

# Fear, Hope, and COVID-19: Emotional Elite Rhetoric and Its Impact on the Public During the First Wave of the COVID-19 Pandemic

Tobias Widmann 

*Department of Political Science, Aarhus University, Aarhus, Denmark*

---

*Research shows that emotions matter in politics, and they matter during a public health crisis. Yet, a comprehensive analysis of emotional political rhetoric during the COVID-19 crisis is still missing. Based on parties' position in the political arena (government versus populist radical parties), I expect differences in how specific emotions are employed and in how these messages actually influence the public. To test my hypotheses, I use word embeddings and neural network classifiers to measure fear and hope appeals in social media messages of political parties in four European countries. Furthermore, I rely on more than 1,400,000 public tweets of random citizens to estimate the impact of party messages. To do so, I employ vector autoregression (VAR) analysis to compare retweet volumes of political messages to emotional expressions in public tweets. Results indicate two main findings, (1) populist radical parties communicate less about the pandemic and decrease fear and increase hope appeals while COVID case numbers are rising whereas government parties exhibit the opposite pattern; (2) increased diffusion of party tweets consistently precedes change in partisans' emotional expressions the following day. The findings can carry important implications for (affective) polarization and the level of protective behavior among the population.*

---

**KEY WORDS:** emotions, covid-19, political communication, computational text analysis, text-as-data

Don't be afraid of Covid. Don't let it dominate your life [...]  
—Donald J. Trump, October 5, 2020 (deleted tweet)

Public advice from governments and other political parties constitute a key component of pandemic responses. Government messages might foster protective behaviors and thereby slow down the spread of a deadly disease. Yet, specific parties and actors around the world have been accused of downplaying the COVID-19 crisis. Among them, most famously, Donald J. Trump encouraged American citizens not to be afraid of the virus. Most recent research suggests that rhetoric playing down the crisis can actually impact public opinion about the crisis and thereby protective behavior (Simonov et al., 2020). Yet, despite the importance of political communication during pandemics, detailed research on COVID-19-related rhetoric in political communication and its consequences is still limited. In particular, the emotional framing of messages is understudied, even though emotional

### Highlights

- Fear and hope have been found to be central emotional responses to public health crises with important implications for individuals' behavior during pandemics.
- In routine times, government parties rely on positive emotions while challenger parties, such as populist radical parties, rely more on negative emotional appeals.
- With rising COVID-19 numbers, populist radical parties increase appeals to hope and decrease appeals to fear, while government parties exhibit the opposite trend.
- Changes in emotional expressions of citizens were consistently preceded by corresponding changes in the retweet volume of their supported party.
- Populist actors use discrete emotional appeals to downplay the severity of the first wave of the pandemic and create populist crisis narratives.

content has been shown to be a powerful tool shaping opinions, attitudes, and political behavior (Brader et al., 2008; Van Kleef et al., 2015).

A growing strand of literature researches the affective side of political communication. These studies argue that politicians use emotional rhetoric strategically (Crabtree et al., 2020; Kosmidis et al., 2019; Müller, 2022; Valentim & Widmann, 2021). Furthermore, the general pattern found is that incumbents make more use of positive emotional appeals, while opposition parties (and especially challenger parties on the fringes of the political spectrum) make greater use of negative emotional language. This does not only apply to general positive or negative sentiment, but also to discrete emotions (Widmann, 2021). Yet there is reason to believe that this pattern changes during a global public health crisis.

Emotions play an important role during pandemics. Recent research on political trust suggests that emotional evaluations are even more important than cognitive ones during COVID-19 (Schraff, 2020). In particular, fear has been found to be one of the central emotional responses. A number of recent empirical studies found that during the first wave of the COVID-19 pandemic, individuals who experienced fear or a feeling of threat are more compliant with protective advice (Harper et al., 2021; Jørgensen et al., 2021), put more trust in governments (Schraff, 2020), and showed increased support for restriction measures (Vasilopoulos et al., 2022). Hope, on the other hand, can induce a feeling of false optimism which could lead people to underestimate the likelihood of contracting a disease and therefore ignore public health warnings (Wise et al., 2020). Based on this, I hypothesize that political parties diverge from their emotional communication of routine times. In particular, I expect government parties to become overall more negative (increasing fear and decreasing hope) in order for citizens to comply with governmental advice. On the other hand, populist parties are expected to show the opposite pattern: decreasing fear and increasing hope appeals. This communication can help populist actors create specific populist crisis narratives which can forge societal division (Lasco & Curato, 2019), mobilize support, and potentially limit the possibilities for government parties to benefit from “rally-'round-the-flag” effects (De Vries et al., 2021; Schraff, 2020; Yam et al., 2020).

Furthermore, research has shown that media messages on political issues can induce emotional responses in individuals (Gross & Brewer, 2007) and that these emotions can sway attitudes and public opinion (Kühne et al., 2011; Kühne & Schemer, 2015). In the case of this study, I expect that emotional rhetoric of specific parties impact citizens' “feelings” and thereby change potentially their opinion about the crisis. Yet, in order to impact individuals, the public needs to be exposed to political messages first. Incidental exposure can impact political learning (Nanz & Matthes, 2020) and

attitudes (Müller & Schulz, 2019). Yet, the question remains whether effects of emotional appeals in elite communication follows partisan dynamics or occurs based on the virality (and dominance) of specific parties in social media networks (Davis et al., 2019).

To test these expectations, I analyze emotional appeals in social media messages by political parties in four European countries (Germany, Italy, the Netherlands, and Spain) and public tweets in one European country (Germany) during the first wave of the COVID-19 pandemic. To measure fear and hope appeals, I make use of neural network classifiers based on word embeddings. Subsequently, I use regression models in Study 1 to analyze how political parties adapt their emotional rhetoric to the crisis situation. In Study 2, I use time-series data and vector autoregression (VAR) analysis to explore which party succeeds in impacting the general public on Twitter. Importantly, I do not test directly how emotional framing influences attitudes towards the pandemic. Instead, I measure changes in the emotional expressions of the public in response to increased diffusion of party messages in social media networks, which might serve as a proxy of the public's attitudes (Ruck et al., 2019). To do so, I compare retweet volumes of political messages to changes in the emotional expressions of different subgroups of citizens on the following day. Lastly, I complement this quantitative text analysis by delving deeper into the data in a more qualitative fashion.

Results indicate different rhetorical styles between government and radical populist parties. As expected, with rising case numbers, government parties emphasize the severity of the COVID-19 crisis by increasing the level of fear appeals and decreasing hope appeals in their messages. Radical populist parties exhibit the opposite pattern. When daily new infections increase, they decrease fearful rhetoric while increasing hope appeals. These findings suggest that political parties employ emotional rhetoric to either emphasize or downplay the severity of the crisis during the first wave of the pandemic.

In terms of impact on the mass public, the findings suggest that there are important partisan dynamics at play: Changes in emotional expressions of followers of government parties were consistently preceded by corresponding changes in the retweet volume of government messages, at an optimum interval of one day. The same applies for the populist radical right. Partisans changed their emotional expressions following corresponding changes in the retweet volume of the populist radical-right party. These findings indicate that partisans are more responsive to the communication of their own party and carefully suggest that communication effects are more likely to occur among copartisans, which can further radicalize and (affectively) polarize certain parts of the population. The study thereby provides further evidence to research documenting an increase of affective polarization between radical-right and mainstream partisans during the first wave of the pandemic (Jungkunz, 2021).

Overall, this study adds to a strand of literature that researches the strategic use of emotional rhetoric in political communication, arguing that emotional style is an important part of party competition (Kosmidis et al., 2019). It further contributes to research on the importance of distinct emotions for populist actors (Widmann, 2021) and shows how distinct emotional appeals can contribute to or be embedded in populist narratives during public health crises (Lasco, 2020) and beyond. In addition, the results add to a strand of literature researching the consequences of emotional rhetoric by showing that changes in emotional elite messages correlate with how the public talks about political issues, thereby potentially impacting attitudes individuals hold (Gross & Brewer, 2007; Stapleton & Dawkins, 2021). Assuming that elite messages can impact the perception of the pandemic (as either more or less severe), this last finding carries important implications for the level of protective behavior among citizens (Andersen, 2020; Motta et al., 2020; Simonov et al., 2020).

## Emotional Rhetoric in Political Communication

Research in political communication has increasingly acknowledged the importance of emotional appeals. Next to the factual content and the target of political messages, the (emotional) style of messages matters as well (Crabtree et al., 2020). Indeed, research on affect and cognition has shown that emotional reactions can impact important processes in individuals: information processing, risk perception, attitude formation, and voting decisions (Lerner & Keltner, 2000; Vasilopoulos et al., 2018).

Existing studies investigating the emotional framing of messages in political communication suggest that political parties use emotive content in a strategic manner, depending on their policy positions (Kosmidis et al., 2019), the economic situation (Crabtree et al., 2020), the success of political competitors (Valentim & Widmann, 2021), or the temporal direction of statements (Müller, 2022). Moreover, research has found that emotional appeals are dependent on the incumbency status and the position in the political space. While government parties make extensive usage of positive emotional appeals, opposition parties and especially parties on the fringes of the political spectrum, such as populist challenger parties, make greater usage of negative emotional appeals (Widmann, 2021). Yet, does this pattern change during a global health crisis? This is an important question since research indicates that emotions play a central role in regard to protective behavior during pandemics.

Fear is one of the central emotional responses during a pandemic and an important predictor of behavior. In general, fear is associated with high levels of uncertainty which can lead to a more cautious approach towards risky situations (Lerner & Keltner, 2000) and facilitate coping strategies such as avoidance or escape (Lazarus, 1991). Appraisal theories also describe the underlying core relational theme of fear as the danger of “imminent physical harm” (Lazarus, 1991). Hence, fear reactions should induce individuals to follow recommended preventive health behavior (Maddux & Rogers, 1983), in order to avoid physical harm.

