Do Politicians Appeal to Discrete Emotions?

The Effect of Wind Turbine Construction on Elite Discourse

Short Title: Do Politicians Appeal to Discrete Emotions?

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Abstract

Do political actors appeal to discrete emotions? In this study, I investigate how politicians adapt their emotional rhetoric to increased political conflict over climate change. To do so, I apply transformer-based machine learning classifier to a large dataset of text data coming from German Members of Parliament in order to measure discrete emotional appeals. Relying on staggered difference-in-difference models, I find robust results showing that local constructions of wind turbines cause the strongest opponents of climate change mitigation policies (radical-right MPs) to appeal to a specific negative moral emotion. Less robust evidence suggests a similar effect for the strongest proponents (Green MPs), however, appealing to a different discrete emotion. The effects range between 0.5 to 1.5 percentage points per additional wind turbine. These findings indicate the importance of distinct emotional framing in political communication with important implications for societal polarization and healthy political discourse.[2]

Keywords: Moral Emotions, Political Communication, Text-as-Data, Climate Change, Germany

Supplementary material for this article is available in the appendix in the online edition. Replication files are available in the JOP Data Archive on Dataverse (https://dataverse.harvard.edu/dataverse/jop).The empirical analysis has been successfully replicated by the JOP replication analyst.

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[2] This paper has been pre-registerd. Preregistration can be found here https://osf.io/vsjbw.

Introduction

The way political issues are framed has been found to impact public opinion and behavior (Slothuus and de Vreese 2010). In particular, the emotional framing of messages has been shown to be a powerful tool shaping opinions, attitudes, and political behavior (Van Kleef, van den Berg, and Heerdink 2015; Brader, Valentino, and Suhay 2008). However, we know little about whether politicians actually appeal to *discrete* emotions. Discrete emotions are understood as bounded domains, each with specific causes and consequences (Lazarus 1991). A typical example is anger and fear, two distinct emotions elicited by different circumstances and leading to different, even diverging, (political) consequences (see e.g. Druckman and McDermott 2008). In this study I argue that politicians do in fact appeal to discrete emotions, namely those that resonate with their respective supporter base. This, in turn, should make these emotional appeals more persuasive (Day et al. 2014) and mobilizing (Jung 2020; Enke 2020).

This argument builds on two strands of literature. A small but growing field investigates how parties use emotive content of political messages strategically. This strand perceives the emotional tone in political communication as a (non-policy) component of party competition (Kosmidis et al. 2019) which parties and politicians use to attract attention and potentially persuade or mobilize listeners. Yet, a majority of these studies focus either on general 'emotionality' (in comparison to rationality) (e.g. Osnabrügge, Hobolt, and Rodon 2021) or on positive versus negative sentiment (Kosmidis et al. 2019; Crabtree et al. 2020).

A second strand of literature provides evidence for the importance of discrete emotions. Distinct emotional appeals matter for decision making, political attitudes, political behavior (Vasilopoulos et al. 2018; Valentino et al. 2011; Druckman and McDermott 2008; Petersen 2010) as well as for the moralization of issues (Horberg et al. 2009; E. J. Horberg, Oveis, and

Keltner 2011; Keltner, Horberg, and Oveis 2006). So-called *moral emotions* are emotions that are elicited by moral actions or transgressions and, importantly, are less focused on the *self*. Instead, they are linked to the interests and welfare of society or specific groups within society (Haidt 2003). Moral emotions play a crucial role in the process of 'moralization' (D'Amore, van Zomeren, and Koudenburg 2021; Wisneski and Skitka 2017; Feinberg et al. 2019), which connects (political) issues to fundamental values and strong moral judgments (Petersen 2010). Importantly, research argues that moral emotions are necessary in order for moralization to take place (D'Amore, van Zomeren, and Koudenburg 2021; Clifford 2019).

Thus, politicians should have incentives to make use of discrete moral emotions in their communication that target distinct moral values among their supporter base. Moral Foundation Theory (MFT) argues that citizens systematically endorse distinct moral values depending on their ideology (Graham, Haidt, and Nosek 2009). Activating these moral values through specific emotional appeals should help elites minimizing the moral-emotional distance between themselves and their voters (Enke 2020). This, in turn, should influence the persuasiveness of their messages (Clifford and Jerit 2013), impact political convictions and citizens' political engagement (Jung 2020; Skitka 2010), as well as vote choices (Enke 2020).

To test whether politicians use distinct moral-emotional appeals that target their specific supporter base, I look at the case of climate change. Climate change is one area where emotional and moral concerns of citizens matter for policy preferences (Feinberg and Willer 2013). Green issues have in recent years become ever more salient topics, among the public and in political campaigns. However, prior research focused predominantly on policy standpoints of parties (Carter 2013) or the salience of green topics in political campaigns (Spoon, Hobolt, and Vries 2014). Yet, if parties' emotional rhetoric can lead to the moralization of green issues, political

actors should be strategic about emotional appeals. I use the construction of wind turbines in German electoral districts as a local experience of climate-mitigation policies, which is expected to bring the political conflict over global warming to the forefront (i.e. make climate change more salient). As soon as climate change becomes publicly more salient, political actors are expected to 'ride the wave' (Ansolabehere and Iyengar 1994) and use discrete emotional appeals which resonate among their target group in order to maximize their electoral support.

I rely on a dataset connecting information on wind turbines with parliamentary speeches from the beginning of 19th legislature of the German Bundestag (September 24, 2017) until the end of 2020, including political speeches from more than three years. Using a transformer-based machine learning classifier (Widmann and Wich 2022), I measure discrete emotional appeals in the political debate. Importantly, this allows me to go beyond mere sentiment to measure distinct emotions. Furthermore, I employ two-way fixed effects models with actor and time fixed effects (staggered difference-in-difference models) which allow me to isolate the effect caused by the construction of wind turbines on the rhetoric of Members of Parliament (MPs).

The findings provide robust support for one of the hypotheses: The staggered difference-in-difference models show that the construction of wind turbines in electoral districts consistently cause members of the German radical-right party (AfD) to increase appeals to the moral emotion of disgust, which resonate with their own supporters' moral and emotional concerns. Less consistent are the findings for members of the Green party who, depending on the model specification, show increasing appeals to the moral emotion of anger which is linked to the moral concerns of their supporters. Nevertheless, the findings largely support the idea that politicians choose discrete moral-emotional language which promise to have the most persuasive and mobilizing effect on their supporter base. Emotional framing in political communication is hence

a dynamic and versatile tool for political actors to potentially influence opinions and rile up electoral support. A series of additional tests aim at demonstrating the robustness of these findings and test the underlying strategic considerations.

