

Breaking free from linear assumptions:

Unraveling the relationship between affective polarization and democratic support

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Abstract

Scholars increasingly raise concerns about the alleged detrimental impact of affective polarization on citizens' democratic attitudes. However, empirical evidence on this relationship is mixed: While some report affective polarization eroding democratic support, others document null-findings. We posit that these mixed results can be explained by a *negatively curvilinear* rather than linear relationship. Though extreme levels of affective polarization may harm citizens' democratic commitments, a reasonable amount of affective polarization can strengthen democratic support by heightening the political stakes and stimulating democratic involvement. Employing GAMs on CNEP-data from Germany, the UK, and the USA, we show support for this negatively curvilinear pattern. These findings have important implications for the recommended estimation strategies of future studies examining the consequences of affective polarization.

Keywords: Affective polarization, Democratic support, Political support, Non-linearity, Partisanship.

Introduction

In recent years, affective polarization (AP) has become an increasingly ‘hot topic’ in public and academic debate, spurring widespread worries about its alleged detrimental impact on citizens’ democratic attitudes. AP is defined as citizens’ tendency to positively evaluate their preferred party and its supporters (i.e., in-party favorability), whilst holding negative sentiments toward the political opponent (i.e., out-party animosity) (Gidron *et al.* 2020; Iyengar *et al.* 2012).¹ Dystopian accounts of the political consequences of AP are widespread in the academic literature (see Broockman *et al.* 2022 for an overview). Scholars have gone as far as to state that AP could cause “a deterioration in the quality of democracy” (McCoy and Somer 2019, p. 258) or even the collapse of entire political systems (McCoy *et al.* 2018). On the individual-level, AP is argued to fuel a range of undemocratic attitudes, including the rejection of unfavorable election results and the support for leaders with authoritarian tendencies (Janssen 2023; Kingzette *et al.* 2021; Orhan 2021; Ward and Tavits 2019). Though speculation is rife, empirical evidence on the relationship between AP and democratic support has yielded mixed results.² Whereas some studies report evidence that AP erodes citizens’ support for democratic principles (e.g., Graham and Svolik 2020; Hartevelt *et al.* 2023; Kingzette *et al.* 2021), others report null-findings (e.g., Broockman *et al.* 2022; Voelkel *et al.* 2022).

In this research note, we posit that a possible explanation for these mixed findings is that the relationship between AP and democratic support follows a *negatively curvilinear* pattern (i.e., an inverted U-shape), rather than the linear pattern that has implicitly been assumed in previous estimation strategies. In other words, we argue for the possibility that

¹ In line with recent work (Reiljan *et al.* 2023), we define AP as a multidimensional concept in which both citizens’ views about political parties (i.e., vertical) and their views of the supporters of these parties (i.e., horizontal) play a role. Within this note, we focus both theoretically and methodologically on *party* AP rather than *partisan* AP.

² Following Norris (2017), we define democratic support as citizens’ belief in the fundamental principles and ideals on which democracies are founded (e.g., support for free and fair elections, checks and balances, and the rejection of authoritarian forms of governance).

moderate levels of AP can be beneficial for citizens' democratic support as compared to a complete lack of polarization, but that there is a tipping point at which excessively high levels of AP start to have an eroding impact. Recent work by Torcal and Magalhães (2022) provides evidence that the relationship between *perceived ideological* polarization and democratic support indeed follows such a negatively curvilinear trend. In this research note, we build on their work and provide theoretical arguments for why the same dynamics may apply to the concept of *affective* polarization.

Our assertion thus is that, to a certain extent, AP may strengthen citizens' commitment to democracy. When AP is brought to a minimum, meaning that citizens do not feel positively or negatively towards any particular political party, the likely result is political apathy. In a state of complete indifference towards all parties, the competitive element of democracies is erased. As a result, one is unlikely to attribute much importance to politics, electoral competition, or the democratic institutions that make such competition possible. In other words, "what is at stake in democratic elections from the citizens' points of view cannot be so low as to render them – and democracy itself – irrelevant" (Torcal and Magalhães 2022). A certain degree of partisanship and out-party dislike can thus be essential to raise the stakes of politics, make people feel represented, and spur citizens' democratic involvement (English *et al.* 2018; Mason 2018; Ward and Tavits 2019). Indeed, prior evidence has shown that feeling connected to a party prevents political alienation, which refers to citizens' estrangement from and rejection of the prevailing political system (Dassonneville and Hooghe 2018). In line with this argument, AP has been shown to stimulate turnout and political participation (Harteveld and Wagner 2023; Huddy *et al.* 2015). As such, when kept within bounds, AP can be a strengthening force for citizens' democratic support.

However, there is another side of the coin, as exemplified by the surge of worries and concerns about the alleged rising levels of AP. When AP takes on extreme forms, mutual

tolerance erodes and voters come to view the political opponent as an existential threat to their way of life: “A normal political adversary with whom to engage in a competition for power transforms into an enemy to be vanquished” (McCoy *et al.* 2018, p. 19). In the face of this enemy, key democratic principles and processes become hard to uphold: Cooperation, compromise, and electoral defeat cease to be acceptable parts of politics (Janssen 2023; Levitsky and Ziblatt 2018). As a result, democracy may no longer be perceived as a desirable form of governance but, instead, as an obstacle that stands in the way of one’s in-party’s ability to exert political influence. Extreme AP thus shifts citizens’ political priorities, compelling them to become “partisans first and democrats second” (Graham and Svobik 2020, p. 393). Likewise, scholars have theorized that AP drives citizens to view the political world through a lens of emotion and contention (Armaly and Enders 2022). Democracy becomes an intense battlefield over political power and a potential threat to the status of one’s preferred party. This negative ‘perceptual screen’ can downstream the evaluations of democratic institutions, even of those that are generally considered apolitical (Armaly and Enders 2022). As such, when taken to its extremes, AP also has the potential to be an eroding force for citizens’ democratic support.

In sum, we hypothesize: *The relationship between affective polarization and democratic support follows a negatively curvilinear pattern.*

Data & Method

Data & Cases

To test our hypothesis, we build on the estimation strategy of Torcal and Magalhães (2022) and leverage data from three nationally representative surveys from the Comparative National Election Project (CNEP) conducted in Germany (2017, N=2,984), the UK (2017, N=1,912),

and the USA (2016, N=1,587)³. The datasets available for these countries contain the unique combination of measures necessary for our analysis (i.e., measures of democratic support and like/dislike scores of political parties). Moreover, this cross-national approach allows for a broad test of the hypothesized relationship. Though all three can be considered WEIRD countries, (i.e., Western, educated, industrialized, rich, and democratic), the different national dynamics of AP and the varying electoral systems ensure relevant political and institutional variation in the data. We expect negatively curvilinear patterns in all three countries and deem extensive hypothesizing about these different cases beyond the scope of this research note. Yet, we do want to highlight existing relevant cross-national similarities and differences between these cases.

