




ARTICLE

Modulation of Democracy: Partisan Communication During and After Election Campaigns

Bruno Castanho Silva¹ , Lennart Schürmann^{2,3}  and Sven-Oliver Proksch³ 

¹Department of Political and Social Sciences, Free University of Berlin, Berlin, Germany, ²Center for Civil Society Research, WZB Berlin Social Science Center, Berlin, Germany and ³Cologne Center for Comparative Politics, Institute of Political Science and European Affairs, University of Cologne, Cologne, Germany

Corresponding author: Bruno Castanho Silva; E-mail: b.paula.castanho.e.silva@fu-berlin.de

(Received 14 March 2022; revised 22 November 2022; accepted 8 April 2023; first published online 10 July 2023)

Abstract

It is well known that politicians speak differently when campaigning. The shadow of elections may affect candidates' change in tone during campaigns. However, to date, we lack a systematic study of the changes in communication patterns between campaign and non-campaign periods. In this study, we examine the sentiment expressed in 4.3 million tweets posted by members of national parliaments in the EU27 from 2018 to 2020. Our results show that (1) the opposition, even populists and Eurosceptics, send more positive messages during campaigns, (2) parties trailing in the polls communicate more negatively, and (3) that the changes are similar in national and European elections. These findings show the need to look beyond campaign times to understand parties' appeals and highlight the promises of social media data to move beyond traditional analyses of manifestos and speeches.

Keywords: European politics; text analysis; social media; legislative behaviour; sentiment analysis

Political debate constitutes a cornerstone of democratic societies. The tone set by political elites in their rhetoric plays an important role in this debate. For example, the sentiment and emotions that politicians and parties convey during electoral campaigns affect how voters react to their message (see, for example, Kosmidis et al. 2019; Ridout and Searles 2011). Negativity during campaigns is also known to draw more media attention to political actors (Maier and Nai 2020), and it has been linked to increased affective polarization (Marchal 2022). Crabtree et al. (2020) were among the first to investigate the strategic usage of sentiment in campaign communication cross-nationally, using a sample of electoral manifestos from eight European countries. Their results suggest that political and structural factors affect parties' sentiment: poor economic performance makes everyone use more negative language, although the effect is less intense for incumbents, and extreme parties tend to be more negative overall.

While there is increasing attention from scholars to estimate and explain the emotive rhetoric of politicians, this knowledge is usually limited to specific campaign periods (see, for example, Crabtree et al. 2020; Ridout and Searles 2011), communication in parliamentary arenas (for example, Louwse et al. 2021; Osnabrügge, Hobolt, and Rodon 2021; Proksch et al. 2019; Schwalbach 2022), or high-profile political statements or speeches by political leaders (for example, Ceccobelli 2018; Kosmidis et al. 2019). In contrast, we know little about how parties modify their sentiment in pre- and post-election periods. This is because campaigns are exceptional times and short-lived, while post-electoral times comprise most of parties' communication. This study proposes a new way to measure party sentiment using Twitter data

cross-nationally, which allows us to answer hitherto unresolved questions with regard to the effect of party competition dynamics, ideology, changing popular support, and the importance of elections. We do so using a novel dataset that references all tweets by every member of a national parliament in the EU27 between February 2018 and February 2020.¹ As seventeen national elections took place in EU member states during this period, in addition to the European Parliament elections, we are able to compare parties' sentiment during campaign and non-campaign times.

We find that the strategic constraints identified by Crabtree *et al.* (2020) hold: incumbents are generally more positive than the opposition, while extreme and populist parties are more negative. We also find that the government and opposition are closest in terms of sentiment in electoral campaigns, with governing parties exhibiting a more negative tone than usual, while opposition parties usually become more positive. This finding holds even for populist and Eurosceptic opposition parties, who are generally more negative than other party families but who also become more positive during electoral campaigns. Finally, we also find that politicians belonging to parties that are polling badly are more negative than those whose party is polling well.

Results also indicate that the effects of these contextual factors are the same in both national and European campaigns, which suggests that politicians' change in communication during the 2019 European Parliament elections followed the same pattern as that of national elections, showing the increased importance of the European elections against what would be expected by the second-order model. These findings help us better understand how political communication changes when elections approach and highlight the need to look at politics during 'regular times' to better understand political actors' strategic use of sentiment.

The Tone in Political Communication

Emotive appeals are effective ways of (de)mobilizing electorates and influencing political attitudes and behaviour (see, for example, Lau, Sigelman, and Rovner 2007; Marcus 2000; Utych 2018). An extensive literature has looked at the effects of negative campaigning by parties and politicians on political attitudes and behaviour, including, for example, turnout (Kahn and Kenney 1999; Wattenberg and Briens 1999) and candidate evaluations (see, for example, Fridkin and Kenney 2011; Krupnikov and Piston 2015). This focus is warranted given the negativity bias in news processing: people pay more attention to and engage more with negative news than positive ones (Hansen and Pedersen 2008; Soroka 2006). Therefore, it is unsurprising that political actors deliberately modulate their tone depending on the prevailing political circumstances.

Crabtree *et al.* (2020) were among the first to investigate the patterns of negative and positive tones in partisan campaign communication across countries, looking at electoral manifestos from eight European democracies between 1980 and 2012. Based on retrospective voting theories, they find that governing parties, particularly prime minister (PM) parties, communicate more positively and that extremist parties are the most negative. This finding aligns with the idea that parties try to frame the world in a way more advantageous to them: incumbents praise their record and paint a rosy scenario under their rule. At the same time, the opposition and extremists want to portray the state of the world more negatively and highlight a need for change. However, Crabtree *et al.* (2020) also find that parties in democracies are limited in their depictions: objective economic conditions moderate the effects of political variables. When the economy performs poorly, all parties – including incumbents – communicate with a greater negative sentiment.

During non-campaign times, researchers examined sentiment in parliamentary arenas to investigate legislative conflict across several European countries and found that opposition parties were consistently more negative than governing ones (see, for example, Castanho Silva and Proksch

¹We stop the analysis at the start of the Covid-19 pandemic to not confound pandemic effects with sentiment during 'regular' times.

2022; Proksch et al. 2019; Rheault et al. 2016). Post-election, the role of the opposition is to critique the government. Naturally, this will make its communications increasingly negative. Conversely, governments use highly positive language to praise their bills and proposals. However, these studies look only at the campaign or non-campaign times. Therefore, it is reasonable to expect systematic differences from one period to another, which we investigate in this study. Specifically, we expect three dimensions related to a party's sentiment change: status, ideology, and popular support.

Government vs Opposition Dynamic

Crabtree et al. (2020) argue that retrospective voting influences how parties use sentiment during campaigns: government parties are more positive in their attempt to draw attention to their good record in office, while opposition parties are more negative and try to show how the government failed its citizens. Dolezal et al. (2018) also found this clear split when examining manifestos from Austria, where governing parties consistently show fewer attacks on opponents than the opposition. One problem of focusing exclusively on campaigns is that it does not provide a baseline against which party tone can be compared. Before an election, even some of the most critical opposition parties will run on something other than an anti-government platform. Instead, they praise their policies or candidates, being comparatively more positive than when the election was far off the horizon. Because they wish to woo voters with positive prospects in case they get elected, the prospective voting theory would suggest that opposition parties become more positive during electoral campaigns. Conversely, governing parties criticize the opposition during electoral campaigns, highlighting the risks associated with a potential government led by their opponents.² Our second expectation is that government parties become more negative during campaign times than non-campaign ones. In sum, our hypotheses are as follows:

H1: Opposition parties are more positive during campaign than non-campaign times.