Overall, these findings suggest to move research on political elites' rhetoric beyond valence towards distinguishing between discrete emotional appeals. Furthermore, the results further solidify moral-emotional framing as an important component of parties' framing tool kit and emphasize the important connection between emotions and morality, which carry numerous implications for political behavior, polarization, and democratic discourse in general.

Emotions in Political Communication

A growing strand of literature emphasizes the importance of investigating the emotive content of political messages, since emotional rhetoric can be a powerful tool in persuading individuals (Van Kleef, van den Berg, and Heerdink 2015; Brader, Valentino, and Suhay 2008). Recent research further argues that the emotional framing of messages should be seen as a non-policy component of party competition (Kosmidis et al. 2019), as parties use emotional rhetoric to garner support or draw boundaries between themselves and political opponents.

Crabtree and coauthors (2020), for instance, argue that parties adapt their emotional rhetoric according to incumbency status, policy positions, and the situation of the economy. Government members frame the state of the world in more positive light (using more positive emotive language), hoping to shape voters assessment of the incumbent parties and to increase chances of reelection. Valentim and Widmann (2021) show that politicians use emotional rhetoric as a strategy to distance themselves from political opponents, thereby claiming moral superiority over radical parties and riling up support. A similar mechanism has also been brought forward by Kosmidis and co-authors (2019), showing that emotive rhetoric increases as the ideological

distance between parties shrinks. Other studies propose that emotional rhetoric is strategically used to appeal to voters, for example in high-profile legislative debates (Osnabrügge, Hobolt, and Rodon 2021) or televised debates (Gennaro and Ash 2022).

Yet, these studies focus either on emotionality versus rationality or on sentiment, i.e. positive versus negative emotional rhetoric Kosmidis et al. (2019). The former perceive emotionality as a broad concept (in contrast to rationality) where differences in valence are not meaningful since the mere presence of 'loaded' language (Osnabrügge, Hobolt, and Rodon 2021) can have certain effects on their audience. The latter acknowledge the importance of valence and distinguish between effects of negative or positive emotional rhetoric, yet, ignore the consequences of discrete emotional categories.

This study is based on research in political psychology which has provided ample evidence for the diverging consequences of discrete emotions. For instance, discrete emotions can shape partisan identities (MacKuen et al. 2010), voter turnout (Valentino et al. 2011), or vote choice (Vasilopoulos et al. 2018), as well as the moral convictions held by individuals (Horberg et al. 2009; E. J. Horberg, Oveis, and Keltner 2011; Keltner, Horberg, and Oveis 2006).

Moral Emotions

Moral convictions are important for politics. Prior research found that morally convicted citizens are more committed to their standpoints and show more politically engagement (Skitka 2010) which suggests that moralization can be used to foster electoral support (Jung 2020). Furthermore, political actors can make use of moralized attitudes to bind their partisans even closer: moral conviction increases the unwillingness to compromise and the wish to punish political opponents (Ryan 2017), while strengthening the wish for social distance from disagreeing others (Skitka, Bauman, and Sargis 2005).

Prior research found that emotions play a key role in moralization processes (Clifford 2019)- i.e. the process through which political issues or attitudes become connected to individuals' core values and moral judgments Skitka (2010). The experience of strong moral emotions toward new information can push attitudes into the moral domain (Haidt 2003; Rozin et al. 1999; Rozin 1999; D'Amore, van Zomeren, and Koudenburg 2021). Experimental studies show how individuals moralized their attitude on specific issues (e.g. abortion or meat eating) when they responded with strong moral emotions to morally disruptive material about the relevant issue (Feinberg et al. 2019; Wisneski and Skitka 2017). Further experiments show that emotions are key mediators in moralization processes without which moral conviction (D'Amore, van Zomeren, and Koudenburg 2021; Clifford 2019) or downstream (political) consequences would not occur (Skitka and Wisneski 2011). Hence, I argue that specific discrete moral emotions in political communication act as 'necessary moralizers' - that means that these emotional appeals enable the moralization of the issue under discussion.

For moral-emotional rhetoric to benefit parties and politicians, however, the appeal needs to be credible to receivers and resonate with their moral values. Looking at 'Moral Foundation Theory' (MFT) in particular (Graham, Haidt, and Nosek 2009), research shows that moral arguments resonate differently depending on the ideology of individuals. MFT argues that moral intuitions are based on five psychological systems, or foundations (care, fairness, loyalty, authority, and sanctity), which developed throughout human history due to different challenges humans faced. In modern times, MFT has been used to describe differences between political liberals and conservatives (predominantly in the US): liberals base their morality on the first two foundations, while conservatives value all five foundations (Graham, Haidt, and Nosek 2009). A consequence of this, as Haidt and Graham argue (2007), is that liberals and conservatives often

do not understand each other and their arguments remain effectless, as they simply do not recognize the opposing site's moral concerns.

If, however, moral concerns are being met (i.e. a message is framed in moral-emotional appeals that resonate among a given target group), attitudes can be swayed. For instance, a study examining moral conviction and environmental attitudes shows that there a large attitudinal differences between liberals and conservatives in the US regarding climate change (Feinberg and Willer 2013). However, these differences disappear as soon as pro-environmental arguments are being reframed in terms of sanctity, a moral domain that resonates most strongly among conservatives. Thus, in order to moralize issues in relation to the 'right' (i.e. most resonating) moral foundation for a given target group, politicians should use discrete emotions that are associated with this specific moral domain.

Disgust is linked to the moral concern of 'sanctity' (Haidt and Graham 2007), which is about the protection of physical and mental purity and the preservation of the 'natural order' (Haidt and Graham 2007; E. J. Horberg, Oveis, and Keltner 2011). Originally, disgust evolved for pathogen avoidance by motivating individuals to keep away from poisonous and infectious material. 'Moral disgust', however, moves beyond simply protecting oneself from contamination to condemning any object or person that may have been associated with 'impure' behavior (Haidt 2003). Experimental research found that disgust moralizes actions and objects that otherwise would have been perceived as non-moral (Feinberg et al. 2019; Horberg et al. 2009; Wisneski and Skitka 2017), however it does so primarily in relation to 'sanctity'. Disgust does not cause the moralization of other moral domains (Horberg et al. 2009; Wisneski and Skitka 2017).