During pandemics, research has repeatedly shown that feelings of fear and threat increase the likelihood of complying with public health advice, also during the most recent COVID-19 crisis (Harper et al., 2021; Jørgensen et al., 2021). Vasilopoulos and coauthors (2022) found that in five European countries fear increases support for restrictive measures during the COVID-19 pandemic, even if these measures restrict civil liberties. Other negative emotions, for instance anger, had no significant impact. An even larger cross-country survey in eight European countries found that during the first wave of the pandemic fear increased compliance with governmental advice (Jørgensen et al., 2021).

Moreover, governments can benefit from higher levels of fear and anxiety among citizens since these emotions drive the “rally-round-the-flag” effect which leads to increased popularity of and trust in government actors among citizens (De Vries et al., 2021; Schraff, 2020). Thus, one could expect that government parties increase fear appeals in their communication in order to induce feelings of threat in individuals which, in turn, can lead to increased compliance with public health advice and support for government actions.

Hope, on the other hand, can carry the opposite effects during pandemics. Hope is a future-oriented emotion that is characterized by feelings of uncertainty (Frijda et al., 1989), similar to fear. Hope and fear share further commonalities, such as the assessment of the probability of different outcomes which can subsequently influence behavioral intentions (Just et al., 2007). Hopeful individuals, however, project a positive future and base decisions on optimism. This can introduce an “optimism bias,” especially in situations where full information is impossible. The optimism bias is associated with the belief that bad things are more likely to happen to others (Bavel et al., 2020; Kuper-Smith et al., 2021), which can lead to underestimating the risk of contracting a disease (Brnstrm & Brandberg, 2010; Sharot, 2011) and ignoring public health advice (Brewer et al., 2007; Dolinski et al., 2020; Wise et al., 2020). Hence, government parties should have an interest in decreasing hope-related language in their communication in order to avoid false optimism.

Opposition parties, on the other hand, do not benefit from “rally-’round-the-flag” effects since they are not perceived as the ones in charge during crises (Yam et al., 2020). Populist radical parties in particular, might experience a lack of possibilities on how to attack the government during a crisis. In routine times, populist challengers try to attack the competence of mainstream competitors, such as government actors, by bringing up new divisive issues and using antiestablishment rhetoric (De Vries & Hobolt, 2020). In doing so, research has shown that they make extensive usage of negative emotions such as fear (Widmann, 2021). Yet, during the COVID-19 crisis, increased levels of fear might benefit their political competitors, as it can increase trust in governments (Schraff, 2020; Vasilopoulos et al., 2022) and compliance with governmental advice (Jørgensen et al., 2021; Vasilopoulos et al., 2022).

Furthermore, while populist support in routine times is largely driven by negative emotions such as anger or fear, hope appeals might be more suitable for “populist narratives” during a global pandemic. Populism is at its core a “thin ideology” that is built around antielitism, people centrism, and a Manichean outlook on the world. In this worldview, the elites (politicians, media, scientists, etc.) are often targeted for betraying the “pure people” and disregarding the “general will” of the people (Hawkins et al., 2018). Populists often try to fabricate a sense of crisis, in which they can pit “the people” against a dangerous “other” (Moffitt, 2016). While this seems initially at odds with the expectation that populists use hope appeals to downplay the severity of a pandemic, it can help them in the performance of “medical populism.” This specific form of populism uses public health crises to pit “the people” against “the establishment.” Lasco and Curato (2019) describe components of medical populism as making assertions about the danger of the virus (e.g., “It’s just like the flu”), promising quick fixes and cures like vaccines, making simplistic arguments, as well as positive projections of the future. As such, medical populism is in line with the core components of hope which entails an optimistic outlook into the future. Hope appeals can thereby help in creating populist narratives of simplification during public health crises (Lasco, 2020).

Therefore, I hypothesize that populist parties in particular (and not mainstream opposition parties) try to downplay the severity of the crisis by focusing on positive rather than negative emotions, which would represent a drastic change from the emotional dynamics of routine times. By doing so, they could potentially frame the crisis as less threatening and frightening than it actually is. Moreover, this emotional framing creates populist narratives which can forge division, increase electoral support, and limit the extent to which citizens rally around their governments (Schraff, 2020).

*H1a:* While daily new cases increase, government parties increase fear appeals in their communication.

*H1b:* While daily new cases increase, populist radical parties decrease fear appeals in their communication.

*H2a:* While daily new cases increase, government parties decrease hope appeals in their communication.

*H2b:* While daily new cases increase, populist radical parties increase hope appeals in their communication.

### **Emotional Framing of the Public**

The second part of the analysis aims at answering the question of which parties succeed in actually impacting the mass public’s emotional state. Important to note is that I do not test directly whether emotional messages impact citizens’ opinions towards the pandemic. Instead, I measure changes in the emotional expressions of citizens online, which should be observable if the emotional

framing of political messages impacts citizens' opinions (González-Bailón et al., 2012; Tumasjan et al., 2011).

Past research has shown that emotional framing can influence voters and their attitudes and opinions (Brader et al., 2008; Gross, 2008). For instance, Kühne and Schemer (2015) show how messages can elicit distinct emotional reactions (e.g., anger and sadness), which correspond with the underlying appraisal patterns included in the message. These emotional responses then influence policy opinions, by making emotion-congruent information more accessible and thereby guiding subsequent decision-making. Other studies found that simple elite displays of emotion—for example, angry words in a political debate—can cause individuals to experience similar emotions. This process is called “affect linkage,” which can have important consequences for political processes (Stapleton & Dawkins, 2021). The idea that the electorate takes cues from political elites is not new (Slothuus & Bisgaard, 2020); however, the research above indicates that the public is also influenced by the emotional content of elite messages.

Yet in order for citizens to be influenced by political communication, they first need to be exposed to these messages. In social media networks, the arena where this study takes place, it is often argued that populist parties are very successful in disseminating their messages. In particular, populist radical-right parties often achieve higher number of interactions compared to older, and in terms of vote share, they acquire bigger political competitors. For instance, Facebook content of the German populist-right party *Alternative für Deutschland* (AfD) is shared significantly more than content of established parties (Davis et al., 2019). A study by Jungherr and coauthors [Jungherr et al., 2016] found that during the German election of 2013, the AfD was mentioned on Twitter either equally often or even more than traditional, established parties. This success in social media networks can potentially result in higher chances of accidental exposure to radical-right communication. A study of German Internet users before the COVID-19 outbreak indicated that almost a third of social media users is regularly exposed to messages with an affinity to populism (Müller & Schulz, 2019). Being exposed to political messages can then lead to affect linkage (Stapleton & Dawkins, 2021), which should influence the emotional expressions of exposed citizens. This leads to the following hypothesis:

*H3a:* Greater diffusion of populist radical-right communication leads to corresponding change in the emotional expressions of the public.

Yet there is also research that points in the opposite direction. First, it is up for debate if radical-right parties indeed dominate social media. A number of studies do not find significantly higher levels of social media adaptation or online campaigning levels between radical parties and parties in the center (Dolezal, 2015; Nulty et al., 2016). Furthermore, Silva and Proksch (2021) show that radical-right parties have more “bots” as followers (fake accounts which pretend to be humans), compared to other party groups. Hence, instead of interacting with real citizens, radical-right parties connect more than other parties with fake accounts which raises the question about the effectiveness of radical-right communication (if a substantive part of their recipients are machines). Second, based on motivated reasoning theory (Taber & Lodge, 2006), one would expect that citizens process new information about the pandemic in a biased manner based on predispositions such as partisanship. Hence, partisans would react with positive affect to supporting arguments they encounter online and ignore information inconsistent with prior attitudes. Based on this, one would expect that emotional framing effects are largely driven by partisan dynamics.

*H3b:* Greater diffusion of any party's communication leads to corresponding change in the emotional expressions of this party's supporters.

## Methods

### *Data and Cases*

The analysis of this study consists of two parts. Study 1 analyzes how political parties in four European countries (Germany, Italy, the Netherlands, and Spain) adapt their emotional rhetoric to rising case numbers. These countries not only vary in their geographical location but also show differences in case numbers, lockdown measures, and the presence of a variety of different populist parties. Appendix S1 in the online supporting information presents a list of all political parties, including information on political ideology and populism). Study 2 analyzes the effect of this communication in one European country (Germany) using different subsamples of German Twitter users.

The data used in this study is social media data (Twitter and Facebook) and covers the first wave of the crisis, from the beginning of March to the end of May 2020. I collected all social media posts from the official accounts of all political parties currently represented in the respective national parliaments. The data has been collected using the *Facepager* (Jünger & Keyler, 2019) application for Facebook data and the package *rtweet* (Rtweet, 2021) for Twitter data. After the data collection, I tokenized the Facebook posts to the sentence level since the machine-learning algorithm (described below) was trained on sentences, and it makes the length of the Facebook sentences comparable to tweets. To calculate the salience of the “COVID-19” topic in tweets and sentences, I used multiple keyword strings (see Appendix S1 in the online supporting information) for each of the included languages. These keyword strings have been created by native speakers with extensive knowledge about the respective countries. Hence, the keyword strings do not only include general terms such as “corona,” “covid,” and “crisis” but also country-specific hashtags that have been used during the first wave in social media networks. Furthermore, the keyword strings are broad in focus and also cover related issues such as lockdown, mask mandates, and travel restrictions.

In the first part of this analysis, I focus solely on party communication. This data set includes a total number of 36,811 documents (Facebook sentences or tweets). Importantly, in this part of the analysis I did not filter the documents by keywords. Instead, I analyzed all messages since most of the party communication was focusing on the pandemic during the first wave. Hence, one should be able to find changes in emotional rhetoric if also analyzing the complete sample of documents.

