When Do Candidates "Go Negative"? A Conjoint Analysis to Unpack the Mechanisms of Negative Campaigning

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Abstract

Negative campaigning has become a prevalent campaign strategy not just in the U.S., but also in other established democracies. While negative campaigning has been a prominent focus of the academic literature, the state of knowledge is still mostly based on observational data, often artifacts of campaigning such as content analysis of press releases, campaign ads, or social media posts. Based on a pre-registered conjoint experiment embedded in surveys of more than 800 candidates running in German state elections, the paper aims to explain under what conditions candidates attack their opponents. Rational-choice considerations matter, as candidates are more likely to attack when they see a net gain in the strategy. However, the characteristics and behavior of the opponent also play an important role. Negative campaigning is more likely if the opponent is male, ideologically distant, and has attacked before. In contrast, the closeness of the race and the likelihood of retaliation have no influence on attack behavior. Furthermore, the decision to attack their opponent is largely independent of candidates' own incumbency status, gender, or personality. By integrating relevant factors that were identified in the literature in one research design, the paper sheds light on the drivers of campaign negativity and points towards the role of further situational factors that that are shaping candidates' behavior on the campaign trail. Beyond negative

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campaigning, this study demonstrates the value of embedding experimental designs in samples of political elites.

Keywords: negative campaigning; conjoint experiment; candidate survey; political elites; campaigning; German politics

Introduction

Over the last two decades, election campaigns have been run in an increasingly harsh and aggressive manner (Klinger et al., 2023) —a strategy referred to as negative campaigning. Negative campaigning (NC) can be defined as “any criticism leveled by one candidate against another during a campaign” (Geer, 2006, p. 23). Such attack behavior among political opponents has been associated with profound negative consequences for the health of democracies. Voters are repelled by the negative tone leading to a decline in trust and engagement with political processes and institutions (e.g., Ansolabehere et al., 1994; Ansolabehere & Iyengar, 1995). More recently, rising affective polarization, i.e., strong negative feelings towards members of an opposing party has been associated with negative campaigning (Banks et al., 2021; Martin & Nai, 2024; Sood & Iyengar, 2016). Coinciding with not just the rise of affective polarization, but also the establishment of populist parties and the contestation of cultural issues by political issue entrepreneurs (Hobolt & De Vries, 2015), NC can generate negative feedback loops, potentially exacerbating the dysfunctionality of political systems. Against the backdrop of these recent transformations of party systems, NC has thus become a major strand of research (Haselmayer, 2019) as scholars worldwide make an effort to understand the determinants of candidates’ decisions to go negative in the first place.

Most of this research seeks to explain attack behavior through social and political characteristics of the *sender*, i.e., the political role (e.g., incumbent vs. challenger), the party,

(extreme) political ideology, or the gender of a politician. However, besides some noteworthy exceptions (Ridout & Holland, 2010; Song et al., 2019; Taylor, 2023), the characteristics of the potential *target of attacks* are most often ignored. Moreover, the identified characteristics driving the use of negative campaigning are usually studied in isolation without taking their joint occurrence into consideration. Furthermore, we know that *contextual factors* substantially affect the tone of campaigning. For example, campaigns become especially negative, nasty even, when the race is highly contested and both candidates have a realistic chance of winning (Damore, 2002; Elmelund-Præstekær, 2008; Fowler et al., 2016; Lau & Pomper, 2004). So far, we know very little about how the sponsors and targets as well as the political and social profile interact in a dynamic campaign environment. Therefore, this study aims to answer the research question: *How do characteristics of the sender and the target of negative campaigning drive politicians' attack behavior in a dynamic campaign context?*

To answer this research question, we ran a conjoint experiment embedded in an original candidate survey. We put more than 800 candidates in seven German state elections into a hypothetical situation where the *personal profile* of the target of the attack (ideological proximity, gender), the *attack behavior* of the target, and the *competitiveness* of the race vary. By testing pre-registered hypotheses on each of these dimensions, we thereby study the drivers of the use of NC not in isolation but in a multidimensional scenario. Besides the relevance of rational choice considerations – candidates are more likely to attack when they see a net gain in this behavior – we find that candidates tend to attack when the opponent is male, ideologically more distant, and has attacked before. In contrast, the closeness of the race and the likelihood of retaliation have no influence on candidates' attack behavior.

Our study makes three main contributions to research on negative campaigning. First, the usual methodological toolbox to study the determinants of NC includes content analysis of political messages (e.g., Auter & Fine, 2016; Benoit, 2004; Duggan & Milazzo, 2023;

Elmelund-Præstekær, 2010; Song et al., 2019) and surveys of candidates and experts (Maier et al., 2022, 2023; Nai, 2020). To the best of our knowledge, our conjoint experiment is the first study to investigate the causal mechanisms behind attack behavior of election candidates. Second, politicians are rarely surveyed as scholars lack access to political elites. Our conjoint analysis is embedded in a demographically and ideology diverse sample of real election candidates that varies on theoretically relevant dimensions. Our findings thus offer rare and relevant insights into candidate’s strategic reasoning with high ecological validity. Finally, most research on negative campaigning has been conducted in the US two-party system. However, the influence of the most influential determinants of negative campaigning might substantially diverge in a multidimensional political landscape (Debus & Tuttnauer, 2024). We add to the empirical evidence on European multi-party systems and provide further insights into the context-dependent nature of NC in such a polity. Taken together, our approach and findings create avenues for further research on candidates’ campaign behavior and beyond.

Attacking in a complex campaign environment

The decision to go negative in a campaign depends on multiple factors. Research indicates that the candidate’s attack behavior is predominantly depending on rational considerations (e.g., Benoit, 2022; Maier et al., 2023), a candidate’s own social and political profile (e.g., Dolezal et al., 2015), the setting and the dynamics of the race (e.g., Fowler et al., 2016; Lau & Pomper, 2004), and opponents’ characteristics and behavior (Lau & Pomper, 2004; Song et al., 2019). Previous studies usually did not cover all of these factors; in fact, they often failed to take into account candidates’ considerations regarding their opponents. Our study aims to explicitly conceptualize this multidimensionality and to assess the relative

influence of different factors. In the following, we discuss prominent explanations of negative campaigning and introduce our pre-registered hypotheses.