Anger, on the other hand, relates to moral concerns of 'fairness' and 'care' (Rozin et al. 1999; E. J. Horberg, Oveis, and Keltner 2011). Moral anger has been found to predict greater moral

condemnation of unjust behavior (Horberg et al. 2009), which does not necessarily need to happen to oneself (Haidt 2003). Anger has been numerous times identified as the primary emotional response to cheating or injustice, even when involving a third-party victim (Petersen 2010). Similar to disgust, moral anger is also considered a 'prosocial' emotion (Haidt 2003): it serves to regulate social behavior and is "designed to manage social rule violations" (Petersen 2010, 358) and protecting the moral order if threatened. It also has been found to mobilize people to fight against injustices and boost preferences for justice-restoring policies (Desteno et al. 2004). Hence, it is considered the "most prototypical moral emotion" (Haidt 2003, 859) as it passes clear moral judgement and motivates direct action to repair the moral order.

Following the theory outlined above, I expect politicians to appeal to discrete emotions that trigger a moral foundation best suited to benefit them politically when climate issues become more salient. If they "ride the wave" and address salient issues, politicians might appear more "concerned, responsive, and informed" (Ansolabehere and Iyengar 1994, 337). Ansolabehere and Iyengar conclude that the optimal strategy for politicians is to communicate information, that "resonates well with citizens' prior knowledge" (p. 356). I argue that the same holds for emotional content of messages. Talking in a moral and emotional language which resonates among supporters will potentially make the politician appear as more concerned and responsive. Research suggests that the resulting moral-emotional closeness can even shape electoral support (Enke 2020).

Climate-change skeptical politicians are therefore expected to increase appeals to disgust, an emotion linked to the moral foundation of 'sanctity' once the conflict over climate change becomes more salient. This is the most persuasive moral foundation for conservative (climate-change skeptical) citizens when it comes to environmental attitudes (Feinberg and Willer 2013).

On the other hand, pro-environmental left-leaning parties, and the Greens in particular, are expected to increase appeals to anger, an emotion linked to the moral foundations of 'care' and 'fairness'. These are moral concerns that should resonate more among more left-leaning partisans (Graham, Haidt, and Nosek 2009), which generally support climate change mitigation policies. In contrast, non-moral emotions should not be in the focus of politicians' framing strategy as they do not moralize political topics and therefore do not carry the downstream political benefits of moral convictions.

Anger Hypothesis: A rise in the salience of climate change will increase anger appeals in the speeches of politicians from left-leaning, pro-environmental parties when talking about climate change. This effect should be the strongest for members of the Green party.

Disgust Hypothesis: A rise in the salience of climate change will increase disgust appeals in the speeches of politicians from climate-change skeptical parties when talking about climate change.

Even though one could expect that pro-environmental politicians also appeal to positive emotions, the hypotheses focus solely on negative emotions. As emotional appeals are perceived in this study as strategic decisions in the framework of party competition, politicians are expected to appeal to emotions that are most beneficial. Negative emotional appeals can help in lowering the evaluations of political opponents (Lau and Rovner 2009) and in claiming moral superiority over them.

Appealing to positive emotions, on the other hand, can constitute a risky strategy as parties run danger of benefiting political opponents. If, for instance, Green MPs voice out joy and enthusiasm about the construction of wind turbines, they frame actors perceived as responsible for the construction in positive light. Since responsibilities are often attributed to incumbents

(Crabtree et al. 2020), positive emotional appeals might benefit parties who are in government.[3] It might be therefore less risky to choose negative moral emotions (to attack opponents and moralize attitudes among the supporter base) over positive emotions.

Data & Methods

The topic of climate change has transitioned into a political conflict, where ideology shapes increasingly the mobilization strategy of parties. I expect that this political conflict between ideological camps becomes more pronounced once new wind turbines are being constructed in electoral districts. The underlying assumption is that wind turbine constructions make climate change more visible among the public. That national MPs react to local events in their constituencies has been shown by Schürmann and Stier (2022). Their findings indicate that German MPs regularly refer to their home constituency by using regionalized wording and geographic references.

In Germany, climate change and renewable energies have been particularly salient and controversial issues. As in other countries, NIMBY ("Not In My Backyard") protests against the construction of wind turbines occurred also in Germany. Moreover, Germany's radical-right party '*Alternative für Deutschland*' (AfD) is a sturdy opponent of wind turbines (Hess and Renner 2019). The party openly denies the existence of anthropogenic climate change, opposes climate mitigation policies as threats to the livelihood of the "little guy", and claims that continued reliance on fossil fuels was necessary to ensure a stable power supply (Forchtner 2019).

[3] During the period of research, the German conservative party (CDU/CSU) formed a government with the social democrats (SPD). Politicians from these incumbent parties could be expected of increasing positive emotional appeals after the construction of wind turbines, as it potentially helps them in framing their track record in positive light (see Crabtree et al. 2020). Opposition parties, on the other hand, are expected to refrain from positive emotional appeals. However, this expectation has not been pre-registered in the pre-analysis plan.

The German party system consists momentarily of six major parties represented in parliament. All major parties besides the AfD, including the Christian Democratic Parties (CDU/CSU), the social-democratic party (SPD), the radical-left party 'The Left' (Die Linke), the liberal party (FDP), and the Green party, acknowledge human-made climate change and emphasize their commitment to international efforts such as the Paris agreements and to the long-term transition to renewable energies (Hess and Renner 2019). The Greens are - unsurprisingly - strong supporters of alternative energy sources. The remaining parties have positioned themselves between the two opposite poles of the Greens and AfD (Otteni and Weisskircher 2022).

