Doctoral Thesis

Determinants of Political Elites' Engagement with Climate Change

Noam Himmelrath

Determinants of Political Elites' Engagement with Climate Change

Noam Himmelrath

Inaugural dissertation submitted in partial fulfillment of the requirements for the degree Doctor of Social Sciences in the Graduate School of Social Sciences at the University of Mannheim

Mannheim, 2025

Dean of the School of Social Sciences, University of Mannheim:
Dr. Julian Dierkes

First Supervisor:
Prof. Dr. Marc Debus (University of Mannheim)
Second Supervisor:
Prof. Dr. Christian Stecker (Technical University Darmstadt)

First Examiner:
Prof. Dr. Christian Stecker (Technical University Darmstadt)
Second Examiner:
Prof. Dr. Thomas J. Bräuninger (University of Mannheim)

Date of Defense:
24 April 2025

Acknowledgements

While this thesis is my work alone – except where indicated otherwise – it would have never existed without the help of countless supporters, family, friends, and invaluable research assistance and feedback from colleagues, student assistants, and conference audiences. I have added a separate acknowledgment section at the end of each chapter to highlight who supported which work specifically. Over the last four years, too many people have helped me with my dissertation to name them all, but I still want to highlight some without dismissing whomever I do not mention here. Please know that I appreciate you all.

First, I want to thank my supervisor, Marc Debus, for providing the best supervision I could have imagined, for giving support and guidance when I was unsure of how to continue, for giving me space to work on things on my own when I developed new ideas, and for the encouragement and the possibility to do my PhD in such a positive environment. I would also like to thank my second supervisor, Christian Stecker, for his help over the years and for continuously reminding me that the best PhD is a finished PhD. Finally, I want to thank Thomas Bräuninger for generously agreeing to be an examiner of my work and the third member of my dissertation committee.

I would like to thank Oliver Rittmann for his support since day one of my academic journey, which I can hardly overstate. For his influence on my decision to start a PhD in Mannheim, for his continuous feedback, and for his help on almost every academic (and non-academic) work. Thank you for being such a great and talented friend for over a decade.

I would also like to thank my co-authors and colleagues. You made my PhD experience more remarkable, enjoyable, and endurable. Thank you, Anna Adendorf, David Schweizer, Dennis Schüle, Jan Schwalbach, Julius Diener, Laura Dinnebier, Lennart Schürmann, Lukas Isermann, Simone Tosson, Verena Kunz, and all other colleagues

from the MZES, the CCCP, and the UPF.

While, at times, the PhD felt like my whole world, I am lucky to have family and friends who have always reminded me that there is more to life than googling R-error messages and finding significant stars. I want to thank my parents, Armin and Silvina, for always believing in me, for making me feel that I can achieve anything I put my mind to, and above all, for all the possibilities they provided me. I want to thank my grandmother Bärbel, without whom I could not have commuted to Mannheim. And finally, I want to thank my late Safta Martha for her unending interest in my studies and my progression in academics and life.

Beyond that, I am blessed with friends from all walks of life, be it from Wermelskirchen, Düsseldorf, Cologne, or anywhere else. I want to explicitly thank my friends in Cologne for helping me through those tough COVID-19 years that coincided with my dissertation, for offering distractions on weekends, and for making my everyday life the enjoyable adventure that it is. I especially want to thank Kim Schumann for mental support when I suffered from the loneliness of social distancing and curfews and for proofreading my work. Without you, I would not have moved back to Cologne and would certainly not have finished this PhD.

Finally, my time in Mannheim will always be connected to my roommates, Daniela Distel and Maren Lindacker. Thank you for taking me in, for Bolo-Thursdays, celebrating Shabbat, showing me Mannheim's nice and livable sides, and generally providing the best shared-flat experience I have had in my life.

Noam Himmelrath
University of Mannheim
December 2024

Contents

List of Figures

List of Tables

CHAPTER

ONE

Introduction

1.1 The 'Governance Trap'

There is a huge urgency to take action on climate change. According to the latest *Intergovernmental Panel on Climate Change* (IPCC) report, "there is a rapidly closing window of opportunity to secure a liveable and sustainable future for all" (IPCC, 2023, p. 24). As scientific evidence repeatedly shows the profound impacts of rising temperatures, like extreme weather events and environmental degradation, policymakers are under increasing pressure to prioritize climate action. The consequences of inaction are devastating, threatening not only environmental stability but also economic resilience and public health (e.g., Kotz, Levermann and Wenz, 2024). However, despite the overwhelming scientific consensus on the need for and benefit of immediate action, not a single country is currently on track to reach the goal of "holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels", as agreed on in the 2015 Paris Agreement (*Paris Agreement*, 2015; Boasson and Tatham, 2023).[1] While different approaches to address the issue exist – such as the development of sufficient technological solutions (see, e.g., Fawzy et al., 2020) or following scientific policy suggestions (e.g., Weichselgartner and Kasperson, 2010; Berger, Cologna and Bauer, 2024) – political elites bear a particular responsibility to act. Adopting wide-ranging climate protection policies is, thus, inherently societal and political (Falzon,

[1] For a live update on tracking countries' climate action ambitions, see https://www.climateactiontracker.org/ (accessed November 29, 2024).

Roberts and Brulle, 2021). Especially domestic politics and national-level policy actors are called into play, as the Paris Agreement attributes major responsibility for climate action to them (Falkner, 2016; Höhne et al., 2017).

As seen through the commitments made in the Paris Agreement, many governments and other political elites acknowledge the threats posed by climate change and, to some extent, the need to act. To overcome long-term challenges such as emission reduction, the scientific literature suggests that political elites should adopt time-consistent commitment devices in the form of binding policies (Hovi, Sprinz and Underdal, 2009; Rockström et al., 2017). However, as already highlighted over a decade ago by Compston and Bailey (2008, p. 1): "Governments and other political authorities are reluctant to take decisive action even though most are now convinced that strong measures are needed." The question arises as to why political elites fail to implement sufficient climate action despite the existing knowledge about the imminent danger of anthropogenic climate change and technological possibilities to counteract it. A common presumption of political elites' reluctance to fully address this challenge is that they opt for short-term solutions that align with immediate electoral incentives rather than long-term sustainability (see Jordan et al., 2022). Arguably, voters value policies with near-term (economic) benefits more than fuzzy long-term policies such as climate protection (Victor, 2011; Jacobs, 2016). Within such a system that rewards short-sighted decision-making, political elites prioritize actions that ensure re-election over those that may be beneficial in the long run (Giddens, 2009). Simply put, politicians are expected to fear retribution in the next election (Schulze, 2021) because voters might base their voting decision on a retrospective evaluation of public policies (Stokes, 2016). The phenomenon of non-action in climate politics can be understood through the 'governance trap' lens, a theoretical concept explaining elites' non-action in climate politics. Politicians are said not to act because they fear electoral punishment from the public. In contrast, the public expects leadership from political elites. This stalemate has been identified as a significant risk to successful emission reduction (Pidgeon, 2012; Newell et al., 2015).

While there is an independent stance of research on determinants of public's positions (Smith, Kim and Son, 2017; Otteni and Weisskircher, 2022), in this dissertation, I focus on the supply side of the governance trap, which postulates that focus on immediate voter concerns often eclipses the pressing need for comprehensive climate-related engagement, leading to the paradox where the imperatives of the present constrain political leaders (see for a systematic literature review Moore et al., 2024). Other authors

have also spoken of 'governance dilemmas' (Jacobs and Matthews, 2012, p. 903). Within this framework, the engagement of political elites with climate change becomes a critical area of interest. The foundational theory of rational choice decision-making offers insights into how electoral incentives shape policy decisions (see, e.g., Scott, 2000). As politicians are – at their core level – seen as vote-, office-, and policy-seeking elites, they are primarily motivated to make choices that resonate with their constituents' immediate preferences (Strøm, 1990, 2015). This emphasis on electoral success can result in a neglect of climate actions, as these often require sacrifices or adjustments that may not be immediately popular. In contrast, such actions' rewards may only be seen in the future. Understanding what drives rational political elites to engage with climate change is crucial for developing effective strategies to break the short-sighted decision-making based on short-term electoral cycles. Thus, we arrive at the central research question of this dissertation: What are determinants of political elites' engagement with climate change?

Initially, this question warrants two crucial definitions. In the context of this dissertation, "political elites" refer to almost all players in the political system. That does not necessarily imply that an actor is a specific individual. Political parties or parliamentary groups are players in their own right. Here, I follow an occupational definition of the term: political elites are those actors with institutional roles (in contrast to, e.g., the public) (Putnam et al., 1976; Kertzer and Renshon, 2022). Research on political elites in climate politics has included a wide variety of subjects, such as mayors (Einstein, Glick and Palmer, 2020) or other local politicians (Hjerpe, Storbjörk and Alberth, 2015), Members of the European Parliament (MEPs) (Zapletalová and Komínková, 2020) or other members of parliament (MPs) (Willis, 2018; Debus and Himmelrath, 2022), and parties (Farstad, 2018; Schwörer, 2024; Carter et al., 2018). Their "engagement with climate change" encompasses a range of activities, including position-taking on climate legislation, participation in climate-related discussions, and the implementation of respective policies, strategies, and practices within their jurisdictions. Engagement can thus be defined by the actions taken and the degree of commitment toward addressing climate issues, which may vary significantly among different elites.

This introduction is structured as follows. In the next section, I will summarize the state-of-the-art literature on determinants of engagement with political issues, specifically climate change. I will introduce a crucial theoretical differentiation between endogenous and exogenous determinants in this context. Furthermore, I will provide an overview of how the different chapters of this dissertation speak to the literature and

my theory. This is followed by a broad summary of the chapters' relevance, research interest, data used, and main findings. After that, I stress crucial limitations to my work, accompanied by multiple avenues for further research that could build on the findings of this dissertation. Finally, in the last part of the introduction, I draw conclusions from this work and emphasize my dissertation's scientific and societal relevance.

1.2 Determinants of Elites' Engagement with Political Issues

As discussed above, political elites are rational players primarily concerned with vote-, office-, and policy-seeking (Strøm, 1990; Strøm and Müller, 1999). However, they are subject to various factors that affect their strategic behavior. The idea that certain determinants drive political elites' behavior is at the core of a prominent and rich literature on elite behavior and decision-making (see for an overview, e.g., Kertzer and Renshon, 2022). Generally, those factors can be differentiated into endogenous and exogenous determinants. In this context, an endogenous determinant originates from within the political system, while exogenous refers to a determinant external to the political system. As applied in Chapter 4, I also differentiate between macro and micro level endogenous determinants. The former refers to those determinants emerging from within the political system but outside of individual elites, such as institutional rules in a proportional representation or majoritarian or a mixed-member electoral system (Gallagher, 2005; Stoffel, 2014). The latter, determinants on the micro level, are factors like socio-demographic characteristics of individual political elites, like their gender, age, or race (Poortinga et al., 2019; Baumann, Debus and Müller, 2015). In contrast, exogenous determinants emerging from outside the political system often are constituted by exogenous shocks like economic crises or terror attacks that affect political elites' (Margalit, 2019) and voters' behavior (Das, Ghosh and Maitra, 2024). Within the framework of the governance trap, these determinants can affect both political elites and the public. Here, I focus on the supply side of politics, political elites. In the following, I will elaborate on the state-of-the-art literature on these determinants, specifically for the political issue of climate change. In that context, I will address the questions of when political elites engage with the topic and what structures political elites' behavior, decision-making, and competition. Given the limited scope of the three substantive chapters, I will highlight those determinants that are regarded in the subsequent analyses.

1.2.1 Endogenous Determinants

Beyond determining incentives caused by the electoral system, the literature considers two main independent determinants on the macro level. The first is public opinion, and the second is election district characteristics. The latter is the main focus of the analysis in Chapter 4. Political elites in democracies are generally expected to be responsive to public opinion changes (e.g., Rasmussen, Reher and Toshkov, 2019; Burstein, 2003). Research also shows that, in the field of climate change as well, political elites take cues from public opinion and that an increased issue salience in the media positively affects the number of adopted climate change mitigation policies (Schaffer, Oehl and Bernauer, 2022; Bakaki, Böhmelt and Ward, 2020). This means that political elites, especially governments, adopt more climate protection policies when public opinion shifts towards prioritizing the environment (Anderson, Böhmelt and Ward, 2017).[2] Regarding election district characteristics, the literature findings are consistent with theoretical expectations derived from the rational choice approach for political elites described above (Strøm, 1990, 2015). According to this, elites from election districts with high employment in carbon-intensive sectors are less likely to vote for carbon restrictions (Kono, 2020). Similarly, MPs in a multilevel system are generally responsive to protest events in their states (Schürmann, Schwalbach and Himmelrath, 2024) and specifically responsive to climate protest events in their election district (Schürmann, 2024).

At the micro level, one of the strongest predictors of political elites' engagement with the political issue of climate change is their ideology. As key actors in this setting, political parties have, therefore, been extensively studied. In general, findings indicate that the traditional economic-left-right placement of parties can explain their climate protection efforts and engagement with the issue to a large extent, with parties on the left tending to prioritize climate protection more than their right-wing counterparts (Farstad, 2018).

Beyond that, Green parties position themselves as the primary advocates for the climate issue. They "own" the issue, meaning voters tend to perceive Green parties as the most competent parties in implementing climate protection and addressing climate change. At the same time, Green parties report the strongest climate protection positions (Walgrave, Lefevere and Tresch, 2012; Spoon, Hobolt and De Vries, 2014; Carter,

[2]For a comprehensive overview of research on public opinion on climate change and protection, see Fairbrother (2022).

2013; Carter et al., 2018). These associations of certain issues with certain parties are quite stable across time and countries (Seeberg, 2017).

Conversely, radical right and populist right parties are likely to take opposing stances. These parties are less likely to emphasize global warming and climate change as many dispute the scientific evidence for the phenomenon (Lockwood, 2018; Forchtner, 2019). If a vote-maximizing strategy proposes to address the issue at all, they are more likely to frame the issue of climate change in a nationalistic way. In that sense, they would highlight their role in protecting the domestic environment against pollution from abroad (Tosun and Debus, 2021). However, they have been shown to avoid the issue where possible or only select certain frames when taking a stance on climate protection (Schwörer and Fernández-García, 2024; Boecher et al., 2022). Other ideologies are located between these two poles. Conservative, center-right parties are less uniform in their positions, as some center-right parties completely oppose climate protection and energy-transition policies. Generally, however, "center-right party leaders have continued to voice support for the decarbonization transition, although, in practice, these parties have wavered on some issues and rolled back some decarbonization policies" (Hess and Renner, 2019, p. 427). This is in line with other findings suggesting that conservative parties generally do not oppose climate protection but, at the same time, do not challenge heavy CO2 emitting industries like coal or petroleum (Båtstrand, 2015; Carter and Pearson, 2022)

Research on the specific positions of social democratic parties on climate change is surprisingly sparse. It indicates that social democratic parties tend to engage more with climate change and support stronger climate protection than conservative parties. However, this is not always the case, as mainstream parties' positions on the issue are particularly affected by public opinion and party competition, in addition to being enabled (or constrained) by their existing policy preferences (Ladrech and Little, 2020). Under certain circumstances, this can lead to conservative parties being more climate-friendly than social democratic parties (Carter et al., 2018). Finally, left-wing populist parties generally take ambitious climate protection positions (Huber et al., 2021). The determining effect of ideology on political elites' engagement with climate change has also been researched for other elites than political parties. Generally, however, the results are similar to what could be expected, as MPs from a certain party take positions on climate protection that align with their parties' position. Pearson and Wager (2025), for example, show that British Labour MPs are – in line with party-level findings – more concerned about climate change than their colleagues from the Conservative party.

Socio-demographic characteristics of (individual) political elites are shown to be strong determinants of their engagement with climate issues as well. Generally, gender differences have been shown to determine political behavior for different elites and issues. For example, female MPs represent women's interests more strongly than male MPs (Bäck and Debus, 2019; Höhmann, 2020). Regarding the climate issue, male and female legislators report similar environmental concerns. However, female MPs are more likely to support climate protection policies than their male colleagues and are associated with adopting policies with higher environmental standards (Ramstetter and Habersack, 2020; Atchison and Down, 2019). In the same vein, Salamon (2023) shows that across dozens of democracies, stronger female parliamentary participation increases renewable energy consumption within the country.

Another crucial demographic is the age of the political elites. Research has investigated the effects of under-representation of younger citizens (e.g., Stockemer and Sundström, 2023) and the differences in the impact of age on the legislative behavior of MPs (Hájek, 2019). However, so far, there is little research on the specific nexus of young political elites and their engagement with the political issue of climate change. Anecdotal evidence suggests that young MPs have identified climate change as an issue to advocate for (Stockemer and Sundström, 2024; Debus and Himmelrath, 2022, p. 8) and that voters attribute more competence to younger candidates on the issue (McClean and Ono, 2024). As I will discuss in greater detail below, the salient determinant of age will be addressed in Chapters 3 and 4.

1.2.2 Exogenous Determinants

The behavior of political elites and, in particular, their engagement with the political issue of climate change is not solely shaped by dynamics and determinants within the political system. Instead, it is often influenced by a complex interplay of factors beyond the confines of the political system, meaning by external factors from outside the system. The main exogenous determinant, in that regard, are so-called exogenous shocks, events that are "not fully controlled by elites" (Browne, Frendreis and Gleiber, 1984, p. 180). They can occur in many forms, such as terror attacks, economic crises, or natural disasters. These shocks affect political elites' engagement with issues in two main ways. First, they open windows of opportunity for discussing certain issues and drafting and adopting respective policies (Birkland, 1997; Rudel, 2019). The specific policy

issue for which a window of opportunity opens depends on the nature of the shock. For example, political elites will adapt their economic positions to react to economic crises (Calca and Gross, 2019). Here, I am especially interested in a specific form of exogenous shocks, namely climate disasters. In the context of this dissertation, "climate disasters" refer to significant adverse events, such as hurricanes, floods, and wildfires, that are – in contrast to the broader category of natural disasters, which also include events such as earthquakes – exacerbated by climate change and result in profound social, economic, and environmental impacts (Chmutina and Von Meding, 2019). Such disasters have steadily increased over the last decades, as shown in Figure 2.1 in Chapter 2.

Regarding the effects of exogenous shocks on political elites' engagement with the issue of climate change, research echoes the general findings that these shocks open windows of opportunity and thus affect party competition on specific issues. Oil price shocks, for example, open windows for political discussions of green agenda topics (Finseraas, Høyland and Søyland, 2021). Most research has focused on the US-American context and politicians' immediate policy responses. Quick responses have been found to increase vote shares for incumbents. In the 2004 election, after the Florida hurricane, disaster relief led to increased votes for President George W. Bush in already Republican districts (Chen, 2013). Thus, politicians are incentivized to invest in disaster relief rather than disaster prevention, contradicting (economically) proactive behavior against electorally successful behavior (Healy and Malhotra, 2009). More generally, Gasper and Reeves (2011) demonstrate that voters can distinguish between disasters and random (and naturally occurring) weather events, as well as related government actions. Consequently, they reward and punish politicians in a multi-level system based on their policy responses. Hence, political elites have incentives to react to disasters and adjust their behavior accordingly. In that regard, research has shown that politicians indeed change their climate-related behavior, adopting more pro-climate preferences after disasters such as hurricanes (Gagliarducci, Paserman and Patacchini, 2019). Literature on the European context is less conclusive, with some studies showing long-lasting electoral effects (Bechtel and Hainmueller, 2011) and others only finding decimal effects (Hilbig and Riaz, 2024).

To sum up, political elites are rational actors. Because of the fear of electoral punishment by voters, they often do not act on climate action, as posited by the concept of the governance trap. However, depending on various variables, they employ different strategies and engage with various political issues. As I will highlight below, this dissertation concerns three types of political elites. In Chapter 2, the analysis focuses

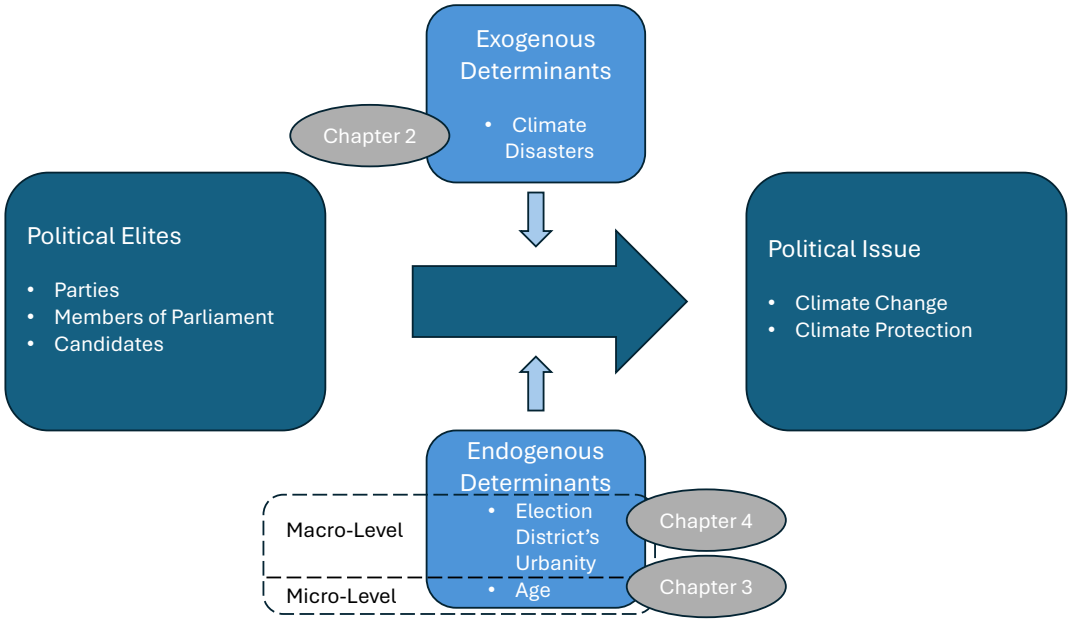

Figure 1.1: Determinants of Political Elites' Engagement with the Climate Change Issue regarded in this Dissertation

on parties. Chapter 3 focuses on an underlying level and analyzes MPs' engagement with climate change. Finally, Chapter 4 is concerned with political candidates and their positions on climate protection. That is, each chapter is concerned with a specific political actor and their engagement with the political issue of climate change, either in the form of climate change generally or climate protection more specifically. Furthermore, each chapter regards different determinants. Chapter 2 focuses on the exogenous determinant of exogenous shocks, and Chapter 3 analyzes the determining effect of age. Building on the findings and the argument developed in that chapter, Chapter 4 also includes the variable age in its analysis and complements it with an endogenous determinant on the macro level, namely election districts' structural variables, especially their urbanity. Figure 1.1 provides an overview of the fundamental theoretical assumptions and details how the chapters speak to each other and to the overarching research question.

1.3 Summary of the Chapters

In the following, I summarize the three substantive chapters of this dissertation. Each chapter extends the existing literature by providing insights into factors determining political elites' engagement with climate change. While Chapter 2 focuses on an

exogenous determinant in the form of climate disasters, Chapters 3 and 4 focus on endogenous determinants, namely MPs' socio-demographic characteristics and structural variables of candidates' election districts.

1.3.1 Chapter 2: Exogenous Shocks and Party Competition.

This first substantive chapter deals with an exogenous determinant of political elites' engagement with climate change. It is based on the idea that party competition does not revolve in a sealed chamber but rather that political issues can be pushed on the agenda by exogenous factors emerging outside the political system. In turn, political elites will have to engage with issues forced upon them by events they are not able to control, such as terror attacks – or, in this case, climate disasters. Such events drastically impact public salience, affecting political competition and increasing elites' attention to a specific issue. It depends on the type of shock which issue is affected. A financial crisis might lead to increased attention toward economic issues (Calca and Gross, 2019), while a rapid influx of refugees rather leads to increased attention toward border control (e.g., Gessler and Hunger, 2022). Natural disasters usually open a so-called window of opportunity for political competition on the issue of disaster relief (Birkland, 2016). In this chapter, I argue that in the recent decade, the public's understanding of the distinct causality between anthropogenic climate change and climate disasters has increased and that, in turn, political parties should increase their attention on climate change in the aftermath of climate disasters (rather than solely on disaster relief).

I rely on party manifestos from ten European democracies from 1990 to 2022 to examine the effects of climate disasters on party competition. To identify which parts of the manifestos relate directly to climate change, I leverage hand-coded data by Schwörer and Fernández-García (2024), who annotated quasi-sentences relating distinctly to climate change. I rely on the EMDAT database to identify climate disasters. The EMDAT database initially includes natural and technical disasters worldwide (Centre for Research on the Epidemiology of Disasters (CRED), 2022). In my analysis, I include only those kinds of disasters whose occurrence or magnitude is amplified by climate change, such as storms or heavy rainfalls, in contrast to, for example, earthquakes.

The findings show that parties, contrary to theoretical expectations, decrease their attention to climate change in their manifestos in the aftermath of climate disasters. Moreover, these results are not moderated by either party ideology or incumbency — two factors highlighted by the existing literature on other kinds of shocks. These re-

sults suggest that parties strategically adapt their behavior, albeit contrary, compared to the effects theoretically anticipated.

1.3.2 Chapter 3: Advocates of Climate Action?

The second substantive chapter moves the focus from exogenous to endogenous determinants. Understanding who spends valuable floor time to address climate change is a crucial prerequisite to understanding the dynamics of politically addressing climate change. In terms of this dissertation's main research question, the chapter provides first insights into age as a determining factor of political engagement with climate change. Co-authored with Marc Debus, this chapter builds on the idea that voters are more likely to support candidates who share similar socio-demographic characteristics, such as age and gender, because they believe these candidates are more likely to promote their preferences and interests (McDermott, 2009; Sevi, 2021). Following this idea, our main argument is that rationally acting MPs should use their socio-demographic characteristics to their advantage by appealing to specific groups of voters who are potentially more inclined to vote for them. This study focuses on younger MPs facing a twofold opportunity presented by the salient issue of climate change. On the one hand, the issue is critical to younger citizens as the rise of youth-led climate movements, such as those inspired by Greta Thunberg, demonstrated (Marquardt, 2020). Younger MPs thus have a unique opportunity to develop a visible profile on a political issue that is especially salient among one of their core constituencies. On the other hand, to differentiate themselves from older colleagues, younger MPs can argue that they and their (future) families would be more strongly affected by the consequences of a not-addressed climate change. We hence argue that younger MPs should speak up more often in parliamentary debates on climate change. Using data on parliamentary speeches given in the German Bundestag between 2013 and 2021, we apply a customary dictionary to identify speeches on climate change.

We find that age indeed matters. The younger MPs are, the more speeches they contribute to parliamentary debates related to climate change. These results contribute to our understanding of who engages with the political issue of climate change. The chapter was published as a self-sufficient paper in *Climate Action* in 2022 (Debus and Himmelrath, 2022). This chapter is a marginally edited version of said paper.

1.3.3 Chapter 4: Political Candidates' Positions on Climate Protection.

The third substantive chapter builds on the argument from Chapter 3 and the insight that age is a determining political dimension regarding engagement with climate change. It considers political candidates' positions on climate protection and which variables help explain them. Expanding the scope of analysis from parties and MPs to political candidates includes an additional political actor, which in turn offers a complete answer to the main research question of this dissertation.

In this chapter, I develop an argument on two levels. At the micro level, I revisit the factor of age. As outlined in Chapter 3, I argue that younger candidates should adopt more pro-climate positions than older candidates. I create an additional argument at the macro level that deals with the structural factors of candidates' election districts. More specifically, the key argument is that voters in rural election districts are more car-dependent than in urban election districts. This is for several reasons, such as longer commuting distances and worse public transport. At the same time, general fossil fuel taxation and car usage have developed to be a crucial aspect of (intended) climate protection measures (Finnegan, 2023), especially in Germany, where cars play a crucial role in public debate (Hornung and Bandelow, 2024). Hence, I argue that rationally acting candidates should infer the median voter's position on climate protection from their election district's urbanity (i.e., the car dependency). Candidates from more urban districts should adopt positions inclined to more climate protection, while candidates from more rural districts should have less climate-friendly positions. However, because of the immense issue ownership of Green parties, this effect should be less pronounced for Green candidates, as they should value climate protection in any case, as their core constituency expects of them (Walgrave, Lefevere and Tresch, 2012).

To analyze candidates' positions on climate change, I leverage data by the *German Longitudinal Election Study*, including all candidates for the German federal elections of 2017 and 2021 (Roßteutscher et al., 2018; GLES, 2023). The case selection was driven by the fact that the issue of climate change was heavily politicized in the second half of the 2010s (Marquardt and Lederer, 2022), as also indicated by the fact that climate change was seen as the most pressing political issue in Germany at that time, shown in Figure 3.1 in Chapter 3.

Applying multivariate regression analysis, I do find the expected effects. First, younger candidates report more climate-friendly positions than older candidates. Second, candidates in urban election districts report positions more inclined to climate protection than candidates in rural election districts. Finally, the latter effect is moderated by Green party ideology. That is, for candidates who run for the Green party, the macro level effect is less pronounced than for candidates from other parties. However, I only identify these effects in the data of 2021, not in the data of 2017, again highlighting the politicization of the climate change issue between these years. The findings could suggest that candidates leverage salient issues strategically to signal their involvement to potential voters.

This chapter is currently under review with *Party Politics*. This is a revised version of the initially submitted manuscript.

1.4 Limitations and Avenues for Further Research

In this dissertation, I argue that endogenous and exogenous determinants drive political elites' engagement with climate change. While the findings contribute valuable insights into these dynamics, several limitations warrant discussion and open avenues for future research to expand on this dissertation. In the following, I highlight three crucial limitations and three avenues that future research should advance on.

First, while this dissertation looks at a wide range of elites using various data sources, it relies exclusively on observational data. While this approach allows for the analysis of political behavior and its determinants, it limits the ability to draw causal inferences about strategic behavior. While I can provide insights into correlations of determinants and engagement with climate change, my data sources and approaches are less effective in establishing the underlying mechanics. I provide theoretical accounts of why political elites act as they do; however, more rigid experimental approaches are needed to unravel these underlying dynamics systematically. This would be desirable as causal evidence would allow for a more precise understanding of why political elites react to certain determinants, that is, whether their behavior is explainable by strategic considerations or rather by the application of psychological explanations (Kertzer and Renshon, 2022).

Second, while the focus on European democracies is valuable for understanding po-

litical engagement in these contexts, it limits the generalizability of the findings to other political systems and world regions. Arguably, the European context is – next to the Anglo-Saxon one – one of the more heavily researched regions of the world, not only regarding climate politics but also research on parties more generally. Political dynamics in other political systems, such as authoritarian regimes, differ significantly due to institutional structure variations, media environment, and public opinion dynamics. While there is an ongoing normative discussion around the question of whether authoritarian approaches can more adequately implement climate action (Mittiga, 2022; Povitkina, 2018), research shows that the determinants to engage with climate change are different in such systems (Lamb and Minx, 2020; Kwon and Hanlon, 2016). Additionally, and especially within the issue of climate change, other regions – such as small island developing states – may have a very different approach to implementing effecting policies, as they are affected more directly by its consequences (Thomas et al., 2020). Further research on non-democratic systems and other world regions is heralded for, given the global dynamics of climate change (Walshe and Stancioff, 2018; Koch, 2024).

Finally, due to the cumulative nature of this dissertation, it does not systematically address the interaction between the determinants it identifies, especially between exogenous and endogenous ones. For example, one could imagine that micro level determinants affect actors' reactions to exogenous determinants like climate disasters. This omission limits our understanding of the full complexity of political elites' engagement with climate change. Beyond that, the scope of this dissertation is limited to a handful of possible determinants. It does not identify all drivers of political elites' engagement with climate change, which would be presumptuous to claim. While I do not argue to analyze an exhaustive list of variables, this still limits the scope of the response to the main research question. Beyond the scope of this thesis are many more factors that exert a determining effect on political elites, such as political protest (Schürmann, 2024; Barrie, Fleming and Rowan, 2024) or transnational and international policy levels that impact national legislature and actors' positioning (e.g., Senninger, Bischof and Ezrow, 2022).

I see three interesting avenues for future research beyond merely addressing the limitations discussed earlier. These aim to explore broader implications and bring new possibilities for advancing research on the nexus of political elites and their engagement with climate change based on the findings presented in this thesis.

First, this dissertation considers different positions on climate protection and how these positions are adopted strategically. It does not investigate how electorally successful different positions and strategies are. Existing research on this topic is inconclusive and highly dependent on the context, with some studies showing no electoral effect of pro-climate positions in some countries, such as in the Swiss context (Dermont and Kammermann, 2020), but significant electoral effects (both electoral benefits and punishments) of party position-taking in responses to floods in others, such as the UK (Birch, 2023). Future research should follow these examples and extend the research to a broader context, independent of single case studies, to derive more general expectations. Specifically related to the results of this work, future research could, for example, focus on whether candidates in urban or rural districts electorally profit from their position-taking on climate change and climate protection.