In the second part of the analysis, I focus solely on Twitter data from Germany. Twitter offers the unique advantage of providing data from both political parties and citizens which are written in a similar format and style. The German data set includes tweets from political parties and more than 1,400,000 tweets from different samples of the general public on Twitter. These samples have been created following the approach by Barberá and coauthors (2019). The “general” public sample includes 10,000 random Twitter users who are politically interested (followers of “Süddeutsche Zeitung,” the biggest daily newspaper in Germany; see Barberá et al., 2019). However, analyzing social media data always entails the risk of oversampling certain parts of the population which are overrepresented in social media. For example, starting from the assumption that the radical right is overly dominant in social media, taking a “random sample” of followers increases the risk of oversampling exactly these partisans. To control for partisan dynamics and to see who reacts to which messages, I created two additional (partisan) samples consisting of 10,000 random followers of the German social democratic party (SPD), which was a member of the government in 2020, and a second sample consisting of 10,000 random followers of the German radical-right party “Alternative für Deutschland” (AfD). These two clusters of Twitter users (supporters of a government party versus the radical right) should provide insight into how partisan support shapes responsiveness to political

messages during the first wave of the pandemic. The citizen data collection is described in further detail in Appendix S1 in the online supporting information.

The number of new COVID-19 cases per country has been collected through the “Our World in Data” database (*Our world in data*, n.d.). The number indicates new daily infections by one million inhabitants per day by country.

### *Word Embeddings and Neural Network Classifier*

To measure emotional appeals in social media messages, I employ novel text-analysis methods that include word embeddings and neural network classifiers. Word-embedding models learn the meaning of words by taking the context of words into consideration. To do so, word embeddings transform words into numerical vectors that can be represented in a multidimensional space. Within this multidimensional space, words with similar meanings are positioned closer to each other (and have similar vectors). Thus, the numerical vectors of terms carry important information about the meaning of words. A number of recent studies use word embeddings in a variety of different text-analysis tasks (Kozłowski et al., 2019; Rheault & Cochrane, 2019).

Such embeddings can be downloaded pretrained or trained locally. In the case of this study, I used word embeddings that have been trained locally on nearly two million text documents of party communication in German. Afterwards, I used these word representations to train machine-learning classifiers. To be precise, I used 10,000 crowd-coded sentences which have been transformed into numerical vectors using the locally trained word embeddings. Then, I use the numerical vectors to train different machine-learning classifiers (neural network classifiers) that are able to measure appeals to eight distinct emotions. A detailed description of the word embeddings, the crowd-coding procedure, the coding instruction, and the machine-learning classifiers can be found in Appendix S2 in the online supporting information. The main focus of this study lies on fear and hope due to their importance during public health crises, but Appendix S7 repeats the main analysis for different emotions.

Overall, the novel classifiers achieve high performance measured against human judgment. The validation tests in Appendix S2 in the online supporting information show that the machine-learning classifiers based on word embeddings clearly outperform freely available emotional dictionaries that have been widely used in previous research in political science (e.g., the LIWC dictionary [Pennebaker et al., 2001] or the NRC dictionary [Mohammad & Turney, 2013]).

### *Analysis*

To test my hypotheses, I draw on different approaches. In the first study, I employ different regression models to analyze changes of emotional rhetoric by political parties depending on the infection rate. The level of emotional language (fear and hope) represents my dependent variable. The independent variable is the number of new cases per one million inhabitants per day in each country, interacted with the party position variable (Government, Opposition, Populist). In the main analysis, I use pooled data, but Appendix S6 in the online supporting information presents the results for each individual country.

In the second part of the analysis, I make use of vector autoregression (VAR) analysis. VAR models explain the interdependencies among multiple time series based on their own lagged values as well as the lagged values of the other time series included in the model. Recent studies have chosen a similar analytical approach (Barberá et al., 2019; Gilardi et al., 2021; Ruck et al., 2019). Optimal lag-length criteria (AIC, Hannan-Quinn, Schwarz, and Forecast Prediction Error) included in the VAR package for R (Pfaff, 2008), indicate that a time lag of one day is optimum for all VAR analysis in this study. Appendix S4 presents these tests and their results in greater detail.



Using the VAR analysis, I aim at investigating which party succeeds in impacting the general public on Twitter. To do so, I analyze whether number of retweets per day predicts the emotional expressions of the public. The idea is that retweet numbers represent the level of diffusion of political messages in networks of real citizens (similar to the study by Ruck et al., 2019). The higher the number of retweets, the higher should be the chance of incidental exposure to political messages which could potentially impact public opinion. This, in turn, should then be reflected in public expressions of citizens online.

To conduct this analysis, I calculate the sum of retweets per day for each party type. To investigate differences between different populist parties (populist right and populist left), I split the populist party group into subgroups in the second part of the analysis. This results in four retweet time series for a time period of 75 days in Germany. The analysis of German citizen data starts on March 18, the day when the German chancellor addressed citizens in a TV speech, which put the COVID-19 crisis more at the center of attention. In addition, one time series indicates the proportion of hope appeals and one the proportion of fear appeals in the different samples of the public. I then express the autoregressive and endogenous relationship of these variables as a system of equations,  $Z$ , in which each variable is a function of its previous lags plus the lags of the other variables:

$$Z_{fear,i,t} = \sum_i \sum_{p=1} \beta_{p,i} Y_{i,t-p} + M_{fear,t-p} + N_{t-p} + \epsilon_{fear,i,t},$$

$$Z_{hope,i,t} = \sum_i \sum_{p=1} \beta_{p,i} Y_{i,t-p} + M_{hope,t-p} + N_{t-p} + \epsilon_{hope,i,t},$$

$Y$  representing the time series of daily retweet numbers for each party group  $i$  in day  $t$ .  $M$  represents the emotional expressions of the mass public for the respective emotion in day  $t$ . In addition, since the emotional expressions of the public could also be driven by the general crisis situation (infection rate), I also control for numbers of new cases per one million inhabitants per day  $N$ . The results of the estimated VAR model are then expressed using cumulative, orthogonal impulse response functions (IRFs), an approach that has been used by similar recent analyses (Barberá et al., 2019). These IRFs show how a one-time standard-deviation increase in the number of retweets per day for a party group predicts the emotional expression of the public the following day.

## Results

Before I turn to the main hypotheses of this study, I start with a descriptive analysis of the data. [Figure 1](#) shows the mean comparison of hope and fear appeals between different party groups in all four countries. The plot displays the averaged emotional scores across the whole observation period. This comparison confirms previous studies showing that, in general, mainstream parties make more use of positive emotional language while populist radical parties rely more on negative emotional appeals (Widmann, 2021), also during the first wave of the pandemic. Furthermore, [Appendix S3](#) in the online supporting information shows the development of new COVID-19 cases per one million inhabitants per day by country during the first wave of the pandemic. While there are some country differences, the general trend remains similar for all countries. While there was a stark increase in daily new cases throughout March, the numbers start to continuously decrease throughout April until reaching a level of only a few new cases per one million inhabitants at the end of May, indicating the end of the first wave.

Next, before turning to emotional appeals, [Figure 2](#) presents the salience of the COVID-19 pandemic in the communication of different parties. As can be seen, all party groups increase COVID-19-related messages in the first half of March reaching a peak between the middle and the end of March. Furthermore, as the graph illustrates, mainstream government parties speak significantly more about the pandemic than populist parties. While almost 70% of government posts contained at least one word related to the COVID-19 crisis in mid-March, populist parties dedicated approximately only

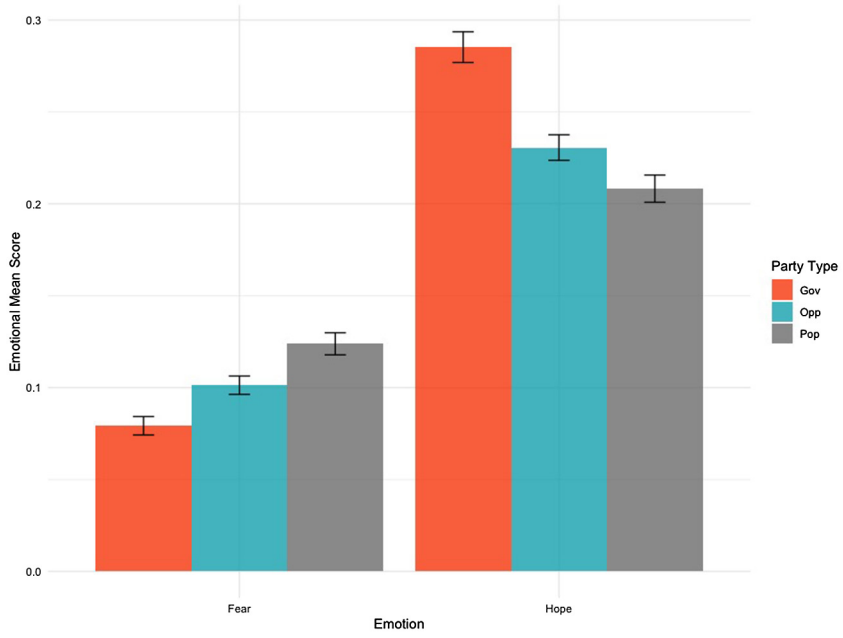


Figure 1. Mean comparison by party group.