Data

To answer how increased salience of climate change impact elite rhetoric, I rely on a dataset connecting information on wind turbines with parliamentary speeches from the German Bundestag. To do so, I collected speeches from the beginning of the 19th legislature starting with the elections on September 24, 2017 until the end of December 2020. The *ParlSpeech* data set (Rauh and Schwalbach 2020) includes speeches from the German parliament until the end of 2018. I collected speeches after this date by scraping them from the website of the German Bundestag. The total number of speeches included is 24,834. This data set consists only of speeches from actual MPs, interjections from parliamentary chairs are excluded.[4]

Data on wind turbines have been collected from the the German Federal Network Agency (BNetzA) which provides data on different energy sources. From the 'Renewable Energy

[4] Relying on parliamentary speeches offers a number of advantages. For instance, manifestos are only released in election years. Speeches are more susceptible to changes over time - for instance due to the construction of wind turbines. Furthermore, they reach larger audiences through mass media, e.g. through national newspapers or TV news programs (Salmond 2014). In addition, previous research has shown that politicians make use of emotive rhetoric in the parliamentary arena strategically, especially in high-profile debates, in order to appeal to voters (Osnabrügge, Hobolt, and Rodon 2021). Lastly, legislative speeches provide individual-level data which allows for measuring the change in rhetoric for individual legislators across time.

Installations Core Dataset' (BNetzA 2021) I collected information on all wind turbines that have been built on-shore (excluding off-shore units) after September 24, 2017 in Germany. This includes information about the date of construction and postal codes.

Subsequently, this information will be combined with information on the electoral districts and their respective candidates. Under Germany's system of election, MPs are either elected via state lists or via one of 299 constituencies (electoral districts), each of which elects one member of the Bundestag by first-past-the-post voting. Most MPs run on state lists and run for candidacy in one of the electoral districts, which allows me to assign most of the MPs to one 'home constituency'. Members of the German Bundestag that only ran on state lists and not in a specific electoral district have been excluded from the analysis.

Text Analysis

Since the above described hypotheses are only expected to apply to the debate on climate change and renewable energies, I need to identify speeches that address green issues. To do so, I will make use of Structural Topic Models (STM) (Roberts, Stewart, and Tingley 2014). More details on pre-processing steps and topic model settings can be found in Online Appendix A.

To measure emotional appeals in speeches, I make use of the transformer-based Electra model trained by Widmann and Wich (Widmann and Wich 2022). Electra models are extended versions of BERT (Bidirectional Encoder Representations from Transformers), which is a new form of machine learning models that set new standards in computational text analysis. Widmann and Wich (2022) trained their Electra model on almost 10,000 sentences from German political communication which have been classified according to eight different discrete emotions (anger, fear, disgust, sadness, joy, enthusiasm, pride, hope) by crowd-workers. In their study, they firstly show the superiority of the transformer-based Electra model in comparison to other approaches

(e.g. dictionary and word embedding classification); secondly they show how customized approaches outperform off-the-shelf dictionaries. Overall, the applied Electra model has been validated extensively and exhibits significantly better performance in measuring discrete emotions in German political text compared to other available tools.

Empirical Strategy

The construction of new wind turbines functions as 'treatment' in the context of this study. A Member of Parliament is considered as 'treated' as long as at least one wind turbine has been built in their electoral district after the parliamentary elections on September 24, 2017.

The left panel of Figure @ref(fig:Figure1) shows the electoral districts of the 19th German legislature (map from (Votta 2019)) and indicates districts in which at least one wind turbine has been constructed (orange). In dark blue electoral districts, no new wind turbine has been built during the period of research. The right panel indicates the treatment as a continuous variable ranging from dark blue (zero or few new wind turbines) to orange (high number of new wind turbines).

In total, 175 out of 299 electoral districts belong to the treatment group. The maximum number of wind turbines per electoral district is 116, the average number per electoral district is 7.5. Even though the left panel indicates a fairly even distribution of new wind turbines throughout the whole of Germany, the right map shows a certain imbalance between the north and the south. Especially the state of Bavaria has been slow of allocating land for new wind turbine construction, thereby only reaching an average number of 1.02 new wind turbines per electoral district during the period of research. However, there is no major difference between the East and West of Germany. Furthermore, the allocation of new wind turbines is relatively evenly distributed among electoral districts with most constituencies receiving only a small number of

wind turbines (only five constituencies received more than 50 wind turbines during the period of research).

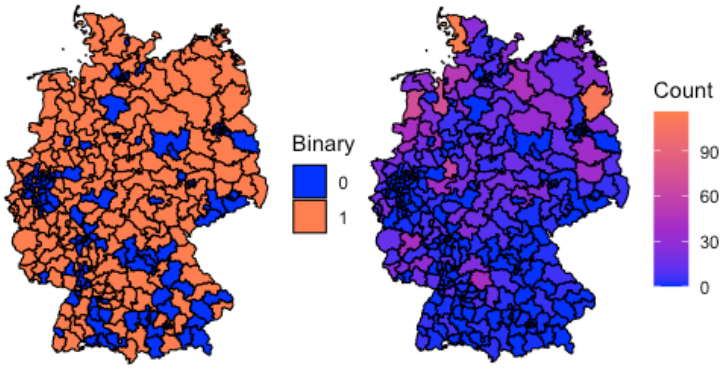

Figure 1: Construction of additional wind turbines in German electoral districts (September 24, 2017 - January 1, 2021)

Germany represents an ideal setting to study the effect of wind turbines on politicians' communication. Private actors can apply for permits through a process that entails limited interference from local politicians and authorities. Companies or private individuals who want to construct wind turbines need to apply for an 'immission control approval' at the responsible rural district office. This approval involves a number of other public regulations (BMWK 2022). Most of these regulation are decided on the national or state level. If the project complies with the requirements of public law, the applicant has a legal right to the permit, which will be given by the local administrative authority. The degree of control local actors have over the approval of these projects is even more limited in the case of sites with less than 20 wind turbines. In these cases, the regulations only require a "simplified procedure" without public participation and

without an environmental impact assessment (EIA) study (RPD 2021). The approval is thus not 'political' in nature, as no local or national politicians (from the respective electoral district) are involved in permitting wind turbines. This should reduce the endogeneity bias as electoral results or popularity of parties/politicians in a given electoral district are independent from the construction of new wind turbines.

To assess the impact of wind turbines on emotional appeals in parliamentary speeches on climate change, I rely on two-way fixed effects regression models (staggered difference-in-difference) with time and MP fixed effects. This allows for investigating how individual MPs change their rhetoric once exposed to wind turbines while controlling for unobserved factors.