Second, my dissertation does not analyze substantive effects regarding policy outcomes. One could argue that parliamentary debates are merely "cheap talk" (Austen-Smith, 1990) and candidates simply report certain positions to obtain votes without acting on these positions. How does elites' engagement affect substantive policy outcomes? For instance, do pro-climate positions by younger MPs or urban candidates translate into substantial legislative outcomes, such as increased adoption of climate protection measures? Given the above-explained governance trap, the question of whether MPs act on their climate positions and introduce climate policies or if they end up in said dilemma and feel pressured to justify their engagement in climate action before their constituents remains an avenue for further research (Willis, 2020). Substantive outcomes of climate positions could also be measured differently. For example, one could ask whether young MPs collaborate across the aisle to promote climate policies, given their shared positions on the issue, similar to collaborations of female MPs on issues like abortion (Wäckerle, 2023).

Finally, although this dissertation is primarily situated within the literature on elite behavior, its results highlight the importance of related literature on political representation (Pitkin, 1967; Mansbridge, 2003). They suggest that younger political elites adopt more climate-friendly positions compared to their older colleagues. At the same time, however, younger citizens remain heavily underrepresented in legislative processes and political institutions (Stockemer and Sundström, 2018). This, in turn, constrains their ability to influence climate policy decisions. Such a generational divide raises the critical question of whether more adequate youth representation would lead to more rigid climate action (Marquardt, Lövbrand and Buhre, 2024). Future research should

examine whether a more equitable representation system could lead to different political outcomes regarding climate change.

Future studies could build on this dissertation's contributions by addressing these limitations and pursuing these research directions, advancing our understanding of political elites' responses to one of the most pressing global challenges. While embarking on these avenues, this dissertation should remind researchers that concepts matter: the difference between environmentalism and climate change is only gradually being adopted into quantitative classification tasks (e.g., Schwörer, 2024; Wappenhans et al., 2024), as, for example, also shown by the different approaches to classify climate change-related texts in Chapters 2 and 3. Furthermore, differentiating between, for example, extreme weather events and climate catastrophes can lead to hugely different results (Quoß and Rudolph, 2022).

1.5 Conclusion

Political elites are crucial in combating climate change as they are responsible for formulating and implementing meaningful climate policies and reducing emissions to achieve the binding goals of the Paris Agreement. Despite various technological solutions that could facilitate the achievement of these targets and continuous scientific guidance on what policy measures are needed, policymakers worldwide continue to fail to take the decisive action required and to implement sufficient climate protection policies. A key reason for this is the so-called governance trap. This concept posits that the standstill in climate policy is rooted in the issue that, on the one side, the public expects political elites to lead by example and to implement policies. Conversely, political elites fear electoral punishment at the next election due to the unpopularity of climate action policies (Pidgeon, 2012). This highlights the underlying issue in climate protection politics: short-term electoral cycles heavily affect elites' behavior (Schwalbach, 2022), while climate policies require long-term planning and acting (Giddens, 2009). Given this trap, this dissertation tries to identify under which circumstances – differentiating between determinants endogenous and exogenous to the political system – elites engage with the political issue of climate change.

The key theoretical assumption is that political elites are rational players. They are incentivized by three independent behaviors: vote-, office-, and policy-seeking. That

means they are primarily motivated by the pursuit of votes, the attainment of office, and ultimately, the implementation of policies that align with their values (Strøm, 1990; Strøm and Müller, 1999). Political elites employ different strategies to gain votes, such as emphasizing and taking certain positions on different issues. The key argument in this dissertation is that certain determinants incentivize specific actors to change their strategy. That is, specific actors should profit from increasing or decreasing their issue emphasis on climate change or take certain positions on the issue. I test this argument for three different political elites, parties, MPs, and candidates using three different data sources: election manifestos, parliamentary speeches, and survey data. Chapter 2 shows that parties decrease their issue attention toward climate change in the aftermath of climate disasters. Regarding endogenous determinants, Chapter 3 shows that younger MPs in the German Bundestag talk more about climate change than their older colleagues. Finally, Chapter 4 builds on the argument from the previous chapter and provides evidence that younger candidates and those candidates running in more urban election districts take stronger pro-climate positions than older candidates and candidates running in rural districts.

This dissertation explores different determinants of political elites' engagement with climate change. In an era where climate change poses one of the most pressing challenges to countries and thus politics and governance, research on such factors that drive political elites to engage with this issue is central. Against this backdrop, the question of what determines political elites' engagement with climate change addresses a stance of research in political science that has experienced a stark growth in recent years (e.g., Zeigermann, Kammerer and Böcher, 2023; Schwörer, 2024). While a well-established body of literature exists on elite behavior and decision-making (e.g., Kertzer and Renshon, 2022), much of this work focuses on specific aspects such as policy preferences (e.g., Rinscheid, Pianta and Weber, 2021), institutional constraints (e.g., Finnegan, 2022), or public opinion dynamics (e.g., Fairbrother, 2022). Still, elites' engagement with the issue of climate change remains inadequately researched. By adopting a slightly different perspective, I seek to cultivate a richer understanding of the contextual determinants that influence elite political behavior on climate change. This dissertation thus advances the field by addressing under-researched areas, provides a more fine-grained view of the factors that influence elite political behavior in relation to climate change, and shows that exogenous, as well as endogenous factors affect elites' engagement in one of our time's most pressing global challenges.

CHAPTER

TWO

Exogenous Shocks and Party Competition. Do Climate Disasters Determine Parties' Issue Attention on Climate Change?

Abstract

Exogenous shocks like economic crises, terror attacks, and rapid increases in migration affect party competition, with some parties placing greater emphasis on the issue while others focus explicitly on different issues. Similar dynamics apply to natural disasters, creating windows of opportunity to discuss and adopt disaster relief policies. Given the imminent link between anthropogenic global warming and an increase in climate disasters, I argue that these events affect climate change issue competition. Analyzing party manifestos from ten European democracies from 1990 to 2022, I show that, surprisingly, the increasing occurrence of climate disasters generally decreases parties' issue attention toward climate change. Contrary to theoretical expectations, parties' ideologies do not moderate this effect, nor do government-opposition dynamics.

2.1 Introduction

Party competition does not revolve in a hermetically sealed chamber where parties solely increase their attention toward favorable issues and neglect others but is influenced by real events. Economic and social crises, terror attacks (Criado, 2017), and rapid influxes in migration (Gessler and Hunger, 2022) can shake up party competition on certain issues, forcing parties to take a position on the issue or increase their attention toward it. Natural disasters, such as the recent horrendous flooding in Valencia, Spain, with over 200 casualties[1] are another form of exogenous shocks that have been shown to affect party competition, forcing parties to discuss and adopt disaster relief-related policies (Birkland, 1997). The growing frequency and severity of these disasters are increasingly recognized as a visible consequence of the rapidly accelerating phenomenon of anthropogenic climate change. Linking disasters with (some form of) human responsibility changes the context in which these disasters are being discussed. Specifically, the issue of climate change might play an increasingly important role in debating the handling of such events. Despite the alarming nature of such disasters, perspectives on their potential impact on public policy vary considerably. *Optimistic* voices suggest that climate disasters may elevate public awareness of the climate crisis and facilitate the urgent implementation of measures necessary to combat climate change. This view hinges on the premise that increased awareness will lead to greater public support for climate action policies, a prerequisite for successful implementation (Bechtel, Genovese and Scheve, 2019). Conversely, more pessimistic voices express concern that these effects will be ephemeral and inadequate to affect meaningful climate action (Rowan, 2023). The pressing need for action in response to climate change has spurred extensive research into the impact of extreme weather events and natural disasters on public opinion (Böhmelt, 2020), political and voter behavior (Baccini and Leemann, 2021; Hilbig and Riaz, 2024; Garside and Zhai, 2022) and policy implementation (e.g., Birkland, 2016). However, little scholarly attention has been devoted to the link between natural disasters and political parties and their reaction. Most recently, Wappenhans et al. (2024) have shown that extreme weather events mostly do not enhance parties' attention toward environmentalism in their press releases. They also find evidence suggesting a similar trend regarding attention to climate change, highlighting the need for further scholarly investigation of climate disasters (of which extreme weather events are a part). Building on these findings, I aim to revisit the dynamics between natural disasters and party competition, focusing specifically on parties' issue attention toward climate change. Given that the outcomes of party competition ulti-

[1]Source: https://www.bbc.com/news/live/cgk1m7g73ydt, accessed December 13, 2024.

mately dictate the introduction of climate-related policies (or lack thereof), parties' reactions to these events are pivotal to ensuring adequate responses. Consequently, it is of political and scientific interest to empirically investigate if and how political parties alter their behavior in response to climate disasters and if and how these disasters affect issue competition on climate change.

To shed some light on the nexus of climate change and the actions of political parties, I investigate the strategies of parties in European democracies in response to disasters as a specific type of exogenous shock. The research question addressed by this study is: How do climate disasters affect issue competition on climate change? Climate disasters are defined as those "natural" disasters whose frequency and severity are exacerbated by climate change, such as droughts and floods, in contrast to events like earthquakes (Chmutina and Von Meding, 2019). Through this question, the study aims to contribute to the scholarly understanding of the role of political parties in shaping responses to climate change. Notably, I focus on issue attention toward climate change specifically, rather than the broader category of environmentalism.

In this study, I aim to examine the extent to which political parties increase their issue attention toward climate change in the aftermath of climate disasters and how several variables – such as party ideology and government-opposition dynamics – moderate these effects. The central argument posits that climate disasters serve as focusing events that increase public salience of climate-related topics, which incentivizes parties to adjust their issue attention towards such topics, depending on the behavior of their competitors. I expect incumbent parties to direct greater attention toward the issue of climate change in the aftermath of climate disasters due to their governmental responsibilities to address the issue, while parties in the opposition may strategically choose not to engage with the issue. Additionally, I expect Green parties to respond differently to these disasters than other parties, given their ownership of the issue of climate change and protection. However, whether they increase or decrease their attention toward the issue relative to other parties remains inconclusive based on existing theories and empirical findings. I hence formulate two competing hypotheses. Surprisingly, political parties generally do not increase their attention toward climate change in response to domestic climate disasters. Instead, the evidence suggests that, as the frequency of such disasters rises, parties tend to strategically reduce their focus on climate change. This negative effect is not moderated by any of the factors theoretically expected to influence party behavior in the face of exogenous shocks. Specifically, the analysis shows that neither party ideology nor the dynamics between government and

opposition play a significant role in moderating this effect.

This research has societal relevance and makes multiple significant contributions to the existing scientific literature. In addition to the multifaceted impacts of climate change, the increasing frequency and severity of climate disasters highlight climate change as one of the most pressing issues of our time, profoundly affecting societies, economies, and ecosystems worldwide. Understanding how political parties respond to these events is crucial, as their actions and policy decisions significantly shape public discourse and influence climate change mitigation and adaptation efforts. Investigating the dynamics of party competition in this context is essential for several reasons. First, focusing on the climate change-specific dynamics of party competition, this study goes beyond existing approaches focusing on issue attention toward environmentalism. Second, political parties are key players in formulating and implementing climate policy; their responsiveness to climate-related issues can determine the effectiveness of government action. Third, parties' behavior after climate disasters can reveal broader societal attitudes toward climate change, which may facilitate or hinder meaningful action. Finally, as climate-related events become more common, understanding the mechanisms that drive party behavior in response to these shocks may help understand future political trends and inform strategies that promote effective climate action. This study contributes valuable insights into the political dynamics surrounding climate change policy by exploring the intricate interplay between climate disasters, party ideology, and issue attention.

This chapter is structured as follows. First, I provide an overview of existing literature, which also serves as the theoretical motivation for the study. I develop my hypotheses and argue that political parties generally increase their issue attention toward climate change as a reaction to domestic climate disasters. These expectations are based on existing findings regarding the effects of exogenous shocks on domestic party competition. I expect parties' ideological positions to play a moderating role in this relationship. In the next step, I introduce the data and methods used to conduct the consecutive analysis before presenting descriptive findings and the results of a range of multivariate analyses. I continue by evaluating the hypotheses and finally interpret the findings in a summarizing conclusion, highlighting the study's limitations and developing avenues for future research.

2.2 The Effects of Exogenous Shocks on Party Competition

Party competition in advanced European democracies has been characterized by parties' attempts to emphasize certain issues that they consider to be electorally decisive (vote-winning). This dynamic has been labeled *issue competition* (Budge and Farlie, 1983; Green-Pedersen, 2007). That means that parties not only compete on an economic left-right dimension but selectively emphasize issues that they "own" to affect the public agenda and ultimately win votes. That is, parties emphasize the issues they think voters perceive them to be competent on. However, parties also converge on issues that are – or recently have become – salient in the public (Dolezal et al., 2014). If, how, and on which issues parties eventually compete depends on several variables, such as institutional or ideological factors. Additionally, factors exogenous to party competition can affect the selection of issues. Research has shown that parties react to external factors that change public attention and demand political action. By repositioning themselves on the issue and taking a clear stance, parties allow voters to align their preferences (Mader and Schoen, 2019). In the following, I first formulate theoretical expectations on the baseline effect of climate disasters as exogenous shocks on parties' issue attention before turning to the two moderating factors of incumbent status and party ideology.

Dynamics of issue competition among parties have been analyzed for a variety of issues, such as European integration (e.g., De Vries and Van de Wardt, 2011; Guinaudeau and Persico, 2014) or immigration (e.g., Green-Pedersen and Otjes, 2019; Kortmann and Stecker, 2019), highlighting how differing party strategies and voter preferences shape the political contest surrounding these topics. In recent years, the ever-accelerating climate crisis has, furthermore, sparked a widespread growth of literature on issue competition on climate change (e.g., Farstad, 2018; Barber and Klassen, 2021). One aspect of issue competition that has gained scholarly attention is the effect of exogenous or external shocks on the attention toward certain policy issues. Climate disasters are such events. They have been shown to affect party competition and, eventually, policy adoption. A prominent theoretical framework that aims to explain the impact of natural[2] disasters in the policy-making process is the concept of *focusing events*. It posits that natural disasters can serve as critical junctures that can trigger a sense of urgency among policymakers and the general public, leading to increased attention and

[2]Note that in this case, the theoretical expectations explicitly regard *natural* disasters, not only climate disasters.

public discourse on disaster-related policies. Empirical research has demonstrated that while not all natural disasters end in disaster-related policy implications, many such events significantly impact the policy-making process and lead to the implementation of disaster relief policies and measures (Birkland, 1997; Rudel, 2019). The presumed primary driver of the policy impact of natural disasters is the increased public attention toward specific issues. Typically, the primary concern that garners public attention in the aftermath of a natural disaster is immediate disaster relief. The case of disaster relief policies provides a compelling example of the notion that public attention and corresponding political attention tend to surge following such events, particularly as attention toward disaster relief is generally low during non-disaster periods. Conversely, a substantial increase of public attention can be observed in the wake of a natural disaster, enabling political action at the local (Giordono, Boudet and Gard-Murray, 2020), state (Birkland, 2006), and even federal level (Birkland, 2016). To sum up, natural disasters can act as exogenous shocks that affect policy implementation and party competition on the issue of disaster relief.

Here, I argue that based on the evident connection of climate disasters to anthropogenic climate change, these disasters should also affect issue competition on climate change (and not only on disaster relief). As shown in Figure 2.1, climate disasters have steadily increased since the 1970s (Yamamura, 2015). Since then, scientists have alluded to the link between climate disasters and anthropogenic global warming (O'keefe, Westgate and Wisner, 1976). However, it was not until the early 2010s that this link became part of the wider public debate (IPCC, 2012, 2014). Today, this link is largely undisputed, as scientific evidence has repeatedly shown that climate disasters' increasing frequency and severity are associated with anthropogenic climate change (Van Aalst, 2006; Banholzer, Kossin and Donner, 2014). However, this connection fundamentally impacts political decision-making processes, public elites, and public issue attention. Humanity's responsibility for these disasters adds a new dimension to the effects of climate disasters on legislative processes. The discussions concerning the concept of *loss and damage* during international climate negotiations each year serve as a prime example of this development. *Loss and damage* refers to the financial and non-financial impacts of climate change that disproportionately affect developing countries. Accompanying this is a global debate regarding the responsibilities of developed nations — primarily accountable for climate change — to provide support and reparations for the resulting harm. This discourse illustrates how the link between climate disasters and political decision-making is publicly recognized, even shaping the political discourse on a global scale (see for an overview Mechler et al., 2019). As the legislative process is

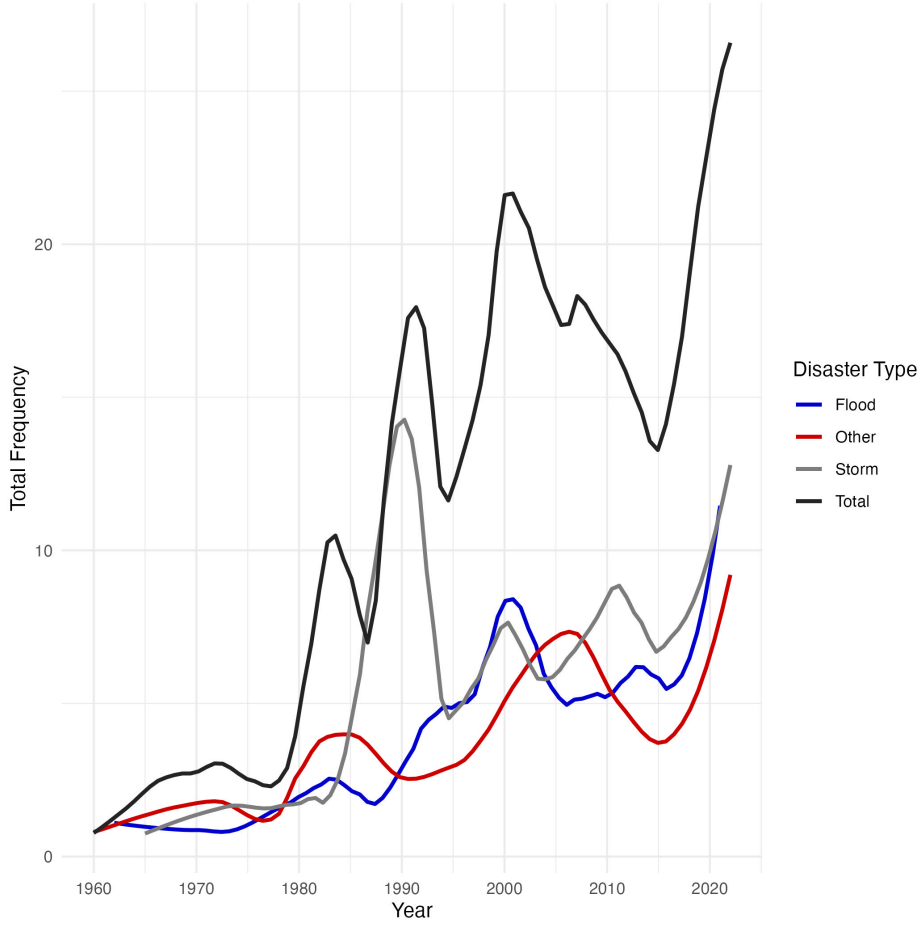

Figure 2.1: Number of Climate Disasters in Countries of Observation by Type (smoothed)

affected by climate disasters, party competition on climate change is likely to also be influenced.

Climate change typically exerts little impact on daily life (at least for now and in most European countries). Its effects are primarily felt through climate-related disasters, which vividly illustrate the severe consequences of anthropogenic climate change to the public and political parties, as described in the example in the introduction. In this highlighting capacity, these disasters now (with humanity's direct responsibility for such events, as explained above) serve as focusing events that increase public attention not only on disaster relief but on climate change itself. Consequently, I argue that the link between anthropogenic climate change and the increased occurrence of climate disasters changes the issues that public and consequential political attention is drawn to in the wake of such disasters. While public attention used to focus solely on disaster relief policies, nowadays, attention is also paid to potential causes of such disasters, namely anthropogenic climate change. These dynamics, so I argue, affect issue

competition between parties.

Parties are vote-, office-, and policy-seeking actors. That is, as benefit-maximizing actors, parties compete to gain votes in elections and adopt positions that they deem vote-winning (see Downs, 1957). Beyond votes, they seek to attain offices and ultimately implement policies corresponding to their positions (Strøm, 1990, 1997). As strategic actors within the political landscape, they frequently adapt their policy positions on environmental issues in response to shifts in issue salience (Abou-Chadi, Green-Pedersen and Mortensen, 2020), demonstrating their responsiveness to public concerns. While different parties might have different strategies regarding their issue attention, I expect that the sharp increase of public attention toward climate change in the last decade, generally and after climate disasters specifically, will generally lead to greater issue attention toward climate change by parties. This link has been shown for other exogenous shocks, revealing that parties do not operate in an airtight chamber of party competition but react to events in the real world (Seeberg, 2023). Notably, the severity of the problems matters for shifts in parties' issue attention, with more severe shocks leading all parties across a party system to attend to the issue (Kristensen et al., 2023). Hence, the baseline hypothesis is:

H1 - General Salience Hypothesis: The more domestic climate disasters occur, the greater parties' issue attention toward climate change.

One could argue that party competition should be affected by international – rather than domestic – climate disasters. The severe nuclear disaster in Fukushima (albeit a technical, not a climate disaster), Japan, in 2011, for example, sparked the phase-out of nuclear energy in Germany, but not in Japan itself (Nam, Konishi and Nam, 2021). I do not dispute that climate disasters (especially exceptionally strong ones) can impact party competition in other states. Yet, parties are more likely to react to domestic disasters than international ones. Research has shown that party competition was affected in varying degrees by an exogenous shock from the global financial crisis in 2008 and 2009. Parties in more affected countries reacted more strongly to the shock than parties in countries less affected (Calca and Gross, 2019). Less severe disasters are, furthermore, less likely to spark change in party competition in other countries. Focusing on domestic climate disasters provides a scenario that will most likely find the expected effects.

2.2.1 Incumbent Status

Beyond the overall increase in issue salience of climate change after domestic climate disasters, the incumbent status of a given party should affect their engagement. However, findings on the effects of government-opposition dynamics on issue competition are somewhat conflicting. Wappenhans et al. (2024) do not find any effect of extreme weather events on parties' environmental attention, indicating no differences between government and opposition parties. Other studies, however, have shown that government parties can be more constrained in their work than opposition parties and are thus less free in choosing which changes in the public agenda to respond to (Klüver and Spoon, 2016; Van de Wardt, 2015). Consequently, studies have argued that opposition parties enjoy greater freedom in their strategic choices regarding issue engagement. They can prioritize topics that align with their interests and neglect unfavorable issues. They tend to concentrate only on issues that bolster their political positioning (Green-Pedersen and Mortensen, 2010). In contrast, governing parties often face constraints in their treatment of issues. Given that they hold the mandate and responsibility to act on behalf of the electorate, they are forced to pay attention to issues brought up in the party system from external factors. This reasoning is consistent with the literature on responsiveness to exogenous shocks, which has shown that government parties react more strongly to economic shocks than opposition parties (Calca and Gross, 2019). Following that logic, the second hypothesis includes the following interaction term.

H2 - Incumbent Hypothesis: The relation between climate disasters and parties' issue attention toward climate change attention is stronger for parties in government compared to parties in the opposition.

2.2.2 Party Type and Ideology

Two other variables expected to play a crucial role in issue competition are party type and party ideology. Although party type and party ideology do not necessarily describe the same characteristics, in this case, both differentiations relate primarily to differences between Green parties and other parties. For this reason, they are presented together, and common hypotheses are derived. Much of the analysis of party (and consequently issue) competition focuses on the party type and, hence, the differentiation between mainstream and niche parties. Meguid (2005) defines niche parties as those parties that abandon the traditional class-based focus of politics and instead limit their issue attention to a single novel issue. Therefore, such niche parties frequently emerge as the owners of their raised issue. The most prominent example is Green parties that

can be classified as *associative issue owners* (Walgrave, Lefevere and Tresch, 2012) of the climate change issue. In that context, most individuals readily associate Green parties with environmental concerns and the issue of climate change. The dynamics of niche and mainstream party competition closely align with party ideology, as one of the distinct drivers of parties' engagement with certain issues is party ideology (Green-Pedersen, 2007). Parties have been shown to engage more with issue agendas of parties from their own party family, rather than agendas from parties from other families (Green-Pedersen and Mortensen, 2015).

Regarding issue competition, mainstream parties have been shown to react stronger to changes in the issue agenda than niche parties when these issues have been raised by other parties (Green-Pedersen and Mortensen, 2015). Mainstream parties generally react more to changes in the public agenda and are being less electorally punished for it than niche parties (Adams et al., 2006). Only when their owned issue - in this case, climate change owned by Green parties – raises concerns or gains prominence among voters, niche parties tend to be more responsive than their mainstream counterparts (Klüver and Spoon, 2016). Hence, Green parties are expected to exhibit a more pronounced reaction to climate disasters, at least as far as issue attention towards climate change is concerned.

Party ideology has been shown to affect parties' reactions to exogenous shocks in some cases but not others, depending on the nature of the shock. Traditionally, political scientists differentiate between valence and positional issues. A valence issue refers to a political issue that is widely agreed upon and is not typically divisive; the disagreement arises over the methods or strategies to achieve these goals rather than the goals themselves, such as preventing terror attacks. In contrast, positional issues are issues with distinct and opposing viewpoints, leading to clear ideological or policy divisions between political parties, such as migration (different views ranging from no migration is desirable to migration is very much needed) (Green-Pedersen, 2007; Green, 2007). Valence issues seem to elicit a more unified response across party lines, whereas more positional issues are subject to strategic considerations of parties (Bevan, Borghetto and Seeberg, 2024). Historically, political scientists have treated climate change as the former (Clarke et al., 2009), but more recent approaches have begun to analyze climate change not as a valence issue but as a positional issue (Carter et al., 2018). This approach arises from the notion that some parties contest the assumption that climate change is anthropogenic or that humanity can act to prevent it (Schaller and Carius, 2019; McCright and Dunlap, 2011). Climate change has become a politically

contested issue. Many parties, even those who acknowledge its human causes, might refrain from putting too much attention on rigid climate action to prevent alienating voters, particularly when electoral competitiveness is high (Finnegan, 2023). This kind of caution should depend on whether parties' electorates favor or disfavor more climate protection. In other words, parties' (and their electorates') ideologies are moderating how strongly they emphasize climate change in response to domestic climate disasters – or as Farstad (2018, p. 698) puts it – "Left–right ideology significantly helps explain these differences and [...] underlines the importance of ideology over economic and policy preferences, size and strategic incentives and incumbency constraints and points towards the partisan (as opposed to the valence) nature of the climate change issue."

In the context of climate change, political parties may hold varying views on the urgency and importance of addressing the issue, with some favoring and others opposing climate action. Green parties, as the clear issue owners, may be particularly motivated to increase issue attention toward climate change in the aftermath of climate disasters. This is because such events heighten public awareness of the need for climate action and create a policy window for parties to advance their environmental agenda. Parties that ideologically favor pro-climate positions have thus not only vote- and office-seeking incentives to increase issue attention but also policy-seeking incentives. Moreover, Green parties have been shown to potentially profit from climate disasters at the cost of mainstream left parties in some cases (McAllister and bin Oslan, 2021) but not in others (Hilbig and Riaz, 2024). These findings are, thus, contested, which could indicate other theoretical expectations. One could argue that there is a kind of ceiling effect to the amount of attention a single issue can receive from a party. Concerning external shocks "parties without issue ownership are, paradoxically, likely to be the ones that respond most strongly to signals from problem indicators, slowly closing the gap with their rival and increasing the issue overlap between them" (Kristensen et al., 2023, p. 2859). Following this contradicting argument and controversial empirical findings, I formulate two contesting hypotheses. These posit an interaction term between party ideology and increased issue attention towards climate action after climate disasters, suggesting that Green parties will be more or less likely to increase their issue attention toward climate change, either because they use their issue ownership to their advantage or because their attention is already comparably high.

H3a - Issue Owner Hypothesis: The relation between climate disasters and parties' issue attention is stronger for Green parties compared to other party families.

H3b - Ceiling Effect Hypothesis: The relation between climate disasters and parties' issue attention is weaker for Green parties compared to other party families.

To summarize, I expect climate disasters to affect domestic party competition on the issue of climate change. Due to the severity of these exogenous shocks, all parties in the party system are likely to increase their attention toward the issue. However, following the strands of literature on party competition and external shocks, some moderating factors should play a role. First, parties in government are expected to be affected more strongly than parties in the opposition. Second, Green parties are expected to react differently than other parties. However, theoretical considerations allow conclusions to be drawn in both directions so that two competing hypotheses are put forward. Green parties either increase or decrease their issue attention toward climate change more or less than parties with a different ideology. In the following, I will present the data and the empirical strategy employed to develop responses to the above-raised hypotheses.

2.3 Research Design

My analysis focuses on the European context to address the research question of how climate disasters affect issue competition on climate change. It includes ten European countries that were selected primarily based on data availability. Those countries are Austria, Germany, France, Italy, Norway, Switzerland, Spain, the United Kingdom (UK), the Netherlands, and Sweden.

The following analysis is based on two data sets, one to measure parties' issue attention and one to measure climate disasters. I leverage manifesto data to identify parties' issue attention to climate change. Due to their periodical nature and relative similarity, party manifestos allow for comparison across time and countries. Popular data sources like the *Manifesto Project* do not code climate change explicitly but rather subsume these issues under the topic of environmentalism (Lehmann et al., 2023). However, this makes it difficult to pinpoint attention to the specific issues that this study aims to address. Consequently, I use recently collected data by Schwörer and Fernández-García (2024). The data was collected through a dictionary-based approach and intensive manual coding. Initially, a dictionary containing climate-related keywords was employed to identify quasi-sentences that might relate to climate change. Then, all collected quasi-sentences were manually coded only if they included an explicit reference to climate protection, arguably a rather conservative measure. Following Carter et al. (2018), the

coding scheme includes two pro/contra categories. The first one "contains demands for climate protection, the recognition of anthropogenic climate change, or descriptions of negative consequences of climate change. The second one consists of rejections of measures against global warming. With very few exceptions, almost no party officially questions measures or the necessity to act against climate change" (Schwörer, 2024, p.7).[3] Hence, the main independent variable of the analysis is the salience of climate change in party manifestos, which is measured in two ways: as an absolute number of quasi-sentences and as the share of such explicit references to anthropogenic climate change.

The second main data set used is the *Emergency Event database EM-DAT* (Centre for Research on the Epidemiology of Disasters (CRED), 2022). The database contains information on disaster events worldwide. Although it encompasses disasters of natural *and* technical causes, I exclusively focus on those "natural" disasters that are likely exacerbated by climate change. These include droughts, epidemics, extreme temperatures, floods, mass movements, storms, and wildfires. In contrast to technical disasters caused by mechanical or human failures, these climate disasters can be direct consequences of climate change. Below, I will provide a more detailed explanation of the measurement of the different variables.

2.3.1 Issue Attention

As mentioned before, the dependent variable – issue attention toward climate change – is measured through the manifesto data collected by Schwörer and Fernández-García (2024). This is done in two different ways. For each manifesto, the share of quasi-sentences on climate change is coded as described above. I use the absolute number of climate change-related quasi-sentences in some models. In other models, the relative share is calculated for each manifesto. The data covers the period from October 1990 to September 2022 and comprises 482 manifestos from ten European countries. Table 2.1 provides an overview of the number of manifestos and climate disasters by country. The exact observation period for natural disasters ranges from the beginning of 1989 to the end of September 2022. By doing so, I consider that in each case, a period before the publication of the manifestos is relevant.

[3]For a more extensive discussion of the approach, a complete list of keywords and additional supporting information see Schwörer and Fernández-García (2024) and the corresponding online appendix.

	AUT	CHE	DEU	ESP	FRA	ITA	NLD	NOR	SWE	UK
Manifestos	52	40	47	38	44	32	37	64	59	69
Disasters	39	43	83	72	137	82	91	35	14	12

Table 2.1: Number of Manifestos and Disasters by Country

Examining manifestos offers analytical advantages. Manifestos are carefully crafted documents representing a formal and comprehensive articulation of a party's strategic policy position. Furthermore, party manifestos offer a reliable reference point for understanding how parties prioritize issues over time and have been widely used to measure parties' issue attention before (e.g. Klüver and Spoon, 2016). However, employing this data source also has some drawbacks. Party manifestos are very static documents, only being drafted for upcoming elections. In contrast to the rigidity of party manifestos, climate disasters are dynamic events that require timely and swift responses. Although parties may react through more time-efficient channels, such as social media posts, parliamentary debates, or press releases to address such urgent issues, as highlighted by, for example, Wappenhans et al. (2024), these reactions may not capture the broader shifts in a party's issue prioritization. The topic of this communication is mostly disaster relief-related, as pointed out before (Birkland, 1997, 2006). While I do not contest that parties react fast to climate disasters and, first and foremost, talk about disaster relief, I argue that such exogenous shocks can resonate beyond immediate relief efforts and, thus, affect domestic party competition, which may be captured through manifesto data. Hence, complementing existing approaches with an analysis of manifesto data can contribute to a better understanding of the evolving political landscape in response to climate disasters.

