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Understanding the online relationship between politicians and citizens. A study on the user engagement of politicians' Facebook posts in election and routine periods

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ABSTRACT
Social media have offered politicians a way to reach a broader audience and citizens a dynamic way to respond and interact with politicians' communication. In this study we focus on how two important dimensions of the social media messages of politicians impact different types of user engagement: the distinction between political and private posts and the degree of emotionality of the post. Additionally, we compare the amount and types of interaction between routine periods and election periods. Supported by automatic data gathering and coding we analyze all Facebook posts of 124 Belgian politicians for a period of more than two years (N = 34,408). Our results indicate that different types of Facebook posts lead to different types of user engagement. Private posts generate more reactions, while political posts are more often shared and commented on. Additionally, Facebook posts with positive, and, negative emotional language garner more interaction than those with less emotionality. Finally, during election campaigns both politicians and citizens are more active. There is a proliferation of the amount of Facebook messages that politicians post, and these messages also score higher on engagement.

KEYWORDS
Social media; Facebook metrics; user engagement; political communication; automatic coding; emotions; election campaign; machine learning

Introduction

Politicians are known as strategic actors who use the media to promote their views and improve their reputation among the electorate (Strömbäck & Kiousis, 2014). Since the rise of the internet and the growing popularity of social media, politicians have new channels to connect with the public and bypass the traditional media. Social media have offered politicians a fast and unfiltered way to reach their (potential) supporters without journalistic interference (Chadwick, 2017; Larsson & Kalsnes, 2014). At the same time, these platforms have given citizens a way to respond and interact with politicians' communication. By engaging with specific messages followers can indicate what kind of messages they like or want to share with their own network. This has created a more dynamic way of understanding the relationship between politicians and citizens (Xenos, Macafee, & Pole, 2017).

The rise of social media as political tools has provided researchers with a new way to study and understand politicians' online performance and popularity. Social media metrics can give us insight into the amount of audience engagement a politician is able to attract. For instance, some studies focused on the overall popularity of politicians on social media and identified factors that explain why some have more followers than others (O'Connell, 2020; Vaccari & Nielsen, 2013). Social media metrics also allow us to study the popularity of politicians' online communication strategies at an even more fine-grained level (Bene, 2017a; Heiss, Schmuck, & Matthes, 2019). In general, we can argue that more engagement by the public on social media means that politicians are performing better in terms of audience response and have an effective online communication strategy. This can be consequential, as liking, and certainly sharing a politician's Facebook post, means it will reach a much larger audience, often going beyond the small network of supporters (Bene, 2017b). Furthermore, studies suggest that audience engagement on social media with politicians' posts is a good, but far from perfect, predictor of offline voting behavior (e.g., Kristensen et al., 2017; Vepsäläinen, Li, & Suomi, 2017). Finally, studying user engagement is relevant as research has shown that user reactions have implications for how

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politicians communicate on social media. More concretely, politicians adapt their communication based on both actual audience reactions and perceived audience expectations (Kelm, 2020; Tromble, 2018).

In this study we focus on two important dimensions of the online communication of politicians that have been addressed in previous research. First, we deal with the distinction between political and private messages. Politicians try to convince voters by expressing their political views or promoting their political accomplishments, but at the same time want to connect with their followers by showing their 'private persona' (Colliander et al., 2017; Graham, Jackson, & Broersma, 2018). Is it successful to show parts of their private life and do these private messages lead to a different type of engagement than political messages? Second, we look at the sort of language politicians use in addressing their followers. More specifically, we focus on the degree of emotionality in the posts. Several studies have shown that more emotional posts lead to more user engagement (Eberl, Tolochko, Jost, Heidenreich, & Boomgaarden, 2020; Heiss et al., 2019). However, we know less about how that degree of emotionality interacts with the type of posts (private versus political), and the type of engagement (reacting versus sharing and commenting).

This study goes beyond the existing literature in two important ways. First, by scrutinizing the differences between elections and routine times, a distinction that has been neglected in most studies so far. Today, more than ever, social media allow politicians to 'campaign' permanently (Larsson, 2016), blurring the difference with election campaign periods. However, election campaigns remain periods in which politicians and parties are extra active, citizens are more interested in political messages, and news media are more open to publicize political content (Van Aelst & De Swert, 2009). It is therefore not surprising that during election periods there is a proliferation of the amount of social media content that politicians share (Ceccobelli, 2018). It is unclear, however, to what extent campaign periods change the online strategies of politicians and lead to different types of user engagement on social media. Do politicians adjust the type or style of posts in campaign time? Or is it rather the public that reacts differently when elections near?

Second, to examine the role of election campaigns we analyze a much longer period of study than previous research has done, containing two election campaigns. This choice also requires automatic forms of gathering and coding social media data. In this sense our study is innovative from a methodological perspective by using automatic language processing techniques and machine learning to analyze large amounts of Facebook data. We analyze the audience metrics of the Facebook posts of 124 Belgian politicians for two and a half years, collecting over 34,000 Facebook posts. We focus on Facebook, which is still the most used platform among both politicians and the wider public in most Western democracies (Gil-Clavel & Zagheni, 2019).