Rational-choice considerations

Most researchers agree that candidates base their decision whether to attack an opponent on rational considerations (for a critical assessment of this assumption: Maier et al., 2023). Candidates weight the potential benefits and the likely costs of an attack against each other (Benoit, 2022; Garramone, 1984; Lau & Rovner, 2009). On the one hand, an attack is considered as beneficial if candidates can either directly increase their political support by mobilizing their own voters (Jackson & Carsey, 2007) or convincing undecided voters (Nai, 2020). On the other hand, candidates might indirectly gain from NC, e.g., by attracting the media’s attention (Haselmayer, 2019). By blaming the opponent, e.g., for failure in handling domestic and foreign policy issues, or by showcasing the opponent as incompetent and of unsuitable character for office, successful attacks increase a candidate’s “net favorability” (Benoit, 2022, p. 39) at the expense of the political opponent. But negative campaigning is not without risks. Most importantly, a candidate might suffer from backlash effects when voters withdraw their support (Garramone, 1984; Roese & Sande, 1993). Nonetheless, voters do not generally disapprove of negative campaigning, as their tolerance for the practice varies across different types of attacks (Lau & Rovner, 2009).

The decision to go negative depends on the perceived ratio of the costs and benefits, which might vary depending on the social and political profile of a candidate. Ultimately, each candidate weights the relevant factors differently to arrive at her individual benefit-cost ratio, but the overall direct net effect should still be observable. Hence, we derive our first hypothesis:

H1 The likelihood of attacking the opponent is higher when the likely consequence is to win votes instead of losing votes, and lower in the opposite scenario.

Competitiveness of the race

Candidates do not campaign in a vacuum but consider the constraints of the electoral race and react to its dynamics. For instance, previous studies have shown that campaigns become especially negative, nasty even, when the race is highly contested and both candidates have a realistic chance of winning (Damore, 2002; Elmelund-Præstekær, 2008; Fowler et al., 2016; Lau & Pomper, 2004). In particular, candidates who are trailing are more likely to resort to negative campaigning. Building on prospect theory, it can be assumed such gains and losses are valued asymmetrically (Kahneman & Tversky, 1979). An individual's fear of losses is greater than the joy of a potential gain. Therefore, when faced with a certain loss, individuals become risk-seeking to avoid the pain of losing. In the context of negative campaigning, this means that a candidate who falls behind in the polls is more likely to go negative to preserve a chance of winning. Negative campaigning as a risky strategy becomes an appropriate measure as they have nothing left to lose. The costs of potential backlash effects thus weigh less in the cost-benefit-calculation. We therefore posit:

H2 The likelihood of attacking the opponent is higher when candidates are trailing or on par with the opponent, and lower when they are ahead of the opponent.

Profile of the opponent

A political actor's cost-benefit-ratio is affected by the profile of the political opponent (Dolezal et al., 2015), for instance, factors like gender or ideology. Although the role of gender in politics has changed considerably over the last decades, many behaviors of politicians are still associated with gender stereotypes. According to role congruity theory,

female politicians are usually ascribed qualities such as being honest, friendly, and caring (e.g., Fridkin & Kenney, 2009; Turska-Kawa & Olszanecka-Marmola, 2018). Such stereotypical gender roles can substantially influence how candidates deal with their political opponents and ultimately reduce the likelihood of women being targeted. In the public perception, attacking a potentially aggressive male candidate may be seen as legitimate, while attacking a female candidate may be seen as unfair (Fridkin et al., 2009; Kenney & Kahn, 2004). A softer campaign style towards women is also advisable due to the socially accepted rules of politeness, as aggressive behavior is seen as a violation of these norms (Maier & Renner, 2018). Because an attack on a male politician is differently perceived than an attack on a female politician, we hypothesize that:

H3 The likelihood of attacking the opponent is higher when the opponent is a man, and lower when the opponent is a woman.

More recently, empirical studies started shedding light on attack behavior in multi-party systems (De Nooy & Kleinnijenhuis, 2013; Song et al., 2019; Walter, 2014b). Negative campaigning in such contexts is more complex than in the US, as winning and losing voters is not a zero-sum game (Walter, 2014a) and political power relations after an election, particularly with respect to coalition building, should affect political strategy. For the latter, ideological closeness matters. In line with this, Song et al. (2019, p. 286) found that candidates are more likely to attack when the target is an “enemy’s friend” or a “friend’s enemy”. Although some studies show that ideological closeness increases the likelihood of being criticized (Walter, 2014a) or failed to show an impact of ideological proximity (Haynes & Rhine, 1998), we follow other studies showing that ideologically distant parties are more likely to become targets of attacks than ideologically close parties (Nai, 2020; Ridout & Holland, 2010). On the one hand, their party programs have less commonalities with a

candidate’s own party or even hold opposing positions. Therefore, they present more obvious points of attack than candidates who have a similar view of politics (Walter, 2014a). Moreover, ideologically distant parties are unlikely to become coalition partners after election day. Attacking them does therefore not harm future parliamentary work. In contrast, leaving scorched earth behind by attacking a top candidate of an ideologically close party is not conducive to future cooperation after the election is decided (Haselmayer & Jenny, 2018). We therefore hypothesize that:

> *H4* The likelihood of attacking the opponent is higher when the opponent is ideologically distant, and lower when the opponent is ideologically close.

Attack behavior of the opponent

Extent literature identified retaliation as a driver of negative campaigning (Damore, 2002; Druckman et al., 2010; Lau & Pomper, 2004; Song et al., 2019). The logic of retaliation is based on the assumption of reciprocity between the candidates – a candidate who goes negative triggers being counterattacked (De Nooy & Kleinnijenhuis, 2013). A rational candidate might consider to fight with fire to not appear weak to uncommitted voters or to mitigate the attack by damaging the reputation of the attacker in return (Damore, 2002; Dolezal et al., 2016). Retaliation might even mitigate the risk of backlash effects as voters expect a counterattack in response to aggressive behavior (Nai, 2020). The legitimacy of a counterattack is hence assumed to be higher than that of an initial attack (Dolezal et al., 2016). We therefore assume that:

> *H5* The likelihood of attacking the opponent is higher when the opponent previously attacked the candidate (often), and lower when the opponent did not previously attack.

However, the logic of retaliation also applies to the target of negative campaigning; if the political opponent is attacked, he/she also has strong incentives to respond with a counterattack. If the target’s counterattack is successful, it has negative consequences for the candidate who started the dispute, resulting in a lower net favorability. Due to this dynamic, candidates will carefully consider the likely reactions to their attacks. If the risk of a counterattack is low because the opponent is facing some constraints, for instance, in a scenario where a female candidate faces an older male opponent, negative campaigning becomes an even more attractive strategy. If there is a high risk of counterattacks, candidates might be more restrained in their own attacks.