To do so, I firstly collapse the sentence data per month. The resulting dataset will give me the average proportion of appeals to each emotion per individual MP within a given month. Then I run the fixed effects models which estimate the average treatment effect of an additional wind turbine. The equation is the following:

$$Y_{i,t} = \alpha + \tau A_{i,t} + \delta_i + \gamma_t + \epsilon_{i,t}$$

where A is the value of treatment (count data indicating the number of wind turbines); δ is an actor-level fixed effect that controls for unobserved heterogeneity; γ is a month fixed effect that accounts for change over time; and τ is the treatment effect. Standard errors will be clustered by individual politician.

Findings

Before I estimate the effect of increased salience of climate change on the usage of emotional appeals by politicians, I turn to the results of the topic model. Topics include typical issues for parliamentary debates ranging from welfare (topic 40) to discussions on housing (topic 46) and the European Union (topic 5). Furthermore, there are two word clusters that refer to

environmental issues: topic 56 deals with the climate and climate change; Topic 16 deals with renewable energies and the German 'climate transition'. Table A1 in Online Appendix A presents a selection of identified topics and terms associated with each cluster, as well as labels chosen by the author.

Figure 2 illustrates the effect of wind turbines on topic proportions. As illustrated in the left panel, topic 56 (Climate change) is - unsurprisingly - most often addressed by the Green party. Between the remaining parties, the radical-left party The Left shows the highest level of salience on this topic, yet without large differences to other parties. The plot in the right panel gives a first indication that increased salience of climate change had some effect on the communication of politicians. As can be seen, treated MPs are more likely to talk about climate change than untreated MPs.

In an additional model, I interacted the treatment variable with party affiliation and plotted the outcome to see whether the effect of treatment is driven by specific parties (see Figure A1 in the Online Appendix). Figure 2 and A1 are furthermore replicated in Online Appendix A for Topic 16 and for Topic 16 + 56 combined.

I will now turn to the effect of increased climate change salience on emotional rhetoric employed by individual politicians. For this analysis, I only include sentences from speeches addressing topic 56 and 16. I do so because I expect that wind turbines only change politicians' rhetoric in regards to green issues. Hence, I assign to each speech the topic with the highest θ value. These values can be extracted from the topic model and represent the probability of a topic given the document. Subsequently, I run the two-way fixed effects regression analysis for the speeches addressing environmental issues.

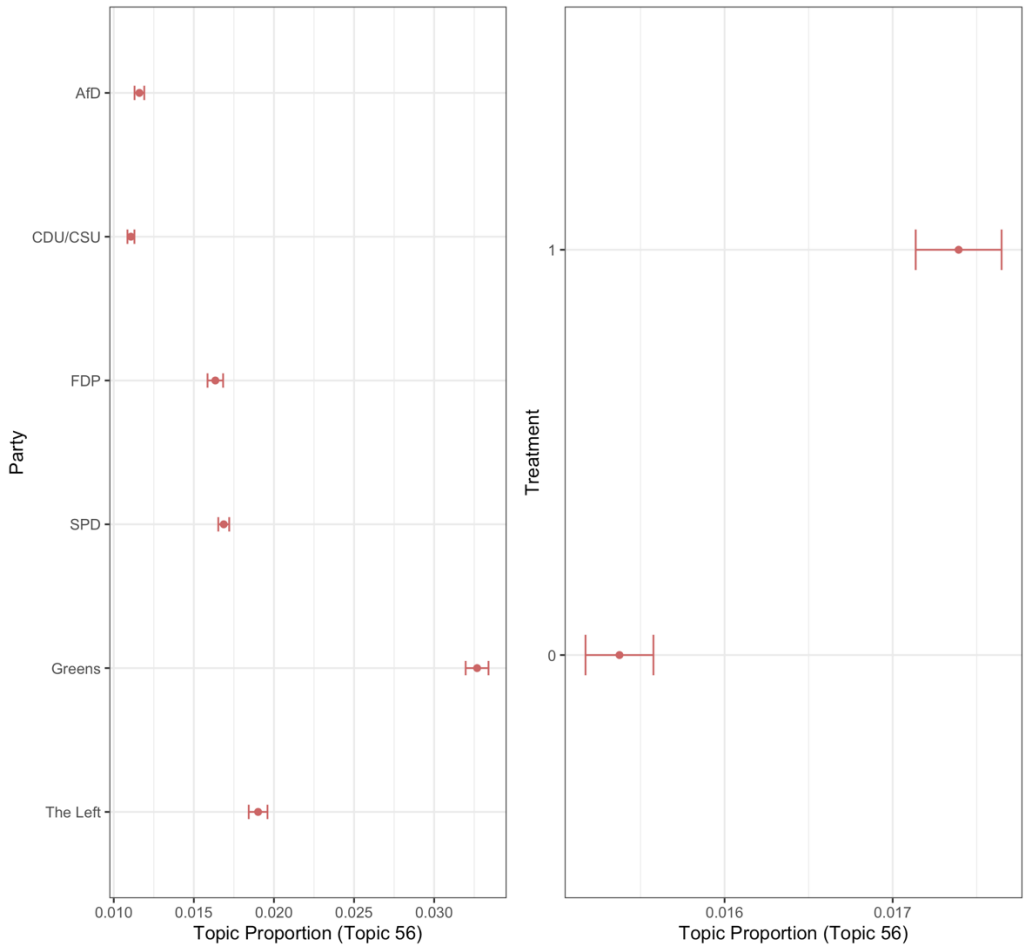

Figure 2: Topic Proportions (Topic 56) by Party and Treatment

Figure 3 shows the effect of increased climate change salience on the usage of moral emotional appeals (anger + disgust) made by MPs from different parties in parliamentary speeches. As can be seen, most coefficients are insignificant and close to zero. Nevertheless, the graph provides first support for the disgust hypothesis stated above. With each additional wind turbine, MPs of the radical-right AfD increase disgust appeals by 0.61 percentage points. As expected, wind turbines have no effect on anger appeals by members of the AfD. On the other hand, the anger hypothesis is not supported as the Green party and other left-wing parties do not significantly increase appeals to anger after the construction of wind turbines in their electoral district. Online Appendix B presents the regression table of the main analysis.