User engagement on Facebook and political messages

Studying different types of user engagement

Facebook users have a wide range of options to engage with messages on the platform; people can follow an account, they can click on a post if it contains a hyperlink, they can react, comment on and/or share a post. The user is no longer a passive consumer but actively rates the message or shares it with friends and strangers. For the author of the posts there is the advantage that the message generates a larger reach through this engagement. The authors can also learn from this engagement, since this behavior is quantified through the so-called engagement metrics that indicate how a particular post performs in relation to previous posts.

However, the three forms of Facebook engagement should not be considered equal, as they all represent a different aspect of engagement. It is assumed that a reaction such as a like is given the quickest, since it requires less commitment and less involvement compared to a comment or a share (e.g. Kim & Yang, 2017). In recent years, Facebook also added the option to not only like a post but also display other types of reactions, such as 'haha' or 'love.' Combined we can call these "reactions." Clicking the reactions button has even become

a kind of habit or ritual in this way (Alhabash, Almutairi, Lou, & Kim, 2019). Also in a political context these reactions are the most common type of user engagement (Gerodimos & Justinussen, 2015; Larsson, 2015) and these are – perhaps even counterintuitively – often studied as the only dependent variable to measure the success of political posts (e.g. Nave, Shifman, & Tenenboim-Weinblatt, 2018). Posting a comment is a totally different type of engagement than giving reactions. Burke and Kraut (2016) refer to "one-click communication" when talking about reactions, while they see posting a comment as a form of "composed communication" that requires more effort, and can thus be seen as a more meaningful indicator of genuine care and interest than reactions (Zell & Moeller, 2017). Sharing a post on Facebook also requires a more complex handling and more cognitive effort than these simple reactions. A share also creates more visibility for a post than a comment, a comment remains limited to the feed under a post, while a share ensures that the shared post appears on your timeline and therefore contributes to your own online profile and identity (Kim & Yang, 2017). The fact that the three forms of engagement are different is also shown by the fact that they are not triggered in the same way by the characteristics of the (political) messages. This is evident from various research that has studied, for example, the impact of post length, facial attractiveness, references to political competitors, emotions, etc. on the behavior of the public, with features provoking more reactions than shares and/or comments, or vice versa (see e.g. Heiss et al., 2019; Markowitz-Elfassi, Yarchi, & Samuel-Azran, 2019). With this study, we aim to provide further insight into how the content and tone of political messages affects the reactions, comments and shares of Facebook users, focusing on the differences between political vs. private post, and on the influence of emotionality, and this inside and outside election periods.

Private versus political posts

The social media posts created by politicians can serve different functions. Graham, Broersma, Hazelhoff, and van 'T Haar (2013) distinguished several functions that can be regrouped into three categories: campaign information, privatized messages and political messages of substance. Campaign information includes calls to vote, updates on the campaign trail, etc. These types of messages generally do not contain any substance in terms of policy plans or political opinions. Functions that fall under the category of political messages are, for instance, taking positions, critiquing opponents or giving advice. These types of posts have more substance in the sense that they go into more detail about policy and often can be linked to a specific issue topic. The third category consists of messages that contain information about, or images of, the politicians' private life, such as their families and leisure time.

This threefold distinction will be used in the remainder of this paper to help us understand why some Facebook posts of politicians attract more engagement than others. Several studies indicated that online content showing the private life of politicians has become a significant part of the social media strategy of politicians across the globe (e.g. Geber & Scherer, 2015; Metz, Kruikemeier, & Lecheler, 2020). When politicians post about their private life, it deepens the amount of empathy voters have toward the politician as a regular person, as someone who is like them (Graham et al., 2018). It generates a sort of authenticity as opposed to the more formal and impersonal communication parties tend to have. In that sense, social media help politicians bridge the gap between themselves and the people they represent (Coleman, 2011; Graham et al., 2018). Lee and Oh (2012) show that personalized messages increase the (imagined) intimacy between voters and the politician and positively impact the evaluations that they make about the politician. This is also known as a 'para-social interaction,' where a person feels they have a friendly relationship with a public figure, even though they have never met (Derrick, Gabriel, & Tippin, 2008). This process of politicians developing a more intimate relationship with voters, has potentially positive outcomes for politicians. For instance, a study done by O'Connell (2020) on the Instagram posts of US politicians shows that family photos and pets posts, among others, receive significantly more likes than impersonal content.

This positive effect of privatized posts on users' engagement, however, might not be the same for each of the three types of engagement. In fact, we could expect that privatized posts might have a positive effect on the number of reactions, while having a negative effect on the amount of shares and comments. People enjoy encountering privatized social media content from politicians and probably want to express their para-social appreciation toward the politician through an easily given reaction (see e.g., Alhabash et al., 2019). In contrast, people share online messages, news stories and such because they contain useful information. For example, reviews of restaurants or movies might help others make better decisions (Berger & Milkman, 2012; Wojnicki & Godes, 2008). Privatized posts, in essence, do not contain such useful information. When people do comment on, or share a post by, a politician, they might be more likely to do so when the post contains relevant or practical information that makes them want to inform other people or appear knowledgeable (Berger & Milkman, 2012; Wojnicki & Godes, 2008), or to share their political point of view, known as partisan sharing (An et al., 2014). This variation in types of user engagement has found some confirmation in a recent study that showed that the private posts of German politicians received more reactions, but not significant more shares or comments (Metz et al., 2020).

Thus, we expect the following:

H1a: Privatized posts will receive more reactions than political posts

H1b: Privatized posts will receive less comments and shares than political posts

We did not have clear expectations related to campaign posts as they fall somewhat in between. They can contain useful information (e.g., place on the list), but often only refer to the 'fun' aspects of being on the campaign trail with supporters. Therefore, we limit ourselves to a research question.