H6 The likelihood of attacking the opponent is higher when the likelihood of a counterattack is low, and lower when the likelihood of a counterattack is high.

The relative influence of factors driving attacks

In essence, the decision to go negative in a campaign is inherently multidimensional. For instance, a candidate may be in a close race in his district against an opponent who is from an ideologically distant party but could still decide against attacking this opponent because it might cost him votes if he attacks a female opponent. Besides these tradeoffs that have to be considered, a candidate is also facing (competing) incentives originating from different arenas of a campaign. Candidates must navigate a highly dynamic (1) contextual environment with external influences like election polls, (2) constantly anticipate, react, and adapt to the campaign behavior of the opponent and (3) keep the personal and political profile of the specific opponent(s) in mind. Despite considering so far understudied characteristics of the targets of attacks, we still hypothesize in line with previous studies that rational considerations should be the strongest predictor of a candidate’s campaign behavior (Maier et al., 2023):

H7a: A positive benefit-cost differential is the most important factor for attacking the opponent.

H7b: A negative benefit-cost differential is the least important factor for attacking the opponent.

Moderators of candidates' attack behavior

There is no question that the decision to go negative in a campaign is influenced by multiple factors. However, the relevance of individual factors can vary from candidate to candidate. Yet so far only few studies of NC took into account the social characteristics of election candidates, their political profile and the campaign context in which they are embedded. As specified in our preregistration,[6] we are following an open research question on the moderation effect of two candidate characteristics, namely gender and incumbency, assessing whether the main effects are uniform across different groups of candidates.

Gender. When it comes to political competition, women are oftentimes perceived as being more willing to compromise and seek consensus than male politicians (Fridkin et al., 2009). Therefore, attacking opponents does not correspond with the socially acceptable traditional female role. In contrast, for men – whose political role is often regarded as assertive, strong, competent, and aggressive – going negative vis-a-vis their political opponent is an accepted part of the political game (Fridkin et al., 2009; Turska-Kawa & Olszanecka-Marmola, 2018). Due to the enduring persistence of gender stereotypes the campaign environment and profile of the political opponent might affect female and male candidates differently. Gender could therefore moderate the direct effects posited in *H1-H6*.

[6] *RQ*1 in the preregistration reads: "Are there heterogeneous effects by gender or incumbency?"

For instance, the gender of a candidate resulted in different perceptions with respect to the risks and benefits of going negative or the influence of the competitiveness of an electoral race. This is to be expected in particular because women are considered to be more risk-averse, whereas men exhibit riskier behavior (Byrnes et al., 1999). Therefore, women might generally be more cautious in attacking their opponent than men, even if, for example, they expect similar level of benefits from negative campaigning.

Incumbency. The decision to attack opponents also depends on whether a candidate is already in office. It has been observed that challengers often adopt a more negative approach in their campaigns compared to incumbents (e.g., Benoit, 2022). Incumbents have the advantage and feel the necessity of defending their own political accomplishments while challengers, lacking such a record, find negative campaigning to be their most effective strategy (Polborn & Yi, 2006). For challengers, no current position is at stake, potentially making them more inclined to embrace the risks associated with negative campaigning. Therefore, the costs of losing campaigns (i.e., loss of election and office) are higher for incumbents than for challengers, which may affect cost-benefit calculations (Benoit, 2022, p. 132) and moderate the direct effects postulated in *H1*-*H6*.

Methods

To investigate the impact of the perceived benefits and costs of an attack, the competitive situation, and the characteristics and behavior of the potential attack target on candidates’ use of negative campaigning, we implemented a conjoint experimental design in a candidate survey. In our conjoint experiment (Hainmueller et al., 2014), election candidates were asked to select, out of two hypothetical opponents in their constituency, the one they would be more likely to attack. The attributes of each hypothetical opponent were randomized which allowed us to establish a causal effect of every attribute of an opponent’s

profile. Unlike traditional candidate surveys, conjoint experiments allow to analyze decision-making in a multidimensional environment when multiple factors are offered at the same time and a respondent must choose the most preferred option.

The study design and research hypotheses were preregistered on OSF: https://osf.io/a4rpz/ The data collection received approval from the GESIS Ethics Committee (decision 2020-6), and the specific conjoint experiment was approved by the Institutional Review Board of the University of Koblenz-Landau (decision LEK-345).

Sample

We test our propositions using a post-election survey among candidates running for seven state parliaments in Germany (Saxony-Anhalt 2021, Berlin 2021, Mecklenburg-Western Pomerania 2021, Schleswig-Holstein 2022, North Rhine-Westphalia 2022, Lower Saxony 2022, and Saarland 2022; for more information see Table C.1 in the Supplementary Materials [SM]). The study sample was drawn by inviting the full population of all candidates to participate (including smaller parties' candidates in the 2021 elections, but only candidates of the six major parties in the 2022 elections). Data were collected using a mixed-mode design, starting on the day after the election and ending two months later.

A total of *N*= 3,978 candidates ran for office in the analyzed state elections. All candidates who provided an email address in their professional online contact details were invited via email to participate in our online survey. All candidates without online contact details were invited by mail including a paper-and-pencil questionnaire and a return envelope. Candidates invited by mail were also provided with a personalized link if they preferred to answer the survey online. *N*= 3,876 candidates could be contacted successfully and were invited to participate in the survey. 39.2 percent (*N*= 1,520) of candidates gave their informed consent and answered the questionnaire. 1,200 candidates took part in the survey

online, where the conjoint experiment was embedded; candidates who answered the paper-and-pencil questionnaire had no opportunity to participate in the conjoint study. The achieved response rates are considerably higher than the around 8% reported in studies with U.S. legislators (Druckman et al., 2023; Teele et al., 2018). Participants were instructed to fill out the questionnaires personally. In total, two reminders were sent to increase response rates.

Of the online respondents, *N*=853 candidates took part in the conjoint task. 35.4% of the participating candidates were female. Participants were between 18 and 87 years old (*M*= 45.0) and 10.2% of them were incumbents. In Table D.1 in the SM, we compare our sample to the population of candidates, which is strikingly similar in terms of gender (population 35.7% female), age (population *M*= 45.4), and incumbency status (population 8.8% incumbents). Meanwhile, our sample slightly over-represents candidates from the Left, the Social Democrats, the Liberal Democrats and the Greens, while slightly under-representing candidates from the Christian Democrats, the Alternative for Germany and from other smaller parties. Also, candidates from Berlin and Mecklenburg-Western Pomerania were significantly less likely, and candidates from the other states more likely to participate.