Previous comparative work shows relatively similar scores on AP for these three countries (Reiljan 2020; Wagner 2021) but a more pronounced increase in the USA over time, whilst AP levels seem to be declining in Germany and relatively stable, or slightly declining in the UK (Boxell *et al.* 2019; Reiljan 2020). Moreover, there are relevant institutional differences. First, the USA is a two-party system in which a very large share of voters identifies with one of the two parties (Reiljan 2020; Wagner 2021). Germany, in contrast, is a multi-party system with currently seven parties represented in the Bundestag⁴ and the UK falls somewhere in between the two. Whilst often considered a *de facto* two-party system (Conservatives and Labour being the two main camps), more than two parties take seat in the House of Commons, and smaller parties like UKIP have successfully left their mark in Britain's public and political sphere. Moreover, Germany can be considered a consensus democracy, in which parties govern together as a coalition, whereas the USA is an example of a majoritarian system, where "the winner takes it all" (Lijphart 1984). The UK is generally considered a majoritarian system as

³ The *N* represents the analytic sample for each country after listwise deletion. A number of 252, 88, and 13 respondents were dropped in Germany, the UK, and the USA respectively due to missing values.

⁴ Counting CDU and CSU as separate parties.

well, although in recent years, there has been some debate as to whether this classification is still fully correct (Boucek 2010).

Measures

Dependent variable. To measure respondents' support for democracy, we rely on the same four survey items as employed by Torcal and Magalhães (2022) (see supplementary materials A). First, we use an 'overt support' item that taps into respondents' agreement with representative democracy as the preferable form of governance. Moreover, we rely on three items that measure respondents' support for other and more autocratic ways of governing (i.e., 'The army should govern the country', 'Only one political party should be allowed to stand for election and hold office', and 'Elections and the National Assembly should be abolished so that we can have a strong leader running this country'). The results of a Principal Component Factor Analysis indicate that these items measure one latent construct (see supplementary materials D for more detailed results) and can therefore be combined into one variable indicating respondents' level of democratic support.

Independent variable. Based on respondents' like-dislike scores of the political parties (0-10 scale), their AP-levels were calculated using Wagner's (2021) spread-measure (ranging 0-5).

Supplementary materials A, B, and C provide further information on descriptive statistics, survey items, and control variables.

Analysis

To test whether the relationship between AP and democratic support is negatively curvilinear, we employ Generalized Additive Modelling (GAM). GAM captures the effects of the independent variable through smooth nonparametric functions (i.e., splines) that can be

nonlinear or linear, depending on the underlying pattern in the observations. GAM thus relaxes the assumption of linearity and offers a more flexible approach to capture nonlinear patterns that conventional linear models would overlook. As such, the smooth relationships that are estimated with GAM can take on a wide variety of shapes that are fully determined by the data. We fit the GAMs with the residual maximum likelihood method and include smooth functions for AP and extremism in the models. The models are estimated for each country separately.

Results

Generalized Additive Models

The results of the GAMs for the different countries are visualized in figure 1, which illustrates the shape of the relationship between AP and democratic support (see supplementary materials E for the corresponding table). In line with our hypothesis, we see that the relationship between AP and democratic support in Germany (2017) forms an inverted U-shape. The figure shows that there is a tipping point at which the effect of AP on democratic support changes direction and turns negative. More concretely, the figure reveals that a certain degree of AP is associated with higher levels of democratic support as compared to the complete absence of AP, which is illustrated by the initial ascending line in the figure. The curve reaches a peak at approximately the value of 2.5 on the AP-scale (0-5), after which democratic support declines as AP further increases.

A very similar trend is observed in the UK (2017), where the relationship between AP and democratic support also follows a negatively curvilinear trend. This again indicates that the democratic support of respondents is maximized when their level of AP is neither very low nor very high. Yet, it should be noted that the tipping point in the UK is situated at a slightly higher level of AP (i.e., approximately 4) as compared to Germany. Nonetheless, similar to Germany, this tipping point surpasses the country's average level of AP (indicated by the dashed

vertical line in the figure), meaning that the country's mean AP is not associated with a downward trend in citizens' democratic support.

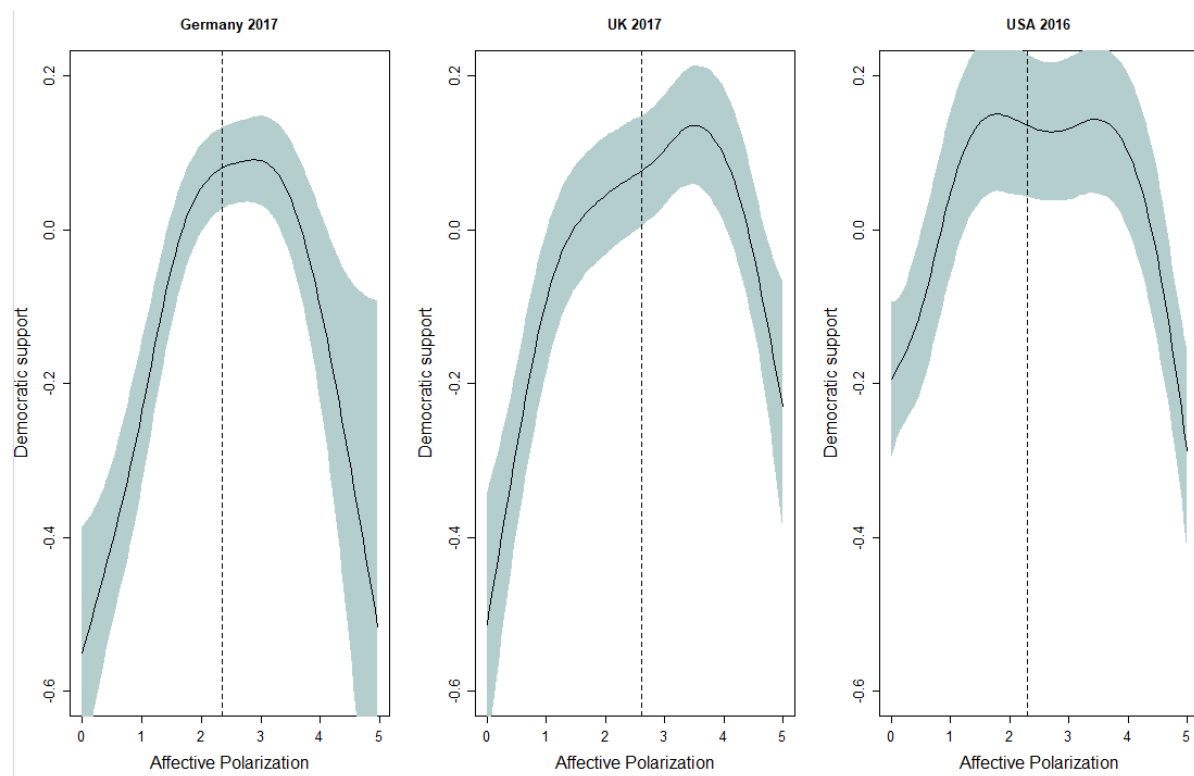


Figure 1. The shape of the relationship between AP and democratic support based on GAMs (95% confidence intervals, dashed vertical line indicates country sample's average level of AP).