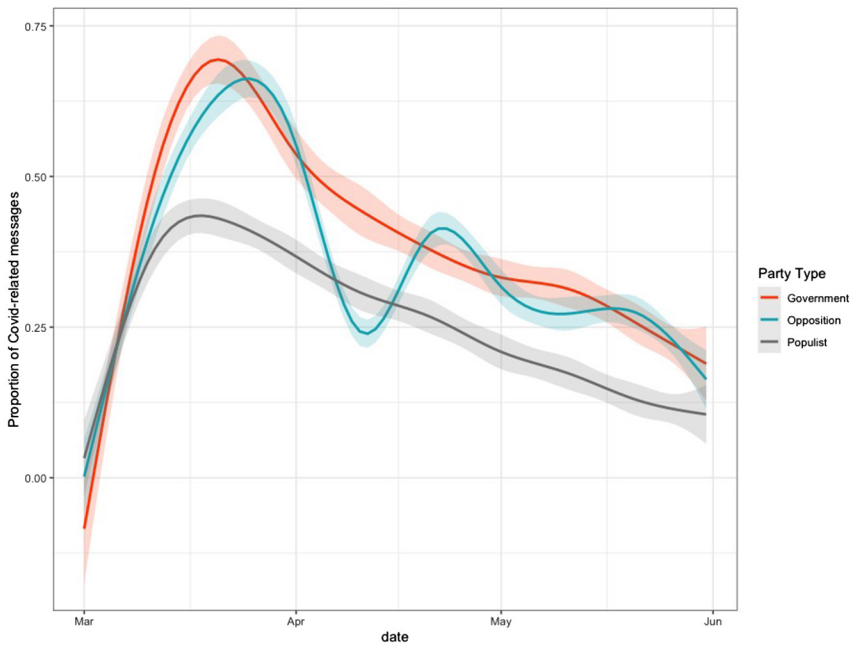


Figure 2. Salience of COVID-19 by party group.

40% of their posts to the crisis around the same time. Mainstream opposition parties, on the other hand, show a higher level of fluctuation, sometimes on the level of the government and sometimes below even the populist level.

This finding provides evidence that government and populist parties show differences in the extent to which they communicate about the crisis. Yet do they also differ in *how* they communicate about the crisis?

To answer this, I turn to the results of the first set of hypotheses. I expected government parties to increase (H1a) and populist parties to decrease (H1b) fear appeals when number of COVID-19 cases per day increase. A first way of evaluating the effects of daily new cases on fear appeals is to present the regression results in a graphical way. The plot for the interaction of infection rate and party type is shown in Figure 3. The main regression table is displayed in Table 1. In line with Hypotheses 1a and 1b, government parties increase fear appeals with rising case numbers, while populist parties decrease fear appeals. Hence, Hypotheses 1a and 1b are confirmed.

In average, populist parties decrease fearful language by 2.9% for an increase of 100 new COVID-19 cases per million inhabitants per day ( $p < .001$ ). Government parties, on the other hand, increase fear appeals by 2% ( $p = .005$ ). While populist parties use significantly more fearful language than mainstream parties (government + opposition) when the infection rate is low, differences between party groups diminish when case numbers go up, as illustrated in Figure 3.

Turning to the second set of hypotheses, I expected the opposite pattern: Incumbents should decrease and populist parties increase appeals to hope in their communication about the pandemic. Figure 4 illustrates the interaction between party type and infection rate graphically. As can be seen, government parties significantly decrease hope appeals while populists become more hopeful with rising case numbers. This finding is in line with Hypotheses 2a and 2b. Table 1 displays the regression coefficients.

With an increase of 100 new COVID-19 cases per day per one million inhabitants, populist parties increase hope appeals by almost 9% ( $p < .001$ ). Government parties, on the other hand, decrease

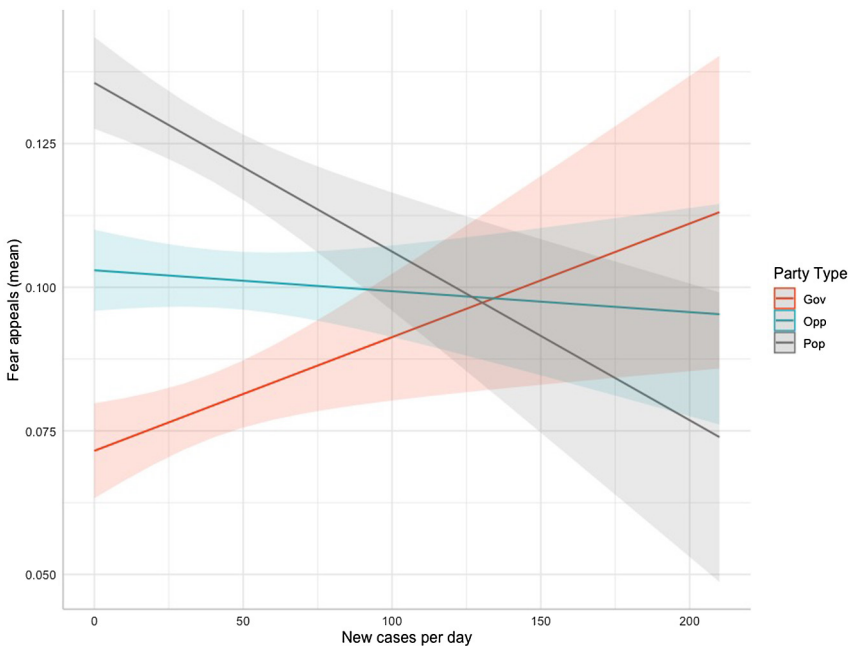
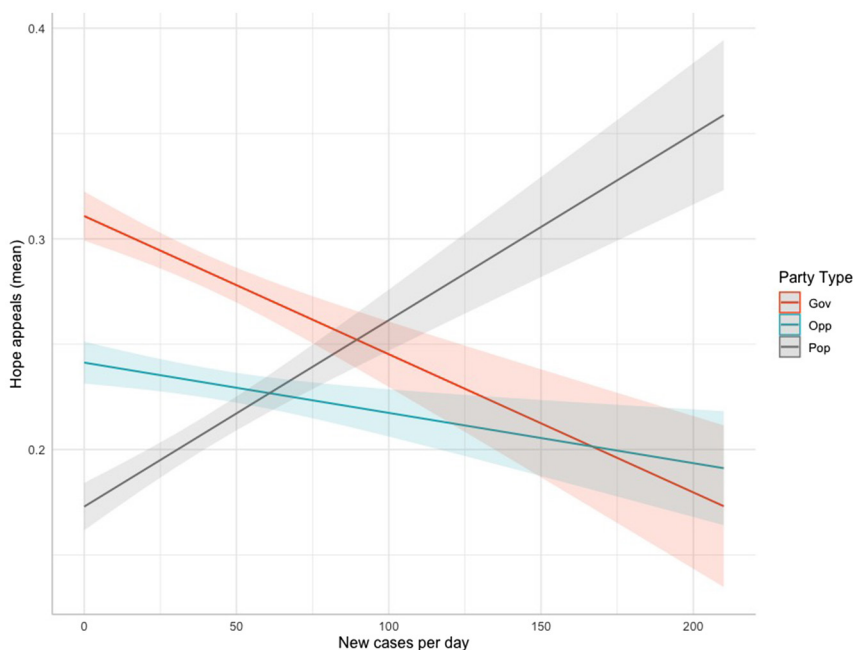


Figure 3. Interaction plot fear appeals.

**Table 1.** Relationship Between New Cases/Million and Emotional Appeals in Four European Countries

|                   | Government Fear     | Opposition Fear    | Populist Fear         | Government Hope       | Opposition Hope      | Populist Hope        |
|-------------------|---------------------|--------------------|-----------------------|-----------------------|----------------------|----------------------|
| New cases/million | 0.00020** (0.00007) | -0.00004 (0.00006) | -0.00029*** (0.00008) | -0.00066*** (0.00012) | -0.00024** (0.00008) | 0.00089*** (0.00010) |
| Num. Obs.         | 11,194              | 14,054             | 11,563                | 11,194                | 14,054               | 11,563               |
| $R^2$             | 0.001               | 0.000              | 0.001                 | 0.003                 | 0.001                | 0.007                |
| $R^2$ Adj.        | 0.001               | 0.000              | 0.001                 | 0.003                 | 0.001                | 0.007                |
| AIC               | 2461.3              | 6212.0             | 7126.3                | 13,941.8              | 15,578.7             | 11,898.2             |
| BIC               | 2483.3              | 6234.6             | 7148.3                | 13,963.7              | 15,601.3             | 11,920.3             |
| Log.Lik.          | -1227.668           | -3102.975          | -3560.137             | -6967.876             | -7786.328            | -5946.110            |
| $F$               | 7.729               | 0.404              | 13.276                | 30.464                | 8.932                | 79.829               |

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < 0.001$



**Figure 4.** Interaction plot (hope appeals).

hope appeals by 6.6% ( $p < .001$ ). Similar to fear-related language, while infection rates are low, populist and government parties show significant differences in their appeals to hope. Yet, when infection rates are rising, populist actors use significantly more hope-related appeals than mainstream parties (as indicated in Figure 4).

Summarizing the first results, one can see that when infection rates increase populist parties reduce fearful language and become more hopeful instead. Government parties, on the other hand, show the opposite pattern. With rising infection rates, they use more fearful language and significantly decrease their hopeful messages to the public. Mainstream opposition parties exhibit very little change in their emotional rhetoric during the first wave of the pandemic.

#### *Robustness Tests*

To substantiate these assumptions, I run a series of robustness tests. First, it is of utmost importance to run country-specific analyses to examine whether pooled results also hold for the individual countries included. Appendix S6 in the online supporting information presents the plots and regression tables for the individual countries. As can be seen, the results remain relatively robust throughout the different countries, with the exception of the Netherlands. The Netherlands represent a special case. Different from other countries in this study, the Netherlands did not introduce strict lockdown measures during the first wave of the COVID-19 pandemic. The national government did not, at least in the first half of 2020, effectively call for protective behavior such as wearing masks (Sterling, 2020) and instead initially followed a strategy to achieve herd immunity (NOS, 2020). These differences might explain the comparatively small changes in emotional communication in the Netherlands. Even though the graphs hint towards similar effects, none of the coefficients in the Netherlands reach statistical significance.

