study were provided by the Institute for Social Research, York University. The survey was funded by the Social Sciences and Humanities Research Council (SSHRC) and Elections Canada, and was completed for the Canadian Election Study Team of Patrick Fournier (Université de Montréal), Fred Cutler (University of British Columbia), Stuart Soroka (University of Michigan), and Dietlind Stolle (McGill University). Neither the Institute for Social Research, SSHRC, Elections Canada, nor the Canadian Election Study Team are responsible for the analyses and interpretations presented here.

A.4.4  (West) Germany
Neither the depositor (individual(s), institute(s) etc.) nor GESIS bear any responsibility for the analysis, the methods used for the analysis, or the interpretation with regard to contents of the data which is provided by GESIS.

A.4.5  New Zealand

A.4.6 Norway

Some of the data applied in the analysis in this publication are based on “Valgundersokelsen 1977-2013.” The data are provided by Institute for Social Research and Statistics Norway, and prepared and made available by NSD – Norwegian Centre for Research Data. Neither Institute for Social Research, Statistics Norway nor NSD is responsible for the analysis/interpretation of the data presented here.

A.4.7 Sweden

Neither SND nor the principal investigator take any responsibility for how the data are used, nor for any interpretations of or conclusions based on it.


A.4.8 Switzerland


A.4.9 US

The American National Election Studies (www.electionstudies.org). These materials are based on work supported by the National Science Foundation under grant numbers SES 1444721, 2014-2017, the University of Michigan, and Stanford University. The original collector of the data, ANES, and the relevant funding agency/agencies bear no responsibility for use of the data or for interpretations or inferences based upon such uses.
A.5 Data sources for potential explanatory variables

See Appendix Figure 4 for plots of the available data for each country and variable.

- **Internet Penetration**: Share of individuals using the internet from Ritchie (2019).

- **Broadband Penetration**: Number of broadband subscriptions per 100 inhabitants from Table 4.11 of OECD (2013). We set this value to zero for all countries in 1995.

- **Inequality (Gini)**: Gini coefficient from Roser and Esteban Ortiz-Ospina (2013).

- **Trade Share of GDP**: World Bank (https://data.worldbank.org/indicator/ne.trd.gnfs.zs). Downloaded on April 12, 2019. Defined to be the “sum of exports and imports of goods and services measured as a share of gross domestic product.”

- **Non-white Share**: Our primary data sources are the Encyclopedia Britannica Book of the Years which were then supplemented with other sources enumerated in the underlying data. In general, the classification of race/ethnicity/nationality varies substantially across countries and can vary over time, including which groups are included in an “other” category. There are also changes over time in the spatial coverage of the data (e.g., Germany vs. West Germany; United Kingdom vs. Great Britain). When shares do not sum to one (e.g., survey or census respondents may self-classify into multiple categories or rounding errors), we renormalize the shares to sum to one by dividing by their unnormalized sum. We applied the following general principles to classify groups as “white.”
  
  - Australia: Has “white” category.
  - Canada: Not a “visible minority.”
  - Continental Europe: Based on nationality or immigration status. Europeans/Americans are considered white.
  - New Zealand: Has a “European” category.
  - Great Britain: Has “white” category.
  - US: Non-hispanic white.

- **Foreign-born Share**: Share of population that is foreign born from OECD (2019). We exclude the 2004 value for Germany for being anomalous (zero).