2.3.2 Independent Variables

I utilize the EM-DAT database for the main independent variable – the number of domestic climate disasters. It includes only those disasters that conform to at least one of the four criteria: 1) ten or more people have died; 2) at least 100 people were affected; 3) the state of emergency was declared; or 4) a call for international assistance was placed. These criteria cover a broad range of disasters but ensure that only impactful disasters are included in the research design, as some may argue that a small local wildfire or flood might not impact parties' issue attention on a federal level. These criteria ensure that only those disasters that could have had an impact are included. While the EM-DAT database includes technological and natural disasters, I only include the latter, and of those, only those possibly impacted by climate change, as discussed above.

Left	Green	Social Dem.	Liberal	Christian Dem.	Conservative	Right
58	56	86	91	63	52	76

Table 2.2: Number of Manifestos by Party Family

To operationalize the number of domestic disasters, I sum up every climate disaster for each country listed in the EM-DAT database. More specifically, each manifesto includes the date of the respective election. To count disasters, I proceed through EM-DAT and collect all entrances in a six-month time frame ending three and half months (15 weeks) before the election. In doing so, I account for the fact that manifestos are published months prior to the election to serve as campaign material (Eder, Jenny and Müller, 2017). The exact timing of the publication dates compared to the election date varies considerably from country to country. Additionally, they may vary from election to election (think of a short preparation time before snap elections, for example) and range from being published a month before an election (Däubler, 2012) to as much as six months before the election date (Dolezal et al., 2012).

Additionally, I control for parties' ideology, measured by their party family, as consistent differences in positions on climate change have been shown between right and left parties, suggesting different approaches to reacting to increased public attention to climate change (Båtstrand, 2014; Farstad, 2018). Table 2.2 provides an overview of the number of manifestos included in the analysis, grouped by party family. Given the above-discussed effects of incumbency on parties issue attention, I also include a control for incumbent status (Calca and Gross, 2019; Green-Pedersen and Mortensen, 2010). Finally, as robustness checks, I also run models with the number of casualties as the main independent variable. As additional controls in the robustness checks, I also employ measurements for public salience of the environmental issue and the country's economic situation, as I will discuss in greater detail below. For four of the five controls, namely party ideology, incumbent status, public salience, and number of casualties, I rely on data as collected by Schwörer and Fernández-García (2024). For the countries' Gross Domestic Product (GDP), I rely on World Bank data. Specifically, I use GDP per capita in current US$ to allow comparison across time. Table A.1 in Appendix A provides summary statistics for all numeric variables included in the regression analysis.

2.4 Results

To present my results, I first provide some descriptive results. The total number of climate disasters recorded in this period is 585. The most frequently occurring type of disaster was storms, with a total of 269 incidents, followed by floods (189) and extreme temperatures (75). Wildfires accounted for 21 incidents, followed by landslides (20) and epidemics (11), indicating a lower frequency of occurrence for these latter events. Finally, a single drought was recorded during the time of observation. As shown in Table 2.1, France was the country most frequently affected by climate disasters, followed by the Netherlands, Germany, and Italy. Sweden and the United Kingdom were the least affected countries. Figure 2.1, shown before, plots the frequency of disasters by type over the year. These incidents were not evenly distributed throughout the observation period. As discussed above, there has been a steady increase in climate disasters since the 1970s and 80s, with a particularly rapid increase since the mid of the 2010s. Furthermore, the data indicates that Europe has recently experienced the highest levels of climate disasters ever recorded, surpassing outliers such as 1990. As the frequency and severity of these events have intensified, the importance of climate change as a political issue has steadily increased as well.

With respect to the election manifestos, the initial descriptive analysis provides an overview of which parties paid how much attention to climate change in their manifestos. Figure 2.2 shows the average share of issue attention toward climate change, broken down by party family in the different countries under observation. Considering the overall average, issue attention toward climate change increased in the mid-2000s and peaked shortly before 2020. Parties belonging to the Green Party family have paid the greatest attention to climate change, which aligns with theoretical expectations of issue ownership (Abou-Chadi, 2016; Spoon, Hobolt and De Vries, 2014). Left-leaning parties in general – such as social democratic and far-left parties – tend to emphasize climate change more compared to right-leaning parties, such as Christian democratic, conservative, or right-extremist parties. The Y-axis varies between plots, indicating fairly stark differences between countries. Parties in German-speaking countries, especially Austria and Switzerland, paid considerable attention to the issue, with the Austrian Green party at one point devoting 25 percent of their manifesto toward the issue of climate change. In contrast, parties in southern European countries like Spain and Italy devoted far less attention to the issue. The share in their election manifestos peaks around four percent. Figure A.1 in Appendix A shows a similar plot with the absolute issue attention instead of the relative. The main takeaways are similar, with

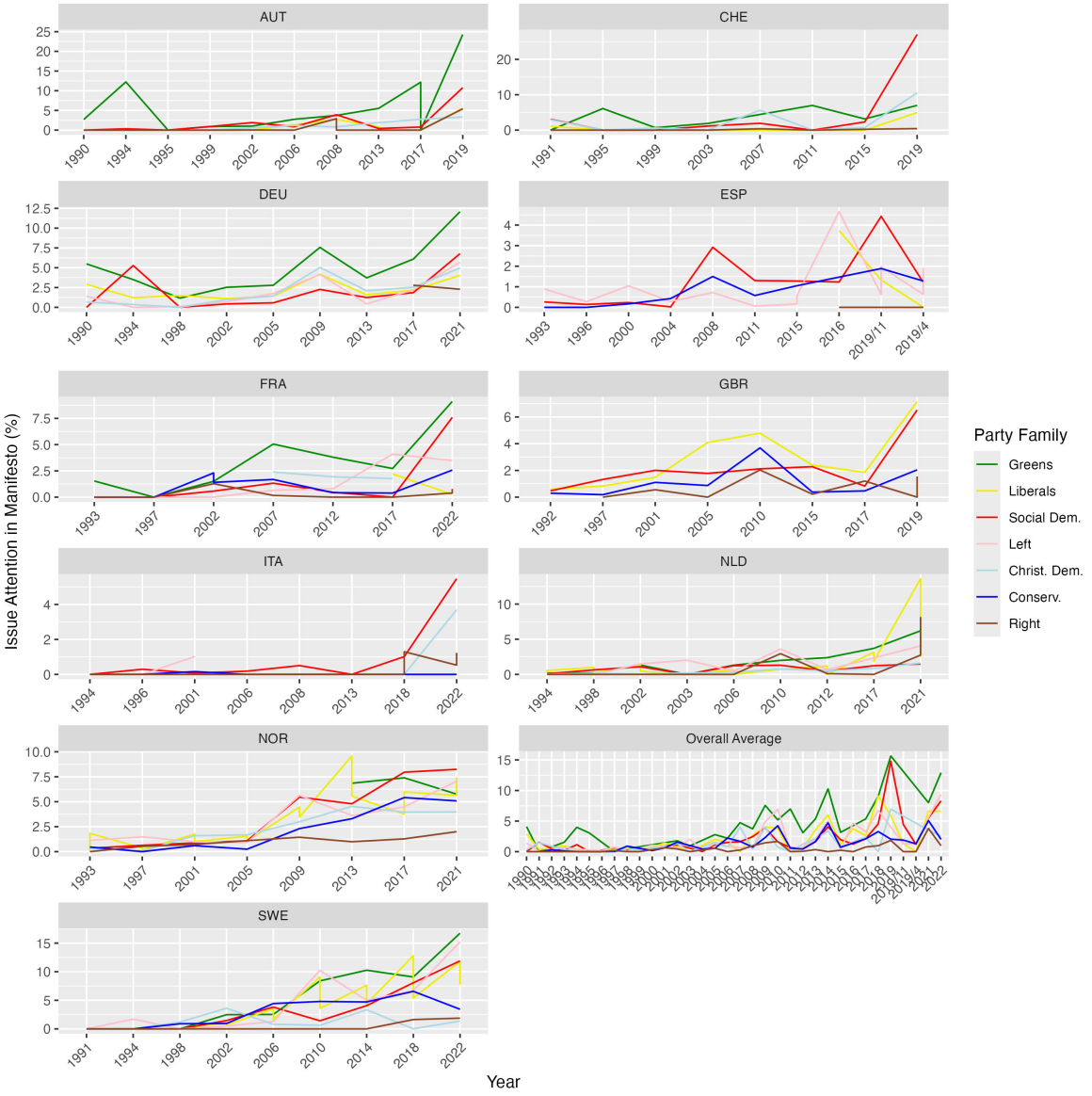

Figure 2.2: Issue Attention Toward Climate Change (%) by Country and Party Family

an overall increase of issue attention toward climate change in the later years and Green parties paying the highest absolute attention to the issue.

Turning toward the multivariate regression analysis and the first hypothesis – the general salience hypothesis – Table 2.3 displays the Ordinary-Least-Squares regression (OLS) results with year-fixed effects and year-clustered standard errors. Models 1 and 2 include the main independent variables as the absolute value and the share. Again, I employ two kinds of measurement of issue attention to climate change. In Model 1, this is the absolute number of quasi-sentences on climate change in a manifesto; in Model 2, it is the share of quasi-sentences on the issue compared to the overall length of the

Model:	Issue Att. (1)	Issue Att. (%) (2)	Issue Att. (3)	Issue Att. (%) (4)
Disasters	-3.129*	-0.1704*		
	(1.458)	(0.0828)		
Disasters (logged)			-35.22*	-1.302*
			(14.72)	(0.6174)
Greens	37.83**	2.1478***	37.98**	2.0678***
	(10.80)	(0.3475)	(10.81)	(0.3392)
Liberals	1.140	-0.0549	1.264	-0.0414
	(3.606)	(0.3993)	(3.464)	(0.3983)
Left	3.108	-0.0606	3.407	-0.0268
	(3.602)	(0.3667)	(3.649)	(0.3668)
Christ. Democrats	-10.22*	-0.8839*	-10.87*	-0.9004*
	(4.776)	(0.4147)	(4.846)	(0.4168)
Conservatives	-7.746·	-0.8119·	-6.731	-0.8035·
	(3.914)	(0.4580)	(3.987)	(0.4699)
Right	-23.98***	-1.9134***	-24.06***	-1.957**
	(5.814)	(0.5576)	(5.840)	(0.5805)
Fixed-effects				
Year	✓	✓	✓	✓
Fit statistics				
Observations	482	482	474	474
R^2	0.48276	0.49775	0.49345	0.49230
Within R^2	0.17255	0.22374	0.19118	0.21277

*Clustered (Year) standard-errors in parentheses. Reference category: Social Democrats. Signif. Codes: ***: 0.001, **: 0.01, *: 0.05*, .: 0.1

Table 2.3: Determinants of Issue Attention toward Climate Change (OLS)

manifesto. Models 3 and 4 include logged versions. Logging the variable models the theoretical assumption that the first or second climate disaster possibly impacts issue attention more than subsequent disasters (such as the 15th or 20th).

Unexpectedly, I find significant negative effects for all dependent and main independent variable variations. Regarding Model 1, the non-logged model with the absolute dependent variable, the analysis suggests an increase by one disaster is associated with a decrease of 3.129 quasi-sentences on climate change in the respective manifesto. The effects of party ideology are mostly in line with theoretical expectations. Christian Democrats (and on a 90%-significance level, Conservative parties) focus significantly less on climate change than Social Democratic parties. Also, (extreme) right-wing parties focus less on the issue. In fact, many right parties adopt climate skeptic or climate change denying positions (Lockwood, 2018). They accentuate only selective frames of the climate change issue instead of the issue as such and, overall, pay less attention to it (see for the German case Boecher et al., 2022). In comparison to Social Democratic parties, no significant difference is observed between the issue attention of parties from

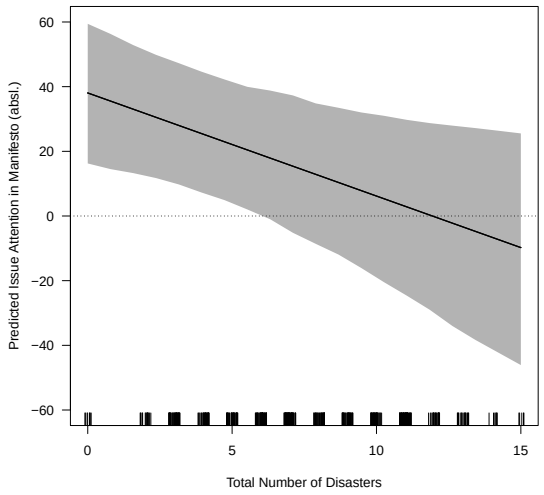

Figure 2.3: Model 1.

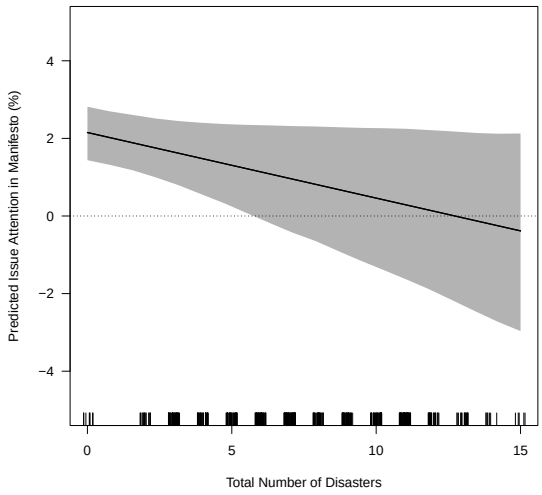

Figure 2.4: Model 2.

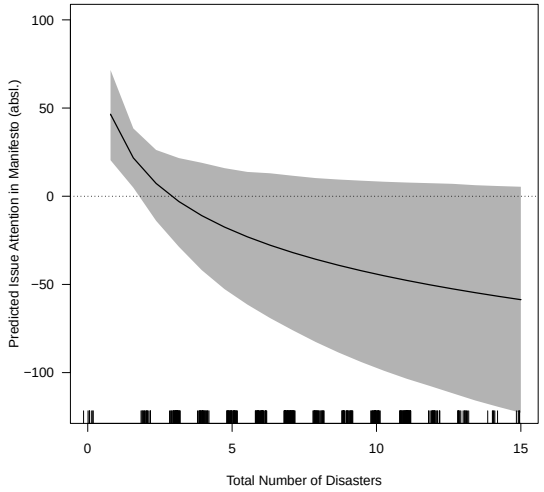

Figure 2.5: Model 3.

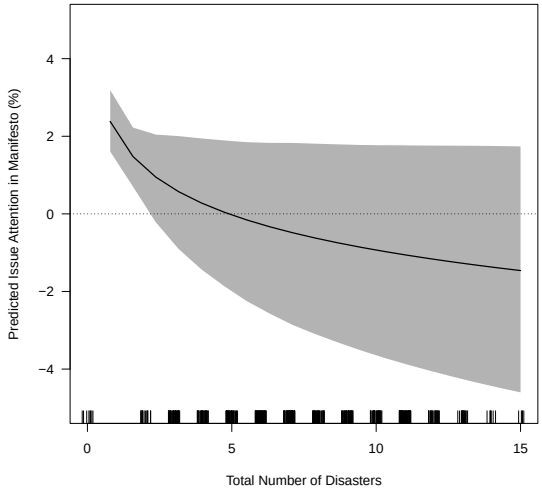

Figure 2.6: Model 4.

Figure 2.7: Predicted Probabilities (Vertical lines indicate distribution of disasters, grey shaded area indicates 90).

the Liberal party and the Left party family. In particular, Green parties pay significantly more attention to the issue of climate change than Social Democratic parties, which is to be expected given their unique issue ownership (Walgrave, Lefevere and Tresch, 2012). Notably, these effects of party ideology are robust across all models.

Model 2 is identical to Model 1 in terms of the independent variables but measures parties' issue attention as the relative share of quasi-sentences on climate change in each

manifesto. The results prove to be similar. In this case, one additional climate disaster is associated with a 0.17 percentage point decrease in the share of quasi-sentences on climate change. Interpreting the results of the log-transformed variables in Models 3 and 4 is more tricky. To that end, Figure 2.7 plots the predicted probabilities for all four models, with and without a logged independent variable. The (varying) y-axes of Figures 2.3 and 2.5 display the predicted number of quasi-sentences on climate change in a manifesto, depending on the number of climate disasters during the six months before the election manifesto was published. Similarly, Figures 2.4 and 2.6 plot the predicted share of quasi-sentences on climate change, depending on the same number of climate disasters during the six months before the election manifesto was published. The main effect is significant and negative in Models 3 and 4. The effects of the control variables correspond to those from Models 1 and 2. The fit statistics also indicate relatively similar model fits. The mean absolute attention toward the issue of climate change across all manifestos is around 29 quasi-sentences; the mean relative attention is only 2.06 percent. The mean number of disasters that have hit a country is roughly nine disasters. The four plots in Figure 2.7 thus indicate relatively strong substantive effects of disasters on parties' issue attention toward climate change. However, these effects sharply level off after the first few disasters. Across the different models and specifications, the results suggest a robust, negative effect of domestic natural disasters on parties' issue attention toward climate change. Again, Table A.1 in Appendix A provides an overview of all summary statistics for all numerical variables included.

Regarding the second hypothesis – the moderating effect of incumbent status – I do not find any empirical support. The interaction is insignificant, as shown in Models 1, 2, 5, and 6 in Table A.2 in Appendix A, which presents the regression results for the interaction models. The table includes interaction models with both dependent variables (absolute and relative issue attention) and regular and logged main independent variables. There appears to be no effect for incumbent parties to react more strongly to climate disasters than opposition parties. However, the main effect in Models 1, 5, and 6 is still significant and negative (the same holds true for Model 2 but only on a 90%-significance level). In Model 5 (absolute issue attention, logged independent variable), the interaction effect is positive and significant on a 90%-significance level, which could be interpreted as some indication of support for the incumbent hypothesis. Overall, however, the results suggest that there is no significant relation between incumbent status and the effect of climate disasters on parties' issue attention toward climate change.

Surprisingly, I obtain similar null results for the competing hypotheses 3a and 3b on the moderating effect of Green parties. Accordingly, Green parties seem to neither increase nor decrease their issue attention due to increased climate disasters more strongly than parties with different ideologies. The main effect of climate disasters on issue attention is still negative and statistically significant across Models 3, 4, 7, and 8. The interactions, however, fail to gain statistical significance. In Model 3 (absolute issue attention, non-logged independent variable), left parties decreased their issue attention even more, compared to the reference party of Social Democrats, but only on a 90%-significance level. On the same level, the interaction between right parties and climate disasters is positive, meaning that the main effect is less pronounced for right parties. Given previous findings on parties' reactions to exogenous shocks, these findings are surprising and herald further attention.

In the empirical analysis, I find mixed results regarding the relationship between domestic climate disasters and political parties' issue attention toward climate change. Specifically, the findings contradict H1, which suggests that political parties, regardless of their ideological positions, would increase their emphasis on climate change after domestic climate disasters. Instead, the results suggest a negative relationship. In substantive terms, parties generally decrease their attention toward climate change in the wake of climate disasters. There could be several reasons for this. Despite the empirical evidence of a link between anthropogenic climate change and increased climate disasters, parties might not connect these two issues. Either because they are unaware of the connection or, more likely, due to strategic considerations. Put differently, parties may be reluctant to focus on climate change in the aftermath of disasters, as they do not want to be called out for being insensitive by talking about such an issue when citizens are still under the shocking impression of the disaster. The analysis also does not support H2, suggesting that incumbent parties would be more likely to increase their issue attention toward climate change in response to climate disasters than parties in the opposition. The results for H3a and H3b are also statistically insignificant, echoing the contradicting theoretical expectations. Overall, the results of the empirical analysis suggest that the relationship between climate disasters and issue attention toward climate change by political parties is more complex than previously thought, as further discussed below.

2.5 Robustness

The findings' complexity warrants further analysis and proof of their robustness. Conceptually, I am counting the total number of domestic natural disasters. A disaster is considered in the EMDAT database when it adheres to at least one of the four criteria mentioned before. As previously mentioned, these are: ten or more people died, at least 100 people were affected, the state of emergency was declared, or a call for international assistance was placed (Centre for Research on the Epidemiology of Disasters (CRED), 2022). Even though these criteria constitute a relatively high threshold, one could argue that more severe disasters might still have different impacts than less severe ones. One catastrophic event with thousands of affected people or many casualties might be more impactful than multiple smaller disasters that just about reached the threshold. To address this "quality of disaster" argument and to lend more robustness to the findings presented above, I rerun the models with a different independent variable. Instead of the total number of domestic disasters, I use the cumulative number of human casualties in the same time frame. By doing so, I model disasters not as existing or not, but rather scale their impact (or their "quality").

Table 2.4 provides the results of the OLS-regression models that replicate the models from the analysis but are constructed around a new independent variable. Instead of the absolute number of disasters, the main independent variable here is the cumulative number of casualties caused by the respective disasters. The effect is negative and statistically significant for the two models including the relative issue attention as their dependent variable. This holds for both the regular and the logged values. The results are more multilayered for Models 1 and 3, which include the absolute issue attention. In Model 1, the effect fails to gain statistical significance. In Model 3, the effect is only significant on a 90%-significance level. As before, Green parties have a higher issue attention toward climate change than Social Democrats across all models. Christian Democrats and (extreme) right parties pay significantly less attention to the issue compared to the reference group of Social Democrats. The same applies to the Conservatives. I interpret these results as further (partial) support for the impact of climate disasters on parties' issue attention, albeit different from what I theoretically expected.

Another argument one could make is that climate change and climate protection are considered second-order issues that are only dealt with in the absence of financial crises or other pressing issues. In other words, countries will only prioritize these is-

Model:	Issue Att. (1)	Issue Att. (%) (2)	Issue Att. (3)	Issue Att.(%) (4)
Casualties	-0.0004	$-7.61 \times 10^{-5***}$		
	(0.0002)	(9.26×10^{-6})		
Casualties (logged)			-7.739·	-0.3555***
			(3.914)	(0.0729)
Greens	38.35**	2.146***	38.97**	2.152***
	(11.19)	(0.3391)	(11.01)	(0.3164)
Liberals	2.050	-0.0332	1.727	-0.0044
	(3.707)	(0.3950)	(3.907)	(0.4080)
Left	4.457	-0.0139	5.025	0.0620
	(3.771)	(0.3525)	(3.856)	(0.3568)
Christ. Democrats	-8.925·	-0.8001*	-9.292·	-0.8546*
	(4.437)	(0.3786)	(4.741)	(0.4001)
Conservatives	-8.688*	-0.8597·	-8.645*	-0.8432·
	(4.135)	(0.4815)	(4.098)	(0.4868)
Right	-24.91***	-1.945**	-24.62***	-1.948**
	(6.336)	(0.5817)	(5.924)	(0.5889)
Fixed-effects				
Year	✓	✓	✓	✓
Fit statistics				
Observations	482	482	469	469
R^2	0.46609	0.49104	0.48950	0.50095
Within R^2	0.14588	0.21337	0.18669	0.22407

*Clustered (Year) standard-errors in parentheses. Reference category: Social Democrats. Signif. Codes: ***: 0.001, **: 0.01, *: 0.05, .: 0.1*

Table 2.4: Determinants of Issue Attention toward Climate Change with new IV (OLS)

sues when they can afford it. To address this argument, I rerun the above-presented initial models with two additional macro-level control variables. First, I control for the GDP per capita in the given country. By including GDP per capita, I consider each country's financial situation and economic circumstances when the respective manifesto was drafted. The data is from the *World Bank*. Additionally, I control for the public salience of the issue of climate change. This data was originally retrieved from the *Eurobarometer* (EB) and is included in the data of Schwörer and Fernández-García (2024). To highlight why the number of observations drops significantly when including this variable, the authors explain: "We use the share of respondents, indicating that protecting the environment is one of the two most important issues. EB data are not available for Switzerland, and for Norway only since the last election in 2021. We selected the respective EB data that were collected ('fieldwork') at least 4 months before the respective election" (Schwörer and Fernández-García, 2024, p. 1188).

Table 2.5 presents the results of the OLS models that include macro-level control

	Issue Att. (1)	Issue Att. (%) (2)	Issue Att. (3)	Issue Att. (%) (4)
Disasters	-4.631*	-0.2257*		
	(1.959)	(0.0810)		
Disasters (logged)			-37.44*	-1.274·
			(14.47)	(0.7192)
Greens	53.70**	2.567***	53.76**	2.581***
	(18.18)	(0.5786)	(18.16)	(0.5870)
Liberals	-2.948	0.1434	-2.957	0.1446
	(4.832)	(0.3669)	(4.924)	(0.3802)
Left	-0.6310	0.1559	-0.7561	0.2006
	(6.421)	(0.4237)	(6.379)	(0.4304)
Christ. Democrats	-16.32*	-1.109·	-16.11*	-1.084·
	(7.568)	(0.5498)	(7.518)	(0.5559)
Conservatives	-5.532	-0.7134	-4.904	-0.7285
	(7.829)	(0.6083)	(8.160)	(0.6205)
Right	-28.86**	-1.847**	-28.45**	-1.864**
	(8.998)	(0.5170)	(9.208)	(0.5258)
GDP per capita	0.0006**	1.18×10^{-5}	0.0007*	2.11×10^{-5}
	(0.0002)	(2.02×10^{-5})	(0.0003)	(2.29×10^{-5})
Publ. Salience	-0.7297	0.1194***	-0.5967	0.1205**
	(0.8057)	(0.0268)	(0.6466)	(0.0328)
Fixed-effects				
Year	✓	✓	✓	✓
Fit statistics				
Observations	283	283	280	280
R^2	0.53205	0.56655	0.53291	0.55567
Within R^2	0.26191	0.35892	0.26405	0.34502

*Clustered (Year) standard-errors in parentheses. Reference category: Social Democrats. Signif. Codes: ***: 0.001, **: 0.01, *: 0.05, .: 0.1*

Table 2.5: Determinants of Issue Attention toward Climate Change (OLS) with macro-level Controls

variables. As done before, I include parties' net issue attention and their relative issue attention toward climate change as main independent variables. Both variants are also included in a logged version. Models 1 through 3's main independent variable is negative and statistically significant. In Model 4, it so on a 90% significance level. The effects of party ideology remain largely unchanged compared to the initial models. Regarding the newly introduced macro-level controls, a country's GDP per capita positively affects parties issuing attention toward climate change in the two models, with the absolute number of quasi-sentences on climate change as the main dependent variable. This suggests that parties pay more attention to the issue when the country's economic situation is better. However, the significant effects of the number of disasters suggest that the latter still leads to parties decreasing their issue attention, even in a

favorable economic situation. Finally, public salience of the climate issue positively affects parties' attention toward the issue in the models, with the relative issue attention as the dependent variable. This is, again, in line with what we would expect, namely that parties increase the attention toward issues that are publicly salient (e.g., Klüver and Sagarzazu, 2016). Again, even when controlling for these macro-level variables, the effect of domestic natural disasters on parties' issue attention toward climate change remains statistically significant and negative, meaning that parties decrease their attention in the wake of disasters. Overall, the results provide additional robustness to my initial findings.

I provide two additional robustness checks in Appendix A. In Table A.3, I vary the time frame during which disasters are counted. In all the models mentioned above, I count disasters in a six-month time frame ending three and a half months (15 weeks) before the election frame, as discussed extensively before. The models in Table A.3 in Appendix A replicate the main models, but the independent variable is constructed to count disasters in three months instead of six months. The results suggest similar findings as above. The main effect is still negative and significant across all model specifications. The effects of the control variables are relatively similar to the ones found in Table 2.3. Additionally, I rerun the models with lagged dependent variables in Table A.4 in Appendix A. Meaning Models 1 and 3 in the respective table, the dependent variable is the change in absolute issue attention toward climate change compared to the party's last manifesto. In Models 2 and 4, the dependent variable is the change in relative issue attention. Across the models, I do not find any significant effects from climate disasters on the change in issue attention, neither absolute nor relative. Unlike other model specifications, most covariates fail to gain statistical significance. Table A.3 provides further support for my findings, while Table A.4 raises more questions and does – at first glance – not. However, the lagged models assume that manifestos carry legacy text from preceding manifestos. To prove that manifestos are independent of previous manifestos, I calculate pairwise comparisons between each manifesto's text and the text of the party's preceding manifesto. The mean across all manifestos in the analysis (apart from the very first manifesto of each party due to missing reference texts) is 0.0676, roughly 7%. Some similarity is to be expected given that, for example, the party's name will not change, and some words like "politics" are occurring in all manifestos without being some form of legacy text from a preceding version. However, the relatively low scores indicate that manifestos are generally independent of their predecessor, which explains the findings in Table A.4.

2.6 Discussion and Conclusion

Understanding the actions of political parties in response to climate change is crucial to effectively address the issue and to avoid far-reaching crises resulting from it. As key players in legislative democracies, political parties significantly influence this dynamic. This study explored how domestic climate disasters impact party competition and how parties adjust their issue attention toward climate change in response to climate disasters. Given that climate disasters are increasingly associated with anthropogenic climate change, I put forward the fundamental assumption that public attention would shift more toward climate change issues rather than just disaster relief. I anticipated that parties would increase their focus on climate change, with incumbent parties displaying a stronger shift in attention than opposition parties, as existing research on party competition suggested. Additionally, I predicted that Green parties would react differently than other parties, given their issue ownership.

However, the analysis yielded surprising and nuanced results that challenged these theoretical hypotheses. Rather than increasing their focus on climate change in the wake of domestic climate disasters, parties reduce their attention to the issue. This decline in attention is consistent and robust across different model specifications and measurements. Contrary to what might be expected from the literature on exogenous shocks and issue attention, I find no evidence of moderating effects — neither governing parties nor opposition parties behave differently. In addition, there is no significant variation across different party families. These findings suggest a more complex and perhaps counter-intuitive relationship between climate disasters and political issue attention than previously thought.

The results suggest that parties do connect climate disasters to climate change, as becomes clear by the robust and significant effect of domestic disasters on parties' attention toward the issue of climate change. This underscores the impact such events can have on a party's agenda. However, their observed strategic behavior diverges from my initial theoretical expectations. Parties appear to decrease their attention toward climate change in the wake of climate disasters. In the following, I propose different preliminary explanations for this counterintuitive behavior. First, parties may fear public and political backlash for perceived opportunism in leveraging such disasters for electoral gains, meaning exploiting climate disasters politically. Exemplary for this dilemma is the following Tweet by German politician of the Green party Konstantin

von Notz, who tweeted in the aftermath of a catastrophic flood in Western Germany: "#CDU: Kein Tempolimit! / #FDP: Der Markt + synthetische Kraftstoffe regeln das / #SPD: Can't touch: Kohle + Nordstream2 / Die #Linke: Was'n jetzt mit Sahra? / #Grüne: Klimaschutz Prio 1".[4] After a heavy public backlash, he deleted the Tweet shortly after and apologized for using the disaster as an opportunity for political competition.[5] In the same vein, parties might actively decrease their issue attention toward climate change so that it does not seem as if they were to make political gain out of the climate disasters. Second, parties might strategically blur their position on climate change by avoiding it. By paying less attention to the issue, parties try to create uncertainty about their stance on the topic (Rovny, 2012). Doing so can help parties broaden their electoral appeal and reduce voter consideration of these issues in their vote choice (Koedam, 2021). Possibly, parties perceive climate change as a vote-loosing issue and thus refrain from taking a clear position on the issue.

The findings of this paper open up broader questions about the strategic behavior of political parties, particularly in the context of how they prioritize or deprioritize certain issues in response to external shocks. Much of the literature on party competition has suggested that external shocks – unexpected events that disrupt the status quo – tend to elevate the salience of further developing this research strand. For instance, research has shown that economic crises or terrorist attacks often lead parties to increase their focus on relevant policy areas, such as economic reform or national security (Criado, 2017; Gessler and Hunger, 2022). However, the results presented in this study complicate this understanding by demonstrating that not all external shocks have the same impact on party competition. Specifically, the findings indicate that domestic climate disasters, despite their increasing association with anthropogenic climate change, do not necessarily lead parties to heighten their attention to climate issues. Instead, the evidence suggests a counterintuitive trend where parties strategically decrease their focus on climate change in the wake of such disasters. Further research is needed to investigate whether climate disasters have the expected effect of increased attention on other issues (besides disaster relief) and whether other exogenous shocks, such as economic crises, lead to a strategic decrease in parties' attention toward certain issues.