H2: Governing parties are more negative during campaign than non-campaign times.

Party Ideology

Previous studies have not found an association between left-right ideology and sentiment (see, for example, Castanho Silva and Proksch 2022; Crabtree et al. 2020; Proksch et al. 2019), but there are specific aspects of a party's discourse, which should be associated with a more or less positive tone. First, there is evidence that populist politicians use more negative emotions in their communication (Widmann 2021), which is driven by the nature of populist discourse. It inherently contains an anti-elite element which is necessarily oppositional or confrontational (Mudde 2004). Populists consistently rally against someone or something, be it the current government or international and supra-national organizations (Mudde and Kaltwasser 2017). Along this line, given that our case study includes EU member states, almost every populist party is also Eurosceptic (Meijers and Zaslove 2021). These two discourses correlate highly because the EU becomes a scapegoat for the perfect unaccountable elite for populist discourse (Castanho Silva and Wratil 2023; Taggart 2017). Moreover, Eurosceptic parties generally communicate with more negative sentiments (Castanho Silva and Proksch 2022; Nai et al. 2022). Therefore, our third and fourth hypotheses are the following:

H3: The more populist a party is, the more negative its tone.

H4: The more Eurosceptic a party is, the more negative its tone.

²Note that Ceccobelli (2018), looking at the personal Facebook pages of thirty-nine national leaders, find that they do not get more negative during campaigns.

We do not expect a different tone between campaign and non-campaign periods for populist parties. Populist parties in government adopt what has been called a ‘permanent campaign’ (Conaghan and De la Torre 2008; Taggart and Kaltwasser 2016), whereby instruments such as referenda or national consultations are used often to keep political disputes at a constant confrontational level. While populists in power use these instruments, such discourse throughout the electoral cycle should be observed by all populists. Therefore, our fifth hypothesis is:

H5: Populist parties show no difference in sentiment between electoral and non-electoral periods.

Party Support

Findings in US politics indicate that a positive tone can attract voters for one’s party, while a negative tone is used to demotivate their opponent’s voters (Harrington and Hess 1996; Skaperdas and Grofman 1995). This causes trailing candidates, who appear to be failing to attract voters to their cause, to increase negative attacks to reduce the appeal of their opponents (Auter and Fine 2016), while negative ads have been found to become more frequent as an election draws near (Damore 2002). This is the ‘desperation’ mode identified by Hassell (2021). In an experiment, campaign operatives are more likely to recommend negative advertising when they are told the candidate is behind in the polls. Focusing on the Danish case, Elmelund-Præstekær (2008, 2010) also find that parties with a prospect of electoral failure have more negative ads. Our sixth hypothesis is thus:

H6: Politicians from parties polling poorly are more negative than those from parties polling better.

However, not all parties are in desperation mode. Government parties leading in the polls might have more to gain from going negative than remaining positive. This process would be due to the higher credibility of negative ads by leading candidates: voters can tell the desperation from a trailing opposition party that goes negative before an election. For instance, among a sample of Taipei voters, Chou and Lien (2010) find that negative ads sponsored by a leading or incumbent candidate generate more positive responses than negative ads by trailing or opposition candidates. We, therefore, test an interaction between polling and party status in hypothesis seven:

H7: Politicians from governing parties that are polling well are more negative.

National vs European Elections

Finally, we embed our study into the multi-level nature of European elections. While campaign tone is often studied for singular elections, an obvious connection might exist between national politics and European elections. Our data allow us to examine whether politicians change their tone for European elections as they do during national elections since the European Parliament elections took place in the middle of our study (May 2019). The second-order election model for European Parliament elections is well-established (Hix and Marsh 2007; Reif and Schmitt 1980; Reif, Schmitt, and Norris 1997), and it states that in European elections voters make decisions based on domestic political considerations. The elections serve as an opportunity to retrospectively evaluate the national incumbent’s performance (Hix and Marsh 2007; Hobolt and Wittrock 2011; Marsh 1998) rather than as a dispute over European issues. While there has been an increase in the salience of European integration in national political disputes (Hooghe and Marks 2018), the main drivers of voting behaviour in the 2019 European parliament elections were still government approval and left-right positions rather than EU integration preferences (Plescia, Wilhelm, and Kritzinger 2020). If so, the logic we presented for H1 and H2 should not apply to European Parliament elections. Opposition

parties should remain negative, as that election would be fought to evaluate the national government without the need to propose alternatives. The government should, therefore, retain positive communication. This is our final hypothesis:

H8: Politicians from government or opposition parties do not change their tone during the European Parliament election campaign in relation to non-EP-campaign times.

Sentiment on Twitter

We analysed a dataset of 4.3 million tweets posted by all members of national parliaments from all 27 EU countries between February 2018 and February 2020. We compiled a list of Twitter handles for all MPs who held an account on February 2018. We subsequently updated this to reflect the newly-elected MPs, in any election, until February 2020. The final list included 4,352 MPs. Tweets were downloaded in real time with the streamR package for R (Barbera 2018).³ While we also collected data from the UK, political debates in the UK during this period were dominated by Brexit, which happened during our time frame. Due to that, and our partial focus on EU integration for some hypotheses, we removed British MPs from the analysis to avoid bias in the results since they were numerous and very active on Twitter, constituting up to 20 per cent of the sample of tweets. Nevertheless, we present the results in the Online Appendix with British MPs included, and all substantive findings hold.

We group all tweets by each MP into two-week intervals and estimate the sentiment in each two-week bloc per MP using the Lexicoder Sentiment Dictionary (Young and Soroka 2012), translated into all official EU languages by Proksch et al. (2019). This is a list with (originally) 6000 + terms that convey either a positive or a negative tone. Next, the sentiment for each MP is calculated as the ratio of the sum of positive terms divided by the sum of negative terms they used so that more positive values denote more positive sentiment. The sentiment is grouped into two-week periods, allowing us to observe a minimum number of posts by each MP without averaging over too long a period, making it possible to capture longitudinal trends.⁴

To validate this estimate, we sampled almost 6,000 tweets from the seventeen countries that had national elections and asked two coders to classify the tone expressed in each tweet as positive, neutral, or negative. We then aggregated the hand-coded scores up to the MP two-week level used for the analysis to evaluate the accuracy of the dictionary measure. The F1 score, a standard measure in machine learning to evaluate the accuracy of classifiers ranging from 0 to 1, was 0.75, indicating a high degree of accuracy of the dictionary sentiment measure compared to hand coding. All details about the sampling and coding process can be found in the Online Appendix.

To illustrate what is captured as sentiment, we selected as examples tweets classified in each category. Two with clearly negative tones are:

The Prime Minister's Brexit negotiating strategy has been a disaster. From day one, @Theresa_may has looked incapable of delivering a good deal for Britain – Jeremy Corbyn, 21/09/2018.

The tragic loss of life and destruction caused by the flooding in Pakistan is heartbreaking – my thoughts go out to everyone affected. The government must now provide urgent humanitarian support, and we must take action to prevent further devastation caused by climate change – Keir Starmer, 31/08/2022.

³Table A.12 in the Online Appendix shows descriptives by country, including the number of MPs on Twitter and the number of tweets they posted.

⁴MPs who did not tweet in a two-week period are not included in the models since missing data is dealt with listwise deletion. That drops the final sample of analysis to 3,656 MPs for the final models.