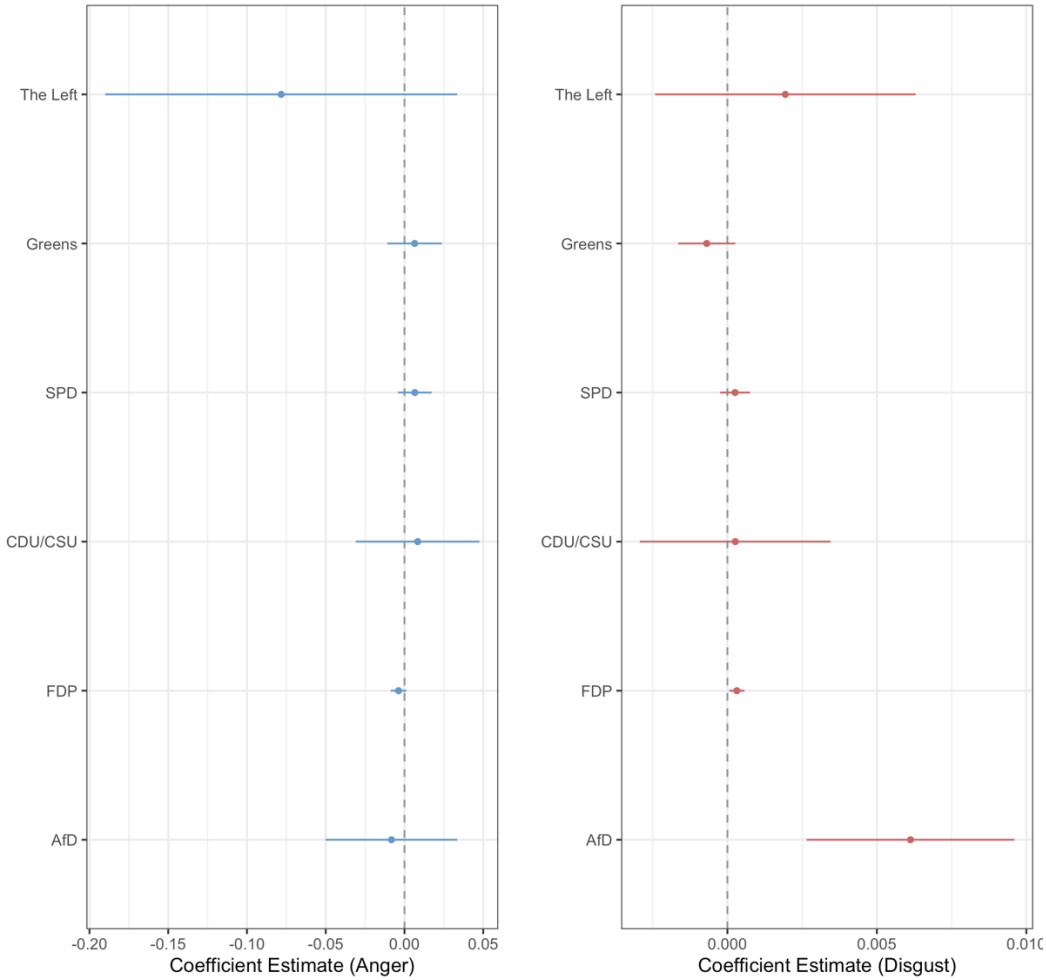

Figure 3: Effect of one additional wind turbine per electoral district on the usage of emotional appeals by Green and AfD MPs (Parliamentary Speeches)

Figure 3 further indicates an increase in disgust for the liberal party (FDP). Even though this effect is very small in comparison to the effect for AfD politicians, it reaches statistical significance. This unexpected finding can be potentially explained by previous research. Otteni and Weisskircher (2022) analyzed citizens' attitudes towards renewable energy and party identification. In their results, they show that favoring the transition to renewable energies decreases the likelihood of identifying with two parties: the AfD and, to a significantly smaller extent, the liberal party FDP (p. 9). Thus, this shows that parts of the supporters of the FDP are

in fact against the transition to renewable energies, which in turn can explain the small increase in disgust from FDP politicians.

To investigate whether moral emotions are indeed in the center of politicians' rhetorical change due to increased salience of climate change in their home constituencies, I also test the effect on non-moral emotions. To do so, I firstly check whether politicians increasingly appeal to non-moral negative emotions: fear and sadness. Figure C1 in the Online Appendix C illustrate that the usage of fear and sadness in parliamentary speeches does not significantly change after the construction of new wind turbines (the only significant coefficients are negative). Moreover, Figure C2 further illustrates the effect of one additional wind turbines on positive non-moral emotions. As can be seen, there are again no positive coefficients. These findings indicate that the effect of constructing wind turbines is limited to negative moral emotions. These findings stress the need to investigate discrete emotional language as parties do not just become more negative in general but appeal to distinct emotions.

Next, I repeat the analysis without relying on the unsupervised topic model approach. By using keyword strings, I employ a supervised approach of identifying parliamentary speeches that deal with climate change and renewable energies. This enables a more precise selection of documents, where the minimum amount of keywords that need to be present can be adjusted manually. The findings of this analysis are illustrated in Figure C5 in Online Appendix C.

As can be seen, the results for the radical-right AfD are consistent. With each additional wind turbine, MPs of the radical-right AfD increase disgust appeals by 0.77 percentage points, while significantly decreasing anger appeals. This illustrates the importance of the emotion of disgust to the detriment of anger (an emotion the radical-right normally relies on for support). Figure C3 also lends first support for the anger hypothesis. As hypothesized, Green MPs increase anger

appeals with each additional wind turbine by 1.5 percentage points. MPs of other left-wing parties, however, do not increase appeals to anger.

In a next step, I replicate the main analysis using Twitter data by individual German MPs. To do so, I analyze more than one million tweets from all available MP accounts during the same research period (details can be found in Online Appendix D). Again, I firstly used a structural topic model to identify topics within tweets. Table D1 presents a selection of the identified topics. After filtering tweets addressing climate issues, I test for the effect of increased local climate change salience on emotional appeals on Twitter. As can be seen in Figure D1, the results remain very similar to the main analysis. The construction of one additional wind turbine causes radical-right politicians to increase appeals to disgust by 0.51 percentage points. However, there is no support for the anger hypothesis: Green MPs and MPs from other left-leaning parties do not significantly increase appeals to anger. Figure D2 and Figure D3 further show that other negative emotions and positive emotions are again not impacted. These findings are important, as they show that the main results can also be replicated with other text sources, indicating that the findings are not only an artifact of the parliamentary debate and its specific legislative rules.