While this paper has provided some insights into the nexus of climate disasters

[4]The Tweet translates to: "#CDU: No speed limit! / #FDP: The market + synthetic fuels will sort it out / #SPD: Can't touch: Coal + Nordstream2 / The #Left: What about Sahra now? / #Greens: Climate protection priority 1"

[5]Source: https://www.tagesspiegel.de/politik/warum-baerbock-und-habeck-in-diesen-tagen-kaum-uber-das-klima-reden-5403541.html, accessed August 27th, 2024.

and political parties, multiple avenues are imaginable to further develop this research strand. First, this paper only investigates a fixed six-month (and a three-month) time frame. Future research should consider that exogenous shocks that happen closer to elections might have a different impact than those that happened months before. Second, as critically discussed above, parties have numerous channels through which they can communicate, many of them being much more flexible than party manifestos. Given that manifestos are central to parties' positioning, one might argue that manifestos should also reflect broader developments. Still, future research should test the theoretical expectations developed in this paper with different data sources. Third, this paper only investigates issue attention but does not consider how parties' policy positions might change as a reaction to climate disasters. Such research would be highly interesting as we know from previous studies that individual politicians indeed change their climate-related behavior, adopting more pro-climate preferences, after natural disasters such as hurricanes (Gagliarducci, Paserman and Patacchini, 2019). We know little, however, about whether and how political parties change their positions in response to climate disasters. Finally, this paper focuses on the relationship between climate disasters and political parties in developed European democracies, but the relationship may very likely differ in other contexts. Other world regions are already affected much more by climate change while having a smaller political impact on its mitigation. For example, research shows that the poor performance of public institutions in developing countries increases the chance of disasters and, conversely, climate disasters decrease public institutions' effectiveness, trapping these countries in a downward spiral (Mahadevia Ghimire, 2021). Future research should specifically examine the relationship between climate disasters and political parties in different political systems and geographical contexts and how the findings from developed democracies in the EU generalize to other settings.

Acknowledgments

I am grateful to Dafni Kalatzi Pantera, Felicia Riethmüller, Oliver Rittmann, Marc Debus, Christian Stecker, and Toni Rodon, the audience at the COMPTEXT conference 2023, the audience at the CDSS graduate workshop in Mannheim and the audience of the IPA workshop at upf Barcelona for their valuable feedback on earlier versions of this manuscript. I also want to explicitly thank Jakob Schwörer and Belén Fernández-García for providing me with the replication materials of their paper and allowing me to use the data.

CHAPTER

THREE

Advocates of Climate Action? The Age of Members of Parliament and their Activity in Legislative Debates on Climate Change.

Co-authored with Marc Debus

Abstract

Parliamentary debates are an important stage in the process of designing new policies and play an important role in discussing the policy reactions to exogenous events like the COVID-19 pandemic or long-term developments like climate change. We combine theories on vote-seeking strategies of political actors with theoretical accounts that highlight the impact of personal characteristics of politicians and argue that, in particular, younger Members of Parliament (MPs) should put more emphasis on issues related to climate change and its consequences than older MPs. We test our hypotheses based on an original dataset covering all parliamentary debates that focus on issues related to climate change in the German Bundestag from 2013 until 2021, thus concentrating on a period when climate change became a highly salient issue among the German public. We find that the age of MPs matters: the younger MPs are, the more speeches they contribute to parliamentary debates related to climate policy.

3.1 Introduction

Parliamentary debates are an important stage in convincing political decision-makers, designing new policies, and discussing policy responses to hazardous processes like climate change. Moreover, debates in parliaments and legislatures influence the public and decision-making processes among citizens. For instance, one unusual side-effect of Brexit and related discussions around it was that BBC Parliament, a TV channel that mostly broadcasts the debates in the British Houses of Parliament, reached more viewers in a week in January than MTV in the UK (see Bäck, Debus and Fernandes, 2021, p. 1). Political representatives were able to present their positions on Brexit in these debates, propose solutions to the stalemate in British and European politics, and communicate their policy proposals to the other MPs and the public.

Given this prominent role of parliaments and their members in the policy cycle, in particular during the stages of agenda-setting, policy formulation, and policy adoption (e.g., Andeweg and Nijzink, 1995; Bräuninger and Debus, 2009; Bräuninger, Debus and Wüst, 2017; Knill and Tosun, 2020), the composition of parliaments both in terms of the partisan affiliation of MPs but also their socio-demographic characteristics is an important aspect when it comes to the content of new policies. Therefore, adequate parliamentary representation is one of the cornerstones of modern liberal democracy, which promises its citizens a pluralistic opinion formation process by elected political actors. However, many societal groups are descriptively underrepresented in parliaments worldwide (e.g., Sawer, Tremblay and Trimble, 2006). Questions about the promised adequate representation arise, especially in contexts where these groups are affected by exogenous phenomena and substantive legislative outcomes. Short-term exogenous shocks, such as the COVID-19 pandemic, but also long-term developments, such as the global climate crisis, present different challenges to different generations. While vaccination campaigns against the COVID-19 virus initially focused on the elderly and adults, the youth was left aside but heavily affected by the COVID-19 pandemic since nurseries, kindergartens, schools, and universities were often closed or practiced online teaching. As older people represent a significantly higher share of the electorate and are more likely to vote (e.g., Goerres, 2008), such decisions by elected politicians in parliaments and governments are not surprising: vote-seeking parties and their representatives should be more likely to take the preferences of citizens into account which are eligible to vote and are more likely to cast a ballot when drafting policy proposals and acting and deciding in parliament and government. Recognizing that personal

characteristics of elected representatives like MPs matter for legislative behavior in specific contexts that address moral or ethical issues (e.g., Baumann, 2018; Burden, 2007; Euchner and Preidel, 2017; Searing, 1994), we argue in this contribution that younger elected representatives should focus on topics that are more important to younger people. In particular, the issue of climate change as a long-term exogenous shock will have drastic implications on future living. Among the multiple threats, the rapid acceleration of climate-related disasters, for instance, will disproportionately affect the lives of today's young people compared to older generations. Decisions made today will have a lasting impact on future generations. Furthermore, concentrating on an issue that a significant share of citizens considers a highly important problem, a promising strategy for promoting the individual career, particularly for younger MPs, can be preparing and presenting policy proposals in parliament, for instance, by giving speeches. Therefore, younger MPs could — simply for career-seeking incentives — become climate action advocates.

Descriptive representation in parliaments should be linked to substantive representation, that is, the mere presence of representatives who are characteristically similar to their constituents changes policy outcomes in the preferred direction of their supporters (Phillips, 1998). In that vein, the parliamentary under-representation of women (Wängnerud, 2009), ethnic minorities (Bird, Saalfeld and Wüst, 2011), and the working class (Carnes, 2012) have been widely studied as examples of inadequate descriptive representation of certain societal groups that affect policy outcomes (e.g., Homola, 2022; Kittilson, 2011; Koch and Fulton, 2011). One group that arguably presents a special case and has so far been mostly overlooked is the youth. Young people are descriptively underrepresented in parliaments worldwide (Stockemer and Sundström, 2018). To shed light on the descriptive parliamentary representation of young people, we here focus on how age influences the parliamentary behavior and actions of MPs on a highly important and pressing issue like climate change. In line with research on such characteristics, we conceptualize age as a socio-demographic variable that should affect legislative behavior independent of other important conditions. To that end, we ask if the age of MPs affects their participation in parliamentary debates in this policy area, which should be highly salient for younger people.

We proceed by formulating a theoretical argument before providing a descriptive overview of the patterns of representation of young people in the German parliament (Bundestag). We focus on Germany in the empirical section since environmental protection, in general, and climate change, in particular, has become a highly salient issue

in Germany in the last decade. By using data on parliamentary debates from the Bundestag since 2013, we subsequently demonstrate that all MPs tend to give more speeches on climate-related issues since this topic — as we will show — became increasingly important among the German population, while comparative studies show that climate policy salience varies substantially between countries and is positively related to country wealth (Crawley, Coffé and Chapman, 2022). Moreover, we find evidence for our claim that, in particular, younger MPs participate more in parliamentary debates on climate change, even when controlling for a variety of further key explanatory variables. We conclude that the personal characteristics of MPs matter for legislative behavior and thus for climate policy, in particular when the context of a parliamentary debate allows MPs to gain a profile within their party and among the public. Younger MPs can thus indeed be seen as advocates of climate action who bring this issue onto the political and parliamentary agenda — although induced through career-seeking incentives.

3.2 Literature Review and Theoretical Argument

Socio-demographic characteristics of legislators affect the preferences of MPs and, consequently, their parliamentary actions. In that regard, scholars have investigated the effects of MPs' gender (Catalano, 2009; Höhmann, 2020; Reynolds, 2013) and MPs' migration background (Saalfeld and Bischof, 2013), as well as candidates' disabilities (Reher, 2022). Many of these studies consider MPs' age as an influential variable and incorporate it in their estimations. Surprisingly, however, the age of MPs as a separate independent variable has so far been mostly overlooked in academic research. Only few researchers have addressed the underrepresentation of the youth in the political decision-making process. Sundström and Stockemer (2021) have introduced a new concept to measure youths' underrepresentation in parliaments. The authors find that young adults under the age of 35 are generally underrepresented by a factor of three, lending support to the fundamental claim that young people are descriptively underrepresented in parliaments. In the case of Germany, which we focus on in this paper, the MPs of the 18th and 19th Bundestag, who were elected in 2013 and 2017, had an average age of 52.83 and 50 years, respectively, at the time of the election. Overall, there were only small differences between the parties in the complete dataset, with the liberal Free Democratic Party (FDP) having the youngest parliamentary group (overall average age: 47.19 years) and the Social Democrats (SPD) the oldest group (overall average age: 52.16 years). By contrast, the average age of the German population in

2017 was only 44.4 years. This discrepancy is the main focus for many academic approaches: most of the existing research focuses on how many young MPs are present in legislative chambers, how to increase this number (Stockemer and Sundström, 2018), and how selected theoretical concepts affect the share of young MPs in parliaments (Stockemer and Sundström, 2019). Here, we take a different approach: Instead of asking how an adequate descriptive representation of the youth can be guaranteed, we investigate how the existing underrepresentation translates into legislative behavior.

Research has shown a mismatch between voters' preferences for younger politicians and the overrepresentation of older politicians in parliaments and governments (Eshima and Smith, 2022). We argue that this represents a strategic opportunity for young MPs to behave differently in parliamentary processes. Their characteristics are thus likely to result in a specific legislative behavior and, more specifically, in an interest in specific policy domains. Previous studies provide evidence for the effect of MPs' age on their legislative behavior in the parliament of the Czech Republic, indicating that age and tenure indeed can significantly influence MPs' legislative behavior and processes of decision-making in parliaments (Hájek, 2019). Similarly, we argue that younger MPs use their age strategically to signal their sincere interest in a highly salient issue like climate change because of career-seeking incentives. We derive our expectations based on two theoretical perspectives.

In line with existing theoretical accounts (e.g., Müller and Saalfeld, 1997; Strøm, 1997, 2015), we argue, first, that a parliamentarian's behavior is likely to be determined by the level of competition for reselection, renomination, and reelection for posts within the party and/or legislative offices. The goals can be ordered hierarchically, as attaining the latter goals is contingent on successful renomination and reelection. In fact, "[the] iron-clad necessity of election in democratic legislatures [. . .] makes the 'single-minded pursuit of reelection' the primary instrumental goal of legislators" (Strøm, 2015, p. 90). Accordingly, MPs' decisions should be mainly determined by the desire to maximize the likelihood of reelection. Secondly, we combine this perspective with the literature on the personal characteristics of MPs and theories that focus on the strategic positioning of parties and their representatives on salient issues (see also Baumann, Debus and Müller, 2015). Based on the office seeking motivation, the legislative behavior of parties on the one hand and their representatives on the other is usually explained as being strategic, whereby differences in these strategies are largely assumed to be rooted in the institutional level of politics like the electoral system (e.g., Bol et al., 2021; Ohmura et al., 2018; Zittel and Nyhuis, 2021). However, contextual features such as issues that

dominate the public agenda also matter for the decision-making processes of parties and individual politicians (e.g., Hobolt and De Vries, 2015; Meyer and Wagner, 2016; Rovny and Whitefield, 2019). We therefore expect that MPs represent the preferences that prevail among their constituents through the MPs' legislative behavior. Such behavior inside and outside the parliament should increase the chances that MPs receive higher public attention and support. However, not every issue or topic will likely fulfill the goal of public visibility. An important aspect is that the elector should perceive the respective politician as trustworthy and competent to deal with and tackle problems related to that topic. One simple strategy to be perceived as competent is to link the respective issue to the personal characteristics of an MP.

Needless to say, MPs are not only influenced by factors on the macro level. Recent research analyzing the decisions of individual MPs has theoretically argued and empirically shown that the legislative behavior of MPs is shaped not only by pressure from their constituents and party but also by their characteristics like gender, family status, religious denomination, or professional background (e.g., Baumann, 2018; Burden, 2000, 2007; Searing, 1994). For instance, MPs with a migrant background are more active in legislative debates if the topic of the debate focuses on issues related to the interests of migrants (Bäck and Debus, 2020; Saalfeld and Bischof, 2013). Likewise, female MPs give more speeches in policy domains that reflect stereotype women's interests (e.g., Bäck and Debus, 2019; Blumenau, 2021; Hargrave and Blumenau, 2022), either because of the strategic interests of the respective MPs or because their party forces those MPs with a particular personal background to be more active in related policy areas for vote-seeking reasons.

When a topic such as climate change receives a high level of issue attention in the public, an office-seeking MP — that is, an MP who seeks renomination and reelection — should try to gain a publicly visible profile on that very issue if their characteristics make them a trustworthy and sincere advocate of that particular issue. In addition, the party of the respective MP is also likely to benefit from such a strategy of an individual politician, as the party as a whole should be more likely to be seen as competent in a salient topic if the respective party has representatives that are perceived as experts in a policy domain considered to be highly important by the voters. While in the case of climate change, several personal characteristics, like an MP's professional background, could be helpful to link the respective MP with the climate change topic, we here focus on the MP's age as a straightforward personal characteristic of parliamentary representatives. Younger MPs can more easily and more sincerely argue that they (and their —

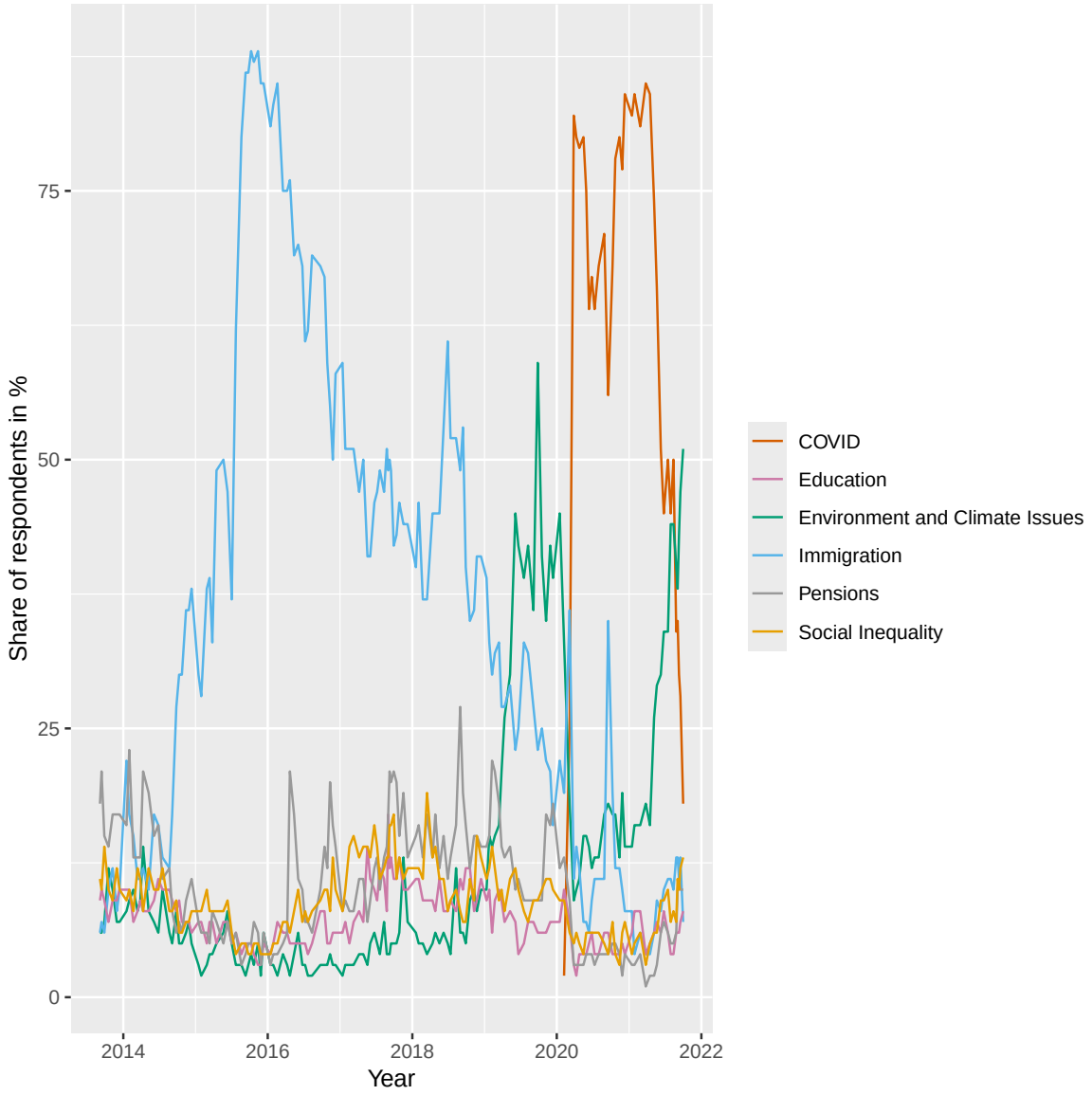

Figure 3.1: Share of respondents that consider the listed issues as the most important ones in Germany. Source: Aggregated survey data of the Forschungsgruppe Wahlen (https://www.forschungsgruppe.de/Umfragen/Politbarometer/Langzeitentwicklung_-_Themen_im_Ueberblick/Politik_II/)

planned — family) are personally affected by climate change and will, therefore, push policies to tackle and reduce its negative effects. We therefore expect that — in a time where climate change has become and continuous to be a highly salient issue among the public, in particular among younger citizens as the 'Fridays for Future' movement shows (Parth et al., 2020; Wallis and Loy, 2021; Berker and Pollex, 2021) — younger MPs should give more speeches in the parliament on debates related to climate change, regardless of other important variables like party affiliation or membership in parlia-

mentary committees. Owing to these career-seeking incentives, younger MPs should be more likely to become advocates of climate action and should prioritize this issue in their parliamentary activities. To test this expectation, we leverage an original dataset that covers information on the number of speeches that members of the German Bundestag contributed to parliamentary debates related to the climate change issue between 2013 and 2021. We thus cover two legislative periods of the Bundestag, with the legislative period between 2017 and 2021 characterized by a significant increase in public attention to climate issues (see Figure 3.1).

While environmental issues in general and climate issues, in particular, were mentioned by less than 10% of Germans as the most important problem until 2019, this issue was considered to be the most pressing one in 2019 before the outbreak of the COVID-19 pandemic. Since then, it did not disappear from the public agenda; instead, it became — despite the COVID-19 pandemic — again the most important problem by the end of 2021. The wide period during which the issue salience of climate change increased in the public sphere additionally allows us to examine whether all actors represented in parliament increase their attention to climate change questions. The latter would be expected by theoretical (and empirical) accounts that highlight the role of the public agenda for responsive changes in the programmatic profile of parties and their representatives (e.g., Adams and Somer-Topcu, 2009; Hobolt and De Vries, 2015; Meyer and Wagner, 2016; Rovny and Whitefield, 2019). However, a general strategy of parties to focus more on climate change because of an increase in issue attention among the public is not at odds with our basic argument that younger MPs should deliver more speeches on climate issues. Because parties would benefit from younger MPs who can make a sincere argument that they care about climate policy, we expect that MPs from all parties give more speeches in debates on climate change but give way — or even encourage — younger members of their parliamentary groups to deliver speeches on climate policy. The next section provides an overview of the data and the methodological strategies used to answer our research question.

3.3 Data and Methods

We rely on speeches in the German Bundestag during its 18th and 19th legislative periods, covering October 22, 2013, until September 26, 2021. Our empirical model includes data from 1312 observations, where one observation equals an MP per legislative period and a total number of 57,818 speeches. These speeches include only

contributions with a minimal length of 25 words, thus excluding short interventions, disruptions, questions, and procedural introductions.[1] Of all remaining speeches, we classify 1140, roughly 5.7%, as speeches on climate change and related issues.

To identify speeches on the topic of investigation, we apply a dictionary-based approach that automatically classifies contributions during a legislative debate as speeches on climate change if at least ten occurrences of the predefined keywords are mentioned in the individual speech (Grimmer and Stewart 2013).[2] We expect that 12 word-stems are most frequently used in the context of debates on climate change.[3] The dictionary was developed in a multi-step process. A basic and initial list of words was adopted based on existing environment-related dictionaries (Laver and Garry, 2000) and further developed by manually adding relevant terms inspired by the coding scheme of the Comparative Agendas Project (Bevan, 2019). Therefore, the debates we identify as related to climate change are also, to some degree, related to environmental issues.

In a subsequent step, computational text analysis in the form of locally trained word embeddings was applied to identify previously missed keywords. Word embeddings use vectors to express the semantic meaning of words because similar words are typically numerically close and semantically related (e.g., neighboring words) and thus spatially proximate. After identifying all speeches on the issue of climate change, we aggregate the data on an MP level. Note that many MPs have been reelected in 2017. For these legislators, we differentiate between the two legislative periods to account for changing structural covariates. That is, one observation is one MP per legislative period. The dependent variable provides information on the number of speeches MPs delivered in debates on climate change in one legislative period. Figure 2 provides an overview of how many speeches the individual MPs gave and shows that most MPs gave only some speeches on climate issues, if any. In contrast, only very few MPs speak very often — up to 36 times — in parliamentary debates on climate change. An adequate method for analyzing a dependent count variable with a right-skewed distribution (as shown

[1] Very short speeches have shown to have insufficient topical content to be analyzed, such that common practice has developed towards excluding them. Cut-off points vary immensely, with some contributions even cutting all speeches below 150 words (Curran et al., 2018). We estimated the empirical models with a cut-off point of 100 words and found that this does not change our results significantly.

[2] Multiple usages of the same keyword are counted separately.

[3] We consider the following words as indicators for debates on environmental issues related to climate change (asterisks indicate that all words with the respective stem are counted as keywords, e.g., "klima*" includes words like "klimawandel" or "klimabewegung"; English translations are provided in parantheses): "erneuerbar*" ("renewable"), "emission*" ("emission"), "klima*" ("climate"), "kohle" ("coal"), "fossil*" ("fossil"), "*erwärmung" ("warming"), "nachhalti*" ("sustainable"), "umwelt*" ("environment"), "*ausstoß" ("emissions"), "grad" ("degree"), "öl" ("oil"), "treibhaus*" ("greenhouse").

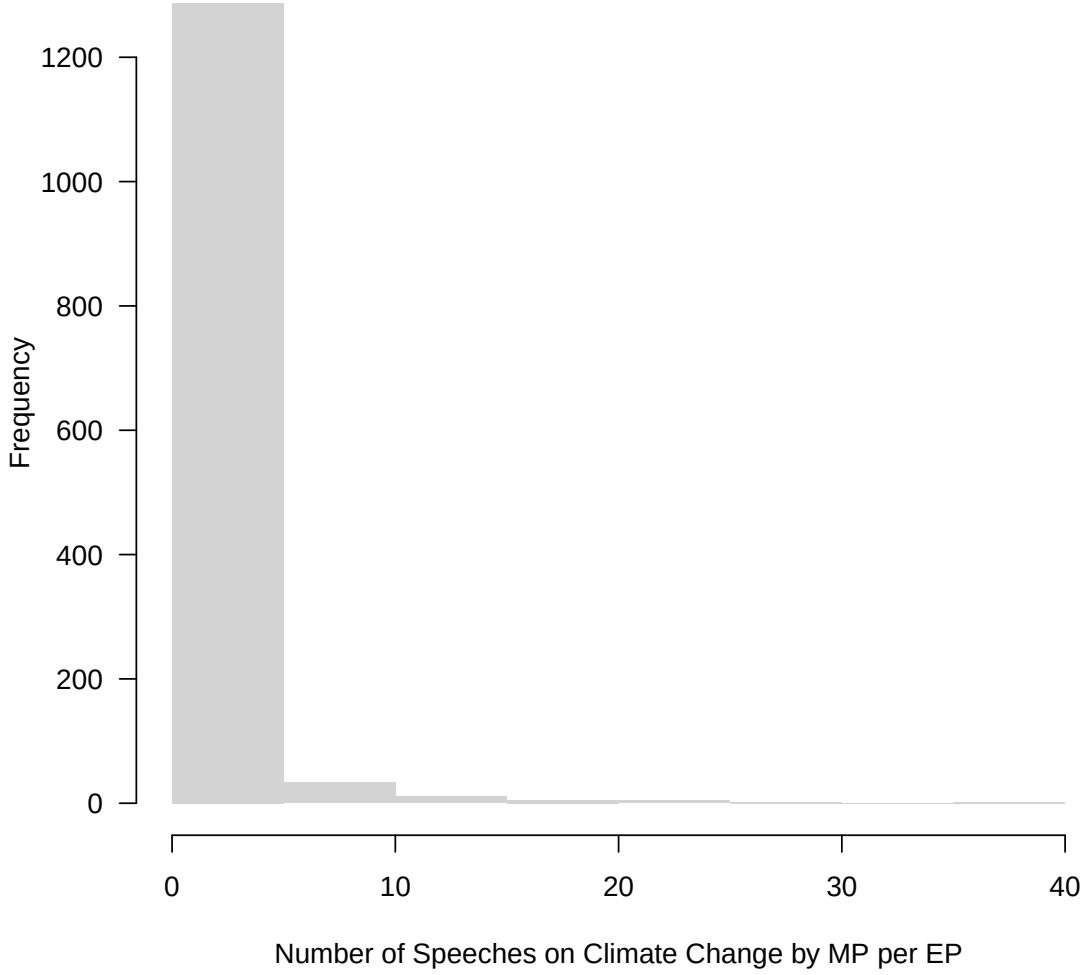

Figure 3.2: Distribution of the dependent variable

in Figure 3.2) is a negative binomial regression model, used, for instance, by Proksch and Slapin (2012) in their analysis of parliamentary debates.

Our main independent variable is the MPs' age. As age constantly changes, there are different ways to measure the variable. Here, we consider age to be dynamic and, as such, model MPs' age as their age in years on the day they gave a speech. As we aggregate the dependent variable, we also do so for the MPs' age. Hence, the main independent variable for each observation is the MP's average age on the day they gave a speech in a debate related to climate change. Figure 3.3 below shows the average share of speeches on climate change by differentiating between MPs who are older than 40

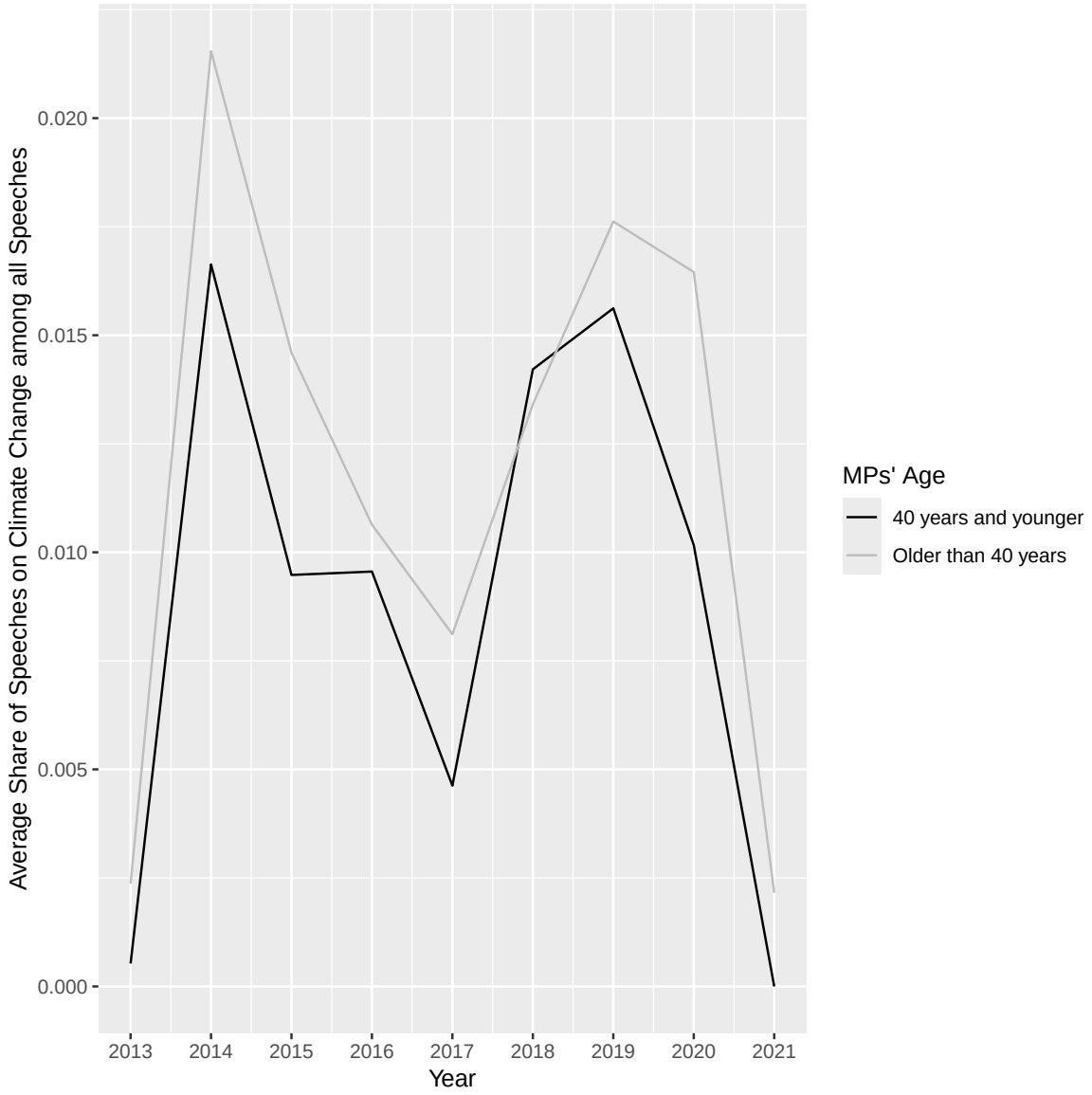

Figure 3.3: Share of speeches related to climate change in the Bundestag over time, differentiated by age group of MPs

years or who are up to 40 years old. As expected, the number of speeches among both age groups increased after 2017, when climate change became a highly salient topic among German citizens. However, there is — according to these descriptive data — no evidence that younger MPs speak more than older MPs. Moreover, we can observe a relatively high share of debates on climate issues in 2014. This could be related to debates in the German parliament on global agreements aiming at fighting climate change, but also because 2014 was the hottest summer in Germany since the beginning of weather recordings, thus making climate issues tangible for citizens and their representatives.

While this descriptive analysis demonstrates that younger and older MPs tend to follow the issue attention of the public, multivariate methods are required to evaluate if there is a significant difference between younger and older MPs regarding the number of speeches they give in debates on climate change. Since multiple variables exist that could have a confounding impact on the variable under investigation, it is crucial to control for these. First, we control for the age structure in the MPs' electoral districts by incorporating information into the empirical models on the share of citizens under the age of 35 years (due to data availability). The 'younger' the constituents of an MP are, on average, the more likely they should focus on a topic like climate change since it is highly relevant, particularly for younger citizens. This data was made available by the German Federal Election Office (www.bundeswahlleiter.de) and stems from 2012 and 2015, respectively. We also control for various institutional factors and further individual characteristics of MPs. For instance, the models include information on the Bundestag committee membership of the MP and provide information on whether an MP was a committee member on environment and climate protection. Furthermore, the model covers whether the MP was elected directly in a district by a plurality of votes or through a party list. Additionally, the model controls for the MP's gender and for the respective MPs' party seat share in the Bundestag. In Model 2, the latter variable is replaced with information on the partisan affiliation of MPs, allowing for the evaluation of a 'green agenda' on climate issues, which is, in particular, introduced by the representatives of the German Green Party. We also include a dummy variable that takes the value of 1 when the MP was part of the Bundestag in the previous legislative period and 0 otherwise. Lastly, we control the economic situation in the MPs' election district by including the unemployment rate in the specific districts in the regression models.