RQ1: How much user engagement (reactions, comments, shares) will campaign posts receive compared to political and private posts?

Emotionality of social media posts

Emotions are important in building strong relationships with others. The importance of emotionality becomes clear when we look at which types of news people prefer. Audiences are drawn toward news that isn't just a neutral description of events. Emotionality, whether positive or negative, draws an audience to the story (Berger, 2011). This is also reflected in people's response to political posts on social media. Berger and Milkman (2012) showed that stories that were better in creating emotionality were able to achieve higher viral effects than news events that lacked such positive or negative tones. Echoing this finding, Kalsnes and Larsson (2018) found that the Norwegian newspapers articles that were being shared the most on social media were those that contained high amounts of emotionality. Additionally, multiple studies show that in political communication, a more emotional tone results in more audience engagement on Facebook posts (Heiss et al., 2019; Keller & Kleinen-von Königslöw, 2018; Nave et al., 2018).

In general, we can say that when a political post on Facebook carries a certain level of emotionality, it affects the user and consequentially the corresponding engagement. Less clarity exists about the determining influence of positive versus negative emotions and the impact on the different types of engagement. In line with the success of negative campaigning (Lau, Sigelman, & Rovner, 2007), it is plausible that negative emotions and tonality in the posts would lead to more attention and consequently more engagement, as angry and outraged users want to offer their point of view. A study on the Facebook pages of Hungarian politicians indeed showed that posts with a negative tone or emotion provoked more comments and shares than positive ones (Bene, 2017a). However, there are also arguments to believe that posts with a positive tone or emotion could provoke more engagement as they allow people to create a more positive self-image on

Facebook (Qiu, Lin, & Leung, 2013). For example, recent research on Austrian politicians has shown that political posts that contain language or pictures that refer to positive emotions provoked more likes, comments and shares, while posts with negatively loaded emotions only had a positive effect on the number of likes (Heiss et al., 2019).

Based on these mixed findings, our expectation is that when Facebook posts of politicians contain more emotionality, both positive or negative, their followers will engage more with the content.

H2a: Posting more positive emotional messages has a positive effect on the likes, comments and shares of social media messages of politicians

H2b: Posting more negative emotional messages has a positive effect on the likes, comments and shares of social media messages of politicians

As the research so far is mixed or inconclusive, we do not formulate concrete expectations about potential different effects for the three types of user engagement but formulate a research question.

RQ2: How much will the effect of (positive and negative) emotionality differ for the different types of user engagement (reactions, comments, shares)?

Election versus routine periods

In election research the notion of a 'permanent campaign' (Blumenthal, 1982) suggests that the differences between election periods and routine periods are blurring and that it becomes ever more difficult to distinguish between the two. Mainly because politicians feel a constant need to maintain popular support, they constantly (want to) communicate with the public (Heclo, 2000). This would imply that it is empirically unnecessary to make a distinction between campaign and routine periods. However, scholars suggest that both periods are structurally different for the main actors involved. Most clearly, for politicians there is more at stake, and therefore they become more active in developing activities to attract public and media attention. Van Aelst and De Swert (2009) claim that election periods also change how the media handle political news and information. For instance, they show that journalists devote more attention to domestic news items and more attention is given to political parties as central actors in the news. This suggests that the amount and nature of the political information citizens encounter during elections is different.

Furthermore, citizens also behave in a different way. Elections are periods when attention for politics is at an all-time high. People become more interested in politics and information about politics becomes more relevant to citizens because people need to make an informed decision at the ballot box (Neudert, Howard, & Kollanyi, 2019). There is a heightened attention for politics and consequently politicians operate under stricter observation by both the public and the media. Thus, there are several reasons to assume the short period before an election day is different from routine periods (Walgrave & Van Aelst, 2006).

However, one can argue that nowadays social media allow or even force politicians to remain in a permanent campaign mode. Nevertheless, studies that focus on the social media behavior of politicians find differences over time. Larsson (2016) showed that Norwegian politicians and parties became much more active on Facebook in the run up to election day. Stier, Bleier, Lietz, and Strohmaier (2018) found a similar effect for German politicians on Twitter. Ceccobelli (2018) assessed the permanent campaign theory on the Facebook communication of party leaders in different countries and found that the amount of Facebook posts politicians put on their page is significantly higher during election times than during routine periods.

Thus, we can expect that politicians become more active on Facebook during election time, but less is known about whether this also changes what politicians post about and how. Only a few studies explicitly distinguish between campaign and routine periods in studying the social media activities of political actors. The study of Ceccobelli (2018) showed that election campaigns increase the personalization of party leaders' Facebook posts, but not the degree of privatization of posts. The leaders become more central, but not their personal life. Additionally, the number of posts about policy issues decreased. He concludes by saying that "on Facebook, not every day is Election Day" (p. 137), meaning that the behavior of political

leaders on social media is fundamentally different during campaigns. In a similar study of US parliamentarians on Twitter, Vasko and Trilling (2019) confirm that election campaigns change the behavior of politicians. For instance, the level of hard news went down during campaigns, and the level of negativity was lower than in routine periods. The authors conclude that "the notion of a permanent campaign does not appropriately describe political campaigning on Twitter, but that the exact differences are still poorly understood" (p. 342).