Overall, the results provide large support for one of the proposed hypotheses. Increased local salience of climate change causes radical-right MPs to increase disgust appeals, which is consistent throughout all analyses. The anger hypothesis is only supported in one model specification. Regarding the size of the changes, the effects might at first appear relatively small. Yet, in average approximately seven wind turbines were constructed in each treated electoral district. This speaks for a sizable increase in negative emotional discourse.

Robustness Tests

To test the robustness of the findings, I conducted a number of additional tests. Firstly, Online Appendix E presents event study plots. These plots compare pre- and post-treatment trends between treated and control groups graphically. Ideally, pre-treatment coefficients should be insignificant from zero showing that the control and treated groups are statistically the same before treatment. After treatment, coefficients should become significant for AfD MPs indicating the treatment effect for treated units. Figures E1 and E2 lend support to this assumption, which strengthens the credibility in assuming parallel trends.

Next, I tested whether directly elected MPs (via first-past-the-post voting) show a stronger effect in comparison to MPs elected via state lists. If the effects are indeed driven by the construction of wind turbines, one should expect stronger effects for directly elected MPs, as they have higher incentives of reacting to local events in their electoral districts (Schürmann and Stier 2022). Online Appendix F confirms these expectations showing a significant, positive effect for directly elected MPs.

In addition, Online Appendix G presents the results of a placebo test investigating whether the main effects also occur in speeches unrelated to climate change. If the main effects are indeed driven by the construction of wind turbines, the change of emotions should not occur in speeches on other topics. Figure G1 supports this assumption.

Lastly, Online Appendix H shows an additional test using the approval date of wind turbines as the date of treatment, rather than the actual construction date. However, Figure H1 shows no significant effects for the approval date, which can be explained by the non-political and non-public nature of the decision process regarding wind turbine constructions.

Testing the Strategy

In a next step, I aim at investigating whether politicians use emotional appeals strategically and whether they indeed link these emotional appeals to moral concerns. To do so, I firstly examine the data in a more qualitative fashion. If politicians of the radical right strategically appeal to the moral emotion of disgust (as indicated in the findings above), one should be able to find examples of corresponding moral appeals in the text documents. To do so, I draw on speeches and tweets that come from radical-right MPs and that have been classified as containing at least one disgust appeal.

The analysis shows how radical-right MPs combine appeals to disgust with the moral condemning of their political opponents. For instance, the AfD is declaring the German government and, especially, the green party as morally bankrupt by accusing them multiple times of "betraying" and "de-humanizing" German workers (e.g. in the coal or car industry) and German taxpayers. They also refer to mainstream politicians as "liars" and as having "double moral standards". More importantly, however, they connect emotional appeals with purity concerns. The sanctity domain encompasses the belief that people ought to protect purity in bodies and minds and act in accordance with the natural order (Horberg et al. 2009). It is therefore immoral to behave in a way that is un-natural. Yet, wind turbines are described as exactly this, violating the purity of the body, the mind, and nature in general. A good example of this is a paragraph from a speech held on September 10, 2019, by AfD MP Marc Bernhard:

"[…] The truth hurts. That's right. Where is your protest against these thousands of hectares, against this immense destruction of the environment? Where is your protest against the destruction of thousands of hectares of forest? The fact that you approve of this shows all your double standards. People living in the vicinity of wind industrial plants suffer from infra-sound

and grueling light reflections, not to mention the countless animals that are shredded in these industrial plants day after day. For example, 250,000 bats are killed in agony every year because of burst lungs and other internal organs. 1,200 tons of insects every year: that means 5 billion to 6 billion bees, grasshoppers and beetles every day.600 000 birds such as storks, red kites and buzzards are hacked to pieces every year by wind turbines […]"

This paragraph clearly reflects how disgust appeals (shredding or hacking animals, burst lungs and other organs, etc.) are connected to accusations of acting immorally (e.g. double standards). In another speech, AfD MP Martin Hohmann brings forward a quote that refers to wind turbines as a "brutal outrage against landscape and people" and describes the electricity produced by them as "blood electricity" (July 03, 2018). Furthermore, pro-environmental actors are described as violating the purity of the mind by being members of "religious cults" (December 19, 2019). They also refer to pro-environmental measures multiple times as "hysterical", "insane", "delusional", and even "fascist". Taken together, the radical-right emotional framing exemplifies the close relationship between the emotion of disgust and the moral foundation of sanctity (Feinberg et al. 2019; Horberg et al. 2009) and aims at amplifying and triggering moral concerns against measures that violate the sanctity of the body, the mind, and the natural order. Simultaneously, they portray themselves as the sole protectors of "the natural foundations of life in our society" fighting against "ideological insanity".

Further text examples from AfD speeches and tweets, as well as an analysis of communication from Green MPs, can be found in Online Appendix I. Lastly, I corroborate the qualitative analysis by applying a moral dictionary for German language (Bos and Minihold 2022) to check - using computational tools - whether wind turbines in fact cause radical-right MPs to increase corresponding moral language. The results of this exercise (Online Appendix J) fully support the

qualitative findings as well as the theoretical expectations. The increased salience of climate issues causes radical-right MPs to increase moral words in relation to the sanctity domain, where left-wing politicians increase moral language of care and fairness.

Finally, as a last step to investigate whether politicians use these emotional appeals strategically, I run additional analyses using data coming from ordinary citizens and party supporters. The theoretical framework of this study rests on the assumption that politicians appeal to emotions which resonate among their supporters. To do so, however, politicians need to know the "moral-emotional" preferences of their supporters, or else they risk losing support (Enke 2020). To see whether citizens' emotional demands fit the emotional framing of elites, I make use of differently sampled groups of party supporters on Twitter. Online Appendix K provides a detailed description of the different data used as well the tools to analyze disgust related language.

In a first analysis, I analyze nearly 20 million replies to politicians' tweets (twitter dataset used in Appendix D). The results paint a clear picture. I find that AfD politicians receive significantly more disgust related replies to their tweets, when talking about climate change and renewable energies, than politicians from other political parties. This means that discussions of AfD followers (below AfD tweets) about green issues are tinted to higher levels in disgust language than discussions by followers of other parties. Furthermore, comparing among different topics, one can see that green issues cause more disgust related replies to AfD tweets than other commonly discussed political topics. Green issues therefore stand out in the amount to which they attract disgust language from AfD supporters.