We note that one is a clear criticism of their political opponents and their policies. At the same time, the other refers to a tragic event without the tone being related to the mention of political competitors. Two typical examples of positive tweets are the following; one with a positive tone to announce a daily activity and the other praising the government’s actions:

Morning folks! Fantastic coffee to start day two of our campaign – Boris Johnson, 07/11/2019

Announcing new licensing laws today with @HMcEntee @cathmartingreen and @McConalogue: good for hospitality businesses, will boost the experience economy, and create jobs. Will also improve cultural and entertainment offerings in our towns, cities and rural areas – Leo Varadkar, 25/10/2022

As these examples show, tone is not necessarily related to specific issues. Golbeck, Grimes, and Rogers (2010) pointed out that most politicians’ social media communication is used to broadcast their daily activities and spread news about themselves, which is seen here.

Pre- and Post-Electoral Periods

The distinction between pre- and post-electoral periods, our main independent variable, is done sequentially. When there was an official date to start the electoral campaign, we used the period between that date and election day. However, there is no official starting date for cases where elections are fixed, so we considered the three months before election day as the campaign period. Across countries, this constitutes a period when campaigns are the most intense. The overview of all countries with election dates can be found in Fig. 1. The subsequent analysis does not include Hungary, Italy, and Slovenia in the list because the elections happened shortly after the data collection began. In addition, several sitting MPs appear in the data for a very short time, meaning we cannot see how they changed their behaviour during pre-electoral times.

Figure 2 shows the evolution of sentiment over time, centred around the timing of the national election – at zero for each country – at the top and the EU elections at the bottom. In general, governing parties, both that of the prime minister and coalition partners, are more positive than the opposition. Still, this difference is reduced shortly before an election takes place – a pattern

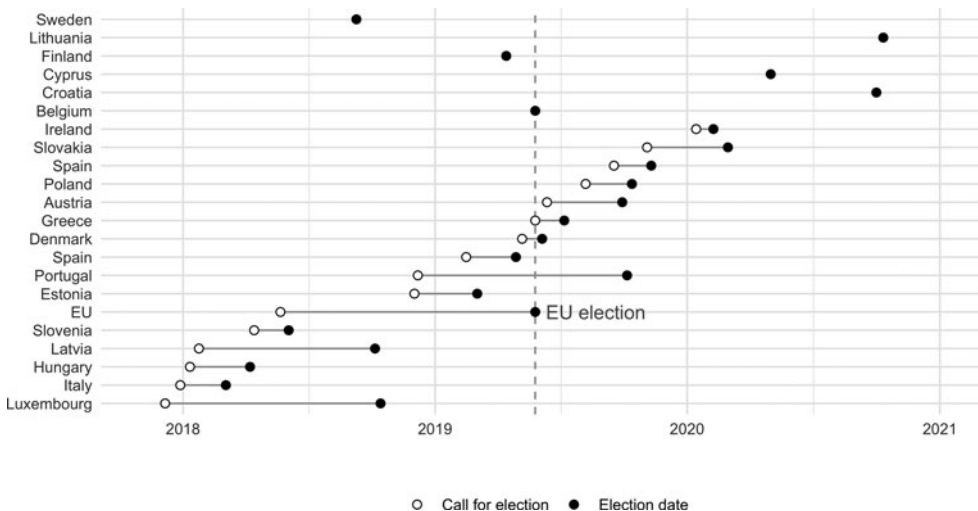


Figure 1. Overview of call for election and election dates.

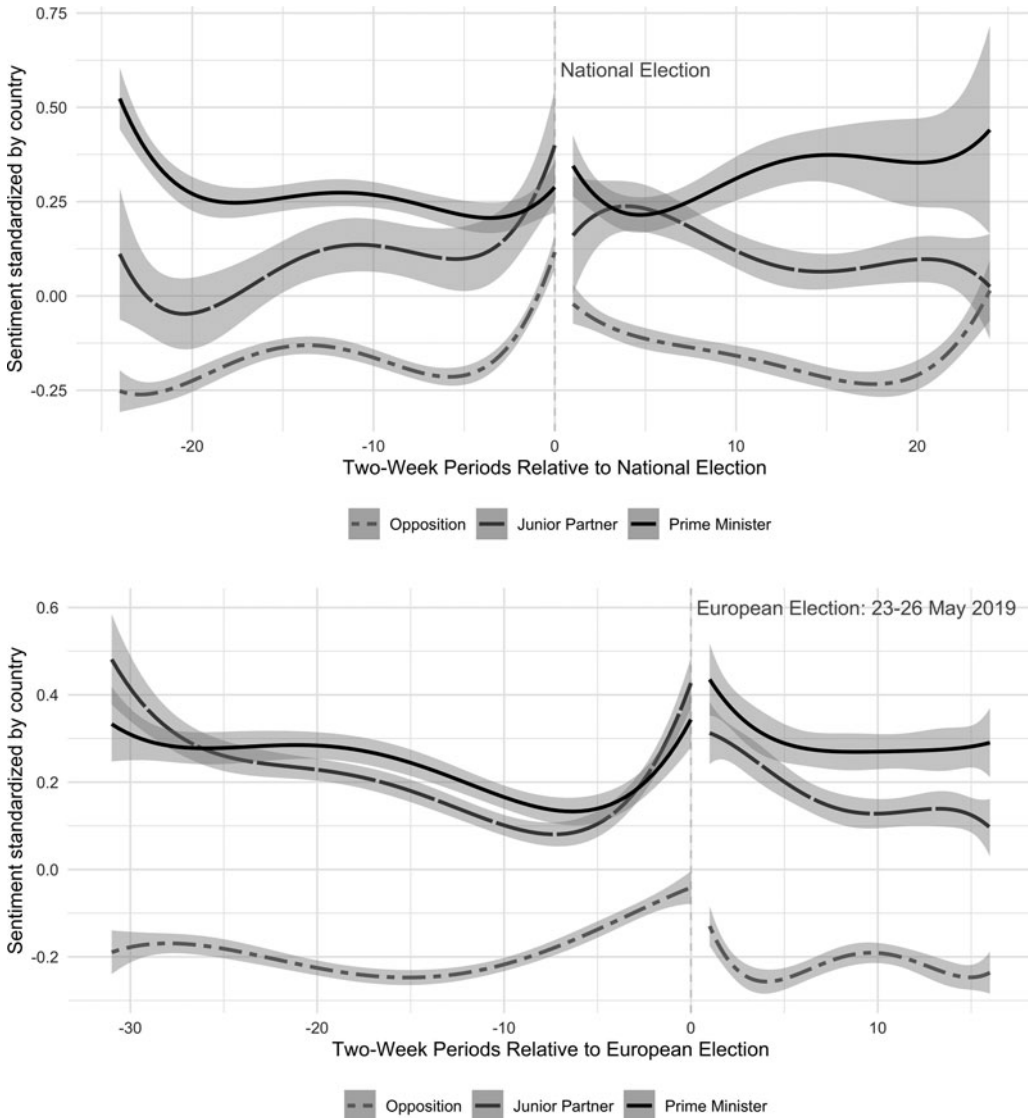


Figure 2. Sentiment relative to national (top) and EU (bottom) elections.

observed in relation to national and European elections. However, we note that these are simple averages across these parties without controlling for other factors. Moreover, the national election results could lead parties to change their government status post-election, suggesting that these results serve only as a first indication.