The USA also portrays a negatively curvilinear pattern but with a flatter top of the curve. In accordance with Germany and the UK, we document an initial increase in citizens' democratic support as AP increases, followed by a steep decrease when AP takes on extreme forms. Citizens' associated level of democratic support, however, is rather uniform between the values of 1.5 and 3.5 on the AP-scale, meaning that there is a less clear 'peak' of the curve. As such, in the USA, citizens' level of democratic support is maximized when AP-levels fall within this range.

Overall, these results indicate that, while a certain level of AP can be beneficial for citizens' democratic support, there exists a point after which further increases in AP are associated with lower levels of democratic support. These findings support our hypothesis that the relationship between AP and democratic support follows a negatively curvilinear rather than a linear pattern. Notably, we find very similar effect sizes in all three countries.

Robustness check I: Quadratic regressions

We test the robustness of our findings with a more conventional analytical approach: OLS regressions with quadratic transformations of AP (results are presented in the supplementary materials F). First, we run a regression model in which AP is solely included as a linear term in order to illustrate how these findings deviate from models that do acknowledge patterns of non-linearity. These results suggest that there is indeed no significant linear relationship between AP and democratic support in the USA. In Germany and the UK, however, we document a modestly positive and statistically significant effect: higher levels of AP are associated with higher levels of democratic support ($b = 0.087$ in Germany and $b = 0.075$ in the UK).

Next, we include a quadratic term for AP in the models. A Likelihood Ratio test indicates that the fit of the models in all countries significantly improves when a quadratic term for AP is added. Additionally, the effect of AP on democratic support now turns highly statistically significant and substantively increases in effect size in all countries. This already indicates that the linear models overlooked a relationship between AP and democratic support that does exist in the data, particularly in the USA.

The results of the quadratic regressions are visualized in figure 2. The figure shows that the results of these models are fundamentally similar to the results of the GAM: we observe a negatively curvilinear trend in Germany, the UK, and the USA.

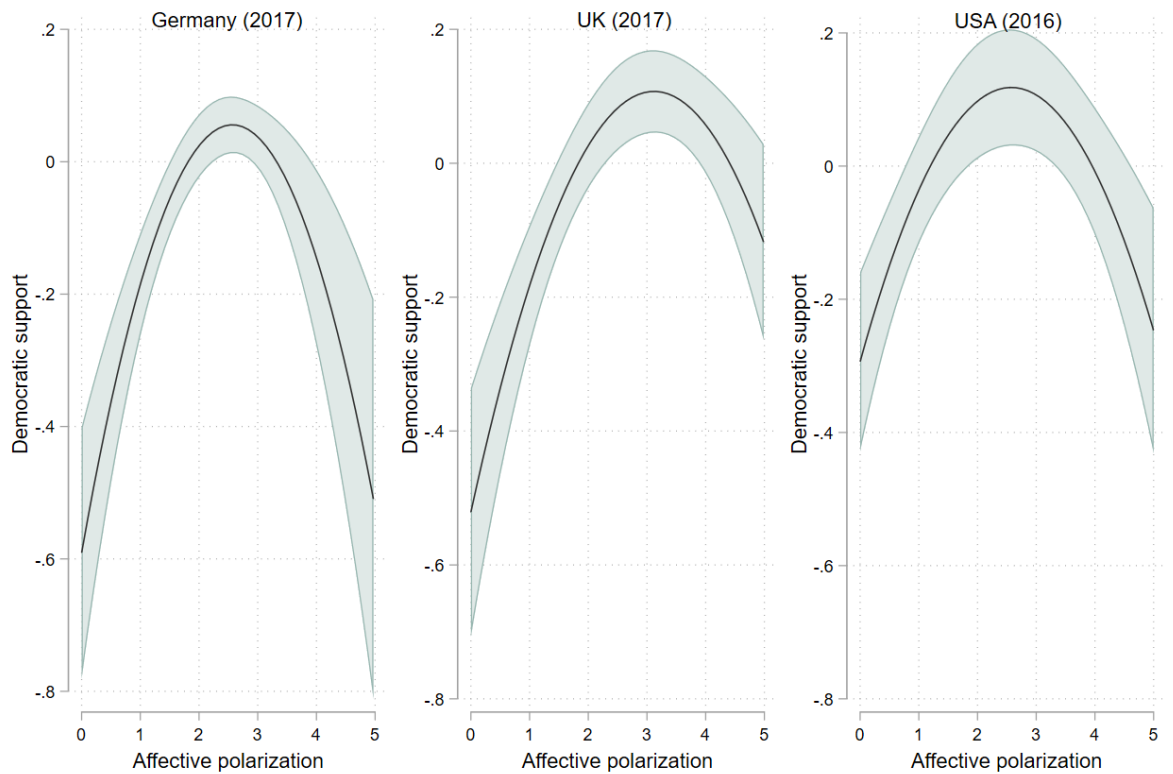


Figure 2. Predicted values of democratic support for varying levels of AP (95% confidence intervals)

Robustness check II: Excluding respondents who dislike all parties

We run an additional robustness check in which respondents who score zero on the AP-scale are dropped from the analyses. These consist mostly of respondents who report strongly disliking all competing political parties. This supplementary analysis leads to fundamentally similar findings, again underlining the existence of a negatively curvilinear pattern (see supplementary materials G).

Robustness check III: Controlling for perceived ideological polarization

Since Torcal and Magalhães (2022) have established that the relationship between perceived ideological polarization and democratic support also forms an inverted U-shape, we run an additional analysis in which we include a smooth function for perceived ideological

polarization in the GAMs. The results indicate that the relationship between AP and democratic support remains negatively curvilinear when perceived ideological polarization is controlled for, though the effect sizes decrease slightly. Moreover, in the USA, the initial ascending line in the figure becomes less pronounced, suggesting that the initial increase in democratic support is partially driven by perceived ideological polarization in this country.

Conclusion

Many scholars warn that affective polarization (AP) undermines citizens' support for basic democratic principles and ideals. Surprisingly, however, many of these concerns are voiced in the absence of clear empirical evidence: to date, research on the relationship between AP and democratic support has yielded mixed results. We posit that these inconsistent findings can partially be explained by a non-linear relationship between AP and democratic support. Theoretically, we argue that, while a certain amount of AP could be beneficial for citizens' support by stimulating a feeling of democratic involvement, extreme levels of AP may in turn have an eroding impact by driving a negative view of the political opponent as an existential threat to one's way of life. As such, we hypothesized that the relationship between AP and democratic support follows a negatively curvilinear pattern.