Although the research on the role of different time periods on how politicians use social media is gradually increasing, the empirical knowledge on how this impacts online user engagement is still absent. We can expect citizens to be more attentive and active online (e.g., Gerbaudo, Marogna, & Alzetta, 2019) but we do not know whether and how this impacts their preference for certain types of messages or the emotional learning of the communication. For instance, campaign periods might stimulate citizens to be more eager to interact with political content, but the higher supply of political messages might also have the opposite effect. Similarly, campaign periods are 'heated' periods that might increase the emotionality of the communication, but that does not mean that these posts have the same effect on user engagement as people might be more reluctant to comment or share emotionally charged posts (Liu et al., 2017). Because of these mixed expectations and our limited knowledge on how campaign periods influence the precise online interaction between politicians and citizens we formulate the following research questions:

RQ3: How do election periods impact the type (private-political-campaign) of politicians' Facebook posts?

RQ4: How do election periods impact the (negative-positive) emotionality of politicians' Facebook posts?

RQ5: How do election periods impact the interaction of different types of user engagement (reaction-share -comment) with the type and emotionality of politicians' Facebook posts?

Data & methodology

We gathered Facebook posts of 124 Dutch-speaking Belgian politicians from five political parties represented in parliament between the first of January 2017 and the first of July 2019. Originally, we considered 237 politicians for the study, this included all Flemish regional and federal parliamentarians,[1] all ministers and party presidents. We used CrowdTangle to collect Facebook posts from publicly available pages.[2] This meant that not all Dutch-speaking Belgian politicians could be included as some politicians only had a personal profile or did not have Facebook altogether. Considering this, we opted to leave out the few remaining members of the Green party and independent parliamentarians as their number was too low for the statistical analyses. This resulted in 124 Facebook pages of politicians that were included in our study. Most politicians that were omitted were backbenchers or politicians that were inactive on social media (see Table S4 in the Appendix for an overview of the distribution across parties).

We classified our Facebook posts into three groups: political posts, private posts and campaign posts. As described earlier, political posts are those that contain a political issue, private posts are about the personal life and leisure time of politicians, and campaign posts do not contain any political substance or opinion, but cover calls to vote, etc. Although some of the indicators for a certain type of post may be contained in the attached image or video, we only based our codes on the textual information contained in a post. Training a multimodal machine classifier was beyond the scope of this paper. The codes were first manually assigned to the posts by four annotators. A machine learning model, specifically a support vector machine, was simultaneously trained using the coded posts to suggest a label to the human coders to streamline the process. After manually coding 15,000 Facebook posts with substantial agreement (0.81 Krippendorff's alpha) a pretrained BERT language model[3] was trained for the task of recognizing the post types. This model assigned labels autonomically (without correction by human annotators) correctly in 86% of the test cases.

The automatic coding process then involved assigning a score from 0 to 100 of how confident the trained model was about each of the labels (*political, private* and *campaign*). Each post was labeled as the classification that scored the highest confidence of the three. However, if a post did not score at least 70 on any of the three classifications, it was removed from the dataset because it could not confidently be classified. In order to test the effectiveness of this operationalization, we compared a random subset (N = 311) of posts that were manually coded with the label that was automatically assigned to it using the aforementioned method. We ran correlations for each of the three categories. This resulted in a correlation of 0.96 for campaign posts, 0.97 for political posts and 0.93 for private posts. This shows the robustness of our operationalization.

This automatic encoding process reduced our total amount of Facebook posts from over 50,000 to 34,408 Facebook posts that were labeled, with 19,690 political posts (57%), 8,362 campaign posts (24%) and 6,356 private posts (19%).

To look at the engagement scores of political messages, we distinguish between three separate measures: reactions, shares and comments that a Facebook post got.[4] Table 1 shows the average numbers of reactions, shares and comments that Facebook posts of politicians got, as well as the standard deviation, median and maximum. In validation of previous work, reactions are more freely given than shares or comments. A Facebook post by a Belgian politician averaged 375 likes, 47 comments and 56 shares in our dataset. The high standard deviation and low median indicate the large variation in user engagement that political posts get.

In order to test our hypotheses we included several additional predictors in our study. First, to measure emotionality we used the LiLaH emotion lexicon for Dutch created by Daelemans et al. (2020). The LiLaH lexicon is translated from the NRC emotion lexicon (Mohammad & Turney, 2013) which has been used to extract emotion scores for social media texts for the purpose of sentiment mining (Rouvier & Favre, 2016) and online hate speech detection (Gao & Huang, 2017, Markov et al., 2021). LiLaH associates words with a polarity (positive or negative sentiment) and eight emotion categories. We processed the Facebook posts by taking each word and looking up its base form (lemma) in the lexicon. If a lemma was associated with a polarity or emotion, it contributed to an overall emotion score of a Facebook post. Posts that did not contain any word present in the LiLaH lexicon thus received a score of 0 and were considered completely neutral. Posts got both a positive and a negative score, which corresponds to the amount of positive and negative words that were present in the Facebook post. On average a Facebook post made by a politician contains 2.6 positive words and 1.25 negative words. Both variables were logarithmically transformed to account for the very skewed distribution.[5]

Next, we annotated whether the post was made during a campaign. Our dataset comprises two election periods, namely the local elections of October 2018 and the regional, federal and European elections of May 2019 (all three elections were on the same day). To investigate if Facebook posts score better during these periods, we added a variable that indicated if a post was created in the four weeks leading up to one of the two elections periods.