Independent Variables and Model

We model the data using a longitudinal within-person multi-level model where the lowest observation unit is an MP-period (two weeks), with random intercepts that vary at the MP, party, and country levels. The models allow the slope of time (our two-week period predictor) to vary across MPs since it would be a strong assumption that this constitutes a fixed effect. It would mean that

all MPs become more positive/negative at the same rate over time, all of the time. Further, the models include an autoregressive covariance structure to account for the temporal residual correlation (AR1, Pinheiro and Bates 2006). This is necessary because, in multi-level models, we assume that residuals within clusters follow a normal distribution with a mean of 0. In longitudinal data structures, this assumption is likely violated. For example, the residual sentiment for a given MP's tweets in December 2018 is probably more similar to the residual sentiment for that MP's tweets in November 2018 than in February 2020. We thus specify an error covariance structure to account for this temporal autocorrelation in the residuals.⁵ The dependent variable is sentiment in MPs' tweets group-mean centred at the country level, meaning the country average is set to 0 and the standard deviation to 1. We take this standardized measure because our primary interest is in longitudinal changes within the country. Moreover, we do not have a substantive interest in differences in sentiment across countries, which may be due to linguistic differences. Therefore, we do not consider any substantive country-level predictors.⁶

To test Hypotheses 1 and 2 on party status, we use data from ParlGov (Döring and Manow 2012). Parties are split into the opposition, PM, and junior coalition partners. Next, for hypotheses on party ideology (H3, H4, and H5), we use data from the Chapel Hill Expert Survey (CHES, Polk *et al.* 2017). Finally, we use the general left-right scale (from 0 = left to 10 = right); anti-elitism salience as a proxy for populism, where 0 indicates that anti-elite discourse is not salient at all for a party and 10 indicates high salience;⁷ and the EU position (where 0 = anti-EU and 7 = pro-EU integration).

To test the hypotheses on polling trends (H6 and H7), we take data from Europe Elects (europeelects.eu), which compiles polls for all EU countries. Since the data contains several surveys, including fieldwork timing, we take the average party support across all surveys in each period as the level of electoral support during that moment. From that, we built a binary indicator based on whether the party at the time of measurement was outperforming their last electoral result (1) or underperforming it (0). While this approach needs more information, it is the most parsimonious and comparable across countries and parties. Looking at absolute numbers would muddle the fact that percentage differences may mean very different things across electoral systems.

Results

The results from our models for national elections are in Table 1. These are restricted to the seventeen countries that held a national election between 2018 and 2020.⁸ Model 1 corroborates that governing parties communicate more positively. The coefficient for PM parties is +0.29 (SE = 0.02) and that of junior coalition partners +0.21 (SE = 0.02), with the opposition as the reference category. This was expected from the literature on sentiment in party communication. The same is true for the effects of the squared term for parties' left-right ideology. We observe an inverted U-shaped relationship where centrist parties are more positive, while both left and

⁵The error covariance matrix can have different forms. For example, an AR1 structure defines two parameters in the diagonal, which is the residual variance for each time in point and is the same for all, and ρ , which is a parameter that determines by how much the covariance between residuals diminishes as time points are further from one another, whereby $0 < \rho < 1$. Theoretically, this structure is sensible in that residuals should correlate across time points closest to each other and gradually less so as more time passes between periods of tweets. In the Online Appendix, we alternatively tested two other structures, linear and compound symmetry. Substantive results are the same, but the AR1 structure gives a better model fit based on AIC and BIC.

⁶Crabtree *et al.* (2020) find that economic factors impact sentiment. However, their analysis period comprises several decades, while ours lasts only two years but with a much more fine-grained resolution. Most economic indicators they look at, such as inflation or growth, have little meaningful variation across our countries within such a short time.

⁷This variable has a high correlation with other measures of populism, such as that by Meijers and Zaslove (2021).

⁸Spain held two national elections during this time.

Table 1. Sentiment on Tweets between 2018 and 2020

	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	-0.70 (0.10)***	-0.71 (0.10)***	-0.73 (0.10)***	-0.44 (0.12)***	-0.86 (0.10)***
Time	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Campaign	0.07 (0.01)***	0.12 (0.07)	0.13 (0.07)	0.11 (0.09)	0.14 (0.08)
Junior partner	0.21 (0.02)***	0.22 (0.02)***	0.21 (0.03)***	0.22 (0.02)***	0.22 (0.02)***
PM party	0.29 (0.02)***	0.31 (0.02)***	0.34 (0.02)***	0.31 (0.02)***	0.32 (0.02)***
Positive polling trend	0.03 (0.01)**	0.03 (0.01)**	0.05 (0.01)***	0.03 (0.01)**	0.03 (0.01)**
Left-right	0.23 (0.04)***	0.23 (0.04)***	0.24 (0.04)***	0.19 (0.04)***	0.13 (0.04)**
Left-right squared	-0.02 (0.00)***	-0.02 (0.00)***	-0.02 (0.00)***	-0.02 (0.00)***	-0.01 (0.00)*
Campaign × Junior partner		-0.06 (0.05)	-0.01 (0.06)	-0.07 (0.05)	-0.06 (0.05)
Campaign × PM party		-0.15 (0.03)***	-0.17 (0.04)***	-0.15 (0.03)***	-0.15 (0.03)***
Campaign × Positive polling		-0.04 (0.02)	-0.04 (0.03)	-0.04 (0.02)	-0.04 (0.02)
Campaign × Left-right		-0.01 (0.03)	-0.02 (0.03)	-0.01 (0.03)	-0.00 (0.03)
Campaign × Left-right squared		0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Positive polling × Junior partner			0.01 (0.03)		
Positive polling × PM party			-0.07 (0.02)**		
Positive polling × Junior partner × Campaign			-0.20 (0.11)		
Positive polling × PM party × Campaign			0.03 (0.06)		
Populism				-0.04 (0.01)***	
Populism × Campaign				0.00 (0.01)	
EU position					0.06 (0.02)***
EU position × campaign					-0.01 (0.01)
AIC	200, 029.34	200, 028.38	200, 041.17	200, 033.83	200, 031.77
BIC	200, 204.50	200, 249.63	200, 299.28	200, 273.52	200, 271.46
Num. obs.	74, 517	74, 517	74, 517	74, 517	74, 517
Num. groups: MPs	2, 719	2, 719	2, 719	2, 719	2, 719
Num. groups: Parties	125	125	125	125	125
Num. groups: Countries	17	17	17	17	17

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

right extremes are mostly negative. All of these effects are robust across all models, regardless of other controls or interactions.

Turning to campaigns, still using Model 1, we observe a positive effect ($\beta = +0.07$, $SE = 0.01$), whereby communication is generally more positive during electoral campaigns than post-election periods. Next, we notice evidence favouring H6. Politicians from parties polling better than their last electoral result are indeed more positive ($\beta = +0.03$, $SE = 0.01$). This effect does not change as we add more controls or interactions in Models 2–5.

Model 2 introduces interactions between campaign times and other political factors to see how communication changes between periods. We observe a significant effect on the interaction with junior partners, but for PM parties the sentiment difference between them and the opposition gets smaller during campaigns. We visualize those effects in the upper panel of Fig. 3. It shows that the effect is driven mainly by opposition parties being more positive during campaign times in favour of H1, while PM parties are only a bit more negative during campaigns, which is evidence against H2. None of the other interactions is significant, indicating that (1) polling trends continue to have a generally positive effect, which does not change during campaigns, and (2) extremist parties continue to be more negative than centrist ones during electoral campaigns.

The top panel in Fig. 3 shows how, during electoral campaigns, opposition sentiment is, on average, positive (above 0), while it is generally negative (below 0) during non-electoral periods. This indicates a substantive shift between the two. Compared to previous studies, the gap between PM parties and the opposition is similar to that observed in Proksch et al. (2019, 123), looking at government/opposition sentiment in parliamentary speeches from seven countries (their coefficient for PM parties is 0.19).