Drawing on the empirical approach of Torcal and Magalhães (2022), we employed Generalized Additive Modelling on CNEP data collected in Germany, the UK, and the USA. The results of the GAMs showed support for our hypothesis that the relationship between AP and democratic support is negatively curvilinear. We thus demonstrate that the democratic support of citizens is maximized when their level of AP is neither very low nor very high. These results suggest that there may be a 'sweet spot' at which citizens are affectively polarized enough to be democratically involved, whilst not being so polarized that they start prioritizing their preferred party (or the demise of the opposing party) over democratic principles.

Our results have important implications for the normative assessment of the phenomenon of AP. Although dystopian accounts of the consequences of AP are widespread in the academic literature and societies at large, we theorize that there might be another side of the coin: A certain degree of AP could be beneficial – possibly even indispensable – for citizens’ democratic attitudes. We demonstrate that AP is not as straightforwardly related to the erosion of democratic principles as scholars have previously assumed. While our research design precludes causal claims, our findings challenge the belief that rising levels of AP invariably have negative implications for democracy. Rather, it might be the number of citizens positioned at the extremes – i.e., those with extremely low and extremely high levels of AP – that warrant attention. Hence, we advocate for a more nuanced discussion about the impact of AP on democratic attitudes in which both alarmism and complacency are avoided.

Importantly, this research note challenges the prevalent assumption of linearity in the study of the political consequences of AP. Our findings indicate that by (implicitly) assuming linear patterns, scholars may overlook important nuances and dynamics in the relationship between AP and democratic support that are crucial to our understanding of these phenomena and how they relate to one another. Hence, we recommend future studies to acknowledge and incorporate the possibility of non-linear trends – and more specifically negatively curvilinear trends – in their estimation strategies. Concretely, we recommend the incorporation of quadratic terms in regressions or the use of Generalized Additive Models. These statistical approaches are better equipped to capture the complex interplay between AP and democratic support, thereby mitigating the risk of drawing inaccurate conclusions.

Despite these relevant contributions, this research note does not come without its limitations. First, given the cross-sectional nature of the data, we are unable to make causal inferences. Though we theoretically argue that AP influences democratic attitudes, other scholars have argued for the possibility of reversed causality (Guedes-Neto 2023). One could,

for instance, posit that citizens with limited pro-democratic attitudes are more inclined to start loathing political opponents. Future work is needed to shed light on the causal effect of AP on democratic support (or vice versa) while accounting for non-linear patterns. Another promising avenue for future research is to examine the determinants of the positioning of the “tipping point” in the curve. The exact level at which AP starts to erode democratic support is likely not an immovable, stable given. Gaining insights into country- and individual-level characteristics that explain when and why AP starts to undermine citizens’ democratic support is pivotal for developing effective strategies that counteract its possible adverse political consequences. Moreover, longitudinal work may prove useful to assess how such a tipping point evolves over time in different contexts. Lastly, implicit assumptions of linearity are prevalent in many research fields, extending beyond the topics of AP and democratic support. We hope this research note stimulates a critical reflection amongst researchers about the established norm of linearity in our research practices.

Data Availability Statement: An anonymized replication package, including instructions for downloading the publicly available datasets and the full syntax, is available at:

https://osf.io/hu6f3/?view_only=dcf2f301b9c7491db8d7cf5c3b02466e

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Supplementary materials

Breaking free from linear assumptions: Unravelling the relationship between affective polarization and democratic support.

An anonymized replication package can be consulted for the complete output of all analyses and robustness checks. This package, including instructions for downloading the publicly available datasets and the full syntax, is available at:

https://osf.io/hu6f3/?view_only=dcf2f301b9c7491db8d7cf5c3b02466e

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A – Overview of variables and survey items

Table A1. Overview of variables

Variables	Survey item	Answer options (recoded)
Democratic support		
One party rule	Only one political party should be allowed to stand for election and hold office.	5-point scale ranging from strongly agree (1) to strongly disagree (5).
Strong leader	Elections and the national assembly should be abolished so that we can have a strong leader running the country.	5-point scale ranging from strongly agree (1) to strongly disagree (5)
Military rule	The army should govern the country.	5-point scale ranging from strongly agree (1) to strongly disagree (5)
Dem vs Auth	Which of the following phrases most closely reflects your own opinion?	Categories are recoded into: 0. Under some circumstances, an authoritarian regime, a dictatorship is preferable to a democratic system OR for people like me one regime is the same as another. 1. Democracy is preferable to any other form of government.
Affective polarization	We would like to know your feelings towards some parties on a scale from 0 to 10. - Germany: CDU, CSU, SPD, Die Linke, Die Gruenen, FDP, and AfD. - UK: Conservative Party, Labour Party, UKIP, Plaid Cymru, SNP, and LibDem. - USA: Democratic and Republican Party.	11-point scale ranging from very unfavourable (0) to very favourable (10). Respondents' weighted affective polarization is calculated using the spread-measure of Wagner (2021).
Perceived ideological polarization	We would like you to classify some political parties according to the same left-right scale. Where would you place the following parties on the same left-right scale? - Germany: CDU, CSU, SPD, Die Linke, Die Gruenen, FDP, and AfD. - UK: Conservative Party, Labour Party, UKIP, Plaid Cymru, SNP, and LibDem. - USA: Democratic and Republican Party.	11-point scale ranging from very very left (0) to very right (10). Respondents' weighted perceived ideological polarization is calculated using the same formula as affective polarization, but replacing the like/dislike scores with the left/right placements.

Left/right position & Extremism	We often hear people talk about “left” and “right” when they think about politics. According to your own political opinions, where would you place yourself on a left to right scale?	11-point scale ranging from very very left (0) to very right (10). Extremism is calculated as the absolute difference between the respondents’ left-right position and the average left-right position of respondents in the same country.
Economic situation	How would you describe the present economic situation in country?	5-point scale ranging from very bad (1) to very good (5).
Political interest	More generally, would you say that you are very, somewhat, not very or not at all interested in politics?	0. Not at all interested. 1. Not very interested 2. Somewhat interested 3. Very interested
Education level	What is the highest level of education that you have completed?	0. No formal schooling. 1. Some primary education. 2. Completed primary education. 3. Some secondary education. 4. Completed secondary education. 5. Some university education. 6. University education completed. 7. Some or completed post graduate education.
Gender	Are you male or female?	0. Female 1. Male
Age	What year were you born?	Age is measured in years

Source: CNEP, Germany (2017), UK (2017), & USA (2016).

B – Descriptive Statistics

Table B1 presents the mean and standard deviation of the variables included in the models. From these descriptive statistics follow that citizens' democratic support is generally highest in Germany, which also aligns with the findings of prior cross-national studies (Andersen 2012; Wike et al. 2017). The support for democracy is overall lowest and shows the most variance in the USA. Moreover, the means of affective polarization per country demonstrate that the UK is most affectively polarized across partisan lines, which is again underlined by earlier findings (Reiljan 2020; Wagner 2021).