Multiple control variables were added. First, we included the function of the politician; our dataset is comprised of parliamentarians, party leaders and ministers. These were recoded into a variable that indicates if a politician is a high profile (minister or party leader) or not. Second, we control for the number of likes a page had when the post was created and divided this by 10,000, which means that an increase of 1 means an actual increase of 10,000 page likes. This was included to account for the overall popularity of politicians on Facebook. Thirdly, we checked the level activity by adding the number of posts a politician made during our 2.5 year time period (and divided this by a 1,000). Fourth, we included the party of the politician to account for the overall popularity of some parties. And lastly, we included the type of post. Previous studies have shown that adding visuals or video can

Table 1. Different types of engagement on political Facebook posts (N = 34.408).

	Mean	Std. Dev.	Median	Max
Reactions	375.0	1133.3	56	33036
Shares	53.2	439.7	3	41283
Comments	47.1	167.9	3	7599

lead to more user engagement (Yuki, 2015). CrowdTangle records this variable and distinguishes eight distinct types: status, photo, link, video, live video, live video complete, native video and YouTube. We recoded all types of video and YouTube into one category, resulting in 4 types. For a descriptive overview of all dependent and independent variables see Table S5 and Table S6 in the appendix.

Results

Our first hypothesis revolves around the distinction between private posts and political posts. As a first indication Table 2 shows the average number of reactions, shares and comments for each of the three types. In line with our expectations, private posts seem to garner the most reactions. Apparently, when people encounter messages or photos of politicians as 'private persons,' they are more inclined to give that post a reaction. In contrast, private posts appear to be less shareworthy. Here we can see that political posts are the most popular. As expected, it appears that people prefer to share posts that contain substance and/or political views. Finally, the difference in the average number of comments shows us that political posts receive more comments than both campaign posts and private posts. It seems that posts with political substance incite more discussions among the followers of politicians' Facebook pages. For a standardized version of the table, see the appendix.

Next, for a more formal test of our hypotheses we conducted fixed effects negative binomial regressions (Table 3). This type of analysis is warranted because our Facebook posts are nested in politicians and because our engagement scores are in essence count variables. All the results in the table are incidence rate ratios. We expected that private posts would score more reactions than political posts (H1a) but score less on comments and shares (H1b). It appears that both assumption are confirmed. There are significant differences between private posts and political posts. Political posts receive on average 16% less reactions than private posts. Also campaign posts receive less reactions than private posts (about 10%). In other words, private posts are more 'likeable' than political posts. Our analysis shows that the opposite is true for shares and comments. Percentage-wise our results show that private posts get 42% less shares than political posts. Political posts score also higher on comments (around 6%) than private posts. All in all, our hypotheses confirm that political and private posts attract different types of behavior from citizens following the pages of politicians. The conclusion for campaign posts is less clear-cut. Just as political posts they receive less reactions (about 10%), but more shares than private posts. However, in terms of comments they score even lower than private posts (almost 9%) suggesting that campaign posts provoke the least discussion on the platform. Which answers our first research question: campaign posts attract the least amounts of reactions and comments, but seem to score better on shares than private posts.

Table 2. Average engagement per classification of post (N = 34,408).

	Reactions		Shares		Comments	
	Mean	SD	Mean	SD	Mean	SD
Campaign	275.6	1108.8	19.2	555,5	27.2	175.7
Private	462.8	1408.1	27.1	257,0	40.6	195.2
Political	389.9	931.1	81.4	126,0	57.7	116.6

Table 3. Fixed effects negative binomial regressions on number of reactions, shares and comments.

	Reactions	Shares	Comments
Classification of post (ref = Private)			
Political	0.84***	1.42***	1.06**
Campaign	0.90***	1.02	0.91***
Negative emotions	1.03***	1.07***	1.08***
Positive emotions	1.01***	1.01*	1.00
Election period	1.27***	1.35***	1.17***
Political status (High profile)	0.93***	1.15***	1.51***
Page likes	1.02***	1.02***	1.02***
Number of posts	1.05**	0.98	1.08***
Type of post (ref = Photo)			
Status	0.85***	0.88**	1.20***
Link	0.81***	0.94***	0.99
Video	0.90***	1.26***	1.06**
Party (Ref = N-VA)			
Open VLD	0.98	0.99	0.71***
CD&V	1.03	1.17***	0.78***
sp.a	1.15***	1.23***	0.98
Vlaams Belang	1.03	1.20***	1.04
Intercept	1.22***	0.28***	0.41***
N (total)	34,408	34,408	34,408
N (Politicians)	124	124	124
AIC	389,204.1	219,983.9	231,517.7

*p < .05; **p < .01;***p < .001

Hypothesis 2a and 2b state that using more emotional language (both positive and negative) will have a positive effect on the reactions, shares and comments of a Facebook post made by politicians. Our analysis shows a clear effect of both negative emotions and positive emotions on the amount of interaction a post gets. This means that emotionally charged language makes users engage more with posts. Citizens seem to be more drawn toward emotionality then to neutral posts. However, the effects of negative language are more outspoken and have a significant effect on all types of engagement. Positive language helps to get more reactions, but the effect on shares is modest, and there does not seem to be a significant effect of positively charged language on the amount of comments. Negativity seems to lead more often to a written reaction in which the user can express his shared anger or frustration with the message. Therefore, we find evidence for both hypothesis 2a and 2b.