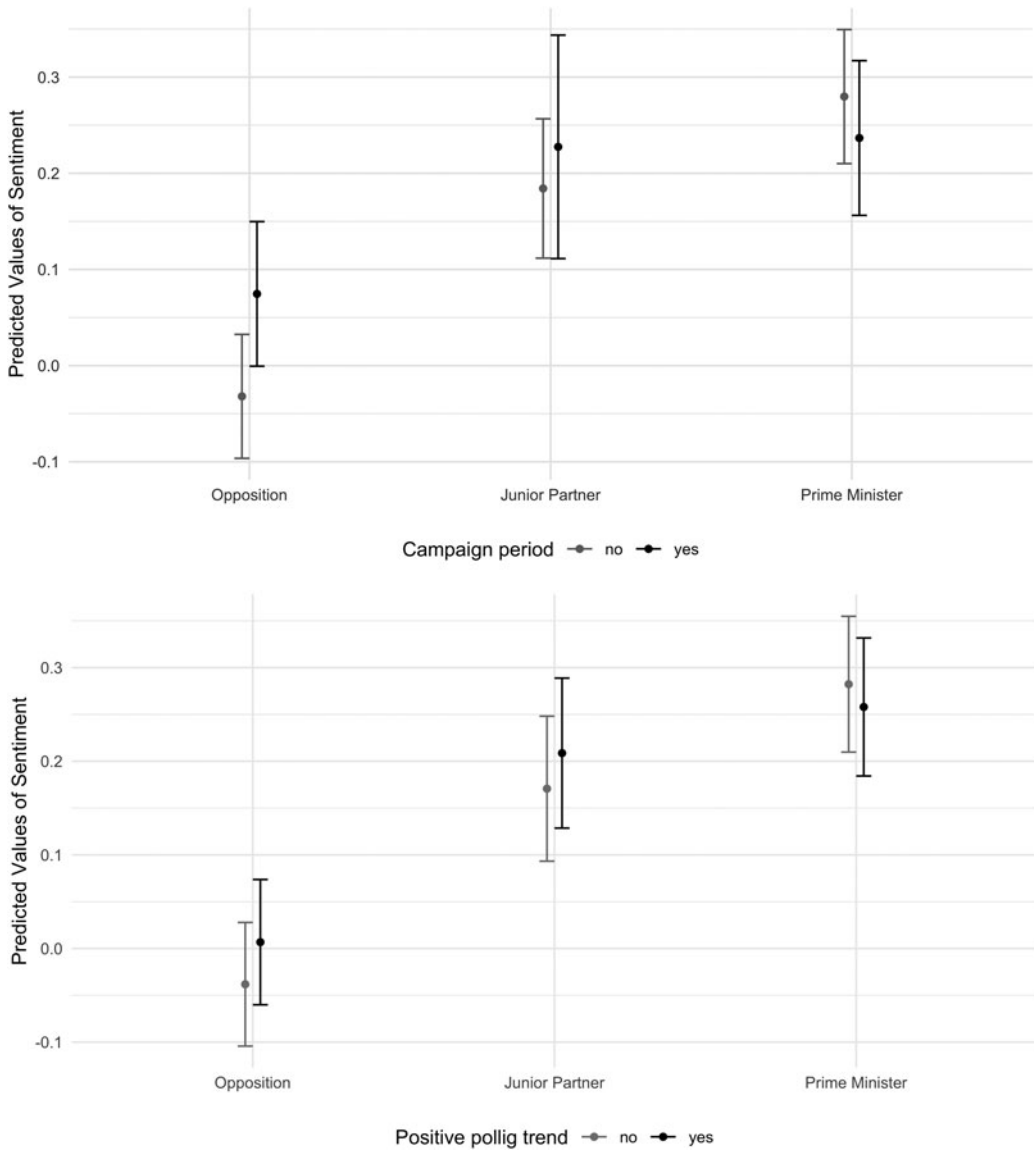


Figure 3. Selected Interactions from Models 2 and 3 in Table 1.

Moving on to Model 3, we look at how public opinion support in polls relates to the discourse of governing and opposition parties. Again, there is a negative significant effect in the interaction between polling and PM parties ($\beta = -0.07$, $SE = 0.02$), indicating that under positive polling, the gap in sentiment between PM parties and the opposition is narrower. The bottom panel in Fig. 3 shows this is due to the opposition being more positive and the PM party tweeting more negatively when polling favourably. Again, this is in line with H7, which expects that politicians from governing parties that poll well are more negative. However, these effects do not change between campaigns and regular legislative times.

Finally, the last two models take populism and Euroscepticism into account. Since these two are highly correlated, we do not have them in the same model due to multi-collinearity. Nevertheless, the effects are in the hypothesized directions. Parties for whom the

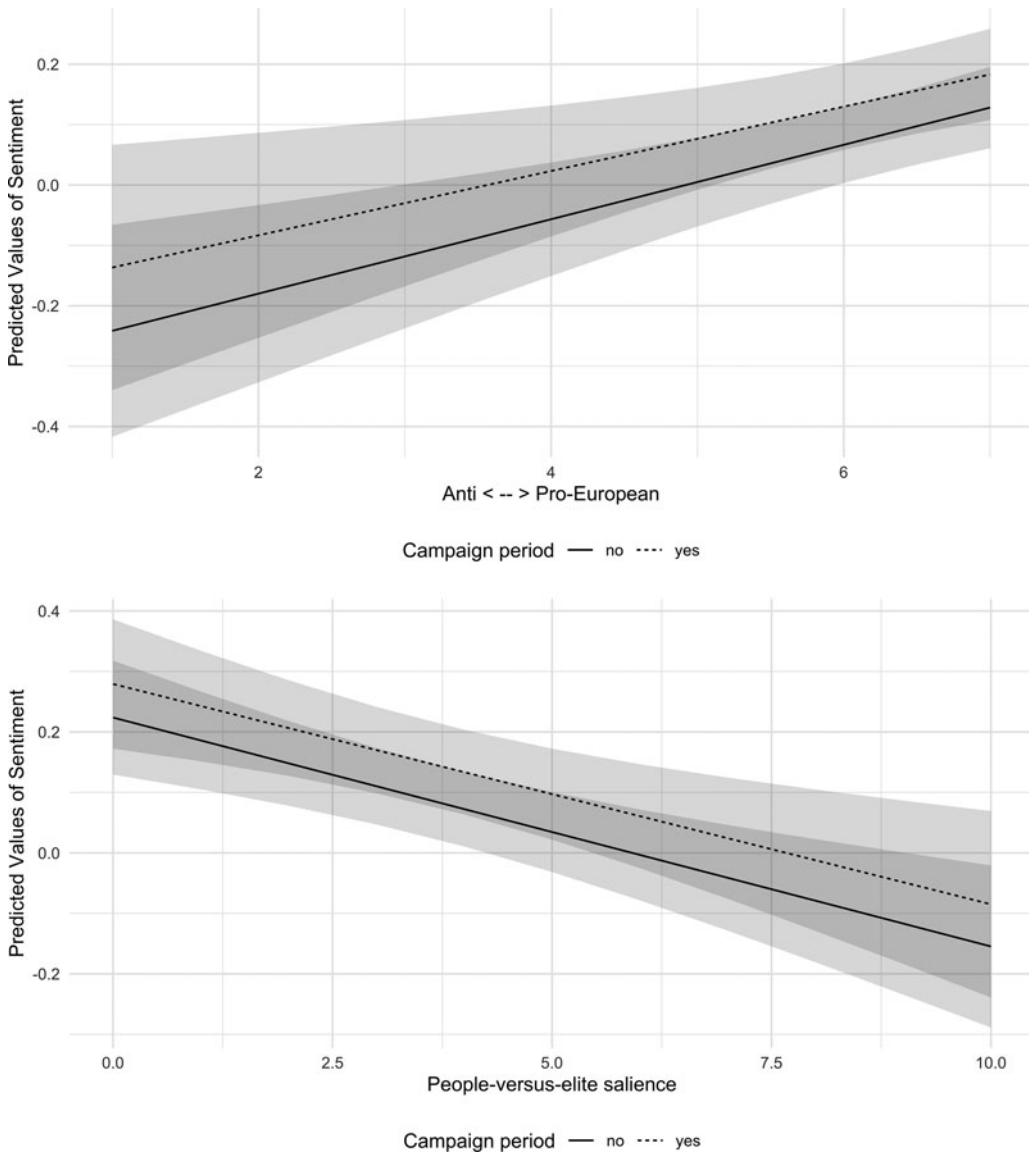


Figure 4. Selected Interactions from Models 4 and 5 in Table 1.