3.4 Results

Table 3.1 presents the results of three negative binomial regression models. The dependent variable is the number of speeches an individual MP gave in debates on the issue of climate change in a legislative period. In contrast to the first model, model 2 replaces the seat share of the MP's parliamentary parties with the party affiliation of the MPs to analyze whether MPs from parties that emphasize a 'green agenda' (Carter et al., 2018; Debus and Tosun, 2021) speak significantly more often than MPs belonging to other parliamentary party groups. Model 3, by contrast, includes a variable that provides information on the role of MPs inside the parliamentary party group, that

is, if they are in a leadership role or ordinary MPs. We find a robust negative effect of MPs' age on the number of parliamentary speeches by MPs held in debates related to climate change. In all three models, the effect of the age variable is significantly negative. In substantive terms, this means that younger Bundestag MPs indeed talk more often on the climate change issue, as we hypothesized in the theoretical section of this contribution.

There are mixed effects from several contextual variables: the age structure in the MPs' electoral district does not affect how often directly elected MPs speak in debates on climate change. Furthermore, the degree of economic problem pressure in the electoral district that MPs represent in parliament also has no effect, nor does the difference between directly and listwise elected MPs. As expected, we find that MPs who are members of the related committee speak more in debates on climate change, as do MPs of the Green Party, which makes sense from the perspective of the literature of issue ownership (e.g., Spoon, Hobolt and De Vries, 2014; Tavits and Potter, 2015). That the finding also applies to the FDP — a party emphasizing market-liberal economic policies — seems surprising, yet the FDP emphasizes the positive effects of the free market for technical innovations helping to fight climate change. The fact that the age of MPs matters for their focus on climate issues, even when controlling for an important variable like party affiliation, signals support for our main argument that younger MPs from all parties are using their age strategically to be associated with an increasingly important issue like climate change.

Figure 3.4 shows the substantive effect of MPs' age on their participation in debates on climate change in the Bundestag from 2013 until 2021, based on Model 1. Younger MPs are predicted to give about one speech on climate change during a legislative period, while older MPs are predicted to give only 0.3 speeches. Needless to say, an MP cannot give a third of a speech, indicating that most older MPs do not give any speech on the topic of climate change at all. This predicted number of speeches in debates on climate change in the Bundestag demonstrates the age variable's statistically significant and substantive effect. It appears that, indeed, younger MPs make use of their age to gain a sincere profile on the climate change issue and push legislative action against climate change by speaking in related parliamentary debates. This finding is confirmed when differentiating between the period between 2013 and 2018 and between 2019 and 2021. While climate change has already been a salient issue for the German population in the five years since 2013, it has only been perceived as the most pressing issue for a minority. This changed compared to the period between 2018 and 2020, in which a

	Negative Binomial Model		
	Speeches on Climate Change		
	(1)	(2)	(3)
Age	−0.021**	−0.015*	−0.020**
	(0.009)	(0.009)	(0.008)
Pop. share below 35 years in elec. dist.	0.020	0.005	0.021
	(0.025)	(0.026)	(0.025)
Committee member	2.412***	2.454***	2.457***
	(0.238)	(0.236)	(0.234)
AfD		0.252	
		(0.451)	
FDP		0.917**	
		(0.405)	
Greens		1.177***	
		(0.342)	
SPD		0.198	
		(0.237)	
The Left		0.273	
		(0.350)	
MP directly elected	0.303	0.392	0.321
	(0.220)	(0.241)	(0.217)
Female	0.204	0.201	0.230
	(0.178)	(0.183)	(0.176)
Reelected	0.869***	0.812***	0.799***
	(0.187)	(0.202)	(0.185)
Parl. group leader			1.604**
			(0.645)
Party seat share	−0.021***		−0.018**
	(0.007)		(0.007)
Unemployment rate in electoral district	−0.038	−0.044	−0.029
	(0.031)	(0.032)	(0.031)
Constant	−0.543	−1.146	−0.813
	(1.118)	(1.110)	(1.108)
Observations	1,312	1,312	1,312
Log Likelihood	−1,146.509	−1,142.663	−1,141.873
θ	0.160*** (0.015)	0.164*** (0.015)	0.166*** (0.016)
Akaike Inf. Crit.	2,311.017	2,311.326	2,303.746
Note:	*p<0.1; **p<0.05; ***p<0.01. Reference group: CDU.		

Table 3.1: Negative Binomial Models of Speeches on Climate Change

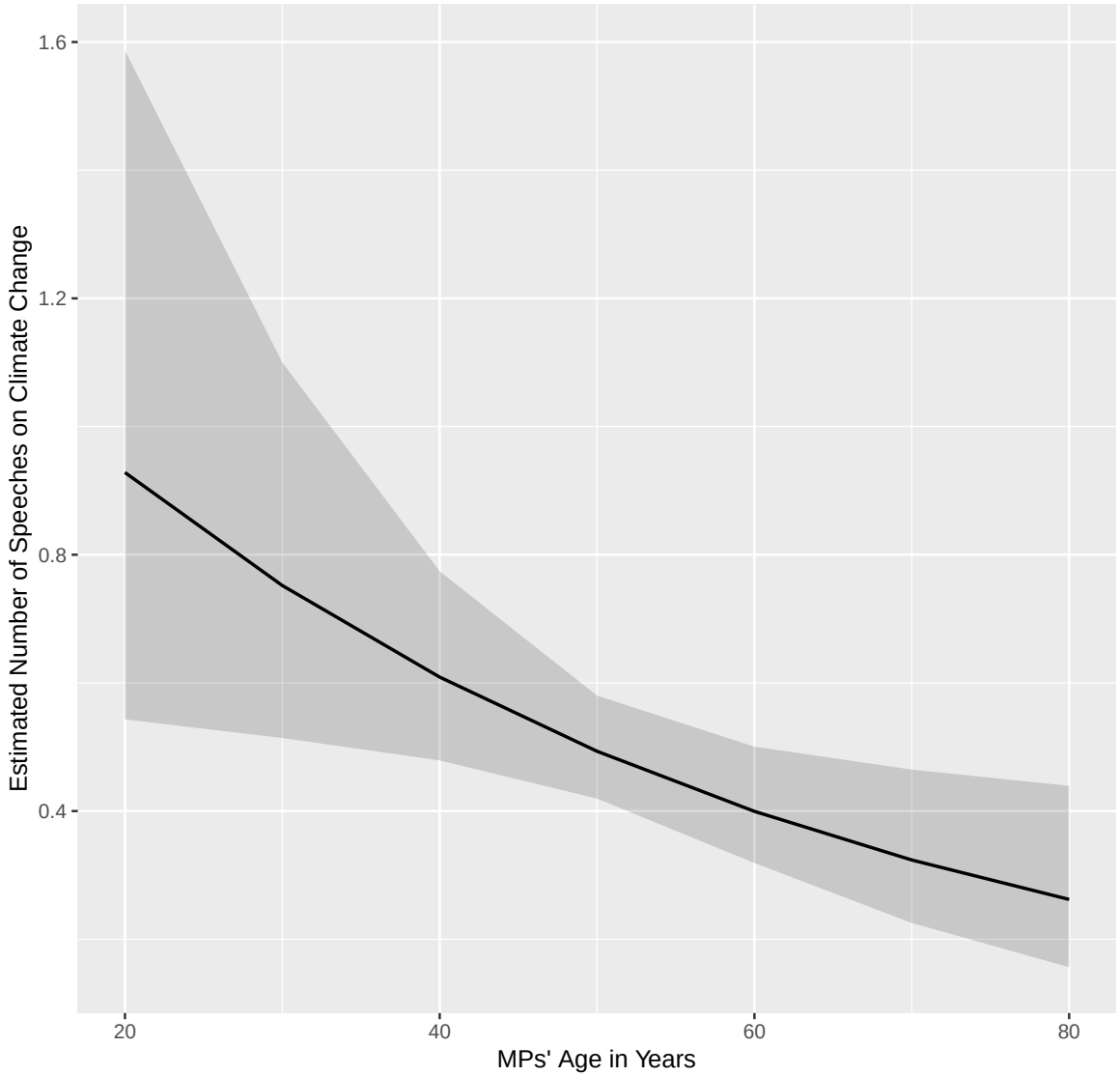

Figure 3.4: Predicted number of speeches in parliamentary debates on climate change, depending on the age of MPs (grey shaded area indicates the 95% confidence interval, Model 1)

majority of Germans began to consider topics related to climate change as the most urgent ones (see Figure 3.1). The results show that younger MPs give significantly more speeches than older MPs in debates on climate change, which was, however, also the case to a similar same degree in the period between 2013 and 2018 (see Figure 3.5 and Table 3.2). Contrary to the expectations, there is no evidence that younger MPs — or their parliamentary parties, which play an important role in allocating floor time in the German Bundestag (Müller, Stecker and Blätte, 2021) — are in particular concentrating on climate policy in their legislative work if the public agenda focuses in particular on climate issues. Instead, the results indicate that younger MPs continuously focus more on climate issues than older MPs, possibly to strengthen their

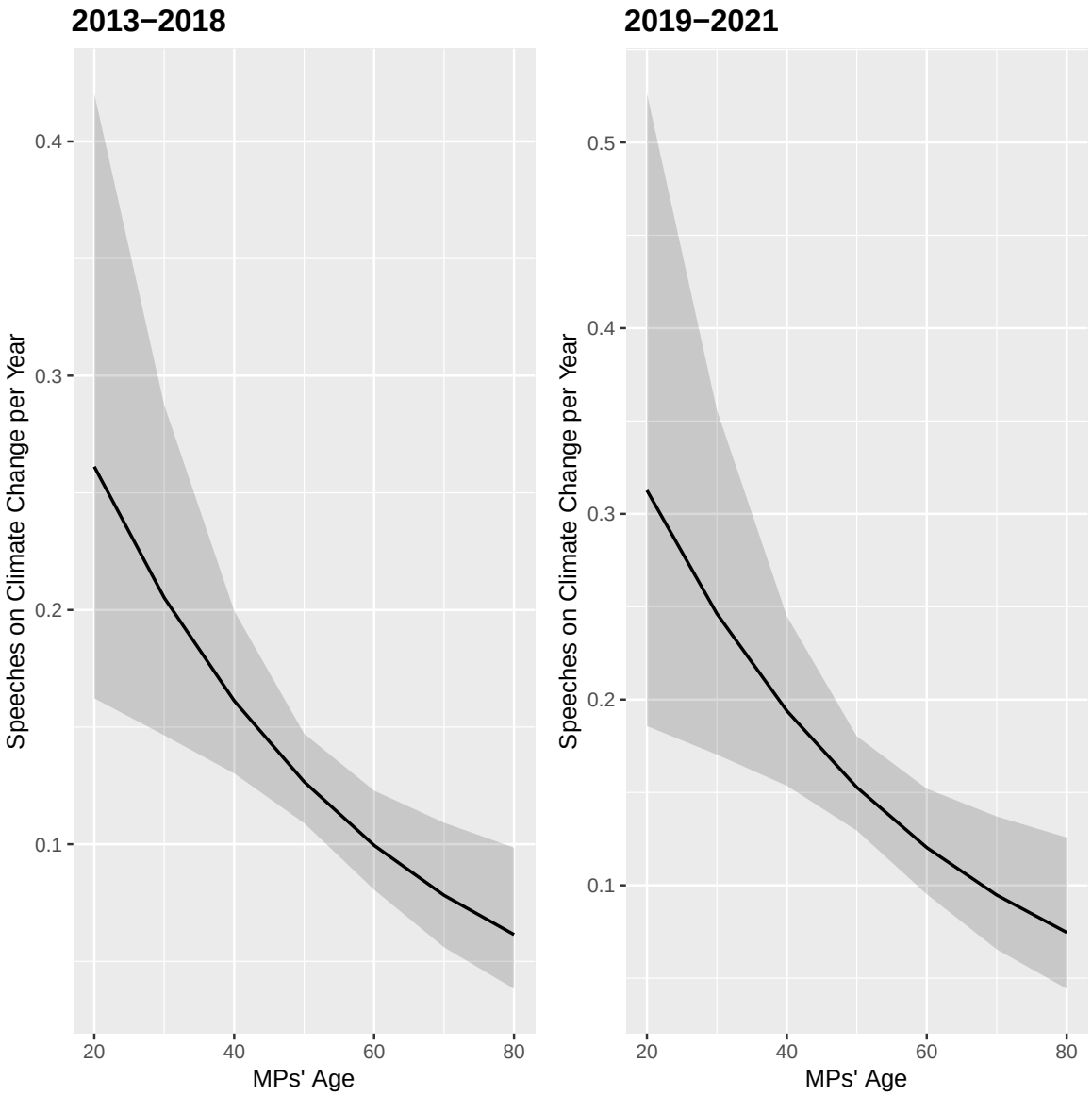

Figure 3.5: Predicted number of speeches of MPs in parliamentary debates on climate change per year, depending on the age of MPs and differentiated before and after 2019 (grey shaded area indicates the 95% confidence interval, similar specifications as in Model 1)

own profile and/or that of their party.

3.5 Conclusion

Climate change-related issues have become a salient topic within the German population and the Bundestag over the past decade. This development provides strategic opportunities for office-seeking legislators. This contribution examined whether younger MPs deliver more speeches in parliament on a topic of high salience to younger citizens. Against this backdrop, we focused on climate change as an issue that has major im-

	Negative Binomial Model	
	Speeches on climate change by MP per year	
	2013-2018	2019-2021
Age	−0.024***	−0.024***
	(0.008)	(0.008)
Pop. share below 35 years in elec. distr.	0.004	0.012
	(0.024)	(0.023)
Committee member	2.472***	2.087***
	(0.190)	(0.195)
MP directly elected	0.230	0.453*
	(0.200)	(0.273)
Female	0.312**	−0.068
	(0.158)	(0.182)
Reelected	0.863***	0.712***
	(0.174)	(0.188)
Party seat share	−0.021***	−0.025*
	(0.006)	(0.013)
Unemployment rate in electoral district	−0.065**	−0.028
	(0.028)	(0.034)
Constant	−0.920	−1.240
	(1.059)	(1.047)
Observations	3,131	1,681
Log Likelihood	−1,292.799	−794.628
θ	0.125*** (0.013)	0.243*** (0.036)
Akaike Inf. Crit.	2,603.598	1,607.256
Note:		*p<0.1; **p<0.05; ***p<0.01

Table 3.2: Determinants of the number of MPs' speeches in debates on climate change

plications for the future of younger people and future generations. Arguing within the realm of vote- and career-seeking reasons, younger MPs use their age to be perceived as sincere advocates of implementing and promoting policies on climate change. We found that even when controlling for several other factors highlighted as decisive by the literature on legislative debates, younger MPs give more speeches in debates on climate change than older MPs. This finding supports our theoretical consideration that younger MPs use their personal characteristics to be considered sincere advocates of policies against climate change and, thus, as representatives of the interests of younger voters and citizens. We concentrated on individual contributions to parliamentary de-

bates to determine whether younger MPs give more speeches on climate change than older MPs. Needless to say, the focus on parliamentary debates in a single parliament — the German Bundestag — with a dictionary covering not only climate issues but also environmental issues only offers a restricted perspective

Further research should develop a more specific dictionary that covers all relevant dimensions of climate policy and should adopt a comparative perspective, which is possible given the existing datasets on legislative debates by Rauh and Schwalbach (2020), and by integrating other options for examining the relationship between MPs and their constituents, e.g., by analyzing social media data like Twitter or Facebook entries (e.g., Sältzer, 2022). Moreover, the age of an MP is a very straightforward and broad indicator of the strategy of an MP to be considered a sincere advocate of climate change policies. More detailed information on the personal background of MPs, like their family structure, the number of children and grandchildren, and the MPs' professional and religious background, may offer a more accurate picture of the involvement of an MP in debates and discussions on climate change. However, it is difficult to gather such data, as researchers can only rely on the information MPs provide on their (personal) websites. At the same time, there is no requirement for elected legislators to provide public information on, for instance, their family status.

While this paper contributes to the mere involvement, in the next step, it would be interesting to see what MPs — particularly the younger ones — substantively contribute during the respective debates on climate change and what position they adopt on climate policy. While there are several computerized methods of content analysis available for measuring the policy positions of the MPs based on their speeches, which would also help for more precise identification of debates related to climate policy, we leave it to further research to theoretically discuss and empirically evaluate which factors influence what climate policy position MPs adopt when speaking in parliaments. Finally, one could argue that younger MPs who were already in charge of climate policy-making — for instance, as the (junior) minister for environmental affairs in the cabinet — speak less in debates on climate policy since these politicians could be considered as not trustworthy anymore by the voters because of their failure to implement policies that would help to stop climate change. Because of the small number of young former cabinet members in charge of climate change, further comparative studies could test this expectation, which we briefly outlined here.

The findings presented in this contribution showed that politicians indeed link a characteristic like their age to an issue to address — in this case — younger citizens. In addition to and beyond the personal background of an MP, it is crucial to acknowledge further institutional and contextual features that might influence the activity of MPs in parliamentary debates on climate change. Depending on the parliamentary rules, floor access can be restricted by the parliamentary party leadership, or individual MPs can take the floor without the agreement of their parliamentary party leadership. Given that Germany can be considered a case where the party leadership in parliament is a decisive player when it comes to the question of who is allowed to speak (Bäck, Debus and Fernandes, 2021; Müller, Stecker and Blätte, 2021; Proksch and Slapin, 2012), the findings presented here could also indicate that the party elite selects younger MPs as speakers in debates on climate change for vote-seeking reasons. That strategy could benefit the party overall and not (only) the respective MP from the possibility of gaining more competence on a salient issue if younger MPs speak in debates related to climate change. Since this is an aspect not covered within this paper and with the data at hand, further studies could conduct interviews with younger MPs and members of the parliamentary party leadership to gain more insight into that specific perspective.

Acknowledgments

Previous versions of this paper were presented at the national convention of the German Political Science Association, 14–16 September 2021, at the NASP International and Interdisciplinary Seminar, University of Milan, Italy, 17 June 2022, and at the 12th annual conference of the European Political Science Association, Prague, Czech Republic, 23–25 June 2022. We would like to thank all participants and discussants for their valuable feedback. We also thank the two anonymous reviewers of Climate Action for their very helpful and constructive suggestions. Finally, we thank Okan Sarioglu for research assistance and Lukas Isermann for support with the methodological approach.

CHAPTER

FOUR

District Characteristics, Age, and Political Candidates' Positions on Climate Protection.

Abstract

Climate change has become a highly salient issue in German politics and media after 2017, with many predominantly young protesters hitting the streets and demanding more climate protection. In this study, I leverage this development and examine positions on climate protection among political candidates in Germany in the federal elections of 2017 and 2021. I make theoretical macro and micro-level assumptions and show that candidates take positions strategically. Candidates in more urban and, thus, less car-dependent areas support climate protection more strongly than their colleagues in rural election districts. This effect is especially true for candidates from the Green party. On a micro level, younger candidates have more climate-friendly positions than older candidates. These effects can, however, only be found in the data of 2021 and, hence, after the politicization of the issue. The findings suggest that candidates leverage salient issues strategically to signal their involvement to potential voters.

4.1 Introduction

Climate change and its effects are fundamental challenges societies face in the 21st century. These ecological challenges extend into economics, social structures, and international relations. Climate change's complex and multifaceted nature has prompted a surge in research into its direct impacts and the mechanisms through which societies respond. Possible solutions and adequate reactions are worldwide contested political issues influenced by varying interests, political ideologies, and levels of public support. The question of what determines citizens' climate change attitudes and their positions on climate protection has thus been the subject of many studies (Capstick et al., 2015). Understanding these determinants is crucial, as public opinion shapes the political agenda and influences policy decisions. This relationship underscores the importance of identifying the factors that drive public perceptions and attitudes. And that is for a good reason, as on a larger scale, public opinion directly affects political efforts of climate protection (e.g., Dür and Mateo, 2014) and – on an individual level – a correct understanding of climate change is an indicator for individuals' stated intentions to act in a climate-protecting way (Bord, O'connor and Fisher, 2000). Other strands of research have studied the drivers of different actors' engagement with climate change: actors such as the media, whose framing of the issues can shape public perception and assert pressure on political elites (Schmidt, Ivanova and Schäfer, 2013; Schäfer, Ivanova and Schmidt, 2014), political parties, which shape governmental policy and are thus at the heart of climate policies (Farstad, 2018), or local communities, which are often the ones to implement specific climate protection measures (Zeigermann, Kammerer and Böcher, 2023). One actor who has so far been mostly overlooked by the literature and provides an interesting case is the political candidate. Political candidates are those individuals who run for office in an election. They have already won the nomination by their respective party and are now competing for citizens' votes. Candidates are political actors who act strategically and focus on (re)election in a vote- and ultimately office-seeking manner (Strøm, 1990; Strøm and Müller, 1999). Accordingly, strategic considerations should drive their positions to attract as many votes as possible. These strategic motivations imply that candidates may adapt their climate positions based on perceived public opinion, party platforms, or structural incentives. In this paper, I focus on this very actor and pose the research question: What are the determinants of political candidates' positions on climate protection?

Political candidates are expected to be driven by strategic considerations on two levels. On a macro level, I expect candidates to consider the urbanity and rurality

of their election district as a key characteristic. Rural-based voters depend more on their cars for commuting and everyday life. However, motor vehicles (specifically fuel taxation) are a crucial target for possible climate protection policies (Finnegan, 2023). Hence, voters in such rural districts usually adopt more climate-skeptical positions than voters in urban districts (Kaufman, 2021). I argue that a strategic acting candidate should adopt similar positions and be less supportive of climate protection than a candidate running in an urban election district. This should, however, not be the case for candidates from Green parties, who – given their parties' issue ownership – should value climate protection more highly. On a micro level, socio-demographic variables, such as age and gender, play a role in determining voters' policy positions on climate protection (e.g., Poortinga et al., 2019). Similarly, younger candidates should seize the opportunity presented by the growing salience of the issue to further distinguish themselves from their older competitors. I argue that they can do so because they can more sincerely argue to be affected by climate change in the future and should thus adopt more pro-climate positions (Debus and Himmelrath, 2022). Based on these theoretical expectations, I leverage two waves of data from the *German Longitudinal Election Survey (GLES)*, covering all candidates running in the German federal elections of 2017 (Roßteutscher et al., 2018) and 2021 (GLES, 2023). I apply multivariate regression models to identify drivers of candidates' positions. The expected effects of the relative number of cars in an election district, the candidate's party affiliation, and their age significantly affect a candidate's position on climate protection. However, these effects are only significant in the election of 2021. In 2017, no significant effect can be found, indicating a strategic behavior by political candidates, as only after the politicization of the climate change issue between the two elections did candidates begin to compete on the issue (Marquardt and Lederer, 2022).

The findings suggest that different factors matter for candidates' strategic behavior and position-taking. These factors can be observed at multiple levels, including macro-level variables related to election district characteristics and micro-level aspects such as candidates' socio-demographic backgrounds. Furthermore, these findings underscore the role of issue politicization, demonstrating how certain topics' heightened importance and visibility can shift political behavior over time. Notably, while in 2017, political candidates' positions on climate protection did not appear to be significantly influenced by the above-mentioned variables, the increased salience of climate change in subsequent years has altered this dynamic. That indicates that, as issues gain prominence and become more embedded in public discourse, factors such as district-specific structures and candidates' demographics begin to shape their strategic behavior and,

in turn, their positions more distinctly. The broader implications of these findings suggest that similar patterns could emerge in other policy areas, demonstrating how the strategic behavior of candidates might adapt in response to shifting public attention.

In the following, I discuss the relevant literature and derive theoretical expectations: place-based differences, party affiliation, and age are expected to play a determining role in political candidates' positions on climate protection, which they strategically adopt. Thereafter, I present the data used in this analysis, detailing the sources, scope, and variables that inform the research. I also outline the research design, emphasizing the analytical methods and models employed to test the hypotheses. In the following section, I present the results of the analysis. First, I focus on descriptive results to present an overview of the data, followed by multivariate regression analyses. Finally, I interpret the results and connect them to the broader theoretical discussion, concluding with reflections on their significance for ongoing political processes and potential applications for understanding candidate behavior in other domains.

4.2 Literature and Theory

I consider two main arguments to develop theoretical expectations of why political candidates take certain positions on climate protection. First, I explore the literature on macro-level factors, focusing on how election district characteristics – specifically their urbanity and rurality – influence candidates' policy positions. Second, I delve into the micro-level factors, examining how candidates' socio-demographic attributes, like age, shape their attitudes and positions on climate change. The existing literature has identified multiple determinants of climate change beliefs and attitudes toward climate protection policies, spanning contextual and individual dimensions.

4.2.1 Macro-Level Determinants: Election District Characteristics

Political candidates are those individuals who have been nominated by their parties to run in an upcoming election. They are ultimately focused on their goals of vote-, office-, and policy-seeking, which in the candidacy stage cumulates to the goal of (re-)election (Strøm, 1997, 2015). Following rational-choice theory, political candidates act in a benefit-maximizing manner to increase their likelihood of being elected. If candidates

act to increase their vote share in the next election, they should adopt policy positions that align with the median voter in their election district. Because this position is not necessarily known, they should infer from more general indicators. One of which is the urbanity or rurality of their election district. An urban-rural divide generally describes differences between rather rural and more urban areas rooted in spatial dissimilarities. These contrasts can manifest on broader and smaller levels, for example, in regional differences, such as variance regarding economic resilience (Giannakis and Bruggeman, 2020) or in differences on an individual level, such as in social and political attitudes of people living in these areas (Kenny and Luca, 2021). In recent years, the latter has led to many countries witnessing increased political polarization, with stark differences in election results between cities and their rural surroundings (Rodden, 2019). Similarly, spatial variation in climate change attitudes and support for climate protection policies has been shown in the European context on a country level, with populations in the Nordic countries supporting stronger climate protection than those in Southern or Eastern European countries (Otto and Gugushvili, 2020). On a national level, there is spatial variation in attitudes routed in center-periphery differences. Individuals living in rural areas or small towns are more likely to oppose carbon taxation (Ewald, Sterner and Sterner, 2022) and generally oppose climate protection policies stronger than those living in more urban areas (Sivonen, 2023). Regarding voters, Kaufman (2021) shows that urban voters tend to support climate protection more than rural voters. The urban-rural divide thus constitutes a salient factor in affecting positions on climate change and, more specifically, on climate protection among citizens.

The literature on the urban-rural cleavage stresses that differences between those areas are "not an artifact of the background characteristics of the people who happen to reside in each area." (Gimpel et al., 2020, p. 1344). Rather, differences "result from some mixture of selection and socialization processes that produce politically relevant opinions" (Gimpel et al., 2020, p. 1363). In other words, the composition of citizens living in a certain area, combined with a growing social divergence between urban and rural places, directly affects their positions on political issues. Additionally, economically more secure individuals tend to support climate protection more than those who suffer from higher economic insecurity, who are usually those living in more rural areas (Arndt, Halikiopoulou and Vrakopoulos, 2023). Especially in the context of climate protection, one additional mechanism links structural characteristics of places to individual attitude formation and positions, which are place-based policies (Kenny and Luca, 2021; Mettler and Brown, 2022). These refer to policies that – either in cost-bearing or intended effect – target specific areas, such as wind farms that are typically

built in rural areas. Because they have such a specific target area, citizens in those areas might adopt other positions on related political issues (e.g., Bergmann, Colombo and Hanley, 2008; Otteni and Weisskircher, 2022). Especially with strong locally concentrated costs of many climate protection policies – that are typically burdened by more rural areas – people in these areas are expected to take a less supportive stance on climate protection policies (Stokes, 2016).

Following these findings that indicate significant urban-rural differences among voters, rationally acting candidates in the respective districts should adopt positions on climate protection accordingly. Here, I focus on a specific aspect of urban-rural differences in election districts: the relative number of motor vehicles compared to the number of inhabitants. Using motor vehicles as a proxy is especially interesting in the context of climate change attitudes and positions on climate protection for the following reason: Rural households tend to own cars more often than urban households (Pucher and Renne, 2005). Voters in rural areas rely more strongly on their cars for commuting and everyday life, as public transport is usually less well-established than in urban areas. At the same time, fossil fuel taxation is a prominent tool to increase costs on climate-damaging means of production and transportation and is politically debated in many countries (Finnegan, 2023). This suggests that candidates in rural constituencies should be more critical of climate protection policies, as these could harm their voters, which would (electorally) punish candidates who support these measures. Consequently, I formulate the following hypothesis with a focus on candidates' election districts:

H1: Candidates standing for election in a rural election district favor less climate protection compared to those standing for election in a more urban election district.

For H1, I argue that rationally acting candidates should adopt more right-wing positions on climate protection, that is, support the latter less if their constituency is more rural. However, I argue that this effect should be moderated by the candidate's party affiliation, especially for candidates from the Green parties. Parties have different core constituencies. Although party constituencies in Europe have become much more mixed, especially compared to the last century, and analyses of core constituencies have become more complex (Odmalm, 2014), certain parties still appeal to certain voters with certain core interests (e.g., Poguntke, 2014). Green parties are *associative issue owners* of the climate change issue (Walgrave, Lefevere and Tresch, 2012). Their core

voters are primarily concerned with climate protection, and environmental concerns are a crucial predictor of voting for Green parties (Schumacher, 2014). Given that climate protection is at the core of Green parties' issue ownership and policy agenda, as well as their voters' concerns, candidates from Green parties should not drastically alter their position on climate protection. They should pay less attention to the average voter in their district (at least on that issue) and thus adopt left-leaning, climate-friendly positions, even in more rural election districts. Consequently, I formulate the following interaction effect:

H2: The differences in support for climate protection between candidates standing for election in urban and rural election districts are less pronounced for candidates from Green parties, compared to other parties.

H1 and H2 are concerned with the structural characteristics of candidates' election districts. Moving toward a micro level of analysis, I expect certain socio-demographic characteristics to be strong predictors of candidates' positions on climate protection, as I will explain in great detail below.

4.2.2 Micro-Level Determinants: Age

Age is a predictor of climate change attitudes in the general population. Generally, older individuals are less concerned about climate change and its consequences than younger citizens, which results in lower support for climate protection. These effects of age differences have been found in numerous studies and across multiple countries (e.g., Whitmarsh, 2011; Milfont et al., 2015). The literature shows that voters tend to vote for those candidates who share socio-demographic characteristics with them in the hope that these candidates will promote their interests (e.g., Sevi, 2021). Following that argument, younger candidates should take left-leaning positions on climate protection, advocating for more climate protection to further appeal to younger voters. This is especially true because the polarization of the climate issue between the elections of 2017 and 2021 was heavily driven by the protest of the movement *Fridays for Future*. The participants in the demonstrations were largely pupils and students (Parth et al., 2020; Marquardt, 2020). This provides younger vote-seeking candidates with a unique opportunity to differentiate themselves from their older competitors. The former can position themselves as competent politicians on a highly salient issue by linking their personal characteristics (in this case, their age) to it. As they aim to gain

a popular public profile, they can more sincerely argue that climate change will affect them personally in the future. Additionally, younger candidates can use their positioning on climate protection for a more visible profile within their party and to foster their party career. Therefore, I expect that younger candidates will advocate for more climate protection, especially when the salience of the climate issue is high (Debus and Himmelrath, 2022). Vote- and office-seeking candidates should take advantage of their age by adopting positions that favor more climate protection to present a trustworthy profile on a salient issue. Consequently, I formulate the following hypothesis:

H3: Younger candidates favor more climate protection than older candidates.

4.3 Data and Research Design

To analyze the determinants of political candidates' positions on climate protection, I leverage two waves of data from the *German Longitudinal Election Study*. Specifically, I rely on the candidate studies from the federal elections of 2017 and 2021 (Roßteutscher et al., 2018; GLES, 2023). Focusing on these two consecutive German federal elections has multiple advantages. First, analyzing two consecutive elections instead of only the most recent one allows me to investigate change over time and understand if and how the anticipated effects have developed. Over the period under investigation, climate change has become more and more politicized worldwide, including Germany. That means climate change - its consequences for the planet but also societies, possible solutions to problems posed by it, and the human responsibility for it – has moved away from being a depoliticized scientific topic (Swyngedouw, 2011) toward being a highly contested political issue (Marquardt and Lederer, 2022). In the second half of the 2017 legislative period, climate change even became the most salient issue in Germany until the onset of the COVID pandemic (see Figure 3.1 in Chapter 3). This politicization could naturally affect if and how candidates act strategically on said issue, thus providing a reasonable argument for the cases selected.