Table B1. Country Means

	Germany		UK		USA	
	Mean	SD	Mean	SD	Mean	SD
Democratic support	0.869	0.198	0.859	0.196	0.809	0.230
Military rule	4.574	0.843	4.561	0.804	4.172	1.068
One party rule	4.490	0.955	4.421	0.943	4.135	1.144
Strong leader	4.488	0.933	4.391	0.978	4.178	1.183
Autocracy	0.766	0.423	0.760	0.427	0.739	0.440
AP	2.344	0.910	2.618	1.310	2.300	1.663
PIP	2.064	0.651	2.249	1.166	2.329	1.338
Left/right placement	5.083	1.792	4.926	1.902	5.699	2.499
Extremism	1.326	1.206	1.480	1.195	2.060	1.414
Economic situation	3.427	0.936	2.508	0.824	2.607	0.958
Political interest	1.627	0.852	1.860	0.927	1.927	1.000
Age	50.769	14.391	47.814	17.129	46.136	17.132
Gender (1 = Male)	0.505	0.500	0.475	0.500	0.468	0.499
Education level	4.103	1.551	4.496	2.088	4.817	1.141
Observations	2984		1912		1587	

Source: CNEP, Germany (2017), UK (2017), & USA (2016), own calculations.

SD: Standard deviation

Democratic support presents the average of the normalized democratic support items.

C – Correlation Matrix

Table C1. Correlation Matrix

	Dem sup	Mil rule	One part	Str lead	Dem auth	AP	PIP	Left righ	Extre mism	Eco sit	Pol int	Age	Gend er	Edu
Dem sup	1.00													
Mil rule	0.83	1.00												
One party	0.85	0.66	1.00											
Strong lead	0.88	0.69	0.74	1.00										
Dem-auth	0.68	0.44	0.43	0.48	1.00									
AP	0.19	0.18	0.13	0.15	0.19	1.00								
PIP	0.28	0.22	0.22	0.23	0.23	0.45	1.00							
Left/Right	-0.20	-0.23	-0.17	-0.16	-0.16	-0.10	-0.06	1.00						
Extremism	0.05	0.01	0.01	0.02	0.03	0.27	0.25	0.06	1.00					
Eco sit	0.14	0.14	0.12	0.15	0.15	0.02	-0.01	-0.05	-0.05	1.00				
Pol int	0.35	0.25	0.28	0.31	0.26	0.30	0.26	-0.09	0.27	0.03	1.00			
Age	0.20	0.21	0.19	0.18	0.15	0.12	0.10	0.09	-0.01	0.08	0.06	1.00		
Gender	0.08	0.07	0.09	0.08	0.02	0.02	0.01	0.06	0.06	0.10	0.19	0.03	1.00	
Educ	0.24	0.15	0.17	0.20	0.18	0.04	0.09	-0.10	0.09	0.01	0.26	-0.13	-0.00	1.00

Source: CNEP, Germany (2017), UK (2017), & USA (2016), own calculations.

Dem sup: Democratic support, Mil rule: Military rule, One part: One party rule, Str lead: Strong leader, AP: Affective polarization, PIP: Perceived ideological polarization, Left righ: Left/right placement, Eco Sit: Economic situation, Pol Int: Political Interest, Edu: Education level.

D – Results PCA

Table D1. Factor analysis/correlation

Factor	Germany (2017)		UK (2017)		USA (2016)	
	Eigenvalue	Proportion	Eigenvalue	Proportion	Eigenvalue	Proportion
Factor 1	2.761	0.690	2.646	0.662	2.784	0.696
Factor 2	0.651	0.163	0.668	0.167	0.623	0.156
Factor 3	0.333	0.083	0.399	0.100	0.368	0.092
Factor 4	0.256	0.064	0.287	0.072	0.225	0.056

Source: CNEP, Germany (2017), UK (2017), & USA (2016), own calculations.

Table D2. Factor loadings and unique variances

Variable	Germany (2017)		UK (2017)		USA (2016)	
	Factor loading	Uniqueness	Factor loading	Uniqueness	Factor loading	Uniqueness
One party rule	0.679	0.540	0.673	0.548	0.698	0.513
Strong Leader	0.895	0.199	0.887	0.214	0.891	0.206
Military rule	0.866	0.250	0.834	0.304	0.891	0.206
Dem vs auth	0.865	0.252	0.844	0.288	0.842	0.290

Source: CNEP, Germany (2017), UK (2017), & USA (2016), own calculations.

E – Results Generalized Additive Models

Tables presenting the results of the GAMs for Germany (2017), the UK (2017), and the USA (2016) are provided in table E1. Within GAM, the effective degrees of freedom (edf) for the smoothed terms illustrates the complexity of the smooth, with higher values indicating more wiggly curves. So, if the edf is equal to 1, this would indicate that the relationship between the independent and dependent variable forms a straight line. For affective polarization, the edf for the smooths are 4.393, 4.436, and 4.405 in Germany, the UK, and the USA respectively. Moreover, the smooths are statistically significant in each country, leading us to reject the null hypothesis that the relationship between affective polarization and democratic support follows a linear pattern.

Table E1. Results GAM on democratic support per country

	Germany (2017)	UK (2017)	USA (2016)
Effective degrees of freedom (edf)			
Affective polarization	4.393***	4.436**	4.405***
Extremism	3.077***	2.888**	2.380+
Parametric coefficients			
Left-right self-placement	-0.084*** (0.009)	-0.086*** (0.012)	-0.082*** (0.009)
Economic situation (ref.: Very bad)			
Bad	0.274** (0.102)	0.100 (0.064)	0.138* (0.070)
Average	0.439*** (0.097)	0.176** (0.065)	0.006 (0.069)
Good	0.674*** (0.097)	0.366*** (0.089)	0.016 (0.082)
Very good	0.681*** (0.107)	-0.033 (0.253)	-0.495** (0.159)
Political interest (ref.: None)			
Not much	0.193** (0.063)	0.348*** (0.075)	0.201* (0.079)
Somewhat	0.374*** (0.064)	0.807*** (0.072)	0.478*** (0.075)
Very	0.460*** (0.074)	0.998*** (0.081)	0.783*** (0.078)
Education level	0.080*** (0.011)	0.858*** (0.010)	0.153*** (0.019)
Gender (1 = male)	-0.001 (0.034)	0.144*** (0.038)	0.083+ (0.043)
Age	0.012*** (0.001)	0.013*** (0.001)	0.012*** (0.001)
Intercept	-1.346*** (0.134)	-1.463*** (0.114)	-1.384*** (0.148)
Adjusted R2	0.233	0.346	0.309
Observations	2,984	1,912	1,587

Source: CNEP, Germany (2017), UK (2017), & USA (2016), own calculations.

Standard errors in parentheses.