people-versus-elite rhetoric is more salient are more negative ($\beta = -0.04$, $SE = 0.01$, Model 4), while those with more pro-EU positions have more positive discourse ($\beta = +0.06$, $SE = 0.02$, Model 5). These findings support H3 and H4, which states that populists and Eurosceptics are generally more negative. National campaigns do not change that picture. Populists and Eurosceptics become more positive at the same rate as non-populists and pro-European parties. Therefore, this is evidence against H5 – those parties might be running permanent campaigns, but even they become more positive during the campaign period. These effects are visualized in Fig. 4.

Lastly, we turn to Table 2, which models the effect of the EU campaign period on sentiment in MPs' tweets. We include all twenty-seven EU countries for these models. In Model 1, many findings from national campaigns in the seventeen countries are replicated. For example, governing

Table 2. Sentiment on Tweets between 2018 and 2020

	Model 1	Model 2	Model 3
Intercept	-0.97 (0.09)***	-0.97 (0.09)***	-0.95 (0.09)***
Time	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
EU Campaign	0.04 (0.01)***	0.09 (0.01)***	-0.04 (0.03)
Junior partner	0.22 (0.02)***	0.23 (0.02)***	0.23 (0.02)***
PM party	0.30 (0.02)***	0.33 (0.02)***	0.33 (0.02)***
Positive polling trend	0.02 (0.01)	0.02 (0.01)	0.02 (0.01)
EU position	0.07 (0.02)***	0.07 (0.02)***	0.07 (0.02)***
Left-right	0.15 (0.04)**	0.15 (0.04)**	0.15 (0.04)**
Left-right squared	-0.01 (0.00)*	-0.01 (0.00)*	-0.01 (0.00)*
EU Campaign × Junior partner		-0.09 (0.02)***	-0.10 (0.02)***
EU Campaign × PM party		-0.14 (0.02)***	-0.13 (0.02)***
EU Campaign × EU position			0.02 (0.01)***
AIC	293, 071.52	293, 036.11	293, 028.61
BIC	293, 263.72	293, 247.52	293, 249.63
Log Likelihood	-146, 515.76	-146, 496.06	-146, 491.31
Num. obs.	110, 154	110, 154	110, 154
Num. groups: user_id	3, 661	3, 661	3, 661
Num. groups: group	178	178	178
Num. groups: country	27	27	27

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

parties are significantly more positive than the opposition, pro-European parties are more positive, and there is a significant quadratic term for left-right orientation, meaning that extreme parties on both the left and right are more negative.

Turning to the H8 test, the gap in sentiment between PM parties and the opposition becomes smaller during the EU campaign than during non-campaign periods, the same pattern we observed for national campaigns. This interaction from Model 2 is visualized in the top panel of Fig. 5. This is evidence against H8, which theorized that EU elections are second order and are treated as an evaluation of the performance of the current national government. Therefore, opposition parties would remain negative, while governing parties would remain positive. Furthermore, Model 3 shows a significant positive interaction between the parties' EU position and the EU campaign dummy, which is visualized in the bottom panel of Fig. 5, the relationship between sentiment and position on the EU becomes stronger during an EU campaign than in other periods. This suggests that parties reinforce their EU-related message during the EU campaign, pro-European parties are more positive, and anti-European parties are more negative. Taken together, these two tests suggest that the 2019 European Parliament elections did not entirely conform to the second-order election model. The European issue featured more prominently during the EU campaign, even in national politicians' communications. Those national politicians who were not running in the EP elections still had a different tone in their tweets, the same way they did in elections when their offices were at stake.

Robustness Tests

We present a series of robustness tests in the Online Appendix. First, we re-run the models from Tables 1 and 2, including observations from the UK. All substantive results hold, and coefficients get even larger, particularly the opposition's positive shift during electoral campaigns. Second, we test the models without group-mean centering the sentiment variable at the country-level. In the main analyses in the paper we centered the dependent variable in order to remove residual variance that is not of substantive interest, e.g. due to language effects, and also because we do not have theoretically relevant variables at the country-level to test their effects. Regardless, the results in the Online Appendix show that our substantive conclusions on the hypotheses tested stay the