A part of the explanation of the different effects of emotionality are related to the types of posts. Negative emotions mainly strengthen the engagement of political posts, while positive emotions seem to boost engagement with private posts. This becomes clear when we perform interaction effects between emotionality and type of post (see Table S9; and Figure S6 appendix). Mainly, the effects of negative emotionality appear to vary for different types of posts. Negative emotional language has a slight negative effect for the number of reactions of private posts, while it has a modest positive effect on campaign posts and a strong positive effect on liking political posts. When it comes to the number of comments, negative emotionally charged language has no effect on private posts, while it does have a positive effect on the amount of comments for both campaign and political posts – which answers our second research question.

Some of our control variables also yielded significant results. As expected, the overall online popularity of a politician matters. The more likes a page has, the higher the amount of reactions, shares and comments the posts of that politician will get. A similar effect is at play for the number of posts a politician has made. More active politicians get more reactions and comments, but not necessarily more shares. Next, we see that the status of politicians has an impact, in particular with the more demanding forms of user engagement. High-profile politicians such as party leaders and ministers can attract more shares and especially more comments than regular parliamentarians. Nonetheless they tend to do worse in terms of reactions. This might be partly explained by the fact that high profile politicians are not only followed by people who 'like' them, but also by people who oppose them and use social media to vocally protest them. We can also report some modest party differences. Interestingly, again, the variation between parties is not consistent over the three measures of user engagement. For instance, the posts of politicians from the Christian Democratic party (CD&V), controlling for other factors, get more shares, but less comments than the Flemish nationalists (N-VA). Finally, regarding the type of post, it seems

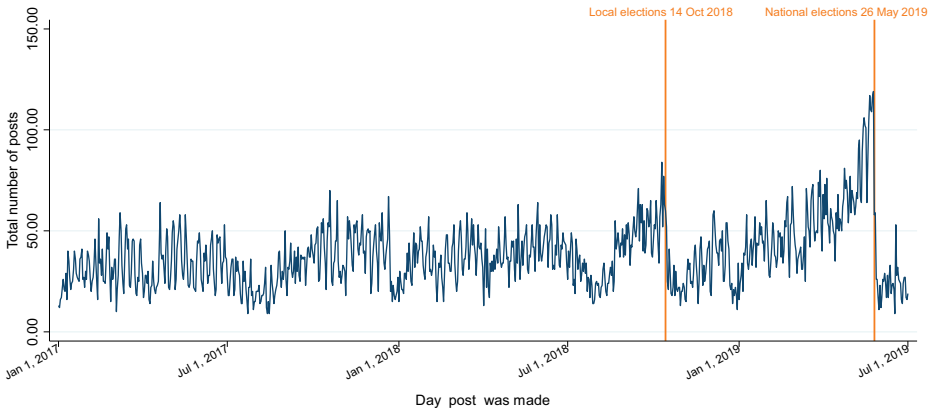

Figure 1. Total posts per day.

that photos are the best at garnering the most reactions, but videos do best in terms of shares and comments.

Campaign versus routine periods

Next, we explore the differences in the amount of interaction the Facebook posts of politicians get between routine periods and election campaign periods. Figure 1 shows that the amount of Facebook posts increases during election times. One smaller spike during the 2018 local elections in the beginning of October 2018, and a second bigger one, during the national elections at the end of May 2019. Overall, the number of posts in an average routine month (about 1,000) almost doubles in the four weeks before election day. Remarkably

Figure 2. Reactions in election and routine periods between types of post.

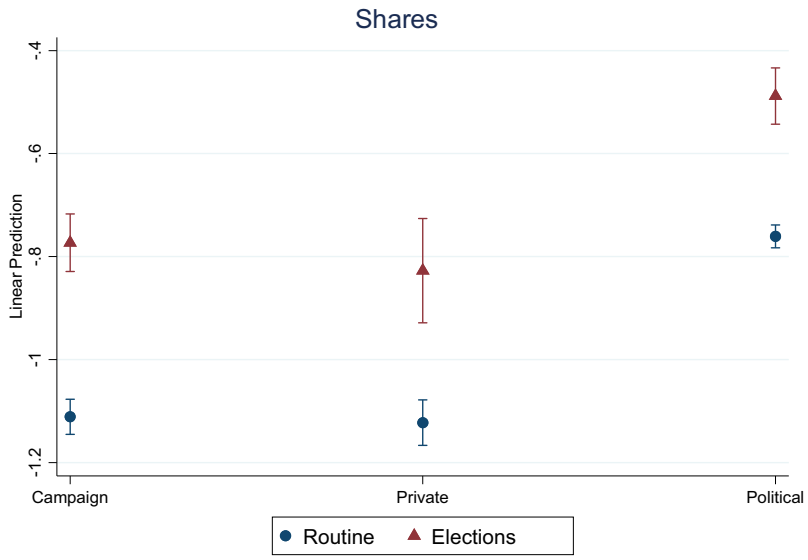

Figure 3. Shares in election and routine periods between types of post.

both elections are followed by a significant drop in the amount of Facebook posts. It is as if politicians have been working tremendously hard during a campaign and therefore need a break after the election day itself.