The results largely hold for the remaining three countries. In Italy, the party groups change their emotional rhetoric in the expected direction. In Spain, results point in the expected direction, yet only

the coefficients for hope reach statistical significance. Lastly, Germany shows as well only significant changes for hope, while fear rhetoric remains for all party groups largely unchanged.

As a second robustness test, I examined how parties change other discrete emotions during the first wave of the pandemic. A large strand of literature has repeatedly shown how anger plays a vital role in support for populist and radical parties (Marcus et al., 2019; Rico et al., 2017; Vasilopoulos et al., 2018). On the other hand, positive emotions can strengthen incumbent electoral support (Healy et al., 2010), and positive emotional rhetoric can be used to frame the government achievements in a positive light (Crabtree et al., 2020). Hence, one could expect that the changes for fear and hope might be single cases due to the importance of these two emotions during pandemics and health emergencies. Yet, the results in Appendix S7 in the online supporting information paint a different picture. As can be seen in Graphs S7.1 to S7.4, the results also translate to other discrete emotions. Surprisingly, populist parties also decrease appeals to anger which is, during routine times, an emotion essential for populist support. Furthermore, populist parties also decrease appeals to sadness and increase appeals to enthusiasm and pride. Hence, populist parties become overall significantly more positive and less negative during the first wave of the pandemic. On the other hand, the findings illustrate how government parties become significantly more negative and less positive. Government parties decrease, next to hope, appeals to enthusiasm and pride and increase appeals to sadness and anger. This reflects the dramatic change in discursive style during the first wave of the pandemic. While in routine times populist radical parties communicate in highly negative emotional style (Widmann, 2021), this pattern starts to reverse with increasing COVID-19 cases.

As a last robustness test, I examined the social media messages in a more qualitative fashion. If populist parties really tried to downplay the crisis using emotional language, one should be able to find examples of this strategy in the data. The results of this exercise confirm the assumption that government parties emphasized the severity and the threat of this crisis by using fearful language. For instance, government parties in all countries emphasized the physical risk of the virus (“A look across our borders shows even more dramatically than here how deadly #Covid2019 is. We must continue to do everything we can to prevent it from spreading too quickly.” 2020-04-05); the severity and uniqueness of the crisis (“We are facing the most serious crisis since the war, unimaginable difficulties and unprecedented challenges.” 2020-03-26); and the unpredictability of the pandemic (“An unprecedented and unpredictable crisis.” 2020-03-22). These example sentences, classified by the machine-learning classifier as fear sentences, are in line with the core relational theme of fear according to appraisal theory, which describes fear as the danger of imminent physical harm in connection with high levels of uncertainty or unpredictability of the future (Lazarus, 1991).

Populist parties, on the other hand, do not focus on the risk of the virus but instead focus on the future after the crisis (“We must appreciate the work of specialists that, together with the enormous commitment of citizens, today allows the disclosure of data that gives us hope for the possibility of defeating the virus in the future.” 2020-05-19); on medical breakthroughs that can spread hope (“A message of hope for all Italy: thanks to a blood test [we will have] soon a reliable test to know who is immune to the virus and who is not.” 2020-04-08; “*Researchers at the university of Lübeck have succeeded in deciphering an enzyme that the corona virus needs in order to multiply.*” 2020-03-24); or on the removal of all restrictions (“Restart, open again. Common sense and courage are needed, we must trust Italians and make them hope again [...]” 2020-04-26). This crisis framing is in line with the definition of hope, which is a future-oriented emotion that projects positive outcomes for the future (Just et al., 2007). Further examples can be found in Appendix S5 in the online supporting information.

All in all, the results of the first part of the analysis underline how the COVID-19 pandemic represents a drastic change in emotional dynamics of political communication. While government parties show significantly higher proportion of positive and lower levels of negative emotions in routine times (for discrete emotions, see Widmann, 2021; for positive “sentiment” see Crabtree et al., 2020), the COVID-19 crisis partly changed this relationship, even if only for a very short period of time.

*The Impact on the Public*

In the second part of the analysis, I focus solely on Germany. I try to estimate the impact of (emotional) political communication on different subgroups of the German population. Two competing hypotheses expected either the virality of specific parties (H3a) or the partisanship of citizens (H3b) to be decisive for the effect of message diffusion on public opinion. To investigate these hypotheses, I take the emotional expressions of the public as a measure for their opinions about the pandemic (González-Bailón et al., 2012; Tumasjan et al., 2011). The vector autoregression (VAR) models below estimate whether retweet numbers of party tweets correlate with changes in the public emotional expressions on Twitter the following day. These tests are illustrated through cumulative, orthogonal IRFs. Following Barberá and coauthors (2019), I created three samples of the public: a general sample of politically interested citizens (followers of Germany's largest daily newspaper), a sample of "government supporters" (followers of the German social democratic party SPD), and a sample of supporters of the German radical right (followers of the AfD).

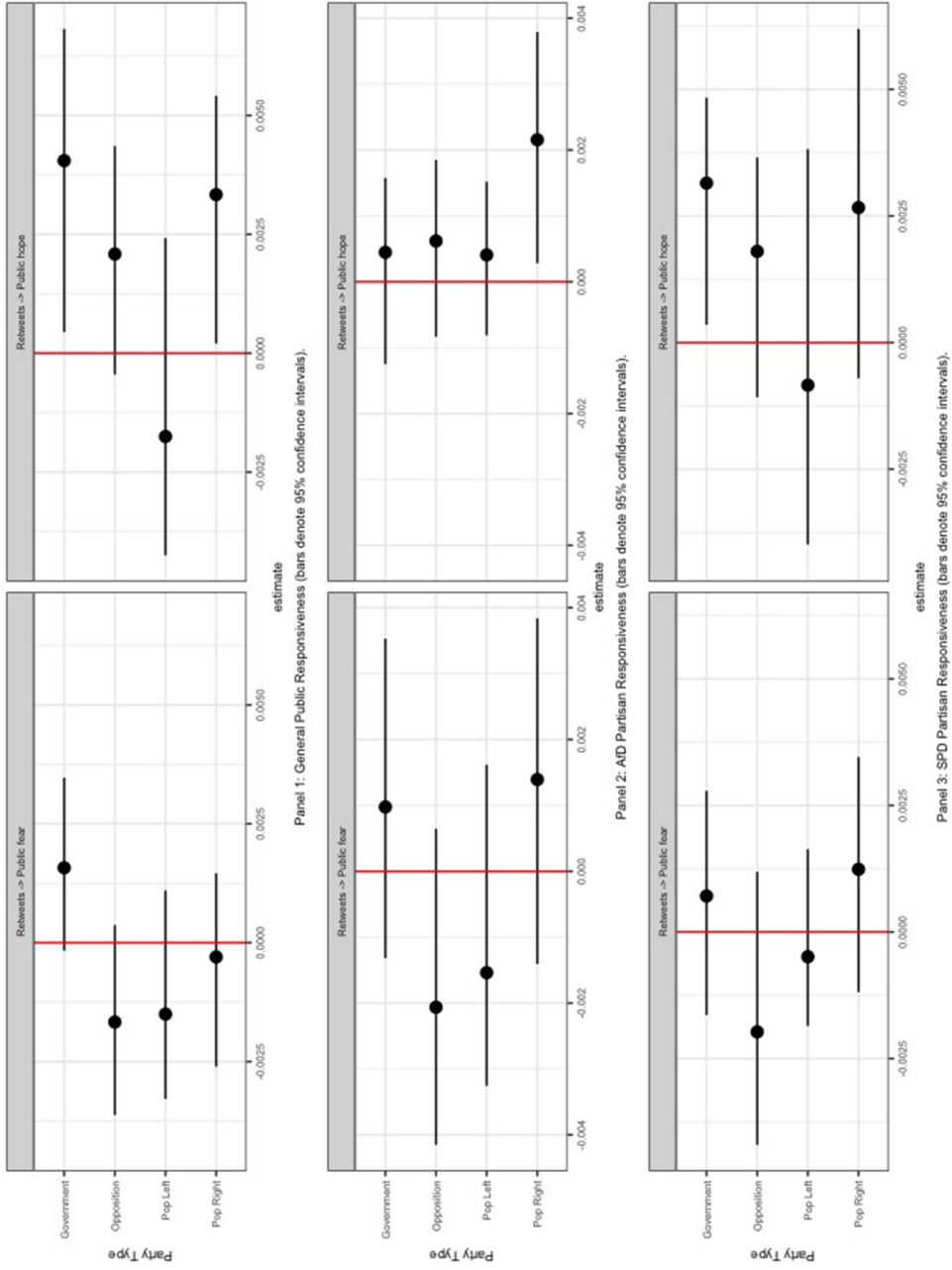
Figure 5 shows the interdependencies between retweet numbers and emotional expressions of the different subsamples, controlling for numbers of new cases per one million inhabitants per day. Specifically, the figure shows how the public responds in terms of fear and hope to a one-time, 1 standard-deviation increase in retweets for each of the four party types.

As can be seen in the first panel of Figure 5, a 1 standard-deviation increase in retweets for both, government parties and the populist right, precede significant changes in the hope expressions among the general public sample of politically interested citizens on the following day. To be precise, an increase of radical-right retweets by 1,000 increases the general public's expression of hope by approximately 0.6% (95% CI [0.0002, 0.0054]). On the other hand, an increase of government retweets by 1,000 increases the general public's expression of hope by approximately 0.3 (95% CI [0.0004, 0.0068]).

The direction of the effect of radical-right retweets is as expected: More retweets predict more hopeful messages of the general public. Yet, increases of government retweets also increases hope among the public. This suggests that the increasingly fearful communication of government parties during the first wave of the pandemic leads to more hopeful expressions among the public. To further analyze this (somewhat surprising) result, I try to examine who is reacting to which messages.