+ $p < .10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

F – Robustness: OLS regression models

Table F1. Results OLS regression models per country, with linear AP

	Germany	United Kingdom	United states
Affective polarization (Linear)	0.087*** (0.026)	0.075** (0.023)	0.025 (0.023)
Left/right placement	-0.084** (0.011)	-0.065*** (0.017)	-0.082*** (0.012)
Extremism	-0.005*** (0.001)	-0.003+ (0.001)	-0.001 (0.001)
Economic satisfaction (ref.: Very bad)			
Bad	0.224 (0.154)	0.141 (0.091)	0.153+ (0.083)
Average	0.370* (0.149)	0.254** (0.095)	-0.085 (0.088)
Good	0.637*** (0.148)	0.390*** (0.117)	-0.112 (0.123)
Very Good	0.615*** (0.156)	-0.299 (0.489)	-0.744** (0.288)
Political Interest (ref.: not at all interested)			
Not very interest	0.339*** (0.086)	0.398*** (0.102)	0.246* (0.119)
Somewhat interested	0.511*** (0.088)	0.850*** (0.092)	0.626*** (0.106)
Very interested	0.596*** (0.094)	1.076*** (0.095)	0.861*** (0.115)
Male	-0.034 (0.037)	0.165*** (0.047)	0.139* (0.060)
Age	0.013*** (0.001)	0.013*** (0.002)	0.012*** (0.002)
Education level	0.081*** (0.012)	0.092*** (0.012)	0.195*** (0.028)
Intercept	-1.605*** (0.185)	-1.897*** (0.140)	-1.755*** (0.193)
Observations	2,984	1,912	1,587
Adjusted R^2	0.227	0.296	0.326
<i>AIC</i>	7,861.0	4,767.7	3,975.5
<i>BIC</i>	7,945.0	4,845.5	4,050.6

Standard errors in parentheses

Data source: CNEP

+ $p < .10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table F2. Results OLS regression models per country, with quadratic AP

	Germany	United Kingdom	United States
Affective polarization (Linear)	0.506*** (0.087)	0.428*** (0.074)	0.320*** (0.067)
Affective polarization (Quadratic)	-0.098*** (0.019)	-0.069*** (0.013)	-0.062*** (0.014)
Left/right placement	-0.082*** (0.011)	-0.072*** (0.016)	-0.085*** (0.012)
Extremism	-0.005*** (0.001)	-0.002 (0.001)	-0.001 (0.001)
Economic satisfaction (ref.: Very bad)			
Bad	0.193 (0.155)	0.136 (0.090)	0.101 (0.081)
Average	0.340* (0.149)	0.225* (0.093)	-0.107 (0.086)
Good	0.595*** (0.148)	0.378** (0.116)	-0.141 (0.122)
Very Good	0.603*** (0.156)	-0.208 (0.456)	-0.717* (0.285)
Political Interest (ref.: not at all interested)			
Not very interest	0.241** (0.086)	0.316** (0.103)	0.215+ (0.119)
Somewhat interested	0.415*** (0.087)	0.753*** (0.093)	0.543*** (0.109)
Very interested	0.520*** (0.093)	0.993*** (0.096)	0.780*** (0.118)
Gender (ref.: female)			
Male	-0.035 (0.037)	0.139** (0.048)	0.148* (0.059)
Age	0.014*** (0.001)	0.013*** (0.002)	0.012*** (0.002)
Education level	0.075*** (0.012)	0.087*** (0.012)	0.171*** (0.029)
Intercept	-1.845*** (0.202)	-2.052*** (0.146)	-1.710*** (0.200)
Observations	2984	1912	1587
Adjusted R^2	0.240	0.311	0.345
<i>AIC</i>	7814.8	4728.6	3931.2
<i>BIC</i>	7904.8	4812.0	4011.7

Standard errors in parentheses

Data source: CNEP

+ $p < .10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

G – Robustness: Results dropping 0-values on affective polarization

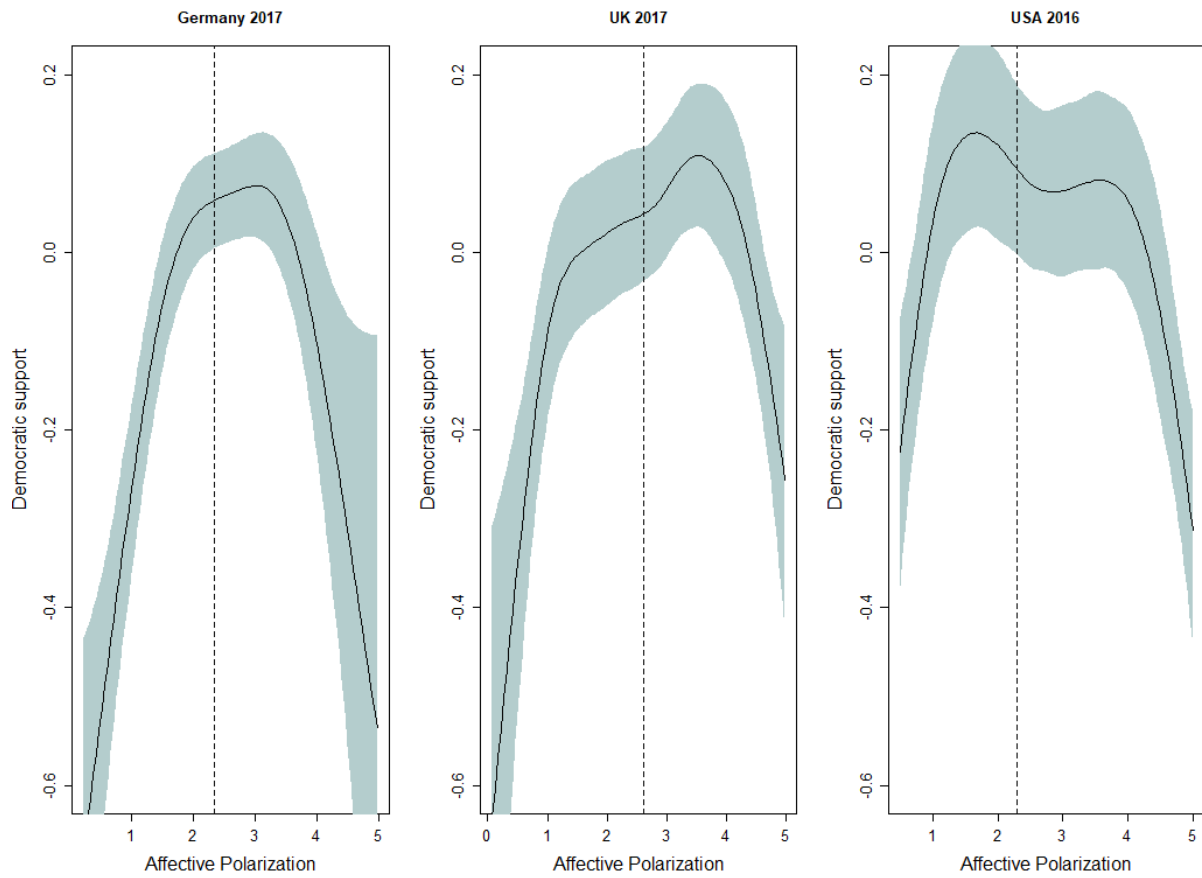


Figure G1. The shape of the relationship between affective polarization and democratic support based on GAMs (95% confidence intervals, dashed vertical line indicates country's average level of affective polarization in the sample)