When we zoom in to the types of posts, we can state that during elections all types of posts appear more often. However, to answer RQ3, we look more in detail at the composition of posts. In routine times around 22% of posts are campaign posts, 19% private posts and 60% political posts. In the weeks leading up to an election around 45% of posts are campaign posts, 15% private posts and 40% political posts. This indicates that mainly political posts, focusing on substantial issues or political opinions, lose in relative importance. However, it is important to note that in absolute numbers both political and private posts increase significantly, but their share decreases because of the exponential growth of campaign posts.

Next, to explore if the amount of emotionality differs between election and routine periods (RQ4), evidence shows that the average for both positive and negative emotionality is significantly lower during election periods. The positive emotionality score is on average 0.12 lower in election periods ($p < .05$) and the negative emotionality score is on average 0.22 lower in election periods ($p < .001$). Our results thus show that during election campaigns, politicians are more neutral in terms of the language that they use.

Table 3 shows that there is a general positive effect of campaigns on the user engagement of politicians' Facebook posts. Users produce more reactions (27%), more shares (35%) and more comments (17%). However, we were interested to see if different types of posts get different types of user engagement in elections times compared to routine times. Thus, to answer RQ5 regarding the effects of elections on user engagement, we interacted the campaign period with our threefold typology (private, campaign and political), as well as with emotionality (for the full regression see Table S6 in appendix). Figures 2, 3 and 4 show us the difference in engagement between the three main types of posts both in election times (red triangle) and routine times (blue circle). At first sight, it becomes clear that all three types receive more reactions, shares and comments during election periods. Figure 4 indicates that the amount of comments posts received in election times is slightly higher for some types of posts. In the run-up to an election, campaign posts score clearly better in terms of comments, while private posts seem to benefit less in this regard. However, all in all, we conclude that for the most part citizens do not show a different engagement behavior with Facebook posts of politicians between routine and elections periods.

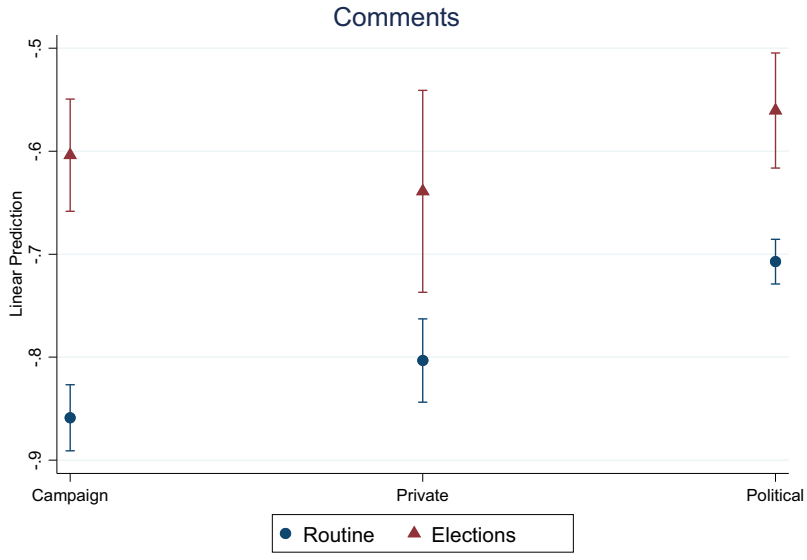

Figure 4. Comments in election and routine periods between types of post.

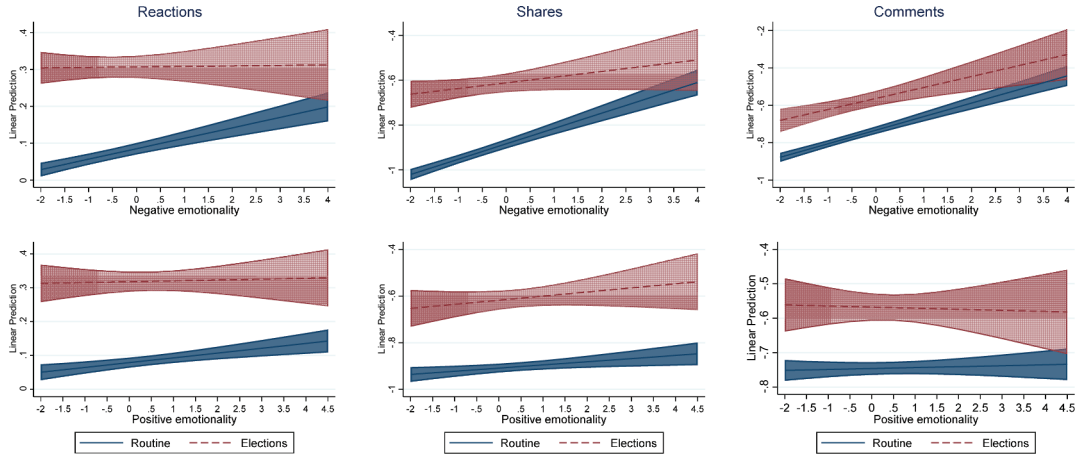

Figure 5. Reactions, shares and comments in election and routine periods for negative and positive emotionality.

Figure 5 shows the difference in the interaction rate of both positive and negative emotionality between routine periods (blue) and election periods (red). We do find significant differences between the two periods. It appears that emotional language, both positive and negative, does not have an impact during a campaign period. In contrast to routine periods, higher levels of emotionality do not lead to more engagement. An exception to this trend is negative emotionality as affects the amount of comments. Also during election periods, negative emotionality has a positive effect on this specific type of engagement. Overall, these results indicate that emotional language has a smaller influence on Facebook engagement during election campaigns.