Previous research found that emotional reactions among citizens depend largely on whether individuals show support for the arguments made in political messages (Gross & Brewer, 2007). Hence, it is reasonable to expect that citizens react positively to messages they agree with. To control for partisan dynamics, I analyze two additional subgroups. The results of this exercise can be found in Figure 5. Panel 2 shows the result for the followers of the radical right. As shown, only an increase in retweets of the radical-right AfD precedes an increase in the emotional expressions of AfD supporters. An increase of radical-right retweets by 1,000 increases the expression of hope among followers by approximately 0.4% (95% CI [0.0002, 0.0037]). This is in line with Hypothesis 3b: Partisans (in this case AfD supporters) are more (emotionally) responsive to messages from the party they support.

Panel 3 displays the results for the followers of the SPD (a government party). As can be seen, these supporters' emotional expressions change only in response to a preceding increase in the amount of government retweets. An increase of government retweets by 1,000 increases the expression of hope among followers by approximately 0.4% (95% CI [0.0003, 0.0048]). Again, panel 3 illustrates that partisans are more responsive to the communication of their own party which lends support for Hypothesis 3b and rejects Hypothesis H3a. However, the direction of change in the case of the SPD supporters is unexpected. Even if government communication became less hopeful during the first wave of the pandemic, their followers' emotional expressions became more hopeful on the following day. A potential explanation could be that government



**Figure 5.** Impulse response function Germany (different subgroups of the population).



supporters became more hopeful once they realized that the government is taking the crisis seriously by communicating risks and promoting protective measures. Furthermore, the results can be explained by motivated reasoning according to which partisans react with positive affect to attitude-congruent messages (Taber & Lodge, 2006), while they dismiss information that is inconsistent with their prior beliefs. This would also explain why partisans do not react negatively to messages from competing parties (no change in fear expressions), as can be seen in Figure 5, since messages incongruent with attitudes are ignored.

Overall, these findings suggest that parties can impact the emotional expressions of their supporters during the first wave of the COVID-19 pandemic and thereby potentially shape their opinions and beliefs towards the pandemic. However, this correlation exists largely along partisan lines. Partisans react positively to information coming from their supported party. This can potentially lead to a strengthening of already held attitudes as well as increased levels of affective polarization. Even though partisans do not seem to react negatively to outgroup messages, increased positive affect towards the own party has been found to foster higher levels of affective polarization (McLaughlin et al., 2020).

Regarding the size of the changes in both Study 1 and Study 2, the effects might at first appear relatively small. Yet considering the large extent of the datasets with million of tweets and Facebook posts as well as several thousands of citizens included, even small changes can potentially impact a substantive amount of individuals, especially when considering further diffusion of behavior through social networks (Centola, 2010).

## Conclusion and Discussion

Effective political communication can constitute a key component of pandemic responses. To measure how parties communicate about the pandemic, I turned to emotional appeals. This article set out to investigate (1) how political parties change their fear and hope appeals during the first wave of the COVID-19 pandemic in four European countries and (2) which political parties actually succeed in impacting public expressions about the pandemic in one of these European countries.

Results indicate different rhetorical styles between mainstream government and populist parties and important country differences. The general trend of the findings indicate that government parties emphasize the severity of the COVID-19 crisis by lowering hope-related messages and increasing fear appeals when case numbers rise. Populist radical parties, on the other hand, show generally a lower salience of pandemic-related messages and decrease fear and increase hope appeals in order to downplay the crisis severity. A deeper analysis of social media messages further confirms these findings of the quantitative text analysis. Overall, the results provide further evidence for related research that shows that populist actors tried to downplay the COVID-19 pandemic, at least initially (Falkenbach & Greer, 2020; Kavakli, 2020).

In addition, results of the second part of the analysis indicate that partisan dynamics play an important role in how and when the public reacts to party communication. Findings indicate that a change in emotional expressions of different samples of the public was largely driven by partisanship: Supporters of a government party became more hopeful following increased diffusion of government messages. Radical-right supporters became more hopeful following increased diffusion of radical-right messages. This suggests that party communication mostly reach (and impact) individuals who are already supporters of the respective party.

Overall, the findings of this research contribute to several research strands. First, the results speak to a growing body of research that examines how political actors use emotional rhetoric strategically (Crabtree et al., 2020; Müller, 2022; Valentim & Widmann, 2021). In this study, both government parties and populist parties adapted their emotional rhetoric to the crisis situation: The

former emphasized the risk of the pandemic while the latter focused on a hopeful future rather than the severity of the crisis. Thus, this study provides further evidence for the importance of emotional rhetoric in party competition in general (in line with Kosmidis et al., 2019) and during global pandemics in particular.

The findings further emphasize the importance of emotions for the communication of populist actors in particular. While negative emotions such as anger or fear drive populist support in routine times (Marcus et al., 2019; Rico et al., 2017; Vasilopoulos et al., 2018), it is positive emotions such as hope that are being used during the COVID-19 pandemic to create populist crisis narratives. While the existence of these discursive strategies have been shown before (Lasco, 2020), this study provides empirical evidence on how emotional appeals are essential components of this process. To build narratives, populist actors resort to emotions whose core appraisal themes are in line with the narratives employed. While they capitalize in routine times on the grievances of citizens by emphasizing injustices and appealing to anger (Widmann, 2021), or creating a sense of crisis by appealing to fear (Sengul, 2020), in the COVID-19 pandemic they moved to hope as this emotion allows them to downplay the severity of the crisis (an essential part of “medical populism”). Thus, the findings hint carefully towards the strategic employment of emotions (even though “strategy” cannot be empirically tested), since populists switch between distinct emotions which are most beneficial for the current situation. The study thereby contributes to the importance of emotional appeals in creating populist crisis narratives, which can have also important implications for the persuasiveness of these narratives (Rocklage et al., 2018; Van Kleef et al., 2015).

Finally, the findings speak to a body of research investigating the consequences of emotional rhetoric. Taking emotional expressions online as a proxy for public opinion (González-Bailón et al., 2012; Tumasjan et al., 2011), the findings bolster previous research by providing careful evidence that emotional framing of messages influence citizens’ opinions (Kühne et al., 2011).

However, this finding might only apply to subgroups of the population. Results by Gross and Brewer (2007) show that emotional framing only impacts people already supporting a specific side of the debate. Similarly, Stapleton and Dawkins (2021) show that “affect linkage” mostly occurs between copartisans. Furthermore, Jones et al. (2013) show that online emotional rhetoric only impacts the most politically engaged citizens. Hence, engaged partisans are the most likely group being influenced by the emotional rhetoric of parties. These findings are supported by the results of this study. Partisans’ emotional expressions are more responsive to the communication of the party they support. Hence, rather than being persuaded by the “other side,” they react with (positive) emotions to communication by parties they already support, which is line with motivated reasoning (Taber & Lodge, 2006). Yet, even if emotional party rhetoric only impacts partisans and does not persuade, it can further polarize opinions (e.g., about the pandemic). In particular, it might polarize and radicalize certain parts of the population (e.g., supporters of the radical right) which might lead different segments of the population to arrive at different conclusions about the threat of the pandemic (Bavel et al., 2020). Furthermore, the pandemic and party communication can potentially also reinforce affective polarization along existing cleavage lines, which has been also shown empirically in the case of Germany between radical-right supporters and supporters of mainstream center parties during the first months of the COVID-19 crisis (Jungkunz, 2021).

The findings of this study have to be seen in light of some limitations. First, the impact of political communication on public opinion is estimated with Twitter data only. Twitter is often described as a network of elites and journalists and has only very limited market share in European countries (Social Media Stats Europe, 2020). Moreover, the size of the effects on the public on Twitter is fairly small. Yet, Twitter might just be one of many platforms where political parties communicate about the pandemic. As this study has shown, parties follow similar strategies on other platforms. Facebook is the biggest social network in many European countries (Social

Media Stats Europe, 2020). Furthermore, topics being discussed on Twitter by politicians can set the agenda for other parts of today's hybrid media system, including newspaper media (see e.g., Gilardi et al., 2021). Thus, parties can potentially reach many more people than those directly exposed to their messages on Twitter.

A second limitation concerns the period of this study. This study focuses only on the first wave of the pandemic. Hence, it is necessary to exercise caution when drawing conclusions on how parties communicate during public health crises in general. Nevertheless, I believe that this study can provide some insight into how different parties behave and communicate at the onset of a global crisis. Thereby, it can potentially help us understand dynamics of other crises too, such as climate change. Similar to the COVID-19 pandemic, climate change also represents a contentious topic in which political parties take polarized positions and employ specific narratives strategically (Forchtner, 2019) with possible effects on emotional responses and support for climate mitigation policies (Hart & Nisbet, 2012). Hence, I am confident that the findings of this study can also travel beyond the case of the COVID-19 pandemic.

Lastly, the study is of a descriptive rather than a causal nature. The findings of the VAR models point only at correlations, showing how increased diffusion of party messages precede changes in emotional expressions among citizens. Yet, this observational analysis cannot rule out confounding by unobserved factors.

These limitations notwithstanding, the findings of the present study can carry important implications. Studies from the United States found that exposure to right-leaning media during the pandemic lead to higher likelihood of endorsing misinformation (Motta et al., 2020) and to a lower likelihood of social distancing (Andersen, 2020; Simonov et al., 2020). Similar effects could apply in other countries after exposure to populist (radical-right) framing of the crisis, even if this only applies to subgroups of the population. The downplaying of the pandemic might therefore carry important implications for the level of protective behavior. Moreover, exposure to emotionally charged political messages (especially to ones that are judged as relevant) can further deepen already existing societal cleavages and thereby strengthen affective polarization.

## ACKNOWLEDGMENT

I thank Hanspeter Kriesi, participants of the Düsseldorf University Social Science Colloquium and the *Political Psychology* reviewers and special issue editors for extremely helpful comments on earlier versions of the manuscript. Correspondence concerning this article should be addressed to Tobias Widmann, Department of Political and Social Science, European University Institute, Via dei Rocettini 9, Fiesole, Firenze 50014, Italy. E-mail: [widmann@ps.au.dk](mailto:widmann@ps.au.dk).