Secondly, I find that - analyzing random samples of party supporters and politically interested citizens on Twitter - AfD supporters use significantly more disgust related language than other

partisans when discussing green issues. However, when the same partisan groups discuss other topics (e.g. immigration, the EU, housing etc.) disgust levels are similar and statistically non-significant. These results show that disgust - when discussing green issues - is an important emotion radical-right supporters rely on (more than partisans of other parties). Since these discussions take place "below" tweets from radical-right politicians or publicly on social media, it is further reasonable to assume that AfD politicians have knowledge about this specific moral-emotional environment among their supporters. Prior research has supported this assumption by showing that politicians are generally aware of 'what' their supporters write on Twitter and adapt their tweets to it (Barberá et al. 2019). Furthermore, previous studies indicated that there are strong strategic considerations underlying parliamentary debates (Proksch and Slapin 2012). Thus, this provides altogether some careful evidence suggesting that the change in emotional framing is part of politicians' strategic communication, rather than some spontaneous emotional response to local events.[5]

Discussion

The emotional framing of political issues carry important implications for political opinions, attitudes and behavior. Prior research however, focused either on emotionality as a broad concept or on sentiment (negative versus positive valence). In this article, I test whether politicians appeal to discrete moral emotions which are expected to resonate among their supporters when the salience of contested issues increases.

[5] It is, of course, impossible to fully understand whether politicians adapt their framing to fully crystallized moral-emotional demands of their supporters, or whether citizens are also influenced by the framing of politicians. While there is evidence suggesting that politicians adapt their rhetoric to the moral-emotional landscapes of their constituents, it is also plausible that such leaders play an active role in shaping these landscapes, particularly in emergent policy domains like climate change. Thus, it could be that the radical-right uses an 'adaptive strategy' in which they are not static in their approach but may be actively seeking to cultivate and capitalize on specific moral-emotional responses to climate change. Therefore, the interaction between elite rhetoric and partisan discourse may well be bi-directional, with each continuously informing and reinforcing the other.

The main findings of this study show that politicians indeed appeal to discrete (moral) emotions which are expected to benefit them in mobilizing support among their partisans. Members of the radical right focus on the emotion of disgust which is linked to the moral concern of purity (sanctity foundation). These results are robust and can be replicated using different text sources and model specifications. Multiple robustness tests further corroborated the findings. Further careful evidence suggests that the main effect might be driven by strategic incentives. Politicians adapt their emotional framing to their base, as disgust is linked to their underlying moral values and a key emotion for radical-right supporters when talking about climate change. Radical-right MPs therefore speak an emotional language their supporters 'understand'. On the other hand, the expectations for left-leaning MPs (especially Members of the Green party) and their focus on the moral emotion of anger only hold for one specific text source and only for identifying speeches with keyword strings.

The results of this study make nevertheless several noteworthy contributions. Firstly, it contributes to the existing literature on emotional rhetoric in political communication (Crabtree et al. 2020; Kosmidis et al. 2019; Osnabrügge, Hobolt, and Rodon 2021; Gennaro and Ash 2022). By examining the public salience of contested issues, this study reveals that political actors appeal to the emotions that are expected to benefit them the most. This highlights the importance of investigating discrete emotions rather than merely sentiment and emphasizes the versatility of emotional framing. Parties, or party families, need not rely solely on one emotion for electoral support. The findings of this study demonstrate that the appeal of the radical right is not exclusively based on anger. Rather, radical-right actors can adapt their framing and employ different emotional appeals depending on what is most advantageous in a given situation. This

suggests that emotional framing in political communication is more versatile and more fine-grained than previous studies assumed.

Secondly, the study provides further evidence for the important connection between morality and emotions in politics. Moral emotions can cause and amplify distinct moral concerns. If these moral concerns resonate among the target group, political messages can become particularly convincing and persuasive (Feinberg and Willer 2013), increase political activism and partisan turnout (Jung 2020; Skitka and Wisneski 2011), and shape voting behavior (Enke 2020). This clearly reflects a potential for political elites as they can use distinct (moral) emotions in targeting specific audiences in given situations.

However, it is important to note that whether elites actually succeed in eliciting the precise moral emotion in their target audience is beyond the scope of this paper. Recent studies suggest that political rhetoric and politicians can indeed cause emotional responses in their audience (Bakker, Schumacher, and Rooduijn 2020), but how precise this triggering process can be is difficult to measure. Recent research suggests that negative emotions often emerge together, which speaks for a more general negative affect towards certain treatments (Bakker, Schumacher, and Homan 2020).

One limitation of this study is that the analysis has been limited to one European case. However, I believe that the findings potentially travel to other European and North American countries, where one can find similar climate-skepticism among the far right (Forchtner 2019) and polarization among elites and the public in terms of global warming. Nevertheless, future research should set out to conduct larger comparative analyses. In a similar vein, future research should take other contested issues into consideration and analyze how other discrete emotions take the role of 'most beneficial' for other political topics.

These limitations notwithstanding, I believe that these findings carry broader implications for democracy in general. Negative emotions can carry important implications for political trust and democratic values (Webster 2020). More morally convicted attitudes and higher levels of moral-emotional appeals can further exacerbate polarization (Clifford 2019) and lower the willingness to compromise (Ryan 2017). Negative moral emotions in particular, can make the author or speaker appear less open-minded and less worthy of a political conversation for outgroup members (Brady and Van Bavel 2021). Hence, increasing levels of negative moral emotions can harm inter-group discourse. This effect might be particularly strong when the moral rhetoric employed by politicians does not resonate with the moral world view of the opposing outgroup. Such communication leads the public to perceive sharper ideological distinctions between parties than actually exists (Finkel et al. 2020). Considering the growing salience of global warming and its consequences in the future, these findings potentially foreshadow increasing societal divisions between pro-environmentalists and climate change skeptics.

Acknowledgments

The author would like to thank Hanspeter Kriesi, Ellen Immergut, Christian Rauh, Bert Bakker, Francesco Colombo, Vicente Valentim, participants in the Hot Politics Lab and the Danish Political Science Association Conference 2021, the editorial team of *The Journal of Politics* and the three anonymous reviewers for detailed and very helpful comments on earlier versions of the manuscript.

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