Conclusion

The social media revolution has not only changed the opportunities for politicians to spread their message, but also for citizens to interact with them. A recent but growing number of studies try to explain which messages from politicians will lead to more interaction than others. Our study adds to this literature in several ways. First, we have shown that the type of social media post co-determines how the online public engages with it. For instance, when politicians share private matters, which happens in one out of five Facebook posts, these posts lead to more reactions than political posts, while simultaneously they are less likely to be shared or commented on. This means that the so-called para-social interaction between politician and citizen remains rather superficial. The politician gives a quick insight into an aspect of his/her personal life, and the follower shows a form of appreciation with an even more hasty response. For political posts another dynamic is at play. When politicians share their political ideas, opinions or accomplishments, people more often react to them in a more meaningful way by commenting on them and sharing the message with others. As these types of interaction require a bit more effort from the user, they also show more involvement and commitment to the user's community.

Second, if politicians want to get more interaction on their Facebook page, the use of emotional language is key. Overall, and in line with previous studies, we find that messages containing more positive or negative emotional words lead to more user engagement. The effect of negativity is clearly more outspoken, and much stronger on the higher levels of interaction such as comments and shares, where the effect of positivity becomes small or non-existent. Our data suggest that this difference is also related to the type of message. Where positive language works well to improve the number of reactions on private messages, negative language has a stronger effect on the shares and comments for political posts.

Third, and most innovatively, we focused on the role of the political context, by distinguishing by routine and election periods. Our findings are in line with previous studies that state that the idea of a permanent campaign does not imply that "every day is election day" (Ceccobeli, 2018). Both

politicians and citizens are more active on social media during this 'exceptional period,' but the dynamic of the interaction between political actors and the public remains largely the same. All types of posts get almost to the same extent substantially more reactions, shares and comments. Therefore, we can conclude that election campaigns intensify the interactions between politicians and citizens but do not change the dynamic. Campaign periods also do not mean that politicians start using more emotional language, on the contrary, campaigns lead to less emotional messages and emotionality has less effect on user engagement. Only for the most active people who make the effort to comment on a post does negative language work better during campaigns. This seems to suggest that during campaign periods, when stakes are higher, politicians do not need to use strong language to provoke public interaction on social media.

More broadly, our study can weigh in on the ongoing debate on the effectiveness of negative campaigning (Lau et al., 2007), as our results suggest that 'going negative' is a fruitful political strategy to increase one's online popularity. However, there are a few important nuances. First, it is unclear whether more interaction is always positive for the politician. In particular posts of leading politicians seem to generate a large number of comments that critique the message or its sender. We should thus be careful when interpreting these numbers purely in terms of success and popularity. Second, negative emotional language is less used and less effective in the important period preceding an election. In that sense the notion of 'negative campaigning' is somewhat misleading, as negative language is more present and more successful in routine times than in election time. This could be due to the fact that in election times Facebook posts containing negative emotional language are seen as less sincere, or more strategic, by the public, which causes it to have less of an impact. Outside election time, negative emotionality might be perceived as more related to actual policy and less as a form of negative campaigning to damage an opponent and gain votes. This finding echoes what Aaldering, van der Meer, and Van der Brug (2018) found in their study on the lower effect of negative news coverage of political leaders during campaign times compared to routine times. Third, our study tells us little about the right 'doses' of negative language. It is possible that negative messages mainly attract attention if they are not the norm and are mixed with more positive communication. In a similar way, it is possible that private messages only get more likes if they are not the dominant form of communication. Put differently, further research is needed to determine what a successful combination is of both emotionality and types of messages.

However, the present study has other limitations that could be addressed in future work. Our findings are based on a large N dataset, which means that there was less room for personal differences. For instance, we did not include a lot of variables on the post level, such as pictures, videos or the timing. Thus, big data research such as this, is best used in combination with qualitative analyses to further deepen our understanding of which factors of the Facebook posts of politicians result in a more audience engagement. Although, we devoted ample attention to the different types of user engagement when studying how people interact with Facebook posts of politicians, we combined the seven different types of reactions. We are, however, aware that a more fine-grained analysis could provide more accurate insights on what types of posts lead to 'positive' (like, love, care) or more 'negative' (angry, sad) reactions. Finally, the present study only took the textual content of the Facebook posts into account when labeling each post. After all, there might be a difference in terms of meaning and content between the textual and visual messages of a Facebook post. Whereas a politician might post a private message in the form of a status update, the accompanying photo or video might well have a political focus, or vice versa. This (non-)congruence between textual and visual elements and associated meanings is therefore valuable to study in the future. Despite these limitations, we hope that our large-N study and partly automatic analyses of social media posts of political actors will inspire others to further develop our understandings on when, how and why politicians and citizens interact on social media.

Notes

1. Substitutes who (temporarily) filled in the parliamentary seat of a ministers were also included.
2. For more info see https://www.crowdtangle.com
3. A BERT-transformer using the GroNLP/bert-base-dutch-cased pretrained model (12-layers, GELU activation).
4. For Reactions, all sub types of reactions were aggregated (likes, wow, haha, sad, angry and love).
5. Skewness for Positive words = 3.47 and skewness for negative words is 3.12.

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