## REFERENCES

- Andersen, M. (2020). Early evidence on social distancing in response to COVID-19 in the United States. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3569368>
- Barberá, P., Casas, A., Nagler, J., Egan, P. J., Bonneau, R., Jost, J. T., & Tucker, J. A. (2019). Who leads? Who follows? Measuring issue attention and agenda setting by legislators and the mass public using social media data. *American Political Science Review*, 113(4), 883–901. <https://doi.org/10.1017/S0003055419000352>
- Bavel, J. J. V., Baicker, K., Boggio, P. S., Capraro, V., Cichocka, A., Cikara, M., Crockett, M. J., Crum, A. J., Douglas, K. M., Druckman, J. N., Drury, J., Dube, O., Ellemers, N., Finkel, E. J., Fowler, J. H., Gelfand, M., Han, S., Haslam, S. A., Jetten, J., ... Willer, R. (2020). Using social and behavioural science to support COVID-19 pandemic response. *Nature Human Behaviour*, 4(5), 460–471. <https://doi.org/10.1038/s41562-020-0884-z>
- Brader, T., Valentino, N. A., & Suhay, E. (2008). What triggers public opposition to immigration? Anxiety, group cues, and immigration threat. *American Journal of Political Science*, 52(4), 959–978.

- Brewer, N. T., Chapman, G. B., Gibbons, F. X., Gerrard, M., McCaul, K. D., & Weinstein, N. D. (2007). Meta-analysis of the relationship between risk perception and health behavior: The example of vaccination. *Health Psychology, 26*(2), 136–145. <https://doi.org/10.1037/0278-6133.26.2.136>
- Brnström, R., & Brandberg, Y. (2010). Health risk perception, optimistic bias, and personal satisfaction. *American Journal of Health Behavior, 34*(2), 197205.
- Centola, D. (2010). The spread of behavior in an online social network experiment. *Science, 329*(5996), 1194–1197. <https://doi.org/10.1126/science.1185231>
- Crabtree, C., Golder, M., Gschwend, T., & Indriason, I. H. (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), 1044–1060. <https://doi.org/10.1086/707613>
- Davis, T., Livingston, S., & Hindman, M. (2019). *Suspicious election campaign activity on Facebook* (p. 27).
- De Vries, C. E., Bakker, B. N., Hobolt, S. B., & Arceneaux, K. (2021, July). Crisis signaling: How Italy's coronavirus lockdown affected incumbent support in other European countries. *Political Science Research and Methods, 9*(3), 451–467.
- De Vries, C. E., & Hobolt, S. B. (2020). *Political entrepreneurs: The rise of challenger parties in Europe*. Princeton University Press.
- Dolezal, M. (2015). Online campaigning by austrian political candidates: Determinants of using personal Websites, Facebook, and Twitter. *Policy & Internet, 7*(1), 103–119. <https://doi.org/10.1002/poi3.83>
- Dolinski, D., Dolinska, B., Zmaczynska-Witek, B., Banach, M., & Kulesza, W. (2020). Unrealistic optimism in the time of coronavirus pandemic: May it help to kill, if sowhom: Disease or the person? *Journal of Clinical Medicine, 9*(5), 1464. <https://doi.org/10.3390/jcm9051464>
- Falkenbach, M., & Greer, S. L. (2020, August 3). Denial and distraction: How the populist radical right responds to COVID-19 comment on “A scoping review of PRR parties’ influence on welfare policy and its implication for population health in Europe”. *International Journal of Health Policy and Management, 10*(9), 578–580.
- Forchtner, B. (2019). Climate change and the far right. *WIREs Climate Change, 10*(5), e604. <https://doi.org/10.1002/wcc.604>
- Frijda, N. H., Kuipers, P., & Ter Schure, E. (1989). Relations among emotion, appraisal, and emotional action readiness. *Journal of Personality and Social Psychology, 57*(2), 212–228.
- Gilardi, F., Gessler, T., Kubli, M., & Müller, S. (2021, May 1). Social media and political agenda setting. *Political Communication, 39*(1), 1–22.
- González-Bailón, S., Banchs, R. E., & Kaltenbrunner, A. (2012). Emotions, public opinion, and U.S. presidential approval rates: A 5-year analysis of online political discussions. *Human Communication Research, 38*(2), 121–143. <https://doi.org/10.1111/j.1468-2958.2011.01423.x>
- Gross, K. (2008). Framing persuasive appeals: Episodic and thematic framing, emotional response, and policy opinion. *Political Psychology, 29*(2), 169192.
- Gross, K., & Brewer, P. R. (2007). Sore losers: News frames, policy debates, and emotions. *Harvard International Journal of Press/Politics, 12*(1), 122–133. <https://doi.org/10.1177/1081180X06297231>
- Harper, C. A., Satchell, L. P., Fido, D., & Litzman, R. D. (2021, October 1). Functional fear predicts public health compliance in the COVID-19 pandemic. *International Journal of Mental Health and Addiction, 19*(5), 1875–1888.
- Hart, P. S., & Nisbet, E. C. (2012). Boomerang effects in science communication: How motivated reasoning and identity cues amplify opinion polarization about climate mitigation policies. *Communication Research, 39*(6), 701–723. <https://doi.org/10.1177/0093650211416646>
- Hawkins, K. A., Rovira Kaltwasser, C., & Andreadis, I. (2018). The Activation of Populist Attitudes. *Government and Opposition, 55*, 1–25. <https://doi.org/10.1017/gov.2018.23>
- Healy, A. J., Malhotra, N., & Mo, C. H. (2010). Irrelevant events affect voters’ evaluations of government performance. *Proceedings of the National Academy of Sciences, 107*(29), 12804–12809. <https://doi.org/10.1073/pnas.1007420107>
- Jones, P. E., Hoffman, L. H., & Young, D. G. (2013). Online emotional appeals and political participation: The effect of candidate affect on mass behavior. *New Media & Society, 15*(7), 1132–1150. <https://doi.org/10.1177/1461444812466717>
- Jørgensen, F., Bor, A., & Petersen, M. B. (2021). Compliance without fear: Individual-level protective behaviour during the first wave of the COVID-19 pandemic. *British Journal of Health Psychology, 26*(2), 679–696.
- Jünger, J., & Keyler, T. (2019). *Facepager: An application for automated data retrieval on the web*. <https://github.com/strohn/Facepager>
- Jungherr, A., Schoen, H., & Jürgens, P. (2016, January 1). The mediation of politics through Twitter: An analysis of messages posted during the campaign for the German federal election 2013. *Journal of Computer-Mediated Communication, 21*(1), 50–68.
- Jungkunz, S. (2021). Political polarization during the COVID-19 pandemic. *Frontiers in Political Science, 3*. <https://doi.org/10.3389/fpos.2021.622512>

- Just, M. R., Crigler, A. N., & Belt, T. L. (2007). *Don't give up hope: Emotions, candidate appraisals, and votes* (W. R. Neuman, G. E. Marcus, A. N. Crigler, & M. MacKuen, Eds.). The University of Chicago Press.
- Kavakli, K. C. (2020). *Did populist leaders respond to the COVID-19 pandemic more slowly? Evidence from a global sample* (p. 34).
- Kosmidis, S., Hobolt, S. B., Molloy, E., & Whitefield, S. (2019). Party competition and emotive rhetoric. *Comparative Political Studies*, 52(6), 811–837. <https://doi.org/10.1177/0010414018797942>
- Kozlowski, A. C., Taddy, M., & Evans, J. A. (2019). The geometry of culture: Analyzing meaning through word embeddings. *American Sociological Review*, 84(5), 905–949. <https://doi.org/10.1177/0003122419877135>
- Kühne, R., & Schemer, C. (2015). The emotional effects of news frames on information processing and opinion formation. *Communication Research*, 42(3), 387407.
- Kühne, R., Schemer, C., Matthes, J., & Wirth, W. (2011). Affective priming in political campaigns: How campaign-induced emotions prime political opinions. *International Journal of Public Opinion Research*, 23(4), 485–507. <https://doi.org/10.1093/ijpor/edr004>
- Kuper-Smith, B. J., Doppelhofer, L. M., Oganian, Y., Rosenblau, G., & Korn, C. W. (2021, November 1). Risk perception and optimism during the early stages of the COVID-19 pandemic. *Royal Society Open Science*, 8(11), 210904.
- Lasco, G. (2020). Medical populism and the COVID-19 pandemic. *Global Public Health*, 15(10), 1417–1429. <https://doi.org/10.1080/17441692.2020.1807581>
- Lasco, G., & Curato, N. (2019). Medical populism. *Social Science & Medicine*, 221, 1–8. <https://doi.org/10.1016/j.socscimed.2018.12.006>
- Lazarus, R. S. (1991). *Emotion and adaptation*. Oxford University Press.
- Lerner, J. S., & Keltner, D. (2000). Beyond valence: Toward a model of emotion-specific influences on judgement and choice. *Cognition & Emotion*, 14(4), 473493.
- Maddux, J. E., & Rogers, R. W. (1983). Protection motivation and self-efficacy: A revised theory of fear appeals and attitude change. *Journal of Experimental Social Psychology*, 19(5), 469–479. [https://doi.org/10.1016/0022-1031\(83\)90023-9](https://doi.org/10.1016/0022-1031(83)90023-9)
- Marcus, G. E., Valentino, N. A., Vasilopoulos, P., & Foucault, M. (2019). Applying the theory of affective intelligence to support for authoritarian policies and parties. *Political Psychology*, 40(S1), 109–139. <https://doi.org/10.1111/pops.12571>
- McLaughlin, B., Holland, D., Thompson, B. A., & Koenig, A. (2020). Emotions and affective polarization: How enthusiasm and anxiety about presidential candidates affect interparty attitudes. *American Politics Research*, 48(2), 308–316. <https://doi.org/10.1177/1532673X19891423>
- Moffitt, B. (2016). *The global rise of populism: Performance, political style, and representation*. Stanford University Press. <https://doi.org/10.11126/stanford/9780804796132.001.0001>
- Mohammad, S. M., & Turney, P. D. (2013). Crowdsourcing a word-emotion association lexicon. *arXiv:1308.6297 [Cs]*. <http://arxiv.org/abs/1308.6297>
- Motta, M., Stecula, D., & Farhart, C. (2020, June). How right-leaning media coverage of COVID-19 facilitated the spread of misinformation in the early stages of the pandemic in the U.S. *Canadian Journal of Political Science*, 53(2), 335–342.
- Müller, P., & Schulz, A. (2019). Alternative media for a populist audience? Exploring political and media use predictors of exposure to Breitbart, Sputnik, and Co. *Information, Communication & Society*, 24, 1–17. <https://doi.org/10.1080/1369118X.2019.1646778>
- Müller, S. (2022, January). The temporal focus of campaign communication. *The Journal of Politics*, 84(1), 585–590.
- Nanz, A., & Matthes, J. (2020). Learning from incidental exposure to political information in online environments. *Journal of Communication*, 70(6), 769–793. <https://doi.org/10.1093/joc/jqaa031>
- NOS. (2020). *50 tot 60 procent Nederlanders moet corona krijgen voor groepsimmunitet*. <https://nos.nl/1/2327338>
- Nulty, P., Theocharis, Y., Popa, S. A., Parnet, O., & Benoit, K. (2016). Social media and political communication in the 2014 elections to the European Parliament. *Electoral Studies*, 44, 429–444. <https://doi.org/10.1016/j.electstud.2016.04.014>
- Our world in data. (n.d.). <https://ourworldindata.org>
- Pennebaker, J. W., Francis, M. E., & Booth, R. J. (2001). *Linguistic inquiry and word count: LIWC 2001* (Vol. 71). Mahway: Lawrence Erlbaum Associates.
- Pfaff, B. (2008). VAR, SVAR and SVEC models: Implementation within R package vars. *Journal of Statistical Software*, 27(4), 1–32. <https://doi.org/10.18637/jss.v027.i04>
- Rheault, L., & Cochrane, C. (2019). Word embeddings for the analysis of ideological placement in parliamentary corpora. *Political Analysis*, 28, 1–22. <https://doi.org/10.1017/pan.2019.26>
- Rico, G., Guinjoan, M., & Anduiza, E. (2017). The emotional underpinnings of populism: How anger and fear affect populist attitudes. *Swiss Political Science Review*, 23(4), 444–461. <https://doi.org/10.1111/spsr.12261>