Second, the German multiparty system allows for a detailed analysis of various parties. The data includes traditionally a center-right party (CDU/CSU[1]) and a center-left social-democratic party (SPD). Moreover, it also includes a Green party (Grüne), a

[1]The so-called *Union* is a special case in the German multiparty system. The CSU only stands for election in Bavaria, the CDU in all other 15 states but Bavaria. In the Bundestag, members of parliament (MPs) from both parties form a joint parliamentary group.

(economically) liberal party (FDP), an far-left party (LINKE), and the populist radical right party (PRRP) AfD. Most research on the issue of candidates' climate change positions and strategic behavior due to urban-rural differences stems from the Anglo-Saxon context. Only recently have scholars started to investigate other party systems (Maxwell, 2019; Kenny and Luca, 2021). European cases thus warrant further investigation.

Giving some more context on the German party system, Green party supporters are likely to be the strongest supporters of climate protection. While the Green party is not the most left on either an economic or the GAL-TAN dimension, they are the issue owner of climate change (Spoon, Hobolt and De Vries, 2014). On the left spectrum, there are additionally the parties, the Left and the Social Democrats (SPD). On the right of the spectrum are the parties FDP, CDU/CSU, and AfD (e.g., Franzmann, Giebler and Poguntke, 2020).

4.3.1 Dependent Variable

The dependent variable this paper is centered around is a political candidate's position on climate protection. I operationalize it through an item within the two GLES surveys, which is measured on a scale from 1 to 11, where 1 is labeled with "Politics needs to do much more to combat climate change" and 11 with "Politics to combat climate change have already gone far too far." The scale was reversed over the two survey waves included in the analysis. I re-coded all variables in the way described above such that low values indicate support for climate protection, as this position is typically thought of as a left position. Tables B.1 and B.2 in Appendix B provide an overview of the distribution of the dependent variable and all other numeric variables for each survey wave, respectively.

4.3.2 Independent Variables and Controls

This study is concerned with two main independent variables. A form of urban-rural divide among political candidates regarding their election districts' characteristics and, secondly, their age. Consequently, the first main independent variable in my analysis is the number of motor vehicles per thousand citizens in each candidate's election district. Specifically, I rely on so-called *Strukturdaten*, which themselves are not part of the GLES data but are provided by the German Federal Election Office[2] and are being

[2]www.bundeswahlleiter.de

matched to the respective candidates. I use the number of registered motor vehicles per 1000 inhabitants as an indicator of the urbanity/rurality of the district. Especially in Germany, future climate protection policies have to focus on the transport sector and cars if the country wants to meet the greenhouse gas emission reduction goals posed by EU legislation (Meisel et al., 2020). Additionally, cars play a crucial role in the German public debate. As Hornung and Bandelow (2024, p. 4) write: "Germany is a particularly interesting case to look at these policy sectors as it is commonly referred to as the 'car state' (Mögele and Rau, 2020), where the car serves as a status symbol connected to emotions (Sachs, 2023)." At the same time that cars have such a high value, public transportation in rural areas in Germany is less developed than in urban areas, in turn making people's dependence on their cars even stronger, making it more likely for candidates to adopt distinguished positions.

The second main independent variable is a candidate's age in years at the time of the survey. It is included in the GLES data. Following the above-discussed determinants of climate change attitudes on an individual level, I also include several control variables in the regression analysis. Human values and political orientation have been shown to affect peoples' climate change attitudes and positions on climate protection (Poortinga et al., 2019). In their meta-analysis of over 170 studies, Hornsey et al. (2016) find that values and political orientation strongly predict climate change beliefs. Individuals who adhere to more altruistic values tend to report higher levels of concern about climate change, and those who endorse more egoistic values generally report lower levels of concern (Brown and Kasser, 2005; Corner, Markowitz and Pidgeon, 2014; Steg and De Groot, 2012). These values translate into political orientations and consequently into party identification, which is the strongest predictor of positing on political issues. Left-leaning and liberal individuals are more likely to report greater concern over climate change than right-leaning and conservative individuals do (McCright and Dunlap, 2011). This relationship is stronger in politically more polarized countries, such as the United States, compared to, for example, Germany (Ziegler, 2017). However, in Germany as well, conservative parties are representatives of industry and business, and hence "individuals with a stronger affiliation to the right of the political spectrum are expected to have lower environmental concerns" (Franzen and Vogl, 2013, p. 1003). Previous findings suggest that while partisanship drives climate change attitudes to a large extent, spatial differences – and thus differences between election districts – still prevail (Mildenberger et al., 2017). Some candidates ran for a certain party without actually being a member. Party affiliation was still coded, so the candidate belonged to the corresponding party.

Beyond spatial variation in the form of structural variables of election district, age, and political orientation, gender has a determining effect on individuals' climate protection attitudes. Generally, men are less concerned about climate change than women. A finding that has been shown repeatedly across time and space is argued to be rooted in different socialization and social roles (Blocker and Eckberg, 1997; Zelezny, Chua and Aldrich, 2000; Franzen and Vogl, 2013) and is especially strong in wealthier countries (Bush and Clayton, 2023). I thus control for the candidate's gender (coded binary). Finally, in those models regarding the macro-level in the form of structural differences between election districts, I additionally include a control for whether the district is located in East or West Germany. Even decades after Germany's reunification in 1990, differences in individuals' political attitudes on the one hand and structural differences like labor market differences on the other hand persist till today (Pickel and Pickel, 2023; Schnabel, 2016). In the robustness check further below, I include additional controls like the economic situation in a respective election district. Again, Tables B.1 and B.2 in Appendix B provide descriptive statistics for all numeric variables.

4.4 Results

In the following, I report on the findings of the analyses. First, I investigate descriptive patterns of candidates' positions on climate protection, examining variation across political parties and between the two elections. This initial step provides an overview of how candidates' stances have shifted over time and how they differ according to party lines. I then conduct multiple multivariate regression analyses to provide empirical evidence for the theoretically assumed effects, allowing for a more nuanced understanding of the determinants influencing candidates' climate policy positions. These analyses help identify significant predictors and clarify how macro-level district characteristics and micro-level socio-demographic factors shape candidates' strategic positioning on climate issues.

4.4.1 Descriptive Analysis

Figure 4.1 provides a first broad overview of candidates' positions on climate protection by plotting multiple density plots of the distribution of candidates' positions. Differentiating by party, the figure shows considerable variation across those parties and across

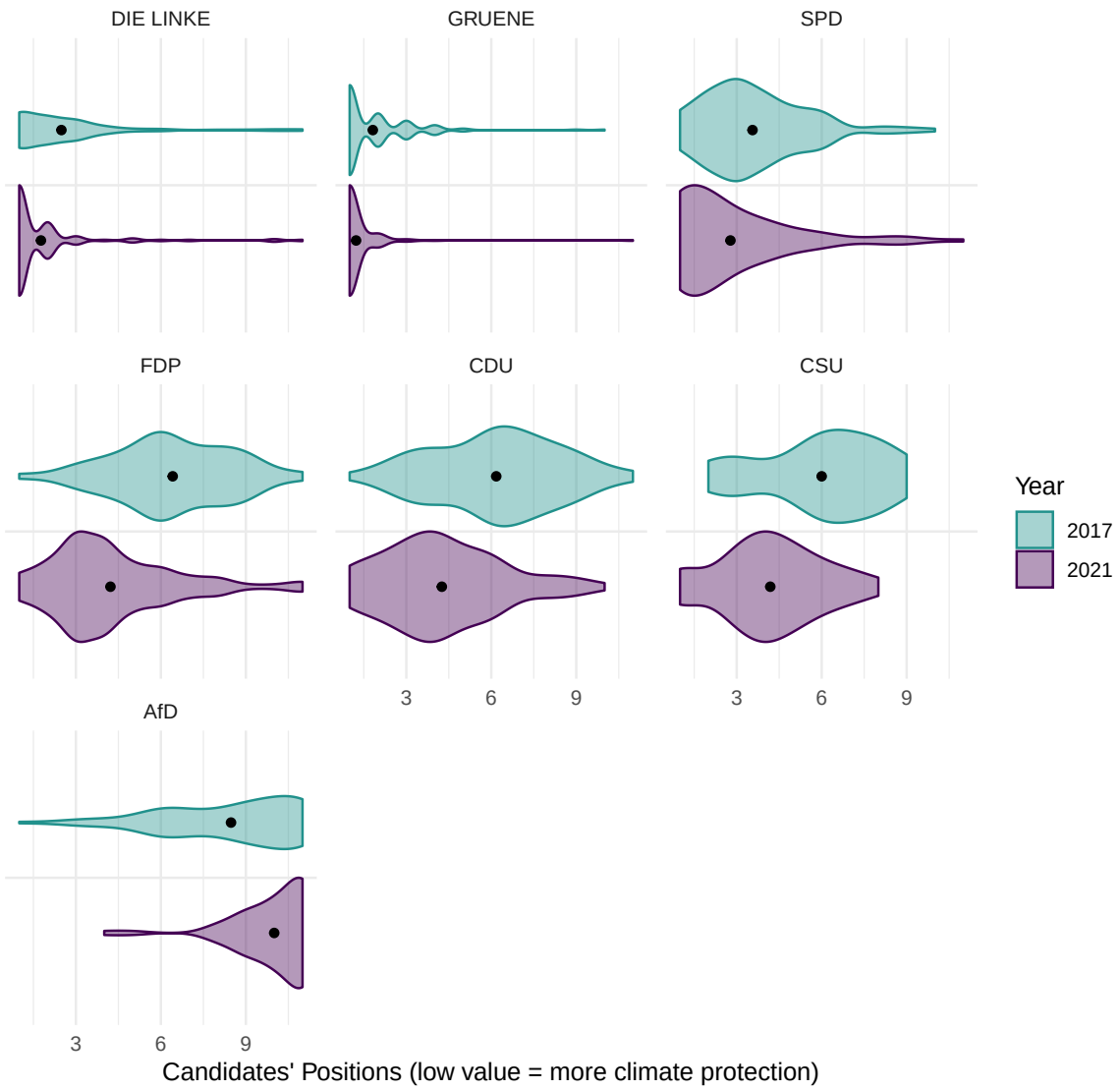

Figure 4.1: Density plot of candidates' positions on climate protection by party and election (dot indicates mean).

time, indicating two insightful observations that can be gained.

First, there is considerable inter-party variation. Candidates from left-leaning parties support climate protection more than those candidates from more conservative parties. This aligns with existing research, indicating that left parties adopt more progressive climate protection policies (Carter et al., 2018; Båtstrand, 2014). In turn, their candidates should have stronger climate protection preferences than those candidates from more right-leaning parties. LINKE, SPD, and Green candidates mostly report positions on climate protection between one and four. Candidates from FDP, CDU,

and CSU report positions higher than that. Finally, candidates from the AfD report the highest climate protection positions. Remember that high scores indicate low support for climate protection, i.e. a right-wing position, while low scores indicate the opposite. Additionally, candidates from the Green party consistently report the most climate-friendly positions.

Second, there is interesting variation over time. The general trend indicates that candidates more strongly supported climate protection in the election of 2021 than in the election of 2017. This aligns with research arguing that the climate change issue has become increasingly more polarized over the last decade (Marquardt and Lederer, 2022). Especially in Germany, one driver of this was the continuous impact of civil society groups, such as *Fridays for Future* and *Extinction Rebellion*, as briefly discussed above (Marquardt, 2020; Schürmann, 2024; Scherhaufer, Klittich and Buzogány, 2021). The general trend of stronger support for climate protection does not revolve along a left-right cleavage but along the populist/non-populist cleavage, as higher support for climate protection in the later election can be observed for all parties except for the AfD. AfD candidates report considerably lower climate protection support (as measured by a higher number) in 2021 than in 2017. In 2017, the median for AfD candidates was around 8.5. In the most recent election of 2021, the mean position on climate protection among AfD candidates was even higher, with a value of 10. This indicates a strong polarization of the climate change issue, in which populist radical right parties challenge the existence of a human-made global climate change (Lockwood, 2018) or argue only on selective scientific issues that suit them (Boecher et al., 2022).

4.4.2 Multivariate Analysis

In the following, I fit multiple OLS regression models to test whether the descriptive findings hold when controlling for other factors. Table 4.1 provides an overview of two OLS models to evaluate hypothesis H1. The hypothesis stipulates that candidates who stand for election in an urban election district, as measured by the number of motor vehicles, should support climate protection more than those running in a more rural district. Each model refers to one election. The dependent variable for each model is the candidate's position on climate protection, as discussed above. The main independent variable is the number of motor vehicles per 1000 citizens in the respective election district. The models also include controls for the candidate's party affiliation, age, and gender. Additionally, I control for the geographical location of the election district,

	Position on Climate Protection (OLS)	
	2017	2021
Motor Vehicles per 1000 Citizens	−0.001 (0.001)	0.002** (0.001)
CDU	2.304*** (0.317)	1.211*** (0.282)
CSU	2.932*** (0.967)	1.583*** (0.576)
FDP	2.850*** (0.253)	1.332*** (0.244)
Grüne	−1.713*** (0.234)	−1.734*** (0.231)
Die Linke	−1.146*** (0.248)	−1.357*** (0.235)
AfD	4.687*** (0.286)	6.974*** (0.284)
Age	0.008 (0.006)	0.007 (0.005)
Female	−0.188 (0.174)	−0.269* (0.161)
East Germany	−0.333 (0.203)	0.226 (0.196)
Constant	4.066*** (0.625)	1.437** (0.637)
Observations	626	535
R^2	0.606	0.723
Adjusted R^2	0.600	0.718
Residual Std. Error	1.888 (df = 615)	1.636 (df = 524)
F Statistic	94.637*** (df = 10; 615)	136.633*** (df = 10; 524)
Note:	*p<0.1; **p<0.05; ***p<0.01. Reference category: SPD.	

Table 4.1: Election District Level Determinants of Candidates' Positions on Climate Protection

more specifically, whether it is located in East or West Germany, as discussed above. Note that this part of the analysis is only possible with a subset of those candidates who ran as a candidate in an election district. Those candidates who only ran on a party list were dropped from the analysis because no matching information on election district variables was available for those candidates.

The results in Table 4.1 paint an interesting picture and partially support my first hypothesis. In the election of 2017, the expected effect of election district characteristics fails to gain statistical significance. That is, the urbanity/rurality of an election district did not affect a candidate's position on climate protection. In the data on the election of 2021, however, I find the expected effect. Candidates in election districts with more motor vehicles per citizen adopt more right-leaning, meaning less strict, climate protection positions. For each additional motor vehicle per 1000 citizens in their respective election district, a candidate's position on climate protection increases by 0.002. More substantively, candidates adopt more right-leaning, less climate-protecting positions in election districts with a higher relative number of motor vehicles. Regarding the control variables, party affiliation is a highly relevant factor in both elections. Theoretically, candidates are expected to join political parties with similar policy positions. Consequently, candidates from more right-leaning parties should favor climate protection less than candidates nominated by left-leaning parties. Indeed, and as seen

in the descriptive analysis, candidates of the CDU, CSU, FDP, and AfD adopt more right-leaning positions on climate protection than those candidates from the reference category SPD. The multivariate regression analysis corroborates these findings. Candidates nominated by the CDU and CSU adopt significantly less climate-friendly (more right-leaning) positions than those candidates nominated by the SPD. In particular, candidates from the AfD take strong positions against climate protection, which is in line with the party's position, regularly displaying climate change skepticism (Küppers, 2024). Interestingly, FDP candidates also report significantly more right-leaning positions on climate protection than SPD candidates. The fiscally liberal party FDP (and their candidates) usually adopt left-leaning positions on socio-cultural issues (Debus and Wurthmann, 2024). Climate protection, however, is used as an issue to differentiate the party from the Greens and the SPD, as according to the findings in Table 4.1, candidates from the Green adopt stronger, more left-leaning positions on climate protection. This is especially interesting in the context of the recent German *traffic light coalition*, formed by SPD, FDP, and Greens, as I will discuss further below (Faas and Klingelhöfer, 2022). Finally, candidates nominated by the Left party also adopt more pro-climate positions compared to the reference category of SPD candidates. Concerning candidates' socio-demographic characteristics, their age does not affect their position significantly. Gender does affect candidates' positions, with female candidates adopting more left-leaning positions on climate protection than their male colleagues, but only in the election of 2021. The effect fails to gain statistical significance in the election of 2017. Also, whether an election district is located in East or West Germany does not seem to affect the respective candidate's position. To further illustrate the main effect found in the 2021 data, Figure 4.2 shows the substantive effect of the number of motor vehicles on candidates' climate protection positions.

H2 stipulates that positions from candidates nominated by the Green party should be less affected by the effect identified in H1 than candidates from other parties, as the former should value climate protection highly due to their party's inherent issue ownership and their voters' core interests. To analyze whether the effect found in the second model in Table 4.1 is moderated by a candidate's party affiliation, I rerun the models, including an interaction between the main independent variable and candidates' party affiliations. Table B.3 in Appendix B provides an overview of the results. In the first model, regarding the 2017 federal election, I do not find the hypothesized effect. However, the results are still interesting regarding the control variables. Even when the interaction effect is included, candidates from the FDP and AfD (the latter only on a 90%-level) take significantly more right-leaning positions than those candidates

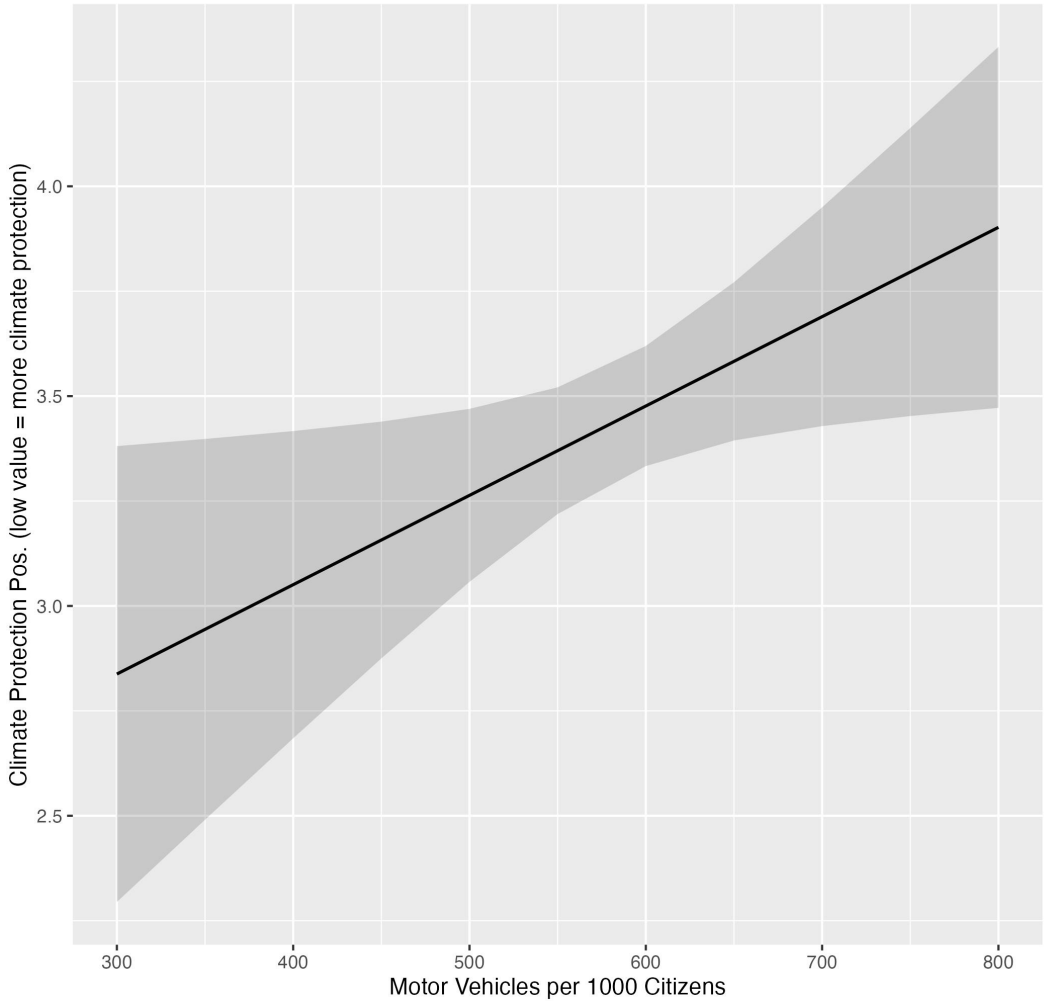

Figure 4.2: Predicted Candidate's Position on Climate Protection, depending on Motor Vehicles in Election District (Grey Area indicates 95%-CI Interval, 2021.)

nominated by the SPD. The interaction effect fails to gain statistical significance for all candidates but for candidates from the Left party, for whom the results suggest that higher motor vehicle density is associated with a more left-leaning position. Finally, candidates' age is (on a 90%-level) positively correlated with a more right position on climate protection, indicating that younger candidates took more climate-friendly positions. After the polarization of the issue and in the data on the election of 2021, I do find an effect in line with my theoretical expectations. First, the main effect is, as in the results for H1, significantly positive, meaning that candidates adopt more right-wing positions on climate protection when they are running in election districts with more motor vehicles per 1000 citizens. This effect is slightly mitigated for candidates of the Green party, albeit the effect is only significant at a 90%-level, which I interpret as support for H2. Beyond that, candidates from the FDP (on a 90%-level) and candidates

	Position on Climate Protection (OLS)	
	2017	2021
Age	0.003 (0.005)	0.010** (0.005)
CDU	2.559*** (0.250)	1.459*** (0.233)
CSU	2.421*** (0.544)	1.416*** (0.371)
FDP	2.826*** (0.234)	1.415*** (0.234)
Grüne	−1.733*** (0.221)	−1.489*** (0.215)
Die Linke	−1.101*** (0.233)	−1.031*** (0.229)
AfD	4.739*** (0.256)	7.030*** (0.285)
Female	−0.227 (0.154)	−0.269* (0.141)
Constant	3.531*** (0.309)	2.460*** (0.280)
Observations	795	715
R^2	0.587	0.645
Adjusted R^2	0.583	0.641
Residual Std. Error	1.942 (df = 786)	1.757 (df = 706)
F Statistic	139.767*** (df = 8; 786)	160.086*** (df = 8; 706)
Note:	*p<0.1; **p<0.05; ***p<0.01. Reference category: SPD.	

Table 4.2: Micro-Level Determinants of Candidates' Positions on Climate Protection

from the AfD adopt less climate-friendly positions than candidates from the SPD. The continuous cleavage between AfD and FDP on the one side and SPD (and Greens) on the other side warrants further attention, which I will address in the discussion below.

In the following, I turn to the third hypothesis. H3 stipulates that younger candidates favor more climate protection than older candidates. They are expected to adopt these positions to gain a more visible profile on a timely issue especially salient among younger voters. To provide empirical results, I run two regression models. These now include all candidates, including those that only ran on a party list and not as a candidate in a specific election district. As before, I control for party affiliation and gender.

Table 4.2 displays the regression results of the two models. They paint a similar picture to the results from the first analysis. I do not find any significant effect of a candidate's age on their position on climate protection in the 2017 data. In 2021, however, there is a significant positive effect. For each year a respective candidate is older, their position is 0.01 higher. In substantive terms, older candidates adopt less climate-friendly positions. This is very much in line with my third hypothesis. As before, party affiliation strongly predicts a candidate's position. In both data, CDU, CSU, and FDP candidates adopt more right-leaning climate protection positions than SPD ones. Additionally, AfD candidates, particularly, adopt loose climate protection positions compared to SPD candidates. Candidates from the Green and the Left adopt

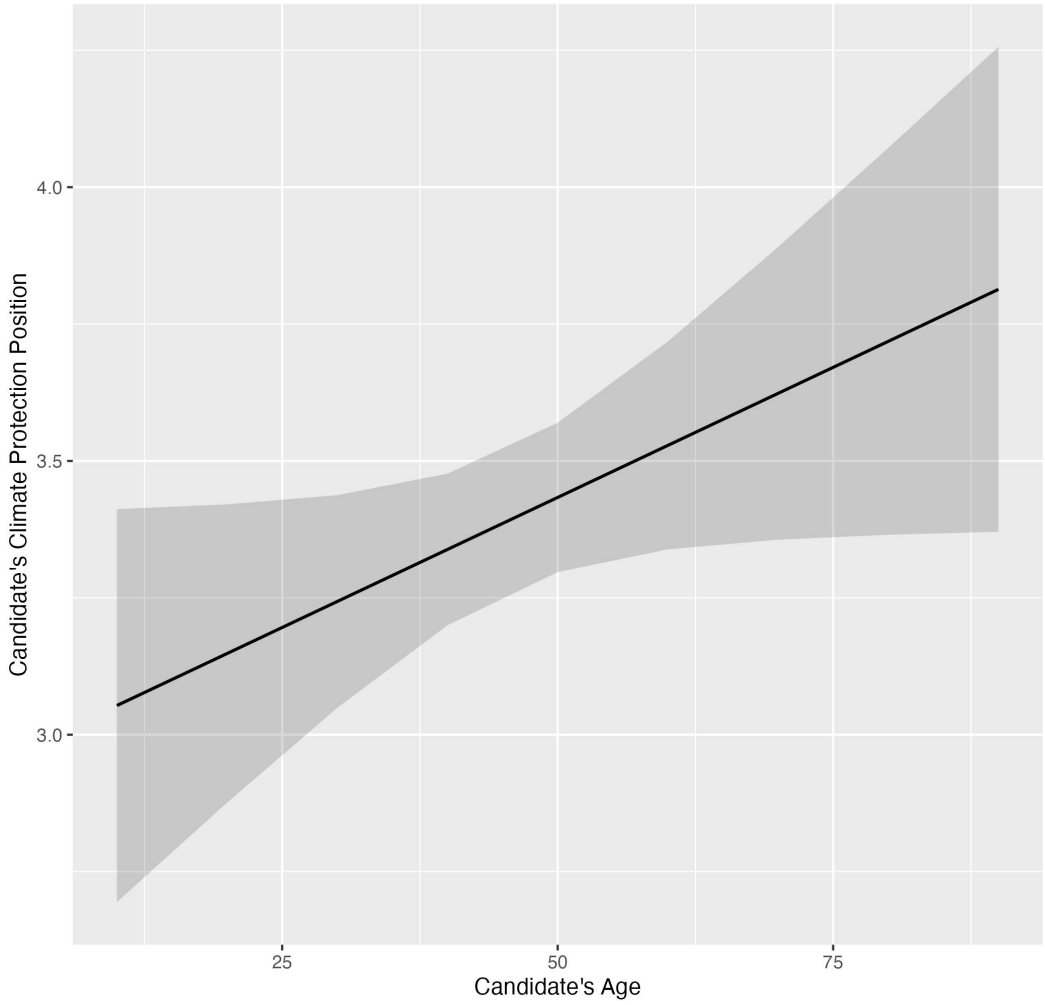

Figure 4.3: Predicted Candidate's Position on Climate Protection, depending on their Age (Grey Area indicates 95%-CI Interval, 2021.)

stronger climate-protecting positions than SPD candidates. Again, regarding climate protection, the results describe cleavage between SPD, Greens, and the Left on the one side and all other parties on the other. Gender is only significant in the election of 2021 (on a 90%-level), where female candidates adopt more pro-climate positions than their male colleagues. To provide a more intuitive understanding of the main effect, Figure 4.3 shows the substantive effect of a candidate's age on their position on climate protection in 2021.

Finally, in Table B.4 in Appendix B, I provide four models in total that include additional control variables. The first two models replicate the models in Table 4.1, and Models 3 and 4 replicate those in Table 4.2. For the first two models, I additionally control for a non-linear relationship of age with the dependent variable and for

the economic situation of the candidates' election districts. Specifically, I include a variable that captures the unemployment rate in the respective district, retrieved from the above-mentioned *Strukturdaten*. The results provide further robustness to my initial findings. Again, the main independent variable only has a significant effect in 2021. The effect size is quite similar to the one in the initial analysis. Party affiliation is again a strong predictor with the expected effects, with the above-described cleavage along an economic left/right arrangement of the parties being observable again. The gender control variable is again only significant in 2021, with female candidates supporting stronger climate protection than male candidates. The results suggest that older candidates adopt more right-leaning positions on climate protection than their younger competitors. The newly introduced control for a non-linear relationship between age and a candidate's position is also significant and negative in the election of 2021. This indicates an inversed U-shaped correlation. Finally, the control of a district's economic situation has no significant effect on candidates' positions.

As indicated, Table B.4 in the appendix also includes robustness checks for the models initially presented in Table 4.2. I again include a control for a non-linear relationship between the dependent variable and age for those models. I also control a dummy variable that takes the value of 1 if the candidate only ran for the popular vote in a district. If the candidate ran solely on a party list, the variable has the value 0. By doing so, I control for possible effects of the German mixed-member electoral system. Overall, the results provide additional robustness to the notion that a candidate's age significantly affects their climate protection position, but only in the election of 2021. The control variables also remain mostly similar. The gender control in the new model is significant on a 95%-level instead of only on a 90%-level as in the original model. The newly added variable of squared age only gained statistical significance in 2021, again indicating an inversed U-shaped correlation. The control for the district candidacy has no significant effect. Overall, these results lend further robustness to my findings.

4.5 Discussion and Conclusion

In this contribution, I explored the determinants of political candidates' positions on climate protection. Specifically, I focused on election districts' characteristics on a macro level and candidates' age on a micro level. For the former, I focused on a form of urban-rural divide by using the number of motor vehicles per 1000 citizens as a key structural characteristic of election districts. Following existing findings on the mecha-

nisms underlying the urban-rural divide, I expected candidates who run in more urban electoral districts to support climate protection more than their counterparts running in rural election districts to signal potential voters their position on the issue. Additionally, I argued that this effect should be moderated by party affiliation, as Green parties should value climate protection much more than other parties due to their issue ownership and their constituents' core interests. Similarly, I argued that younger candidates should adopt more climate-friendly positions than their older colleagues, given that climate protection is a highly salient issue among younger voters. To empirically address my hypotheses, I relied on GLES data from the German federal elections of 2017 and 2021 (Roßteutscher et al., 2018; GLES, 2023). My main finding is that the determinants of candidates' climate protection positions have changed between 2017 and 2021. While in 2017, party affiliation was the only significant factor (at least from the variables considered here) in determining candidates' positions, in 2021, I found multiple variables that align with my theoretical expectations. Indeed, candidates in more rural areas, as measured by the relative number of motor vehicles, adopt more right-leaning and, thus, less climate-friendly positions than those candidates running in more urban areas. Also, when considering candidates' socio-demographic characteristics, younger candidates adopted more climate-friendly positions than older candidates (only in 2021). The results of the moderating effect of party affiliation are less clear. In 2021, the effect of urbanity/rurality is diminished for Green candidates compared to candidates from the SPD.

How can one make sense of these results? The findings indicate that the strategic incentives for candidates have changed critically during the investigation period. As mentioned in the introduction, the issue of climate protection – especially during 2018 and 2019 – was characterized by a step increase of salience and a public debate following a polarization of the issue (Marquardt and Lederer, 2022). Specifically, this means that in 2021, more than in 2017, some political actors linked climate change politics to other political issues, such as the economy. The car industry, for example, was said to suffer under more strict climate protection. Moreover, driving a (fuel-powered) car was seemingly threatened by climate protection measures (Küppers, 2024). This could explain the difference in the effects that car-related structural variables have on candidates' positioning. While in 2017, there was no clear linkage between motor vehicles and climate protection, this relationship has become a political issue. The same with the effect of age. As we show in Chapter 3, climate action was the most pressing issue for German voters toward the end of the 2010s (Debus and Himmelrath, 2022). Younger MPs used that opportunity to signal to voters their sincere involvement by talking

more about the issue than their older colleagues. A similar effect could be the driving mechanism here. Younger candidates strategically adopted climate-friendly positions because they wanted to appeal to younger voters and could more plausibly argue their involvement.

The findings presented here also point to a crucial cleavage between the left-leaning parties of SPD, Greens, and the Left on the one hand and CDU, CSU, FDP, and AfD on the other hand. In particular, the latter two have (albeit with very different arguments) positioned themselves on the opposite side of the political spectrum to the issue-owning Green party. While this might be expected from the PRRP AfD, the implications of the FDP's positioning go beyond mere party competition, as both parties were (together with the SPD) members of the *traffic light coalition*, which until recently governed the federal state (Faas and Klingelhöfer, 2022). The FDP has taken opposing positions to their coalition partners on numerous issues. The findings in this paper suggest that climate protection might be one of the issues at the heart of the lasting tensions within the government that eventually led to the coalition's breakup in November 2024. Indeed, the Federal Constitutional Court's prohibition of reallocating COVID-19 relief funds to climate protection measures was one of the crucial topics during the ongoing election period (Angenendt and Kinski, 2024). The FDP – in contrast to the SPD and Greens – insisted on not taking on any new debt to close the resulting budget gap, which was one contributing factor to the eventual end of the coalition.