Experimental design

We embedded a choice-based conjoint experiment in the online questionnaire, in which respondents were confronted with two profiles of an opposing candidate (up to three times). In each choice task, respondents were invited to imagine a hypothetical scenario in which they would run for office with only few days left until the election, and were asked: "In which of the following two situations would you be more likely to attack the opponent?" The situations manipulated the following variables (see all the conjoint attributes and their levels in Table 1): the likelihood of winning or losing votes by attacking the political opponent (*H1*), the competitiveness of the race (*H2*), whether the opponent is a man or a

woman (*H3)*, whether (s)he is ideologically close or distant to the candidate (*H4*), the campaign behavior of a hypothetical opponent (*H5*), i.e., whether (s)he has attacked the candidate before, and (*H*6) if the likelihood of retaliation is high or low.

Table 1: Overview of conjoint attributes

Attributes	Levels
Net effect of attack (*H1*)	Losing more votes than winning
	Winning more votes than losing
Competitiveness of the race (*H*2)	Opponent behind
	Opponent on par
	Opponent ahead
Gender of opponent (*H3*)	Female
	Male
Ideology of opponent (*H4*)	Close
	Far
Previous attacks of opponent (*H5*)	Never
	Sometimes
	Often
Likelihood of counterattack (*H6*)	Low
	High

For example, one of the candidate profiles read (translated from German, the varying attributes underlined): "Polls show that your strongest opponent - a <u>woman</u> - is slightly <u>behind</u> you. Ideologically, she is <u>close</u> to you. She <u>sometimes</u> attacked you during the election campaign. The likelihood of a counterattack is <u>high</u> if you attack now. Forecasts show that you are likely to <u>lose more votes than you gain</u> by attacking.". In SM Appendix F, we report frequencies of the different conjoint attributes (Figure F.1) and show that covariates are balanced across feature levels (Figures F.2 through F.4).

After the first task, respondents were asked whether they would like to respond to a second scenario, and after that, to a third scenario (see, e.g., Teele et al. 2018 who also implemented three distinct pairwise comparisons). Hence, each candidate was exposed to a maximum of six observations (three tasks * two situations). 453 respondents chose to respond

to three tasks; 110 respondents to two tasks; 290 respondents to one task. Our overall number of observations is thus 3,738. Our dependent variable for each observation is whether the respondent selected that scenario.

Moderators

Our open research question *RQ*1 asks whether any of the attributes' effects are heterogenous across different groups of election candidates. Our data contains measures of the respondent's gender (male vs. female) and of incumbency (non-incumbent vs. incumbent). These measures, as well as measures of party affiliation and age, which we use for summary statistics, were provided by the respective electoral state officers. In the preregistration, we further created hypotheses for moderating effects of dark personality traits, conflict approach, values, attitudes on negative campaigning and ideological extremism. The results of these additional analyses will be reported in the SM. We furthermore test the robustness of the results by analyzing whether there are differences between the different states. Our minor deviations from the pre-analysis plan are discussed in SM Section B, while all moderator variables including the original German wording and Cronbach's alpha reliability statistics are described in SM Table G.1.

Analysis

Our primary presentation of results is based on marginal means (as pre-registered). As pointed out by Leeper et al. (2020), marginal means allow for an easier comparison of the effect sizes of attributes with each other (as required by *H*7a/b) and facilitate clearer subgroup analyses (*RQ1*, additional robustness tests in the SM). A marginal mean describes the favorability towards situations with a certain attribute level, ignoring all other attributes. To exemplify with our data, a marginal mean of 0.60 for the level "male" on the attribute "gender" would mean that situations in which the opponent is male are selected with a

probability of 60 percent as a target for an attack. However, to also test the effects of attributes statistically, we also run the more common AMCE models, and include these in the Supplementary Material. To test subgroup differences formally, we apply an F-test as proposed by Leeper et al. (2020). All analyses were run in R, Version 4.3.1. For the conjoint analysis we used the R Package *cregg* (Leeper, 2020).

Results

Main results

Figure 1 displays marginal means for the complete sample of respondents while SM Figure E.1 shows the AMCEs. The ratio between expected benefits and costs of an attack (*H1*) has the hypothesized effect: Respondents were more likely to attack an opponent when the likely consequence is to win votes instead of losing votes than in the opposite scenario. The marginal mean for the scenario in which a candidate would gain from an attack is 0.56 (SE = 0.008), in contrast to marginal mean of 0.42 (SE = 0.008) for the opposite scenario (with a highly significant AMCE, $p_{AMCE} < 0.001$). *H2* predicted that attacking the opponent is more likely when the candidate is behind or on par with the opponent, and lower when ahead. We do not find strong support for this idea, with marginal means of 0.48 (SE = 0.012) for a situation in which the candidate is behind the opponent, 0.51 (SE = 0.011) for an on-par race, and 0.50 (SE = 0.012) for a race which the opponent is leading. The attribute's effect is not statistically significant.

Does the gender of the opponent matter (*H3*)? The data supports this hypothesis and shows a marginal mean for a male opponent of 0.54 (SE = 0.008) and of 0.46 (SE = 0.008) for a female opponent, which represents a statistically significant effect ($p_{AMCE} < 0.001$). Likewise, we find support for our hypothesis about ideological distance (*H4*). The participating candidates were more likely to state that they would attack an ideologically

distant opponent (marginal mean of 0.54, SE = 0.008) than an ideologically close one (marginal mean of 0.46, SE = 0.008), a statistically significant effect ($p_{AMCE} < 0.001$).