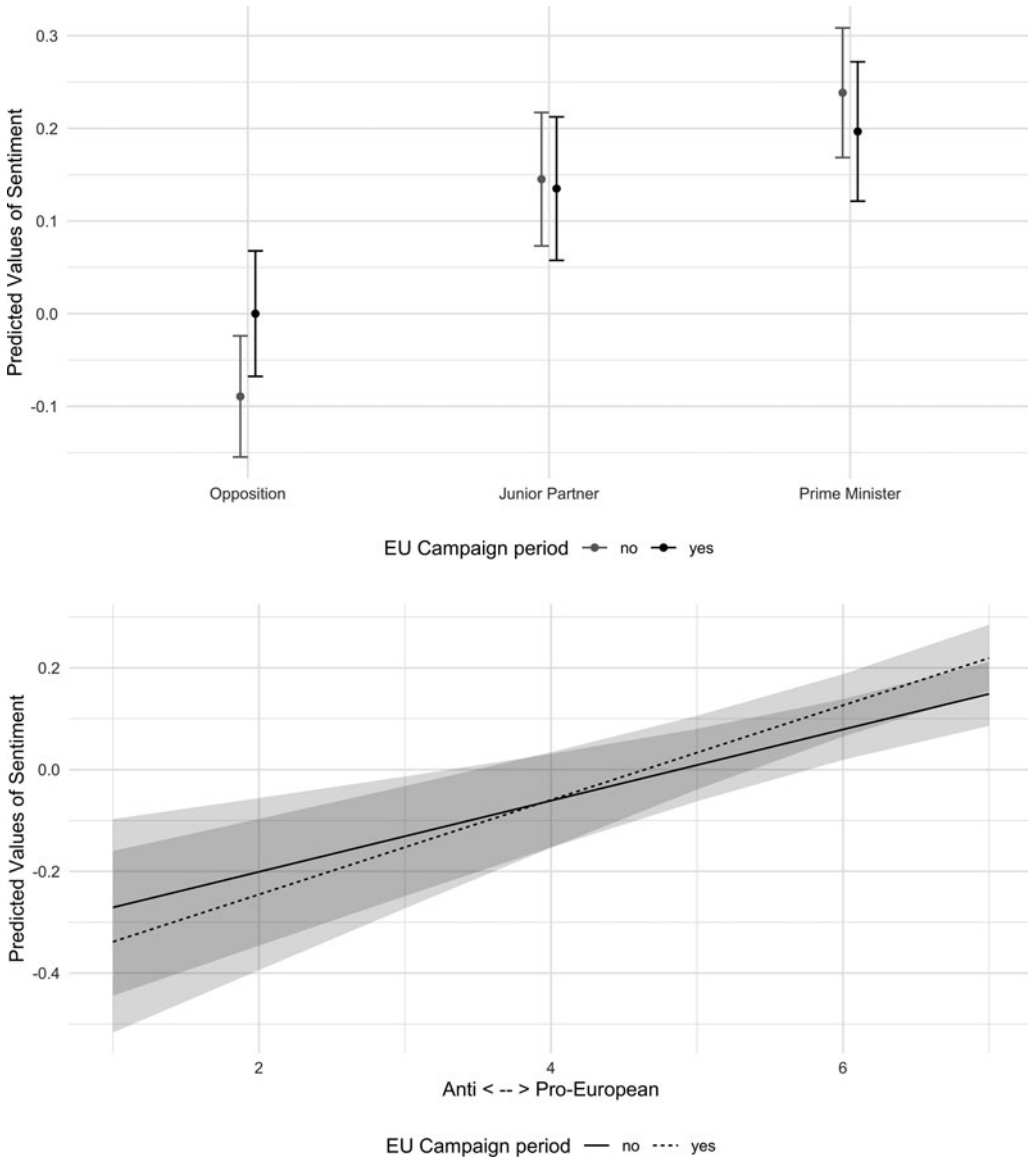


Figure 5. Selected Interactions from Model 3 in Table 2.

same if we run the models with the raw sentiment scores as the dependent variable instead of the scaled sentiment.

Third, most countries in this sample are multi-party parliamentary democracies where the period after an election is usually characterized by coalition talks when there is a caretaker government in place. During these times, it is likely that parties who are officially in opposition are still discussing government formation and may behave differently and communicate more like a government than an opposition party. Therefore, in the Online Appendix, we re-run the models, removing periods of caretaker governments. All substantive results hold. Fourth, as mentioned earlier, we use an AR1 error covariance structure for the temporal residual correlations. In the Online Appendix, we present results using two alternative structures: linear and compound symmetry. The results remain the same with both.

Another modelling choice was the aggregation of MPs' tweets into two-week intervals. In the Online Appendix, we show results obtained if MPs' tweets are aggregated at the a) one-week and b) one-month period level. All substantive results hold. Finally, we also repeat the main models using an alternative measure of populism. The CHES measure captures two dimensions of the concept – anti-elitism and people-centrism – but a significant part of the literature would claim there are three (Mudde 2004), including the claim of a homogeneous people with a general will. For that, we also run the models using populism measures from the POPPA dataset (Meijers and Zaslove 2021), which captures more dimensions, and all results hold.

Conclusion

Ask any politically interested member of the public, and they will tell you that politicians speak differently when elections are approaching. Moreover, we know from previous literature that the tone parties and politicians use in their communications influences voters, but there has been no study to date on how politicians change the tone of their communication during electoral campaigns. Closing that gap was the goal of this study. Using a dataset of 4.3 million tweets by members of national parliaments in the EU27 between 2018 and 2020, we find that changes in the sentiment expressed by MPs follow predictable political factors.

More specifically, opposition MPs, including populists and Eurosceptics, express themselves more negatively but become more positive when elections are near. These findings show how previous literature, looking only at campaign material or non-electoral texts, fails to capture this important dynamic. We also find that parties trailing in the polls tend to be more negative, which is observed in the US, but for which we had not yet enough evidence in Europe. Finally, results indicate that changes between campaign and non-campaign times are similar during both national and European elections. Contrary to what the second-order model would suggest, national politicians become more positive on social media ahead of European Parliament elections, much like they do ahead of national elections, in an effort to praise their co-partisans – and instead of criticizing the government in an effort to make the elections a contest of incumbents' approval.

Our results show how European politicians' discourse systematically changes when they campaign. This also highlights one of the main promises of social media data over other traditional sources, such as electoral manifestos or parliamentary speeches. We can capture political discourse during different phases of the legislative cycle, including the final moments before a general election. This analysis could be expanded in several directions in the future. For example, much of contemporary political science is dedicated to studying affective polarization. It is now possible to see how politicians' tone during campaigns, particularly in social media posts that mention their opponents directly, is connected to polarization among the public.

Furthermore, the tone may vary across issues, which could be a fruitful avenue for future analysis. For example, Heidenreich *et al.* (2020) use sentiment analysis of social media posts to estimate politicians' positions on immigration, while Castanho Silva and Proksch (2022) do so to measure Euroscepticism. Future research can look into how politicians change their tone depending on issues being discussed and further strategic considerations.

For that, the final contribution of this project, the dataset itself, comes in handy. While bound by the Twitter Terms of Service not to share the full text of individual tweets, the replication files contain the complete list of all status IDs so that researchers with access to the Twitter API can retrieve all tweets, as well as the weekly estimates of sentiment in MPs' tweets. This study shows one example of how new social media data allows us to test pre-existing theories of political communication at a much higher resolution than before. Moreover, it opens the door to plenty of new applications.

Supplementary material. The supplementary material for this article can be found at <https://doi.org/10.1017/S0007123423000169>.

Data availability statement. Replication Data for this article can be found in Harvard Dataverse at: <https://doi.org/10.7910/DVN/DNUXY9>.

Acknowledgements. The authors would like to thank Andrei Zhirmov and the participants of the QStep Seminar at the University of Exeter, and Jae-Jae Spoon and Pablo Fernandez-Vazquez along with the participants of the Rethink Europe Workshop at the University of Pittsburgh for comments on earlier versions of this paper. In addition, we would like to thank Barbara Zucchi Nobre Silva, Danielle Pullan, Felix Reich, Jasmin Spekkers, Lea Kaftan, Leonie Diffené, Noam Himmelrath, Pit Rieger, Rebecca Kittel, and Sara Birkner for outstanding research assistance. All remaining errors are our own.

Financial support. We acknowledge funding from the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) under Germany's Excellence Strategy – EXC 2126/1–390838866.

Competing interest. The authors declare no competing interests.