As always, this study has certain unresolved limitations that future research should investigate in greater detail. In this paper, I demonstrated how candidates' positions on climate protection evolved when the issue sharply rose in public salience. However, following 2020, the prominence of climate change discussions waned due to the onset of the COVID-19 pandemic. With more recent data on candidates' positions – potentially from the upcoming federal election – future research should explore how such a decrease in salience influences their positioning, especially considering that parties often adopt a wider range of positions on issues that are less salient (Tromborg, 2019). Given the findings that reveal significant differences between the 2017 and 2021 elections, one might anticipate results that are more similar to the 2017 data, as climate change currently holds lower salience. Additionally, candidates' electoral success based on their position-taking is an important topic beyond this study's scope. Understanding whether adopting certain stances impacts electoral outcomes remains an open question for further exploration. Finally, the results of this study align with existing research by showing that younger candidates and MPs hold distinct positions on climate change

and protection. Future research should investigate whether and how these positions translate into legislative actions in parliamentary settings. For instance, do young MPs spearhead cross-party initiatives on climate issues, or are the ideological cleavages outlined in this study too pronounced to overcome?

Acknowledgments

I am grateful to Marc Debus, Christian Stecker, and Oliver Rittmann for helpful comments on earlier versions of this paper.

APPENDIX

A

Appendix to Chapter 2: Exogenous Shocks and Party Competition.

A.1 Summary Statistics

Statistic	N	Mean	St. Dev.	Min	Max
Issue Attention (absl.)	482	29.392	56.397	0	553
Issue Attention (rel.)	482	2.056	3.121	0.000	27.049
Disaster	482	8.618	5.235	0	41
Government	482	0.373	0.484	0	1
Public Salience	295	11.484	9.472	0.599	35.757
GDP per capita (current US$)	295	42926.74	19063.14	13340	103554

Table A.1: Summary Statistics

A.2 Issue Attention Toward Climate Change (absolute) by Country and Party Family

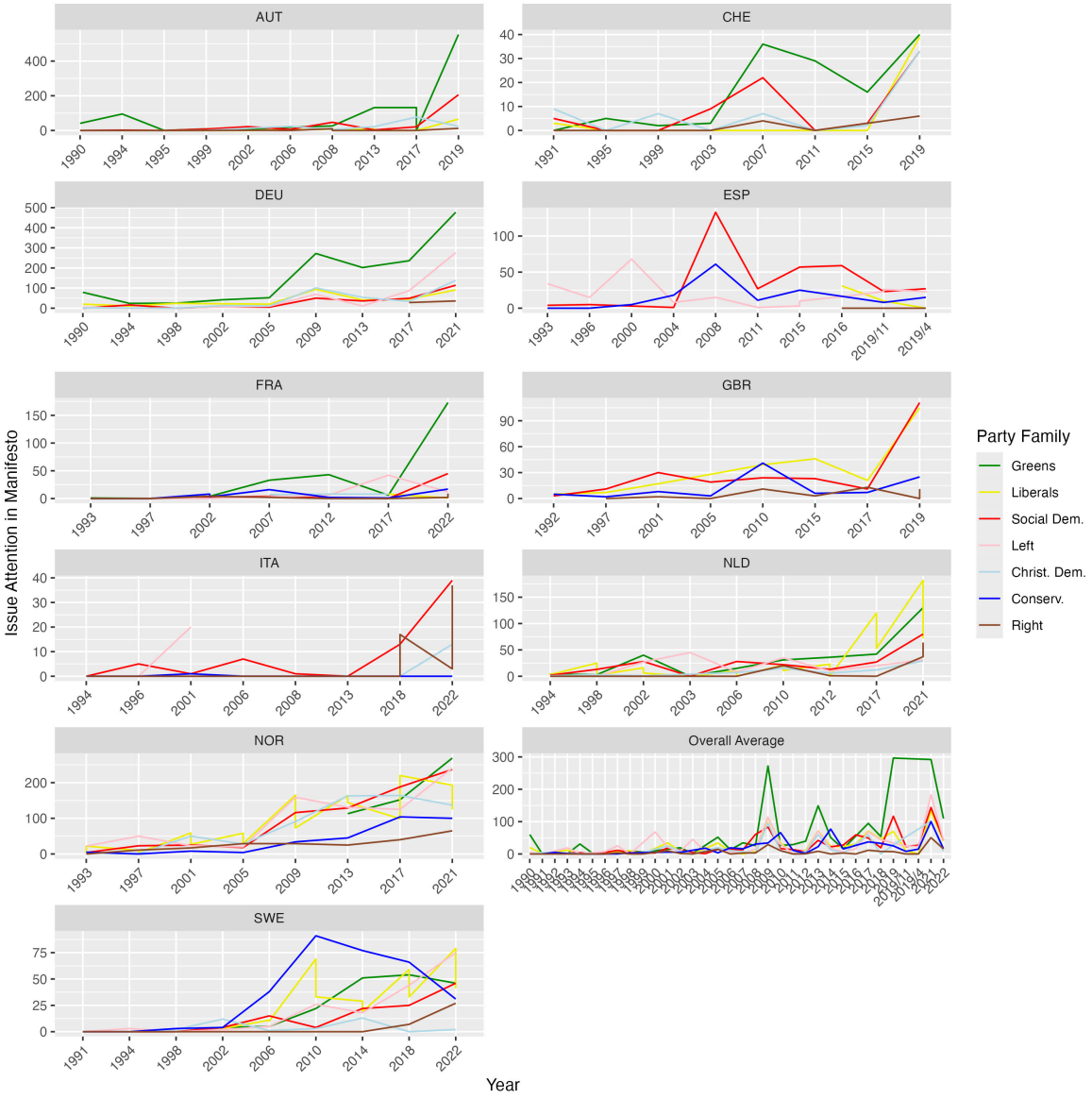

Figure A.1: Issue Attention Toward Climate Change by Country and Party Family (absolute)

A.3 Regression Results (Interactions)

	I.A. (absl.)	I.A. (%)	I.A. (absl.)	I.A. (%)	I.A. (absl.)	I.A. (%)	I.A. (absl.)	I.A. (%)
Disasters	-3.930*	-0.2068·	-3.110*	-0.1392*				
	(1.871)	(0.1038)	(1.240)	(0.0523)				
Government	-13.71	-0.1649			-29.16·	-0.3831		
	(9.692)	(0.3724)			(15.46)	(0.6703)		
Disasters × Government	0.8731	0.0176						
	(0.7172)	(0.0336)						
Greens			50.52*	2.261***			91.08*	2.231
			(21.86)	(0.6076)			(42.66)	(1.326)
Liberals			5.380	-0.2387			4.393	-0.4486
			(8.217)	(0.5745)			(13.73)	(0.9836)
Left			19.27	-0.0369			27.16	-0.4068
			(11.56)	(0.4417)			(20.32)	(0.6973)
Christ. Democrats			-8.109	-0.6963			2.007	0.1202
			(7.652)	(0.5249)			(13.01)	(0.7722)
Conservatives			-12.05·	0.0634			-18.93	0.6879
			(6.132)	(0.5028)			(11.62)	(1.117)
Right			-32.45***	-1.328·			-40.75**	-0.1350
			(8.829)	(0.6785)			(14.84)	(1.125)
Disasters × Greens			-1.442	-0.0132				
			(1.720)	(0.0556)				
Disasters × Liberals			-0.5068	0.0225				
			(0.6975)	(0.0643)				
Disasters × Left			-2.008·	-0.0005				
			(1.130)	(0.0473)				
Disasters × Christ. Democrats			-0.2610	-0.0214				
			(0.5327)	(0.0435)				
Disasters × Conservatives			0.5430	-0.1045				
			(0.9309)	(0.0863)				
Disasters × Right			0.9268·	-0.0661				
			(0.5038)	(0.0816)				
Disasters (logged)					-43.46*	-1.608*	-32.18*	-1.036*
					(17.16)	(0.7777)	(13.50)	(0.4576)
Disasters (logged) × Government					10.95·	0.1838		
					(6.042)	(0.3135)		
Disasters (logged) × Greens							-26.09	-0.0823
							(17.76)	(0.6338)
Disasters (logged) × Liberals							-1.467	0.2046
							(5.954)	(0.5239)
Disasters (logged) × Left							-12.04	0.2030
							(9.084)	(0.3954)
Disasters (logged) × Christ. Democrats							-6.419	-0.5062
							(5.472)	(0.4158)
Disasters (logged) × Conservatives							6.130	-0.7440
							(6.981)	(0.7191)
Disasters (logged) × Right							8.043	-0.8867
							(6.195)	(0.7176)
Fixed-effects								
Year	✓	✓	✓	✓	✓	✓	✓	✓
Fit statistics								
Observations	482	482	482	482	474	474	474	474
R^2	0.40182	0.37667	0.48928	0.50112	0.41473	0.37359	0.50347	0.49775
Within R^2	0.04306	0.03660	0.18297	0.22895	0.06549	0.02871	0.20718	0.22123

Clustered (Year) standard-errors in parentheses. Reference category: Social Democrats.
*Signif. Codes: ***: 0.001, **: 0.01, *: 0.05, .: 0.1*

Table A.2: Determinants of Issue Attention toward Climate Change (Interactions)

A.4 Regression Results (3 Month Period)

	Issue Att. (1)	Issue Att. (%) (2)	Issue Att. (3)	Issue Att. (%) (4)
Disasters (3 Month)	-3.560*	-0.2726**		
	(1.458)	(0.0772)		
Disasters (3 Month, logged)			-24.70*	-0.6042*
			(9.985)	(0.2903)
Greens	37.46**	2.103***	34.19*	1.737***
	(10.72)	(0.3434)	(12.74)	(0.3528)
Liberals	1.447	-0.0561	-2.888	-0.4115
	(3.676)	(0.3940)	(3.718)	(0.4279)
Left	3.761	-0.0450	0.5755	-0.4138
	(3.687)	(0.3457)	(4.476)	(0.3634)
Christ. Democrats	-10.67*	-0.9443*	-11.85*	-0.7250·
	(4.949)	(0.4294)	(5.602)	(0.3968)
Conservatives	-8.199*	-0.8252·	-10.32*	-0.8641·
	(3.858)	(0.4548)	(3.968)	(0.4818)
Right	-23.63***	-1.863**	-24.10***	-1.786**
	(5.714)	(0.5454)	(6.415)	(0.6049)
Fixed-effects				
Year	✓	✓	✓	✓
Fit statistics				
Observations	482	482	399	399
R^2	0.48522	0.51909	0.49353	0.50242
Within R^2	0.17648	0.25672	0.19914	0.19609

*Clustered (Year) standard-errors in parentheses. Reference category: Social Democrats. Signif. Codes: ***: 0.001, **: 0.01, *: 0.05, .: 0.1*

Table A.3: Determinants of Issue Attention toward Climate Change (Disasters in 3 month period)

A.5 Regression Results (Lagged dependent variable)

	I. A. (lagged) (1)	I. A. (lagged, %) (2)	I. A. (lagged) (3)	I. A. (lagged, %) (4)
Disasters	-1.206	-0.0071		
	(1.007)	(0.0636)		
Disasters (logged)			-11.46·	0.0207
			(6.723)	(0.4243)
Greens	17.24·	0.2043	16.11·	0.1132
	(9.018)	(0.4274)	(9.125)	(0.4254)
Liberals	-3.429	-0.4402	-4.960	-0.4812
	(4.343)	(0.4943)	(4.148)	(0.4992)
Left	0.0649	-0.2878	-1.353	-0.3196
	(5.364)	(0.4954)	(5.310)	(0.5027)
Christ. Democrats	-7.447	-0.6625	-9.155	-0.6073
	(6.106)	(0.4565)	(6.054)	(0.4590)
Conservatives	-6.785	-0.6955	-7.214	-0.7390
	(4.847)	(0.5263)	(4.904)	(0.5431)
Right	-9.706·	-0.7965	-11.24*	-0.8485
	(5.635)	(0.5948)	(5.480)	(0.6103)
Fixed-effects				
Year	✓	✓	✓	✓
Fit statistics				
Observations	407	407	399	399
R^2	0.32090	0.31771	0.31601	0.31412
Within R^2	0.05330	0.02266	0.05759	0.02136

*Clustered (Year) standard-errors in parentheses. Reference category: Social Democrats. Signif. Codes: ***: 0.001, **: 0.01, *: 0.05, .: 0.1*

Table A.4: Determinants of Issue Attention toward Climate Change (lagged DV)

APPENDIX

B

Appendix to Chapter 4: Political Candidates' Positions on Climate Protection.

B.1 Summary Statistics

Statistic	N	Mean	St. Dev.	Min	Max
Climate Protection Position	795	4.5	3.0	1	11
Motor Vehicles per 1000 Inhabitants	631	673.7	105.0	394.2	977.4
Age	803	48.7	13.0	18	81
Female	803	0.3	0.5	0	1
East Germany	803	0.2	0.4	0	1
Unemployment rate distr.	631	5.975	2.383	2	14.1
Distr. candidacy only	803	0.233	0.423	0	1

Table B.1: Summary Statistics 2017

Statistic	N	Mean	St. Dev.	Min	Max
Climate Protection Position	715	3.4	2.9	1	11
Motor Vehicles per 1000 Inhabitants	548	580.9	82.9	332.9	791.6
Age	735	45.3	13.9	18	83
Female	735	0.4	0.5	0	1
East Germany	735	0.2	0.4	0	1
Unemployment rate distr.	548	6.213	2.181	2.8	12.1
Distr. candidacy only	735	0.219	0.414	0	1

Table B.2: Summary Statistics 2021

B.2 Regression Results Interactions (H2)

	Position on Climate Protection (OLS)	
	2017	2021
Motor Vehicles per 1000 Citizens	0.0004 (0.001)	0.005** (0.002)
CDU	0.477 (1.865)	−0.839 (2.138)
CSU	7.315 (18.480)	−3.671 (12.721)
FDP	5.320*** (1.646)	3.515** (1.772)
Grüne	0.228 (1.415)	1.308 (1.654)
Die Linke	2.404 (1.569)	1.234 (1.735)
AfD	2.978* (1.696)	8.608*** (1.823)
Age	0.011* (0.006)	0.007 (0.005)
Gender: Female	−0.200 (0.173)	−0.262 (0.161)
East Germany	−0.329 (0.202)	0.231 (0.195)
Motor Veh. X CDU	0.003 (0.003)	0.004 (0.004)
Motor Veh. X CSU	−0.006 (0.023)	0.008 (0.020)
Motor Veh. X FDP	−0.004 (0.002)	−0.004 (0.003)
Motor Veh. X Grüne	−0.003 (0.002)	−0.005* (0.003)
Motor Veh. X Die Linke	−0.005** (0.002)	−0.004 (0.003)
Motor Veh. X AfD	0.003 (0.003)	−0.003 (0.003)
Constant	2.960*** (1.066)	−0.278 (1.349)
Observations	626	535
R^2	0.615	0.728
Adjusted R^2	0.605	0.719
Residual Std. Error	1.875 (df = 609)	1.630 (df = 518)
F Statistic	60.861*** (df = 16; 609)	86.584*** (df = 16; 518)
Note:	*p<0.1; **p<0.05; ***p<0.01. Reference category: SPD.	

Table B.3: Determinants of Candidates' Positions on Climate Protection (incl. Interactions)

B.3 Regression Results with Additional Controls

	Position on Climate Protection (OLS)			
	2017	2021	2017	2021
Motor Vehicles per 1000 Citizens	−0.0004 (0.001)	0.003** (0.001)		
Age	0.015 (0.038)	0.084** (0.036)	0.009 (0.034)	0.091*** (0.033)
CDU	2.282*** (0.318)	1.177*** (0.284)	2.570*** (0.251)	1.457*** (0.232)
CSU	2.981*** (0.970)	1.531*** (0.576)	2.442*** (0.546)	1.427*** (0.371)
FDP	2.829*** (0.254)	1.353*** (0.244)	2.836*** (0.235)	1.435*** (0.233)
Grüne	−1.729*** (0.235)	−1.714*** (0.232)	−1.698*** (0.227)	−1.446*** (0.215)
Die Linke	−1.140*** (0.252)	−1.284*** (0.237)	−1.040*** (0.250)	−0.854*** (0.247)
AfD	4.670*** (0.291)	7.012*** (0.284)	4.790*** (0.267)	7.158*** (0.297)
Age (squared)	−0.0001 (0.0004)	−0.001** (0.0004)	−0.0001 (0.0004)	−0.001** (0.0004)
Female	−0.202 (0.175)	−0.292* (0.161)	−0.248 (0.157)	−0.310** (0.142)
Unemploymentrate Distr.	0.050 (0.046)	0.026 (0.049)		
East Germany	−0.411* (0.215)	0.216 (0.195)		
District candidacy only			−0.121 (0.184)	−0.202 (0.185)
Constant	3.195*** (1.229)	−0.683 (1.307)	3.397*** (0.781)	0.806 (0.717)
Observations	626	535	795	715
R^2	0.607	0.725	0.587	0.649
Adjusted R^2	0.599	0.719	0.582	0.644
Residual Std. Error	1.889 (df = 613)	1.631 (df = 522)	1.944 (df = 784)	1.750 (df = 704)
F Statistic	78.865*** (df = 12; 613)	114.910*** (df = 12; 522)	111.644*** (df = 10; 784)	129.957*** (df = 10; 704)
Note:				*p<0.1; **p<0.05; ***p<0.01, Reference category: SPD.

Table B.4: Determinants of Candidates' Positions on Climate Protection (incl. additional controls)

Bibliography

Abou-Chadi, Tarik. 2016. "Niche party success and mainstream party policy shifts–how green and radical right parties differ in their impact." *British Journal of Political Science* 46(2):417–436.

Abou-Chadi, Tarik, Christoffer Green-Pedersen and Peter B Mortensen. 2020. "Parties' policy adjustments in response to changes in issue saliency." *West European Politics* 43(4):749–771.

Adams, James, Michael Clark, Lawrence Ezrow and Garrett Glasgow. 2006. "Are niche parties fundamentally different from mainstream parties? The causes and the electoral consequences of Western European parties' policy shifts, 1976–1998." *American Journal of Political Science* 50(3):513–529.

Adams, James and Zeynep Somer-Topcu. 2009. "Policy adjustment by parties in response to rival parties' policy shifts: Spatial theory and the dynamics of party competition in twenty-five post-war democracies." *British Journal of Political Science* 39(4):825–846.

Anderson, Brilé, Tobias Böhmelt and Hugh Ward. 2017. "Public opinion and environmental policy output: a cross-national analysis of energy policies in Europe." *Environmental Research Letters* 12(11):114011.

Andeweg, Rudy B and Lia Nijzink. 1995. Beyond the Two-body Image: Relations between Ministers and MPs. In *Parliaments and Majority Rule in Western Europe*, ed. Herbert Döhring. St. Martin's Press pp. 152–178.

Angenendt, Michael and Lucy Kinski. 2024. "Germany: Political Developments and

Data in 2023: Major Tensions within the Governing Coalition." *European Journal of Political Research Political Data Yearbook* .

Arndt, Christoph, Daphne Halikiopoulou and Christos Vrakopoulos. 2023. "The centre-periphery divide and attitudes towards climate change measures among Western Europeans." *Environmental Politics* 32(3):381–406.

Atchison, Amy L and Ian Down. 2019. "The effects of women officeholders on environmental policy." *Review of Policy Research* 36(6):805–834.

Austen-Smith, David. 1990. "Information transmission in debate." *American Journal of Political Science* 34(1):124–152.

Baccini, Leonardo and Lucas Leemann. 2021. "Do natural disasters help the environment? How voters respond and what that means." *Political Science Research and Methods* 9(3):468–484.

Bäck, Hanna and Marc Debus. 2019. "When do women speak? A comparative analysis of the role of gender in legislative debates." *Political Studies* 67(3):576–596.

Bäck, Hanna and Marc Debus. 2020. "Personalized versus partisan representation in the speeches of migrant members of parliament in the German bundestag." *Ethnic and Racial Studies* 43(9):1673–1691.

Bäck, Hanna, Marc Debus and Jorge M. Fernandes. 2021. *The politics of legislative debates*. Oxford University Press.

Bakaki, Zorzeta, Tobias Böhmelt and Hugh Ward. 2020. "The triangular relationship between public concern for environmental issues, policy output, and media attention." *Environmental Politics* 29(7):1157–1177.

Banholzer, Sandra, James Kossin and Simon Donner. 2014. The impact of climate change on natural disasters. In *Reducing Disaster: Early Warning Systems For Climate Change*, ed. Zinta Zommers and Ashbindu Singh. Dordrecht: Springer pp. 21–49.

Barber, Greg and Andrew Klassen. 2021. "Climate change, the Australian Greens, and dynamics of party competition across five national elections in Australia." *Australian Journal of Political Science* 56(1):56–72.

Barrie, Christopher, Thomas G Fleming and Sam S Rowan. 2024. "Does Protest Influence Political Speech? Evidence from UK Climate Protest, 2017–2019." *British Journal of Political Science* 54(2):456–473.

Båtstrand, Sondre. 2014. "Giving content to new politics: From broad hypothesis to empirical analysis using Norwegian manifesto data on climate change." *Party Politics* 20(6):930–939.

Båtstrand, Sondre. 2015. "More than markets: A comparative study of nine conservative parties on climate change." *Politics & Policy* 43(4):538–561.

Baumann, Markus. 2018. "Turning liberal: Legislators' individual preferences and the regulation of pre-implantation genetic diagnosis in Switzerland." *Swiss Political Science Review* 24(1):16–40.

Baumann, Markus, Marc Debus and Jochen Müller. 2015. "Personal characteristics of MPs and legislative behavior in moral policymaking." *Legislative Studies Quarterly* 40(2):179–210.

Bechtel, Michael M, Federica Genovese and Kenneth F Scheve. 2019. "Interests, norms and support for the provision of global public goods: the case of climate co-operation." *British Journal of Political Science* 49(4):1333–1355.

Bechtel, Michael M and Jens Hainmueller. 2011. "How lasting is voter gratitude? An analysis of the short-and long-term electoral returns to beneficial policy." *American Journal of Political Science* 55(4):852–868.

Berger, Sebastian, Viktoria Cologna and Jan M Bauer. 2024. "Mitigating Climate Change Via the Demand Side and Behavioral Insights: Policy Recommendation and Current Challenges." *Policy Insights from the Behavioral and Brain Sciences* 11(2):164–171.

Bergmann, Ariel, Sergio Colombo and Nick Hanley. 2008. "Rural versus urban preferences for renewable energy developments." *Ecological economics* 65(3):616–625.

Berker, Lars E. and Jan Pollex. 2021. "Friend or foe?—comparing party reactions to Fridays for Future in a party system polarised between AfD and Green Party." *Zeitschrift für vergleichende Politikwissenschaft* 15(2):1–19.

Bevan, Shaun. 2019. Gone Fishing: The creation of the comparative agendas project master codebook. In *Comparative policy agendas: Theory, Tools, Data*, ed. Frank R. Baumgartner, Christian Breunig and Emiliano Grossmann. Oxford University Press, Oxford, United Kingdom, pp. 17–34.

Bevan, Shaun, Enrico Borghetto and Henrik Seeberg. 2024. "Do different parties respond to different problems? A comparative study of parliamentary questions across multiple countries." *Journal of European Public Policy* 31(7):1856–1878.

Birch, Sarah. 2023. "The electoral benefits of environmental position-taking: Floods and electoral outcomes in England 2010–2019." *European Journal of Political Research* 62(1):95–117.

Bird, Karen, Thomas Saalfeld and Andreas M. Wüst. 2011. *The Political Representation of Immigrants and Minorities. Voters, parties and parliaments in liberal democracies*. Routledge, New York.

Birkland, Thomas A. 1997. *After disaster: Agenda setting, public policy, and focusing events*. Georgetown University Press.

Birkland, Thomas A. 2006. *Lessons of disaster: Policy change after catastrophic events*. Georgetown University Press.

Birkland, Thomas A. 2016. Policy process theory and natural hazards. In *Oxford research encyclopedia of Natural Hazard Science*. Oxford University Press.

Blocker, Jean T. and Douglas Lee Eckberg. 1997. "Gender and environmentalism: Results from the 1993 general social survey." *Social Science Quarterly* 78(4):841–858.

Blumenau, Jack. 2021. "The effects of female leadership on women's voice in political debate." *British Journal of Political Science* 51(2):750–771.

Boasson, Elin Lerum and Michaël Tatham. 2023. "Climate policy: from complexity to consensus?" *Journal of European Public Policy* 30(3):401–424.

Boecher, Michael, Ulrike Zeigermann, Lars E Berker and Djamila Jabra. 2022. "Climate policy expertise in times of populism–knowledge strategies of the AfD regarding Germany's climate package." *Environmental Politics* 31(5):820–840.

Böhmelt, Tobias. 2020. "Environmental disasters and public-opinion formation: A natural experiment." *Environmental Research Communications* 2:081002.

Bol, Damien, Thomas Gschwend, Thomas Zittel and Steffen Zittlau. 2021. "The importance of personal vote intentions for the responsiveness of legislators: A field experiment." *European Journal of Political Research* 60(2):455–473.

Bord, Richard J, Robert E O'connor and Ann Fisher. 2000. "In what sense does the public need to understand global climate change?" *Public understanding of science* 9(3):205.

Bräuninger, Thomas and Marc Debus. 2009. "Legislative agenda-setting in parliamentary democracies." *European Journal of Political Research* 48(6):804–839.

Bräuninger, Thomas, Marc Debus and Fabian Wüst. 2017. "Governments, parliaments and legislative activity." *Political Science Research and Methods* 5(3):529–554.

Brown, Kirk Warren and Tim Kasser. 2005. "Are psychological and ecological well-being compatible? The role of values, mindfulness, and lifestyle." *Social indicators research* 74:349–368.

Browne, Eric C, John P Frendreis and Dennis W Gleiber. 1984. "An "events" approach to the problem of cabinet stability." *Comparative Political Studies* 17(2):167–197.

Budge, Ian and Dennis Farlie. 1983. *Explaining and predicting elections: Issue effects and party strategies in twenty-three democracies.* London: George Allen & Unwin.

Burden, Barry C. 2000. "Voter turnout and the national election studies." *Political Analysis* 8(4):389–398.

Burden, Barry C. 2007. *Personal roots of representation.* Princeton University Press.

Burstein, Paul. 2003. "The impact of public opinion on public policy: A review and an agenda." *Political research quarterly* 56(1):29–40.

Bush, Sarah Sunn and Amanda Clayton. 2023. "Facing change: Gender and climate change attitudes worldwide." *American Political Science Review* 117(2):591–608.

Calca, Patrícia and Martin Gross. 2019. "To adapt or to disregard? Parties' reactions to external shocks." *West European Politics* 42(3):545–572.

Capstick, Stuart, Lorraine Whitmarsh, Wouter Poortinga, Nick Pidgeon and Paul Upham. 2015. "International trends in public perceptions of climate change over the past quarter century." *Wiley Interdisciplinary Reviews: Climate Change* 6(1):35–61.

Carnes, Nicholas. 2012. "Does the numerical underrepresentation of the working class in Congress matter?" *Legislative studies quarterly* 37(1):5–34.

Carter, Neil. 2013. "Greening the mainstream: party politics and the environment." *Environmental Politics* 22(1):73–94.

Carter, Neil and Mitya Pearson. 2022. "From green crap to net zero: Conservative climate policy 2015–2022." *British Politics* .

Carter, Neil, Robert Ladrech, Conor Little and Vasiliki Tsagkroni. 2018. "Political parties and climate policy: A new approach to measuring parties' climate policy preferences." *Party politics* 24(6):731–742.

Catalano, Ana. 2009. "Women acting for women? An analysis of gender and debate participation in the British House of Commons 2005–2007." *Politics & Gender* 5(1):45–68.

Centre for Research on the Epidemiology of Disasters (CRED). 2022. "EM-DAT.". UCLouvain, Brussels, Belgium – www.emdat.be.

Chen, Jowei. 2013. "Voter partisanship and the effect of distributive spending on political participation." *American Journal of Political Science* 57(1):200–217.

Chmutina, Ksenia and Jason Von Meding. 2019. "A dilemma of language: "Natural disasters" in academic literature." *International Journal of Disaster Risk Science* 10:283–292.

Clarke, Harold D, David Sanders, Marianne C Stewart and Paul F Whiteley. 2009. *Performance politics and the British voter*. Cambridge University Press.

Compston, Hugh and Ian Bailey. 2008. *Turning down the heat: the politics of climate policy in affluent democracies*. Springer.

Corner, Adam, Ezra Markowitz and Nick Pidgeon. 2014. "Public engagement with climate change: the role of human values." *Wiley Interdisciplinary Reviews: Climate Change* 5(3):411–422.

Crawley, Sam, Hilde Coffé and Ralph Chapman. 2022. "Climate belief and issue salience: comparing two dimensions of public opinion on climate change in the EU." *Social Indicators Research* 162(1):307–325.

Criado, Henar. 2017. "What makes terrorism salient? Terrorist strategies, political competition, and public opinion." *Terrorism and Political Violence* 29(2):197–214.

Curran, Ben, Kyle Higham, Elisenda Ortiz and Demival Vasques Filho. 2018. "Look who's talking: Two-mode networks as representations of a topic model of New Zealand parliamentary speeches." *PloS one* 13(6):e0199072.

Das, Kaustav, Atisha Ghosh and Pushkar Maitra. 2024. "Exogenous shocks and electoral outcomes." *Public Choice* 201:145–179.

Däubler, Thomas. 2012. "The preparation and use of election manifestos: Learning from the Irish case." *Irish Political Studies* 27(1):51–70.

De Vries, Catherine E and Marc Van de Wardt. 2011. EU Issue Salience and Domestic Party Competition. In *Issue Salience in International Politics*, ed. Kai Oppermann and Henrike Viehrig. Routledge pp. 173–187.

Debus, Marc and Jale Tosun. 2021. "The manifestation of the green agenda: a comparative analysis of parliamentary debates." *Environmental Politics* 30(6):918–937.

Debus, Marc and L. Constantin Wurthmann. 2024. "LGB+ identity and its implications for the policy positions of parliamentary candidates." *European Political Science Review* 16:483—-502.

Debus, Marc and Noam Himmelrath. 2022. "Advocates of climate action? The age of members of parliament and their activity in legislative debates on climate change." *Climate Action* 1(1):1–16.

Dermont, Clau and Lorenz Kammermann. 2020. "Political candidates and the energy issue: Nuclear power position and electoral success." *Review of Policy Research* 37(3):369–385.

Dolezal, Martin, Laurenz Ennser-Jedenastik, Wolfgang C Müller and Anna Katharina Winkler. 2012. "The life cycle of party manifestos: The Austrian case." *West European Politics* 35(4):869–895.

Dolezal, Martin, Laurenz Ennser-Jedenastik, Wolfgang C Müller and Anna Katharina Winkler. 2014. "How parties compete for votes: A test of saliency theory." *European Journal of Political Research* 53(1):57–76.

Downs, Anthony. 1957. "An economic theory of political action in a democracy." *Journal of political economy* 65(2):135–150.

Dür, Andreas and Gemma Mateo. 2014. "Public opinion and interest group influence: how citizen groups derailed the Anti-Counterfeiting Trade Agreement." *Journal of European Public Policy* 21(8):1199–1217.

Eder, Nikolaus, Marcelo Jenny and Wolfgang C Müller. 2017. "Manifesto functions: How party candidates view and use their party's central policy document." *Electoral Studies* 45:75–87.

Einstein, Katherine Levine, David M. Glick and Maxwell Palmer. 2020. "Can Mayors lead on climate change? Evidence from six years of surveys." *The Forum* 18(1):71–86.

Eshima, Shusei and Daniel M Smith. 2022. "Just a number? Voter evaluations of age in candidate-choice experiments." *The Journal of Politics* 84(3):1856–1861.

Euchner, Eva-Maria and Caroline Preidel. 2017. "Politicisation without party discipline. A new perspective on Christian democracy in modern times." *Parliamentary Affairs* 70(3):465–488.

Ewald, Jens, Thomas Sterner and Erik Sterner. 2022. "Understanding the resistance to carbon taxes: Drivers and barriers among the general public and fuel-tax protesters." *Resource and Energy Economics* 70:101331.

Faas, Thorsten and Tristan Klingelhöfer. 2022. "German politics at the traffic light: new beginnings in the election of 2021." *West European Politics* 45(7):1506–1521.