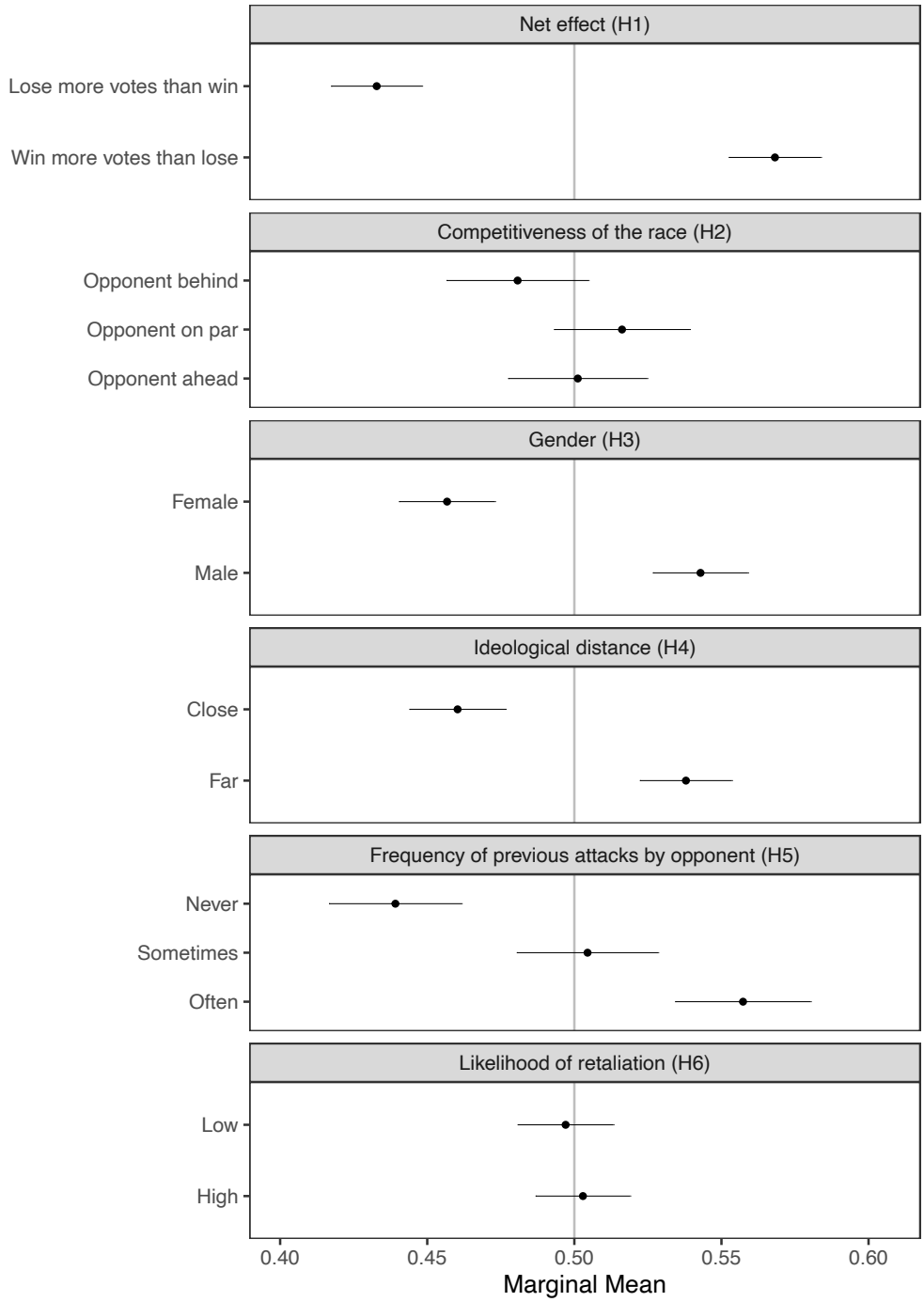

Fig. 1: Marginal means of attribute levels

H5 predicted that candidates would be more likely to attack when the opponent was described as previously having attacked the candidate sometimes or often rather than never.

Again, the results support this prediction, with marginals means of 0.44 (SE = 0.011) for a scenario of no past attacks, of 0.50 (SE = 0.012; $p_{AMCE} < 0.001$ with baseline “never”) for some past attacks, and of 0.56 (SE = 0.011, $p_{AMCE} < 0.001$ with baseline “never”) for attacks having happened often.

Last, does the likelihood of retaliation matter (*H6*)? Not for the candidates in our sample, who are not significantly more likely to say they would attack an opponent who is highly likely to retaliate (marginal mean of 0.50, SE = 0.008) than someone with a low probability to strike back (marginal mean of 0.50, SE = 0.008). This represents an insignificant effect ($p_{AMCE} = 0.54$).

Next to the individual effects of these attributes, we were also interested in their relative size, hypothesizing that a positive benefit-cost differential would be the most important factor driving an attack (*H7a*), and a negative differential the least important factor (*H7b*). The data supports this idea to some extent, as the two levels of the net effect attribute do indeed show the largest and smallest marginal means. However, there is a large overlap with two levels of the attribute “frequency of previous attacks”: the marginal mean of a scenario with previous attacks “never” happening is only 0.01 points larger than that of a negative benefit-cost differential, and the confidence intervals overlap widely. Similarly, the marginal mean of a scenario with previous attacks “often” happening is only 0.01 points smaller than that of the positive benefits-cost differential, with a wide overlap of confidence intervals. In sum, we cannot rule out that the frequency of previous attacks may be as important as the benefit-cost differential, and reject hypotheses *H7a/b*.

Subgroup analyses

We next investigate whether these effects vary by respondent gender and incumbency (*RQ1*), two individual-level factors for which evidence exists that they make a difference in the likelihood to attack. Figure 2 presents marginal means split by gender.