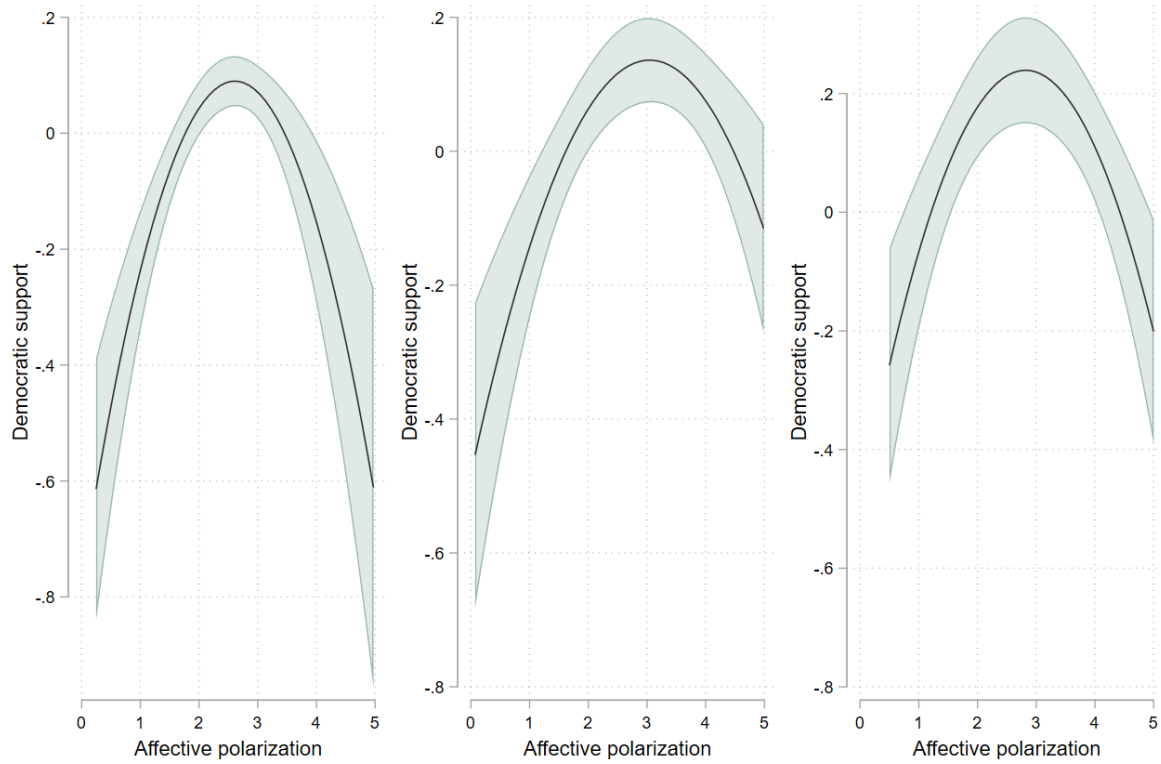


Figure G2. Quadratic regression: Predicted values of democratic support for varying levels of affective polarization (95% confidence intervals)

Table G1. Results OLS regression models per country

	Germany	United Kingdom	United States
Affective polarization (linear)	0.658*** (0.122)	0.406*** (0.093)	0.522*** (0.116)
Affective polarization (quadratic)	-0.126*** (0.025)	-0.067*** (0.016)	-0.093*** (0.020)
Left/right placement	-0.079*** (0.010)	-0.078*** (0.015)	-0.073*** (0.013)
Extremism	-0.005*** (0.001)	-0.001 (0.001)	-0.001 (0.001)
Economic satisfaction (ref.: Very bad)			
Bad	0.311* (0.158)	0.134 (0.093)	0.079 (0.089)
Average	0.495** (0.152)	0.229* (0.096)	-0.067 (0.098)
Good	0.729*** (0.151)	0.380** (0.118)	-0.123 (0.133)
Very Good	0.731*** (0.158)	0.255 (0.223)	-0.683* (0.308)
Political Interest (ref.: not at all interested)			
Not very interest	0.280** (0.093)	0.326** (0.112)	0.445** (0.155)
Somewhat interested	0.440*** (0.093)	0.757*** (0.102)	0.698*** (0.132)
Very interested	0.557*** (0.099)	1.004*** (0.104)	0.960*** (0.139)
Male	-0.047 (0.037)	0.131** (0.049)	0.164** (0.063)
Age	0.014*** (0.001)	0.013*** (0.002)	0.011*** (0.002)
Education level	0.075*** (0.012)	0.087*** (0.012)	0.193*** (0.031)
Intercept	-2.208*** (0.234)	-1.994*** (0.177)	-2.331*** (0.275)
Observations	2884	1831	1290
Adjusted R^2	0.229	0.279	0.322
<i>AIC</i>	7476.5	4491.9	3158.3
<i>BIC</i>	7566.0	4574.6	3235.8

Standard errors in parentheses

Data source: CNEP

+ $p < .10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix H – Control for perceived ideological polarization