References

- Auter ZJ and Fine JA** (2016) Negative campaigning in the social media age: Attack advertising on Facebook. *Political Behavior* **38**(4), 999–1020.
- Barbera P** (2018) *streamR: Access to Twitter Streaming API via R*. R package version 0.4.5. Available from <https://CRAN.R-project.org/package=streamR>.
- Castanho Silva B and Proksch S-O** (2022) Politicians unleashed? Political communication on Twitter and in parliament in Western Europe. *Political Science Research and Methods* **10**(4), 776–92.
- Castanho Silva B and Wrátil C** (2023) Do parties' representation failures affect populist attitudes? Evidence from a multi-national survey experiment. *Political Science Research and Methods* **11**(2), 347–62.
- Castanho Silva B, Schürmann L and Proksch S-O** (2023) "Replication Data for: Modulation of Democracy: 'Partisan Communication during and after Election Campaigns'". <https://doi.org/10.7910/DVN/DNUXY9>, Harvard Dataverse, V1.
- Ceccobelli D** (2018) Not every day is election day: A comparative analysis of eighteen election campaigns on Facebook. *Journal of Information Technology & Politics* **15**(2), 122–41.
- Chou H-Y and Lien N-H** (2010) How do candidate poll ranking and election status affect the effects of negative political advertising? *International Journal of Advertising* **29**(5), 815–34.
- Conaghan C and De la Torre C** (2008) The permanent campaign of Rafael Correa: Making Ecuador's plebiscitary presidency. *The International Journal of Press/Politics* **13**(3), 267–84.
- Crabtree C et al.** (2020) It is not only what you say, it is also how you say it: The strategic use of campaign sentiment. *The Journal of Politics* **82**(3), 1044–60.
- Damore DF** (2002) Candidate strategy and the decision to go negative. *Political Research Quarterly* **55**(3), 669–85.
- Dolezal M et al.** (2018) Beyond salience and position taking: How political parties communicate through their manifestos. *Party Politics* **24**(3), 240–52.
- Döring H and Manow P** (2012) Parliament and government composition database (ParlGov). *An infrastructure for empirical information on parties, elections and governments in modern democracies. Version 12*(10).
- Elmelund-Præstekær C** (2008) Negative campaigning in a multiparty system. *Representation* **44**(1), 27–39.
- Elmelund-Præstekær C** (2010) Beyond American negativity: Toward a general understanding of the determinants of negative campaigning. *European Political Science Review* **2**(1), 137–56.
- Fridkin KL and Kenney P** (2011) Variability in citizens' reactions to different types of negative campaigns. *American Journal of Political Science* **55**(2), 307–25.
- Golbeck J, Grimes JM and Rogers A** (2010) Twitter use by the U.S. Congress. *Journal of the Association for Information Science and Technology* **61**(8), 1612–21.
- Hansen KM and Pedersen RT** (2008) Negative campaigning in a multiparty system. *Scandinavian Political Studies* **31**(4), 408–27.
- Harrington Jr JE and Hess GD** (1996) A spatial theory of positive and negative campaigning. *Games and Economic Behavior* **17**(2), 209–29.
- Hassell HJG** (2021) Desperate times call for desperate measures: Electoral competitiveness, poll position, and campaign negativity. *Political Behavior* **43**, 1137–59.
- Heidenreich T et al.** (2020) Political migration discourses on social media: A comparative perspective on visibility and sentiment across political Facebook accounts in Europe. *Journal of Ethnic and Migration Studies* **46**(7), 1261–80.
- Hix S and Marsh M** (2007) Punishment or protest? Understanding European Parliament elections. *The Journal of Politics* **69**(2), 495–510.
- Hobolt SB and Wittrock J** (2011) The second-order election model revisited: An experimental test of vote choices in European parliament elections. *Electoral Studies* **30**(1), 29–40.
- Hooghe L and Marks G** (2018) Cleavage theory meets Europe's crises: Lipset, Rokkan, and the transnational cleavage. *Journal of European Public Policy* **25**(1), 109–35.

- Kahn KF and Kenney PJ** (1999) Do negative campaigns mobilize or suppress turnout? Clarifying the relationship between negativity and participation. *American Political Science Review* **93**(4), 877–89.
- Kosmidis S et al.** (2019) Party competition and emotive rhetoric. *Comparative Political Studies* **52**(6), 811–37.
- Krupnikov Y and Piston S** (2015) Accentuating the negative: candidate race and campaign strategy. *Political Communication* **32**(1), 152–73.
- Lau RR, Sigelman L and Rovner IB** (2007) The effects of negative political campaigns: A meta-analytic reassessment. *The Journal of Politics* **69**(4), 1176–1209.
- Louwerse T et al.** (2021) Opposition in times of crisis: COVID-19 in parliamentary debates. *West European Politics* **44**(5), 1025–51.
- Maier J and Nai A** (2020) Roaring candidates in the spotlight: Campaign negativity, emotions, and media coverage in 107 national elections. *The International Journal of Press/Politics* **25**(4), 576–606.
- Marchal N** (2022) “Be nice or leave me alone”: An intergroup perspective on affective polarization in online political discussions. *Communication Research* **49**(3), 376–98.
- Marcus GE** (2000) Emotions in politics. *Annual Review of Political Science* **3**(1), 221–50.
- Marsh M** (1998) Testing the second-order election model after four European elections. *British Journal of Political Science* **28**(4), 591–607.
- Meijers MJ and Zaslove A** (2021) Measuring populism in political parties: Appraisal of a new approach. *Comparative Political Studies* **54**(2), 372–407.
- Mudde C** (2004) The populist zeitgeist. *Government and Opposition* **39**(4), 541–63.
- Mudde C and Kaltwasser CR** (2017) *Populism: A Very Short Introduction*. Oxford: Oxford University Press.
- Nai A et al.** (2022) Euroscepticism and the use of negative, uncivil and emotional campaigns in the 2019 European Parliament election: A winning combination. *European Union Politics* **23**(1), 21–42.
- Osnabrügge M, Hobolt SB and Rodon T** (2021) Playing to the gallery: Emotive rhetoric in parliaments. *American Political Science Review* **115**(3), 885–99.
- Pinheiro J and Bates D** (2006) *Mixed-effects Models in S and S-PLUS*. New York: Springer Science & Business Media.
- Plescia C, Wilhelm J and Kritzinger S** (2020) First-order breakthrough or still second-order? An assessment of the 2019 EP elections in Kritzinger S, Plescia C, Raube K, Wilhelm J and Wouters J (eds), *Assessing the 2019 European Parliament Elections*. London: Routledge, 76–95.
- Polk J et al.** (2017) Explaining the salience of anti-elitism and reducing political corruption for political parties in Europe with the 2014 chapel hill expert survey data. *Research & Politics* **4**(1), 1–9.
- Proksch S-O et al.** (2019) Multilingual sentiment analysis: A new approach to measuring conflict in legislative speeches. *Legislative Studies Quarterly* **44**(1), 97–131.
- Reif K and Schmitt H** (1980) Nine second-order national elections – a conceptual framework for the analysis of European election results. *European Journal of Political Research* **8**(1), 3–44.
- Reif K, Schmitt H and Norris P** (1997) Second-order elections. *European Journal of Political Research* **31**(1/2), 109–24.
- Rheault L et al.** (2016) Measuring emotion in parliamentary debates with automated textual analysis. *PLoS ONE* **11**(12), 1–18.
- Ridout TN and Searles K** (2011) It’s my campaign I’ll cry if I want to: How and when campaigns use emotional appeals. *Political Psychology* **32**(3), 439–58.
- Schwalbach J** (2022) Going in circles? The influence of the electoral cycle on the party behaviour in parliament. *European Political Science Review* **14**(1), 36–55.
- Skaperdas S and Grofman B** (1995) Modeling negative campaigning. *American Political Science Review* **89**(1), 49–61.
- Soroka SN** (2006) Good news and bad news: Asymmetric responses to economic information. *The Journal of Politics* **68**(2), 372–85.
- Taggart P** (2017) Populism in Western Europe in Kaltwasser CR, Taggart P, Espejo PO and Ostiguy P (eds), *The Oxford Handbook of Populism*. Oxford: Oxford University Press, 248–66.
- Taggart P and Kaltwasser CR** (2016) Dealing with populists in government: Some comparative conclusions. *Democratization* **23**(2), 345–65.
- Utych SM** (2018) Negative affective language in politics. *American Politics Research* **46**(1), 77–102.
- Wattenberg MP and Briens CL** (1999) Negative campaign advertising: Demobilizer or mobilizer? *American Political Science Review* **93**(4), 891–99.
- Widmann T** (2021) How emotional are populists really? Factors explaining emotional appeals in the communication of political parties. *Political Psychology* **42**(1), 163–81.
- Young L and Soroka S** (2012) Affective news: The automated coding of sentiment in political texts. *Political Communication* **29**(2), 205–31.