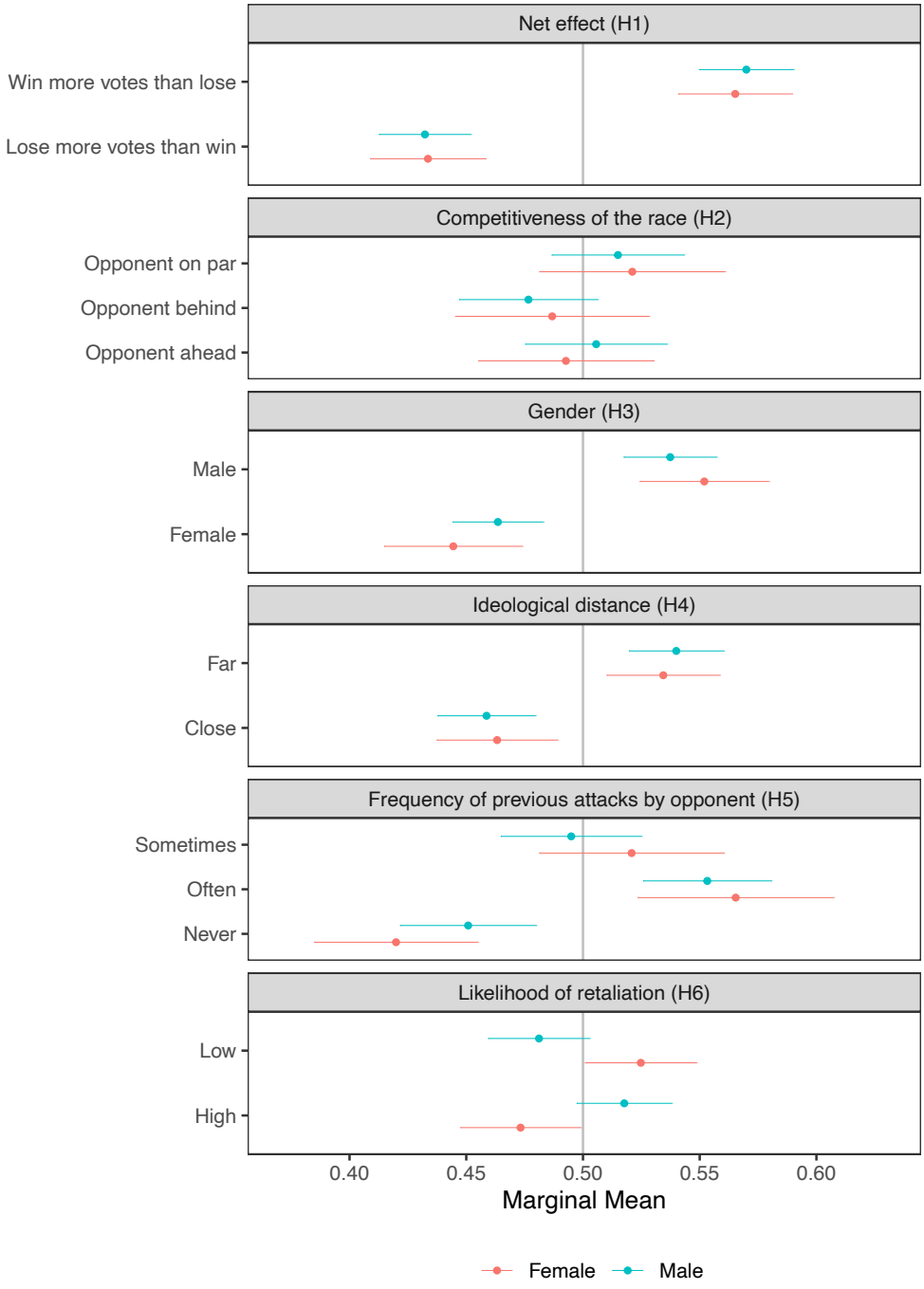

Fig. 2: Marginal means of attribute levels, by candidates' gender

Not much heterogeneity is discernible, except for the attribute of retaliation likelihood: Male candidates were more likely to still attack the opponent when retaliation is likely compared with female candidates. Following Leeper et al. (2020), we test the significance of this heterogeneity with a nested model comparison, that is, we test whether the fit of a model that allows for an interaction between retaliation attribute and gender is better than a model that does not model that interaction. We can reject the null hypothesis that the fit between these two models is equal (SM Table G.7; $F = 3.30$, $p < 0.05$). For all other attributes, this test does not provide any further signs of a heterogeneity by gender (SM Section G).

Figure 3 presents marginal means by incumbency status. Although we see some suggestive patterns – e.g., it seems to matter more for incumbents whether they will win or lose votes – none of these differences reach levels of statistical significance (SM Section G).

Robustness checks

We conducted further robustness tests. First, as we conducted our experiments in seven different states at seven different points in time. Since in a federal system like Germany, campaigning cultures are likely to vary between states (and may also change over the time of two years), we ran a subgroup analysis by state. SM Figure G.1 shows that by and large, results are robust across states. Second, as recent research indicates that there is a relationship between the personality of politicians and their campaign style (Nai & Maier, 2020), we consider the possibility that attribute effects vary across personality types. In our pre-registration, we hypothesized that the cost-benefit attribute should vary between those with low and high scores on dark-personality traits, conflict-approach traits, endorsement of power and of achievement values, attitude on negative campaigning, and between those that are ideologically moderate or extreme. SM Figures G.2 through G.7 show that no such

heterogeneity is present. In other words, attribute effects have robust effects, irrespective of a range of personality traits – though the design may have been underpowered to detect small differences.