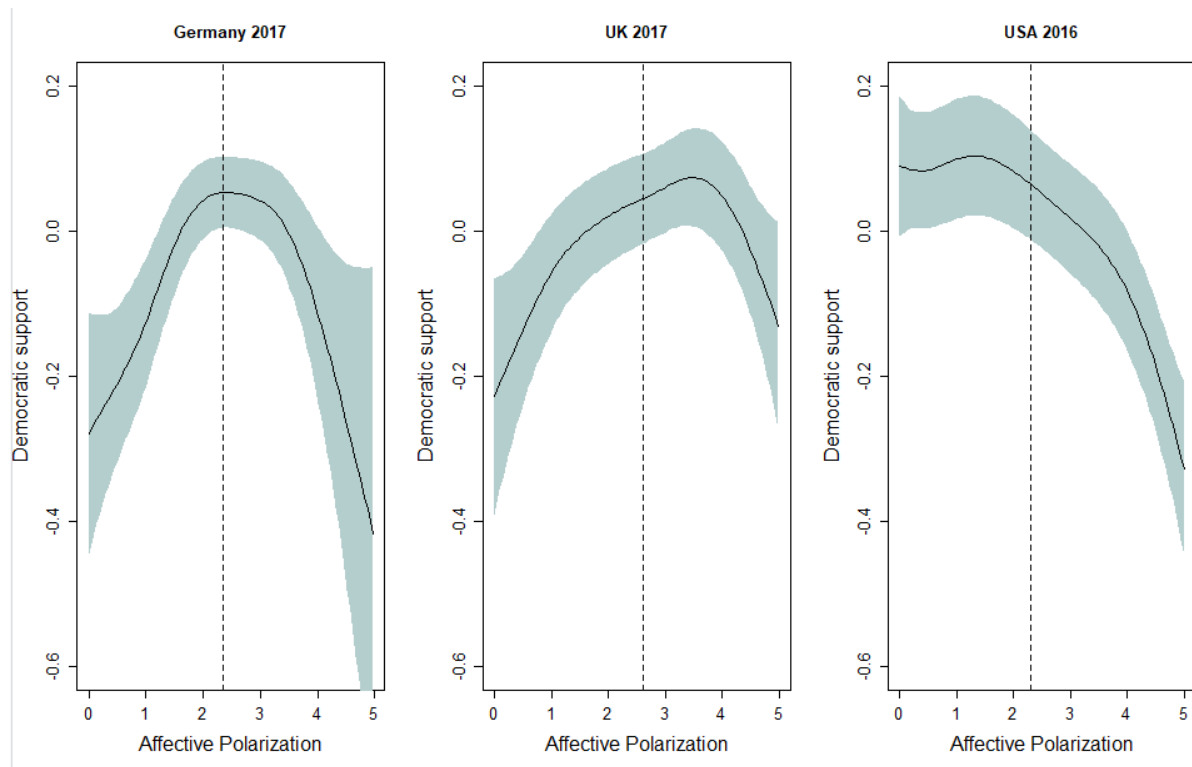


Figure H1. The shape of the relationship between affective polarization and democratic support based on GAMs (95% confidence intervals, dashed vertical line indicates country's average level of affective polarization in the sample)

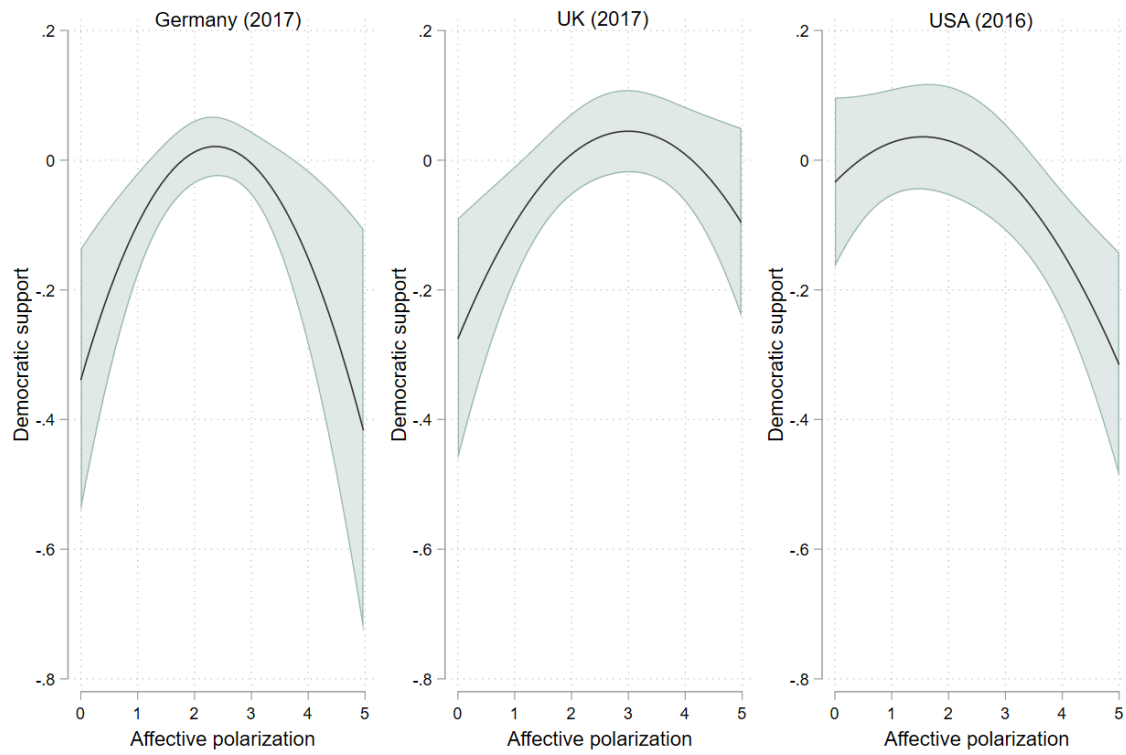


Figure H2. Predicted values of democratic support for varying levels of affective polarization (95% confidence intervals)

Table H1. Results OLS regression models per country, with quadratic PIP

	Germany	United Kingdom	United States
Affective polarization (linear)	0.307** (0.094)	0.228** (0.075)	0.090 (0.062)
Affective polarization (quadratic)	-0.065** (0.021)	-0.039** (0.013)	-0.029* (0.012)
Perceived ideological polarization (linear)	0.714*** (0.134)	0.580*** (0.089)	0.712*** (0.085)
Perceived ideological polarization (quadratic)	-0.144*** (0.033)	-0.103*** (0.018)	-0.121*** (0.019)
Left/right placement	-0.079*** (0.011)	-0.074*** (0.015)	-0.081*** (0.012)
Extremism (exponential transformation)	-0.005*** (0.001)	-0.002 (0.001)	-0.001 (0.001)
Economic satisfaction (ref.: Very bad)			
Bad	0.131 (0.155)	0.128 (0.087)	0.010 (0.081)
Average	0.281 ⁺ (0.150)	0.221* (0.092)	-0.155 ⁺ (0.086)
Good	0.513*** (0.150)	0.371** (0.114)	-0.187 (0.114)
Very Good	0.516** (0.157)	-0.099 (0.400)	-0.699* (0.291)
Political Interest (ref.: not at all interested)			
Not very interest	0.183* (0.088)	0.198 ⁺ (0.103)	0.207 ⁺ (0.115)
Somewhat interested	0.341*** (0.090)	0.546*** (0.096)	0.503*** (0.109)
Very interested	0.451*** (0.096)	0.758*** (0.101)	0.684*** (0.116)
Male	-0.049 (0.037)	0.117* (0.047)	0.133* (0.054)
Age	0.014*** (0.001)	0.011*** (0.002)	0.011*** (0.002)
Education level	0.069*** (0.011)	0.072*** (0.012)	0.145*** (0.027)
Intercept	-2.269*** (0.212)	-2.095*** (0.141)	-1.975*** (0.201)
Observations	2984	1912	1587
Adjusted R^2	0.259	0.352	0.424
AIC	7738.0	4611.5	3727.8
BIC	7840.1	4706.0	3819.1

Standard errors in parentheses

Data source: CNEP

⁺ $p < .10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$