Fairbrother, Malcolm. 2022. "Public opinion about climate policies: A review and call for more studies of what people want." *PLoS Climate* 1(5):e0000030.

Falkner, Robert. 2016. "The Paris Agreement and the new logic of international climate politics." *International Affairs* 92(5):1107–1125.

Falzon, Danielle, J. Timmons Roberts and Robert J. Brulle. 2021. Sociology and climate change: A review and research agenda. In *Handbook of environmental sociology*, ed. Jorgenson A. Malin S.A. Peek L. Pellow D.N. Huang X. Schaefer Caniglia, B. Springer pp. 189–217.

Farstad, Fay M. 2018. "What explains variation in parties' climate change salience?" *Party Politics* 24(6):698–707.

Fawzy, Samer, Ahmed I Osman, John Doran and David W Rooney. 2020. "Strategies for mitigation of climate change: a review." *Environmental Chemistry Letters* 18:2069–2094.

Finnegan, Jared J. 2022. "Institutions, climate change, and the foundations of long-term policymaking." *Comparative Political Studies* 55(7):1198–1235.

Finnegan, Jared J. 2023. "Changing prices in a changing climate: Electoral competition and fossil fuel taxation." *Comparative Political Studies* 56(8):1257–1290.

Finseraas, Henning, Bjørn Høyland and Martin G Søyland. 2021. "Climate politics in hard times: How local economic shocks influence MPs attention to climate change." *European Journal of Political Research* 60(3):738–747.

Forchtner, Bernhard. 2019. "Climate change and the far right." *Wiley Interdisciplinary Reviews: Climate Change* 10(5):e604.

Franzen, Axel and Dominikus Vogl. 2013. "Two decades of measuring environmental attitudes: A comparative analysis of 33 countries." *Global Environmental Change* 23(5):1001–1008.

Franzmann, Simon T, Heiko Giebler and Thomas Poguntke. 2020. "It's no longer the economy, stupid! Issue yield at the 2017 German federal election." *West European Politics* 43(3):610–638.

Gagliarducci, Stefano, M Daniele Paserman and Eleonora Patacchini. 2019. Hurricanes, climate change policies and electoral accountability. Technical report National Bureau of Economic Research. NBER Working Paper No. 25835.

Gallagher, Michael. 2005. *The Politics of Electoral Systems*. Oxford University Press.

Garside, Susanna and Haoyu Zhai. 2022. "If not now, when? Climate disaster and the Green vote following the 2021 Germany floods." *Research & Politics* 9(4):1–8.

Gasper, John T and Andrew Reeves. 2011. "Make it rain? Retrospection and the attentive electorate in the context of natural disasters." *American Journal of Political Science* 55(2):340–355.

Gessler, Theresa and Sophia Hunger. 2022. "How the refugee crisis and radical right parties shape party competition on immigration." *Political Science Research and Methods* 10(3):524–544.

Giannakis, Elias and Adriana Bruggeman. 2020. "Regional disparities in economic resilience in the European Union across the urban–rural divide." *Regional Studies* 54(9):1200–1213.

Giddens, Anthony. 2009. *The Politics of Climate Change*. Cambridge, UK: Polity Press.

Gimpel, James G, Nathan Lovin, Bryant Moy and Andrew Reeves. 2020. "The urban–rural gulf in American political behavior." *Political behavior* 42:1343–1368.

Giordono, Leanne, Hilary Boudet and Alexander Gard-Murray. 2020. "Local adaptation policy responses to extreme weather events." *Policy sciences* 53(4):609–636.

GLES. 2023. "GLES Candidate Study 2021.". GESIS, Cologne. ZA7704 Datafile Version 2.0.0, doi:10.4232/1.14100.

Goerres, Achim. 2008. "The grey vote: Determinants of older voters' party choice in Britain and West Germany." *Electoral Studies* 27(2):285–304.

Green, Jane. 2007. "When voters and parties agree: Valence issues and party competition." *Political Studies* 55(3):629–655.

Green-Pedersen, Christoffer. 2007. "The growing importance of issue competition: The changing nature of party competition in Western Europe." *Political studies* 55(3):607–628.

Green-Pedersen, Christoffer and Peter B Mortensen. 2010. "Who sets the agenda and who responds to it in the Danish parliament? A new model of issue competition and agenda-setting." *European Journal of Political Research* 49(2):257–281.

Green-Pedersen, Christoffer and Peter B Mortensen. 2015. "Avoidance and engagement: Issue competition in multiparty systems." *Political Studies* 63(4):747–764.

Green-Pedersen, Christoffer and Simon Otjes. 2019. "A hot topic? Immigration on the agenda in Western Europe." *Party Politics* 25(3):424–434.

Guinaudeau, Isabelle and Simon Persico. 2014. "What is issue competition? Conflict, consensus and issue ownership in party competition." *Journal of Elections, Public Opinion and Parties* 24(3):312–333.

Hájek, Lukáš. 2019. "Effects of age and tenure on MPs' legislative behaviour in the Czech Republic." *The Journal of legislative studies* 25(4):553–575.

Hargrave, Lotte and Jack Blumenau. 2022. "No longer conforming to stereotypes? Gender, political style and parliamentary debate in the UK." *British Journal of Political Science* 52(4):1584–1601.

Healy, Andrew and Neil Malhotra. 2009. "Myopic voters and natural disaster policy." *American Political Science Review* 103(3):387–406.

Hess, David J and Madison Renner. 2019. "Conservative political parties and energy transitions in Europe: Opposition to climate mitigation policies." *Renewable and Sustainable Energy Reviews* 104:419–428.

Hilbig, Hanno and Sascha Riaz. 2024. "Natural disasters and green party support." *The Journal of Politics* 86(1):241–256.

Hjerpe, Mattias, Sofie Storbjörk and Johan Alberth. 2015. ""There is nothing political in it": triggers of local political leaders' engagement in climate adaptation." *Local environment* 20(8):855–873.

Hobolt, Sara B and Catherine E De Vries. 2015. "Issue entrepreneurship and multiparty competition." *Comparative Political Studies* 48(9):1159–1185.

Höhmann, Daniel. 2020. "When do female MPs represent women's interests? Electoral systems and the legislative behavior of women." *Political Research Quarterly* 73(4):834–847.

Höhne, Niklas, Takeshi Kuramochi, Carsten Warnecke, Frauke Röser, Hanna Fekete, Markus Hagemann, Thomas Day, Ritika Tewari, Marie Kurdziel, Sebastian Sterl et al. 2017. "The Paris Agreement: resolving the inconsistency between global goals and national contributions." *Climate Policy* 17(1):16–32.

Homola, Jonathan. 2022. "The effects of women's descriptive representation on government behavior." *Legislative studies quarterly* 47(2):295–308.

Hornsey, Matthew J, Emily A Harris, Paul G Bain and Kelly S Fielding. 2016. "Meta-analyses of the determinants and outcomes of belief in climate change." *Nature climate change* 6(6):622–626.

Hornung, Johanna and Nils C Bandelow. 2024. "Social identities, emotions and policy preferences." *Policy & Politics* pp. 1–22.

Hovi, Jon, Detlef F Sprinz and Arild Underdal. 2009. "Implementing long-term climate policy: Time inconsistency, domestic politics, international anarchy." *Global Environmental Politics* 9(3):20–39.

Huber, Robert A, Tomas Maltby, Kacper Szulecki and Stefan Ćetković. 2021. "Is populism a challenge to European energy and climate policy? Empirical evidence across varieties of populism." *Journal of European Public Policy* 28(7):998–1017.

IPCC. 2012. "Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. Special Report of the Intergovernmental Panel on Climate Change.". IPCC, Geneva, Switzerland.

IPCC. 2014. "Climate Change 2014: Synthesis Report.". Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland.

IPCC. 2023. "Summary for Policymakers.". In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34.

Jacobs, Alan M. 2016. "Policy making for the long term in advanced democracies." *Annual Review of Political Science* 19(1):433–454.

Jacobs, Alan M and J Scott Matthews. 2012. "Why do citizens discount the future? Public opinion and the timing of policy consequences." *British Journal of Political Science* 42(4):903–935.

Jordan, Andrew, Irene Lorenzoni, Jale Tosun, Lucas Geese, John Kenny, Emiliano Levario Saad, Brendan Moore, Simon G Schaub et al. 2022. "The political challenges of deep decarbonisation: towards a more integrated agenda." *Climate Action* 1(1):1–12.

Kaufman, Chelsea N. 2021. "Where are the values voters? Ideological constraint and stability among rural, suburban, and urban populations in the United States." *Journal of Rural Studies* 88:169–180.

Kenny, Michael and Davide Luca. 2021. "The urban-rural polarisation of political disenchantment: an investigation of social and political attitudes in 30 European countries." *Cambridge Journal of Regions, Economy and Society* 14(3):565–582.

Kertzer, Joshua D and Jonathan Renshon. 2022. "Experiments and surveys on political elites." *Annual Review of Political Science* 25(1):529–550.

Kittilson, Miki Caul. 2011. "Women, parties and platforms in post-industrial democracies." *Party Politics* 17(1):66–92.

Klüver, Heike and Iñaki Sagarzazu. 2016. "Setting the agenda or responding to voters? Political parties, voters and issue attention." *West European Politics* 39(2):380–398.

Klüver, Heike and Jae-Jae Spoon. 2016. "Who responds? Voters, parties and issue attention." *British Journal of Political Science* 46(3):633–654.

Knill, Christoph and Jale Tosun. 2020. *Public policy: A new introduction*. Bloomsbury Publishing.

Koch, Michael T and Sarah A Fulton. 2011. "In the defense of women: Gender, office holding, and national security policy in established democracies." *The Journal of politics* 73(1):1–16.

Koch, Natalie. 2024. Authoritarian regimes and the environment. In *Research Handbook on Authoritarianism*, ed. Natasha Lindstaedt and Jeroen JJ den Bosch. Edward Elgar Publishing pp. 213–227.

Koedam, Jelle. 2021. "Avoidance, ambiguity, alternation: Position blurring strategies in multidimensional party competition." *European Union Politics* 22(4):655 – 675.

Kono, Daniel Yuichi. 2020. "Compensating for the climate: unemployment insurance and climate change votes." *Political Studies* 68(1):167–186.

Kortmann, Matthias and Christian Stecker. 2019. "Party competition and immigration and integration policies: a comparative analysis." *Comparative European Politics* 17:72–91.

Kotz, Maximilian, Anders Levermann and Leonie Wenz. 2024. "The economic commitment of climate change." *Nature* 628(8008):551–557.

Kristensen, Thomas Artmann, Christoffer Green-Pedersen, Peter B. Mortensen and Henrik Bech Seeberg. 2023. "Avoiding or engaging problems? Issue ownership, problem indicators, and party issue competition." *Journal of European Public Policy* 30(12):2854–2885.

Küppers, Anne. 2024. "'Climate-Soviets,''Alarmism,'and 'Eco-Dictatorship': The Framing of Climate Change Scepticism by the Populist Radical Right Alternative for Germany." *German Politics* 33(1):1–21.

Kwon, Kyae Lim and Robert J Hanlon. 2016. "A comparative review for understanding elite interest and climate change policy in China." *Environment, Development and Sustainability* 18:1177–1193.

Ladrech, Robert and Conor Little. 2020. Drivers of political parties' climate policy preferences: lessons from Denmark and Ireland. In *Climate Politics in Small European States*, ed. Neil Carter, Conor Little and Diarmuid Torney. Routledge pp. 37–58.

Lamb, William F and Jan C Minx. 2020. "The political economy of national climate policy: Architectures of constraint and a typology of countries." *Energy Research & Social Science* 64:101429.

Laver, Michael and John Garry. 2000. "Estimating policy positions from political texts." *American Journal of Political Science* 44(3):619–634.

Lehmann, Pola, Tobias Burst, Jirka Lewandowski, Theres Matthieß, Sven Regel and Lisa Zehnter. 2023. "Manifesto Corpus. Version 2022-1.". Berlin: WZB Berlin Social Science Center.

Lockwood, Matthew. 2018. "Right-wing populism and the climate change agenda: exploring the linkages." *Environmental Politics* 27(4):712–732.

Mader, Matthias and Harald Schoen. 2019. "The European refugee crisis, party competition, and voters' responses in Germany." *West European Politics* 42(1):67–90.

Mahadevia Ghimire, Kanksha. 2021. "Natural disasters and weak government institutions: creating a vicious cycle that ensnares developing countries." *Law and Development Review* 14(1):59–104.

Mansbridge, Jane. 2003. "Rethinking representation." *American political science review* 97(4):515–528.

Margalit, Yotam. 2019. "Political responses to economic shocks." *Annual Review of Political Science* 22(1):277–295.

Marquardt, Jens. 2020. "Fridays for future's disruptive potential: an inconvenient youth between moderate and radical ideas." *Frontiers in Communication* 5(48):1–18.

Marquardt, Jens, Eva Lövbrand and Frida Buhre. 2024. "The Politics of Youth Representation at Climate Change Conferences: Who Speaks, Who Is Spoken of, and Who Listens?" *Global Environmental Politics* 24(2):19–45.

Marquardt, Jens and Markus Lederer. 2022. "Politicizing climate change in times of populism: an introduction." *Environmental Politics* 31(5):735–754.

Maxwell, Rahsaan. 2019. "Cosmopolitan immigration attitudes in large European cities: Contextual or compositional effects?" *American Political Science Review* 113(2):456–474.

McAllister, Jordan H and Afiq bin Oslan. 2021. "Issue ownership and salience shocks: The electoral impact of Australian bushfires." *Electoral Studies* 74:102389.

McClean, Charles T and Yoshikuni Ono. 2024. "Too young to run? Voter evaluations of the age of candidates." *Political Behavior* 46:2333–2355.

McCright, Aaron M and Riley E Dunlap. 2011. "The politicization of climate change and polarization in the American public's views of global warming, 2001–2010." *The Sociological Quarterly* 52(2):155–194.

McDermott, M. 2009. "Voting for myself: Candidate and voter group associations over time." *Electoral Studies* 28:606–614.

Mechler, Reinhard, Laurens M Bouwer, Thomas Schinko, Swenja Surminski and JoAnne Linnerooth-Bayer. 2019. *Loss and damage from climate change: Concepts, methods and policy options*. Springer Nature.

Meguid, Bonnie M. 2005. "Competition between unequals: The role of mainstream party strategy in niche party success." *American political science review* 99(3):347–359.

Meisel, Kathleen, Markus Millinger, Karin Naumann, Franziska Müller-Langer, Stefan Majer and Daniela Thrän. 2020. "Future renewable fuel mixes in transport in Germany under RED II and climate protection targets." *Energies* 13(1712):1–18.

Mettler, Suzanne and T. Brown. 2022. "The Growing Rural-Urban Political Divide and Democratic Vulnerability." *The ANNALS of the American Academy of Political and Social Science* 699:130–142.

Meyer, Thomas M and Markus Wagner. 2016. "Issue engagement in election campaigns the impact of electoral incentives and organizational constraints." *Political Science Research and Methods* 4(3):555–571.

Mildenberger, Matto, Jennifer R Marlon, Peter D Howe and Anthony Leiserowitz. 2017. "The spatial distribution of Republican and Democratic climate opinions at state and local scales." *Climatic change* 145:539–548.

Milfont, Taciano L, Petar Milojev, Lara M Greaves and Chris G Sibley. 2015. "Socio-structural and psychological foundations of climate change beliefs." *New Zealand Journal of Psychology (Online)* 44(1):17–30.

Mittiga, Ross. 2022. "Political legitimacy, authoritarianism, and climate change." *American Political Science Review* 116(3):998–1011.

Moore, Brendan, Lucas Geese, John Kenny, Harriet Dudley, Andrew Jordan, Alba Prados Pascual, Irene Lorenzoni, Simon Schaub, Joan Enguer and Jale Tosun. 2024. "Politicians and climate change: A systematic review of the literature." *Wiley Interdisciplinary Reviews: Climate Change* e908.

Müller, Jochen, Christian Stecker and Andreas Blätte. 2021. Germany: Strong party groups and debates among policy specialists. In *The politics of legislative debates*, ed. Hanna Bäck, Marc Debus and Jorge M. Fernandes. Oxford University Press Oxford pp. 376–398.

Müller, Wolfgang C and Thomas Saalfeld. 1997. *Members of Parliament in Western Europe: roles and behaviour*. Psychology Press.

Nam, Hoseok, Satoshi Konishi and Ki-Woo Nam. 2021. "Comparative analysis of decision making regarding nuclear policy after the Fukushima Dai-ichi Nuclear Power Plant Accident: Case study in Germany and Japan." *Technology in society* 67:101735.

Newell, Peter, Harriet Bulkeley, Karen Turner, Christopher Shaw, Simon Caney, Elizabeth Shove and Nicholas Pidgeon. 2015. "Governance traps in climate change politics: re-framing the debate in terms of responsibilities and rights." *Wiley interdisciplinary reviews: climate change* 6(6):535–540.

Odmalm, Pontus. 2014. The Changing Nature of Party Competition. In *The Party Politics of the EU and Immigration. Palgrave Studies in European Union Politics.*, ed. Pontus Odmalm. London: Palgrave Macmillan pp. 1–7.

Ohmura, Tamaki, Stefanie Bailer, Peter Meiβner and Peter Selb. 2018. "Party animals, career changers and other pathways into parliament." *West European Politics* 41(1):169–195.

O'keefe, Phil, Ken Westgate and Ben Wisner. 1976. "Taking the naturalness out of natural disasters." *Nature* 260(5552):566–567.

Otteni, Cyrill and Manès Weisskircher. 2022. "Global warming and polarization. Wind turbines and the electoral success of the greens and the populist radical right." *European Journal of Political Research* 61(4):1102–1122.

Otto, Adeline and Dimitri Gugushvili. 2020. "Eco-social divides in Europe: Public attitudes towards welfare and climate change policies." *Sustainability* 12(1):404.

Paris Agreement. 2015.
URL: *https://unfccc.int/sites/default/files/english_paris_agreement.pdf*

Parth, Anne-Marie, Julia Weiss, Rojda Firat and Manuel Eberhardt. 2020. ""How dare you!"—the influence of Fridays for future on the political attitudes of young adults." *Frontiers in Political Science* 2:611139.

Pearson, Mitya and Alan Wager. 2025. "Not so different: Comparing British MPs' and voters' attitudes to climate change." *Parliamentary Affairs* 78(1):53–76.

Phillips, Anne. 1998. *The politics of presence*. OUP Oxford.

Pickel, Susanne and Gert Pickel. 2023. "The wall in the mind–Revisited stable differences in the political cultures of western and eastern Germany." *German Politics* 32(1):20–42.

Pidgeon, Nick. 2012. "Public understanding of, and attitudes to, climate change: UK and international perspectives and policy." *Climate Policy* 12(sup01):85–106.

Pitkin, Hanna F. 1967. *The concept of representation.* Berkeley: University of California Press.

Poguntke, Thomas. 2014. "Towards a new party system: The vanishing hold of the catch-all parties in Germany." *Party Politics* 20(6):950–963.

Poortinga, Wouter, Lorraine Whitmarsh, Linda Steg, Gisela Böhm and Stephen Fisher. 2019. "Climate change perceptions and their individual-level determinants: A cross-European analysis." *Global environmental change* 55:25–35.

Povitkina, Marina. 2018. "The limits of democracy in tackling climate change." *Environmental politics* 27(3):411–432.

Proksch, Sven-Oliver and Jonathan B Slapin. 2012. "Institutional foundations of legislative speech." *American Journal of Political Science* 56(3):520–537.

Pucher, J. and J. Renne. 2005. "Rural mobility and mode choice: Evidence from the 2001 National Household Travel Survey." *Transportation* 32:165–186.

Putnam, Robert et al. 1976. *The comparative study of political elites.* Prentice-Hall.

Quoß, Franziska and Lukas Rudolph. 2022. "Operationalisation matters: Weather extremes as noisy natural experiment show no influence on political attitudes." *OSF Preprints* .

Ramstetter, Lena and Fabian Habersack. 2020. "Do women make a difference? Analysing environmental attitudes and actions of Members of the European Parliament." *Environmental Politics* .

Rasmussen, Anne, Stefanie Reher and Dimiter Toshkov. 2019. "The opinion-policy nexus in Europe and the role of political institutions." *European Journal of Political Research* 58(2):412–434.

Rauh, Christian and Jan Schwalbach. 2020. "The ParlSpeech V2 data set: Full-text corpora of 6.3 million parliamentary speeches in the key legislative chambers of nine representative democracies." *Harvard Dataverse* 1:1.

Reher, Stefanie. 2022. "Do disabled candidates represent disabled citizens?" *British Journal of Political Science* 52(2):520–534.

Reynolds, Andrew. 2013. "Representation and rights: The impact of LGBT legislators in comparative perspective." *American Political Science Review* 107(2):259–274.

Rinscheid, Adrian, Silvia Pianta and Elke U Weber. 2021. "What shapes public support for climate change mitigation policies? The role of descriptive social norms and elite cues." *Behavioural Public Policy* 5(4):503–527.

Rockström, Johan, Owen Gaffney, Joeri Rogelj, Malte Meinshausen, Nebojsa Nakicenovic and Hans Joachim Schellnhuber. 2017. "A roadmap for rapid decarbonization." *Science* 355(6331):1269–1271.

Rodden, Jonathan A. 2019. *Why cities lose: The deep roots of the urban-rural political divide.* Basic Books.

Rovny, Jan. 2012. "Who emphasizes and who blurs? Party strategies in multidimensional competition." *European Union Politics* 13:269 – 292.

Rovny, Jan and Stephen Whitefield. 2019. "Issue dimensionality and party competition in turbulent times." *Party Politics* 25(1):4–11.

Rowan, Sam. 2023. "Extreme weather and climate policy." *Environmental Politics* 32(4):684–707.

Roßteutscher, Sigrid, Harald Schoen, Rüdiger Schmitt-Beck, Bernhard Weßels, Christof Wolf, Heiko Giebler, Reinhold Melcher and Aiko Wagner. 2018. "Kandidatenstudie (GLES 2017).". GESIS Datenarchiv, Köln: ZA6814 Datenfile Version 3.0.0, doi: 10.4232/1.13089.

Rudel, Thomas K. 2019. *Shocks, states, and sustainability: The origins of radical environmental reforms.* Oxford University Press.

Saalfeld, Thomas and Daniel Bischof. 2013. "Minority-ethnic MPs and the substantive representation of minority interests in the House of Commons, 2005–2011." *Parliamentary Affairs* 66(2):305–328.

Salamon, Hannah. 2023. "The effect of women's parliamentary participation on renewable energy policy outcomes." *European Journal of Political Research* 62(1):174–196.

Sältzer, Marius. 2022. "Finding the bird's wings: Dimensions of factional conflict on Twitter." *Party Politics* 28(1):61–70.

Sawer, Marian, Manon Tremblay and Linda Trimble. 2006. *Representing women in parliament: a comparative study.* Vol. 14 Routledge.

Schäfer, Mike S, Ana Ivanova and Andreas Schmidt. 2014. "What drives media attention for climate change? Explaining issue attention in Australian, German and Indian

print media from 1996 to 2010." *International Communication Gazette* 76(2):152–176.

Schaffer, Lena Maria, Bianca Oehl and Thomas Bernauer. 2022. "Are policymakers responsive to public demand in climate politics?" *Journal of Public Policy* 42(1):136–164.

Schaller, Stella and Alexander Carius. 2019. "Convenient truths." *Mapping climate agendas of right-wing populist parties in Europe* . Berlin: Adelphi.

Scherhaufer, Patrick, Philipp Klittich and Aron Buzogány. 2021. "Between illegal protests and legitimate resistance. Civil disobedience against energy infrastructures." *Utilities Policy* 72(101249):1–9.

Schmidt, Andreas, Ana Ivanova and Mike S Schäfer. 2013. "Media attention for climate change around the world: A comparative analysis of newspaper coverage in 27 countries." *Global Environmental Change* 23(5):1233–1248.

Schnabel, Claus. 2016. "United, yet apart? A note on persistent labour market differences between western and eastern Germany." *Jahrbücher für Nationalökonomie und Statistik* 236(2):157–179.

Schulze, Kai. 2021. "Policy characteristics, electoral cycles, and the partisan politics of climate change." *Global Environmental Politics* 21(2):44–72.

Schumacher, Ingmar. 2014. "An empirical study of the determinants of green party voting." *Ecological Economics* 105:306–318.

Schürmann, Lennart. 2024. "The impact of local protests on political elite communication: evidence from Fridays for Future in Germany." *Journal of Elections, Public Opinion and Parties* 34(3):510–530.

Schürmann, Lennart, Jan Schwalbach and Noam Himmelrath. 2024. "Location matters! Geospatial dynamics of MP responses to Covid-19 protests in multilevel systems." *European Journal of Political Research* pp. 1–22.

Schwalbach, Jan. 2022. "Going in circles? The influence of the electoral cycle on the party behaviour in parliament." *European Political Science Review* 14(1):36–55.

Schwörer, Jakob. 2024. "Mainstream parties and global warming: What determines parties' engagement in climate protection?" *European Journal of Political Research* 63(1):303–325.

Schwörer, Jakob and Belén Fernández-García. 2024. "Climate sceptics or climate nationalists? Understanding and explaining populist radical right parties' positions towards climate change (1990–2022)." *Political Studies* 72(3):1178–1202.

Scott, John. 2000. Rational choice theory. In *Understanding contemporary society: Theories of the present*, ed. Gary Browning, Frank Webster and Abigail Halcli. pp. 126–138.

Searing, Donald. 1994. *Westminster's world: understanding political roles*. Harvard University Press.

Seeberg, Henrik Bech. 2017. "How stable is political parties' issue ownership? A cross-time, cross-national analysis." *Political Studies* 65(2):475–492.

Seeberg, Henrik Bech. 2023. "Avoidance and engagement: Do societal problems fuel political parties' issue attention?" *Party Politics* 29(2):270–280.

Senninger, Roman, Daniel Bischof and Lawrence Ezrow. 2022. "How transnational party alliances influence national parties' policies." *Political Science Research and Methods* 10(3):651–658.

Sevi, Semra. 2021. "Do young voters vote for young leaders?" *Electoral Studies* 69:102200.

Sivonen, Jukka. 2023. "Attitudes toward global and national climate policies in Finland–The significance of climate change risk perception and urban/rural-domicile." *GeoJournal* 88(2):2247–2262.

Smith, Tom W, Jibum Kim and Jaesok Son. 2017. "Public attitudes toward climate change and other environmental issues across countries." *International Journal of Sociology* 47(1):62–80.

Spoon, Jae-Jae, Sara B Hobolt and Catherine E De Vries. 2014. "Going green: Explaining issue competition on the environment." *European Journal of Political Research* 53(2):363–380.

Steg, Linda and Judith De Groot. 2012. Environmental values. In *The Oxford Handbook of Environmental and Conservation Psychology.*, ed. Susan D. Clayton. Oxford University Press, Oxford pp. 81–92.

Stockemer, Daniel and Aksel Sundström. 2018. "Age representation in parliaments: Can institutions pave the way for the young?" *European Political Science Review* 10(3):467–490.

Stockemer, Daniel and Aksel Sundström. 2019. "Young deputies in the European Parliament: a starkly underrepresented age group." *Acta Politica* 54:124–144.

Stockemer, Daniel and Aksel Sundström. 2023. "Age inequalities in political representation: A review article." *Government and Opposition* pp. 1–18.

Stockemer, Daniel and Aksel Sundström. 2024. "'Do young legislators face age-based discrimination in parliament? Views from young MPs across the globe'." *Journal of Youth Studies* pp. 1–18.

Stoffel, Michael F. 2014. "MP behavior in mixed-member electoral systems." *Electoral Studies* 35:78–87.

Stokes, Leah C. 2016. "Electoral backlash against climate policy: A natural experiment on retrospective voting and local resistance to public policy." *American Journal of Political Science* 60(4):958–974.

Strøm, Kaare. 1990. "A behavioral theory of competitive political parties." *American Journal of Political Science* 34(2):565–598.

Strøm, Kaare. 1997. "Rules, reasons and routines: Legislative roles in parliamentary democracies." *The Journal of Legislative Studies* 3(1):155–174.

Strøm, Kaare. 2015. Roles as strategies: Towards a logic of legislative behavior. In *Parliamentary roles in modern legislatures*, ed. Magnus Blomgren and Olivier Rozenberg. Routledge pp. 85–100.

Strøm, Kaare and Wolfgang C Müller. 1999. Political parties and hard choices. In *Policy, office, or votes?: how political parties in Western Europe make hard decisions*, ed. Wolfgang C Müller and Kaare Strøm. Cambridge University Press pp. 1–35.

Sundström, Aksel and Daniel Stockemer. 2021. "Conceptualizing, measuring, and explaining youths' relative absence in legislatures." *PS: Political Science & Politics* 54(2):195–201.

Swyngedouw, Erik. 2011. "Depoliticized environments: The end of nature, climate change and the post-political condition." *Royal Institute of Philosophy Supplements* 69:253–274.

Tavits, Margit and Joshua D Potter. 2015. "The effect of inequality and social identity on party strategies." *American Journal of Political Science* 59(3):744–758.

Thomas, Adelle, April Baptiste, Rosanne Martyr-Koller, Patrick Pringle and Kevon Rhiney. 2020. "Climate change and small island developing states." *Annual Review of Environment and Resources* 45(1):1–27.

Tosun, Jale and Marc Debus. 2021. "Right-wing populist parties and environmental politics: insights from the Austrian Freedom Party's support for the glyphosate ban." *Environmental Politics* 30(1-2):224–244.

Tromborg, Mathias. 2019. "Issue salience and candidate position taking in parliamentary parties." *Political Studies* 67(2):307–325.

Van Aalst, Maarten K. 2006. "The impacts of climate change on the risk of natural disasters." *Disasters* 30(1):5–18.

Van de Wardt, Marc. 2015. "Desperate needs, desperate deeds: Why mainstream parties respond to the issues of niche parties." *West European Politics* 38(1):93–122.

Victor, David G. 2011. *Global warming gridlock: creating more effective strategies for protecting the planet*. Cambridge University Press.

Wäckerle, Jens. 2023. "A bill of their own: collaboration of women in European parliaments." *European Journal of Politics and Gender* 6(3):308–327.

Walgrave, Stefaan, Jonas Lefevere and Anke Tresch. 2012. "The associative dimension of issue ownership." *Public opinion quarterly* 76(4):771–782.

Wallis, Hannah and Laura S Loy. 2021. "What drives pro-environmental activism of young people? A survey study on the Fridays For Future movement." *Journal of Environmental Psychology* 74:101581.

Walshe, Rory A and Charlotte Eloise Stancioff. 2018. "Small island perspectives on climate change." *Island Studies Journal* 13(1):13–24.

Wängnerud, Lena. 2009. "Women in parliaments: Descriptive and substantive representation." *Annual Review of Political Science* 12:51–69.

Wappenhans, Tim, António Valentim, Heike Klüver and Lukas F Stoetzer. 2024. "Extreme weather events do not increase political parties' environmental attention." *Nature Climate Change* 14:696–699.

Weichselgartner, Juergen and Roger Kasperson. 2010. "Barriers in the science-policy-practice interface: Toward a knowledge-action-system in global environmental change research." *Global environmental change* 20(2):266–277.

Whitmarsh, Lorraine. 2011. "Scepticism and uncertainty about climate change: Dimensions, determinants and change over time." *Global environmental change* 21(2):690–700.

Willis, Rebecca. 2018. "How members of parliament understand and respond to climate change." *The Sociological Review* 66(3):475–491.

Willis, Rebecca. 2020. "The role of national politicians in global climate governance." *Environment and Planning E: Nature and Space* 3(3):885–903.

Yamamura, Eiji. 2015. "The impact of natural disasters on income inequality: analysis using panel data during the period 1970 to 2004." *International Economic Journal* 29(3):359–374.

Zapletalová, Veronika and Magda Komínková. 2020. "Who is fighting against the EU's energy and climate policy in the European Parliament? The contribution of the Visegrad Group." *Energy Policy* 139:111326.

Zeigermann, Ulrike, Marlene Kammerer and Michael Böcher. 2023. "What drives local communities to engage in climate change mitigation activities? Examining the rural–urban divide." *Review of Policy Research* 40(6):894–919.

Zelezny, Lynnette C, Poh-Pheng Chua and Christina Aldrich. 2000. "New ways of thinking about environmentalism: Elaborating on gender differences in environmentalism." *Journal of Social issues* 56(3):443–457.

Ziegler, Andreas. 2017. "Political orientation, environmental values, and climate change beliefs and attitudes: An empirical cross country analysis." *Energy Economics* 63:144–153.

Zittel, Thomas and Dominic Nyhuis. 2021. "The legislative effects of campaign personalization an analysis on the legislative behavior of successful German constituency candidates." *Comparative political studies* 54(2):312–338.