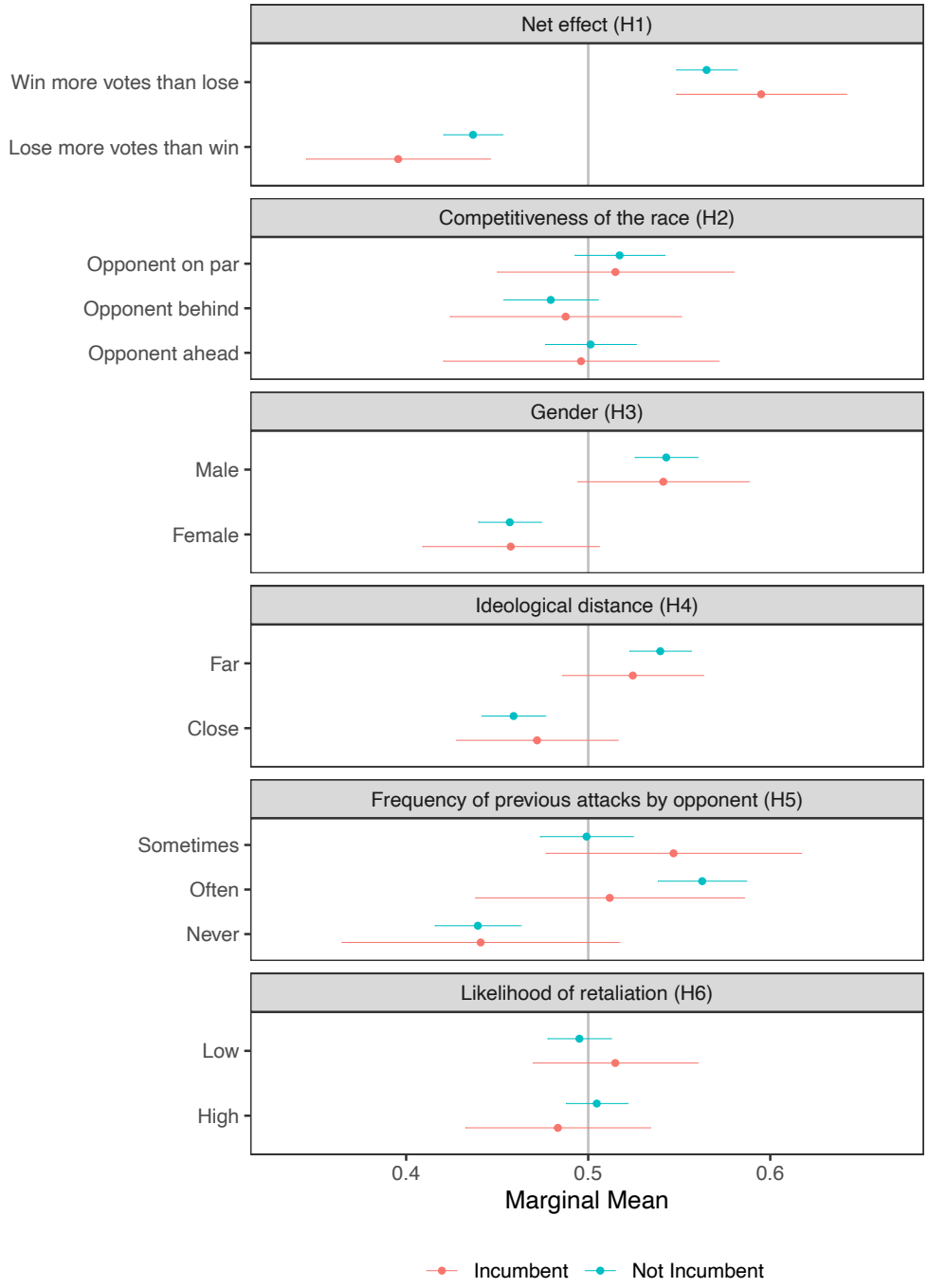

Fig. 3: Marginal means of attribute levels, for incumbents vs. challengers

Discussion and conclusion

This article unpacks the drivers of negative campaigning through a pre-registered conjoint experiment embedded in surveys of more than 800 candidates in German state elections. Combining several theoretical and methodological innovations, our approach advances research on negative campaigning in several respects. First, we more holistically conceptualized the conditions under which candidates decide to attack an opponent or not, incorporating several factors depicting the campaign environment and the specific constellations vis-à-vis two hypothetical opponents. Second, we varied characteristics of the potential target of an attack, which was often not possible or ignored in the most frequently used research designs. Third, by putting real election candidates into scenarios they may face during campaigns, we were able to estimate the relative causal effect of various factors shaping the propensity to use negative campaigning.

The results show that candidates’ decision to attack is shaped by rational-choice considerations but that the profile and the campaign behavior of the political opponent also matter a great deal. Female opponents were less likely to be chosen as the target of attacks, while ideologically distant candidates who themselves go negative were more likely to be attacked. The previous attack behavior of an opponent even was of equal importance as the expected net effect of an attack, suggesting that being attacked triggers either affective reactions or that candidates at least see a necessity to jump into the fray to defend themselves. A host of subgroup analyses showed that candidates’ decisions to go negative are largely independent from moderator variables such as candidates’ gender, incumbency, or candidates’ personality. Taken together, our study demonstrates that election candidates consider the characteristics and attack behavior of their opponents when selecting targets for negative campaigning.

Beyond its findings on the drivers of negative campaigning, the study contributes to the strand of research using experiments with samples of political elites (Druckman et al., 2023; Kertzer & Renshon, 2022). Paired-conjoint experimental designs (Hainmueller et al., 2014) are widely used in population samples (especially on voting behavior, e.g., Nyholt, 2024; Neuner & Wratil, 2022), but have rarely been applied to causally study elites’ political behavior (see for an exception Teele et al., 2018). In particular, we are not aware of studies using a conjoint design to explain the use of negative campaigning.

We also acknowledge several limitations. By design, forced-choice conjoint experiments limit the range of choices to a narrow set of options. To reduce complexity and the burden of the task for candidates, we had to zoom in on six theoretically important factors. Additional relevant factors that could matter such as media coverage, the campaign venue (e.g., social media, local debates between candidates) or the party of an opponent could not be considered. In addition, only a moderate number of levels could be shown for each candidate attribute to achieve sufficient statistical power. Therefore, we had to resort to binary categories such as low/high ideological distance, sacrificing the granularity of more fine-grained ideological distance measures (e.g., from 1 to 11 as asked in surveys). Because the conjoint experiment could only be technically implemented in an online survey, the part of the candidate sample responding to the survey offline could not be included in this experiment. Finally, our study focused on candidates from the second, state-level tier of the German multilevel polity, raising the question of how well the findings generalize to national-level candidates and countries with different political and party systems.

An extension of the study could widen the range of options beyond attacks, making available choices like ignoring opponents or instead appraising own positions. Other experimental designs such as vignette experiments allow for further manipulating different campaign scenarios to elucidate the behavioral reactions by candidates. In such experimental

designs, more dynamic characteristics of the campaign environment like the salience and tone of media coverage could be manipulated. By shifting the focus from the sender of negative campaigning to the characteristics and behavior of potential targets, our approach and findings should open avenues for further research.

Acknowledgements

The authors would like to thank all the candidates who took the time to participate in our surveys despite busy schedules.

Declaration of interest

The authors report there are no competing interests to declare.

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Data and code availability

Data files and code to replicate the results are available on OSF: https://osf.io/j6w3k/

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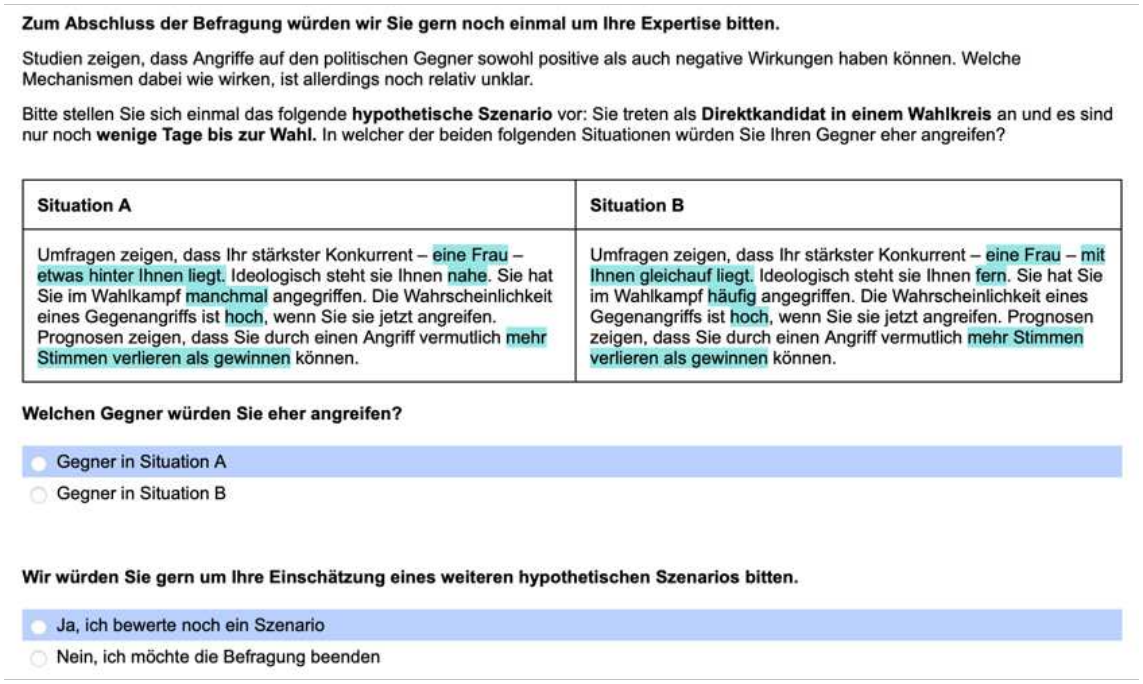
Supplementary material

Appendix A: Experimental setup



Zum Abschluss der Befragung würden wir Sie gern noch einmal um Ihre Expertise bitten.