- Rocklage, M. D., Rucker, D. D., & Nordgren, L. F. (2018). Persuasion, emotion, and language: The intent to persuade transforms language via emotionality. *Psychological Science*, 29(5), 749–760. <https://doi.org/10.1177/0956797617744797>
- Rtweet. (2021). OpenSci. <https://github.com/ropensci/rtweet>
- Ruck, D. J., Rice, N. M., Borycz, J., & Bentley, R. A. (2019). Internet Research Agency Twitter activity predicted 2016 U.S. election polls. *First Monday*. <https://doi.org/10.5210/fm.v24i7.10107>
- Schraff, D. (2020). Political trust during the Covid-19 pandemic: Rally around the flag or lockdown effects? *European Journal of Political Research*, 60(4), 1007–1017. <https://doi.org/10.1111/1475-6765.12425>
- Sengul, K. (2020). “Swamped”: the populist construction of fear, crisis and dangerous others in Pauline Hanson’s senate speeches. *Communication Research and Practice*, 6(1), 20–37. <https://doi.org/10.1080/22041451.2020.1729970>
- Sharot, T. (2011). The optimism bias. *Current Biology*, 21(23), R941–R945. <https://doi.org/10.1016/j.cub.2011.10.030>
- Silva, B. C., & Proksch, S.-O. (2021). Fake it “Til you make it: A natural experiment to identify European Politicians” benefit from Twitter Bots. *American Political Science Review*, 115(1), 316–322. <https://doi.org/10.1017/S0003055420000817>
- Simonov, A., Sacher, S., Dube, J.-P. H., & Biswas, S. (2020). The persuasive effect of fox news: Non-compliance with social distancing during the COVID-19 pandemic. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3604214>
- Slothuus, R., & Bisgaard, M. (2020). How political parties shape public opinion in the real world. *American Journal of Political Science*, 65(4), 896–911. <https://doi.org/10.1111/ajps.12550>
- Social Media Stats Europe. (2020). <https://gs.statcounter.com/social-media-stats/all/europe>
- Stapleton, C. E., & Dawkins, R. (2021). Catching my anger: How political elites create angrier citizens. *Political Research Quarterly*. <https://doi.org/10.1177/10659129211026972>
- Sterling, T. (2020). With no nationwide rule, Amsterdam insists on virus masks. *Reuters*. <https://www.reuters.com/article/us-health-coronavirus-netherlands-masks-idUSKCN2512CF>
- Taber, C. S., & Lodge, M. (2006). Motivated skepticism in the evaluation of political beliefs. *American Journal of Political Science*, 50(3), 755–769. <https://doi.org/10.1111/j.1540-5907.2006.00214.x>
- Tumasjan, A., Sprenger, T. O., Sandner, P. G., & Welpe, I. M. (2011). Election forecasts with twitter: How 140 characters reflect the political landscape. *Social Science Computer Review*, 29(4), 402–418. <https://doi.org/10.1177/0894439310386557>
- Valentim, V., & Widmann, T. (2021, March 24). Does radical-right success make the political debate more negative? Evidence from emotional rhetoric in German state parliaments. *Political Behavior*.
- Van Kleef, G. A., van den Berg, H., & Heerdink, M. W. (2015). The persuasive power of emotions: Effects of emotional expressions on attitude formation and change. *Journal of Applied Psychology*, 100(4), 1124–1142. <https://doi.org/10.1037/apl0000003>
- Vasilopoulos, P., Marcus, G. E., Valentino, N. A., & Foucault, M. (2018). Fear, anger, and voting for the far right: Evidence From the November 13, 2015 Paris Terror Attacks. *Political Psychology*, 40, 679–704. <https://doi.org/10.1111/pops.12513>
- Vasilopoulos, P., McAvay, H., Brouard, S., & Foucault, M. (2022). Emotions, governmental trust, and support for the restriction of civil liberties during the Covid-19 pandemic. *European Journal of Political Research*. <https://doi.org/10.1111/1475-6765.12513>
- Widmann, T. (2021). How emotional are populists really? Factors explaining emotional appeals in the communication of political parties. *Political Psychology*, 42(1), 163–181. <https://doi.org/10.1111/pops.12693>
- Wise, T., Zbozinek, T. D., Michelini, G., Hagan, C. C., & Mobbs, D. (2020). *Changes in risk perception and protective behavior during the first week of the COVID-19 pandemic in the united states* [Preprint]. PsyArXiv. <https://doi.org/10.31234/osf.io/dz428>
- Yam, K. C., Jackson, J. C., Barnes, C. M., Lau, J., Qin, X., & Lee, H. Y. (2020, October 13). The rise of COVID-19 cases is associated with support for world leaders. *Proceedings of the National Academy of Sciences*, 117(41), 25429–25433.

## Supporting Information

Additional supporting information may be found in the online version of this article at the publisher’s web site:

### Appendix S1 Information about Data Set

#### Table S1.1. Party Information S1.2: Keyword String to Filter Tweets and Facebook Posts

### Appendix S2. Word Embeddings and Machine Learning Classifiers

**Table S2.1.** Precision, Recall, and F1 Scores for the Word Embeddings Approach

**Table S2.2.** Precision, Recall, and F1 Scores for the LIWC Dictionary

**Table S2.3.** Precision, Recall, and F1 Scores for the NRC Dictionary

**Appendix S3.** Descriptives

**Figure S3.1.** Number of new Covid-19 cases per day by country.

**Appendix S4.** Optimal Lag Length Tests

**Appendix S5.** Qualitative Text Examples

**Appendix S6.** Results by Country

**Figure S6.1.** Predicted levels of fear appeals across number of new cases by party group in Italy.

**Figure S6.2.** Predicted levels of hope appeals across number of new cases by party group in Italy.

**Table S6.1.** Predicting Levels of Emotions across Number of New Cases by Party Group in Italy

**Figure S6.3.** Predicted levels of fear appeals across number of new cases by party group in Spain.

**Figure S6.4.** Predicted levels of hope appeals across number of new cases by party group in Spain.

**Table S6.2.** Predicting Levels of Emotions across Number of New Cases by Party Group in Spain

**Figure S6.5.** Predicted levels of fear appeals across number of new cases by party group in Germany.

**Figure S6.6.** Predicted levels of hope appeals across number of new cases by party group in Germany.

**Table S6.3.** Predicting Levels of Emotions across Number of New Cases by Party Group in Germany

**Figure S6.7.** Predicted levels of fear appeals across number of new cases by party group in Netherlands.

**Figure S6.8.** Predicted levels of hope appeals across number of new cases by party group in Netherlands.

**Table S6.4.** Predicting Levels of Emotions across Number of New Cases by Party Group in Netherlands

**Appendix S7.** Results for Other Discrete Emotions

**Figure S7.1.** Predicted levels of anger appeals across number of new cases by party group.

**Figure S7.2.** Predicted levels of sadness appeals across number of new cases by party group.

**Figure S7.3.** Predicted levels of enthusiasm appeals across number of new cases by party group.

**Figure S7.4.** Predicted levels of pride appeals across number of new cases by party group