Studien zeigen, dass Angriffe auf den politischen Gegner sowohl positive als auch negative Wirkungen haben können. Welche Mechanismen dabei wie wirken, ist allerdings noch relativ unklar.

Bitte stellen Sie sich einmal das folgende **hypothetische Szenario** vor: Sie treten als **Direktkandidat in einem Wahlkreis** an und es sind nur noch **wenige Tage bis zur Wahl.** In welcher der beiden folgenden Situationen würden Sie Ihren Gegner eher angreifen?

Situation A	Situation B
Umfragen zeigen, dass Ihr stärkster Konkurrent – eine Frau – etwas hinter Ihnen liegt. Ideologisch steht sie Ihnen nahe. Sie hat Sie im Wahlkampf manchmal angegriffen. Die Wahrscheinlichkeit eines Gegenangriffs ist hoch, wenn Sie sie jetzt angreifen. Prognosen zeigen, dass Sie durch einen Angriff vermutlich mehr Stimmen verlieren als gewinnen können.	Umfragen zeigen, dass Ihr stärkster Konkurrent – eine Frau – mit Ihnen gleichauf liegt. Ideologisch steht sie Ihnen fern. Sie hat Sie im Wahlkampf häufig angegriffen. Die Wahrscheinlichkeit eines Gegenangriffs ist hoch, wenn Sie sie jetzt angreifen. Prognosen zeigen, dass Sie durch einen Angriff vermutlich mehr Stimmen verlieren als gewinnen können.

Welchen Gegner würden Sie eher angreifen?

- Gegner in Situation A
- Gegner in Situation B

Wir würden Sie gern um Ihre Einschätzung eines weiteren hypothetischen Szenarios bitten.

- Ja, ich bewerte noch ein Szenario
- Nein, ich möchte die Befragung beenden

Appendix B: Deviations from the pre-analysis plan

We deviated from the pre-analysis plan (https://osf.io/a4rpz/?view_only=2ccad8addede4622a4ee7f83e5abe373) in one regard. The pre-registered hypotheses H8 to H12 were originally designated as hypothesis tests for a second paper. Instead, we integrate the results of these hypothesis tests as robustness tests in the present paper. Results can be found in Appendix F.

H8 The effect of a positive benefit-cost differential on the likelihood to attack is significantly stronger for candidates scoring low on dark personality traits than for candidates scoring high on dark personality traits.

H9 The effect of a positive benefit-cost differential on the likelihood to attack is significantly stronger for candidates scoring low on conflict approach than for candidates scoring high on conflict approach.

H10a The effect of a positive benefit-cost differential on the likelihood to attack is significantly stronger for candidates scoring low on the basic human value "power" than for candidates scoring high on the basic human value "power".

H10b The effect of a positive benefit-cost differential on the likelihood to attack is significantly stronger for candidates scoring low on the basic human value "achievement" than for candidates scoring high on the basic human value "achievement".

H11 The effect of a positive benefit-cost differential on the likelihood to attack is significantly stronger for candidates who regard negative campaigning as a legitimate strategy than for candidates who regard negative campaigning as an illegitimate strategy.

H12 The effect of a positive benefit-cost differential on the likelihood to attack is significantly stronger for ideologically moderate than for ideologically extreme candidates.

Appendix C: Data sources

Table C1: Covered state elections

State	Date of election	# constituencies	Data taken from (last access 13 Dec 2022)
Saxony-Anhalt	6 Jun 2021	41	https://wahlergebnisse.sachsen-anhalt.de/wahlen/lt21/erg/wkr/lt.01.ergtab.php
Berlin	26 Sep 2021	78	https://www.berlin.de/wahlen/historie/berliner-wahlen/ergebnisberichte/sb_b07-02-03_2021j05_be_ah_bvv-2.pdf
Mecklenburg-Western Pomerania	26 Sep 2021	36	https://www.laiv-mv.de/serviceassistent/download?id=1651135
Schleswig-Holstein	8 May 2022	35	https://www.statistik-nord.de/fileadmin/Dokumente/Wahlen/Schleswig-Holstein/Landtagswahlen/2022/endgültig/Wahlbericht_LTW_SH_2022_endgültig.pdf
Saarland	27 Mar 2022	3	https://wahlergebnis.saarland.de/LTW/
North Rhine-Westphalia	15 May 2022	128	https://webshop.it.nrw.de/gratis/B799%20202251.pdf
Lower Saxony	9 Oct 2022	87	https://wahlen.statistik.niedersachsen.de/LW2022/

Appendix D: Sample description

Table D.1: Comparison of population of candidates and conjoint sample

		Population (%)	Sample (%)	p-value (chi-squared test)
Gender	Female	34.11	35.4	0.205
	Male	65.89	64.6	
Age	18-29	12.27	12.69	0.382
	30-49	46.51	47.99	
	50-69	38.34	36.69	
	70+	2.89	2.62	
Party	DIE LINKE	14.04	17.22	< 0.001
	SPD	18.27	16.86	
	DIE GRÜNEN	16.22	21.97	
	CDU	21.92	16.98	
	FDP	15.94	17.4	
	AFD	13.61	9.56	
State	Berlin	29.01	15.73	< 0.001
	Lower Saxony	14.03	18.03	
	Mecklenburg-Western Pomerania	11.64	6.31	
	Northrhine-Westphalia	19.88	29.64	
	Saarland	6.59	5.78	
	Saxony-Anhalt	10.99	11.5	
	Schleswig-Holstein	7.87	13	
Incumbency	not incumbent	91.18	89.77	0.131
	incumbent	8.82	10.23	

Appendix E: Main models with AMCEs

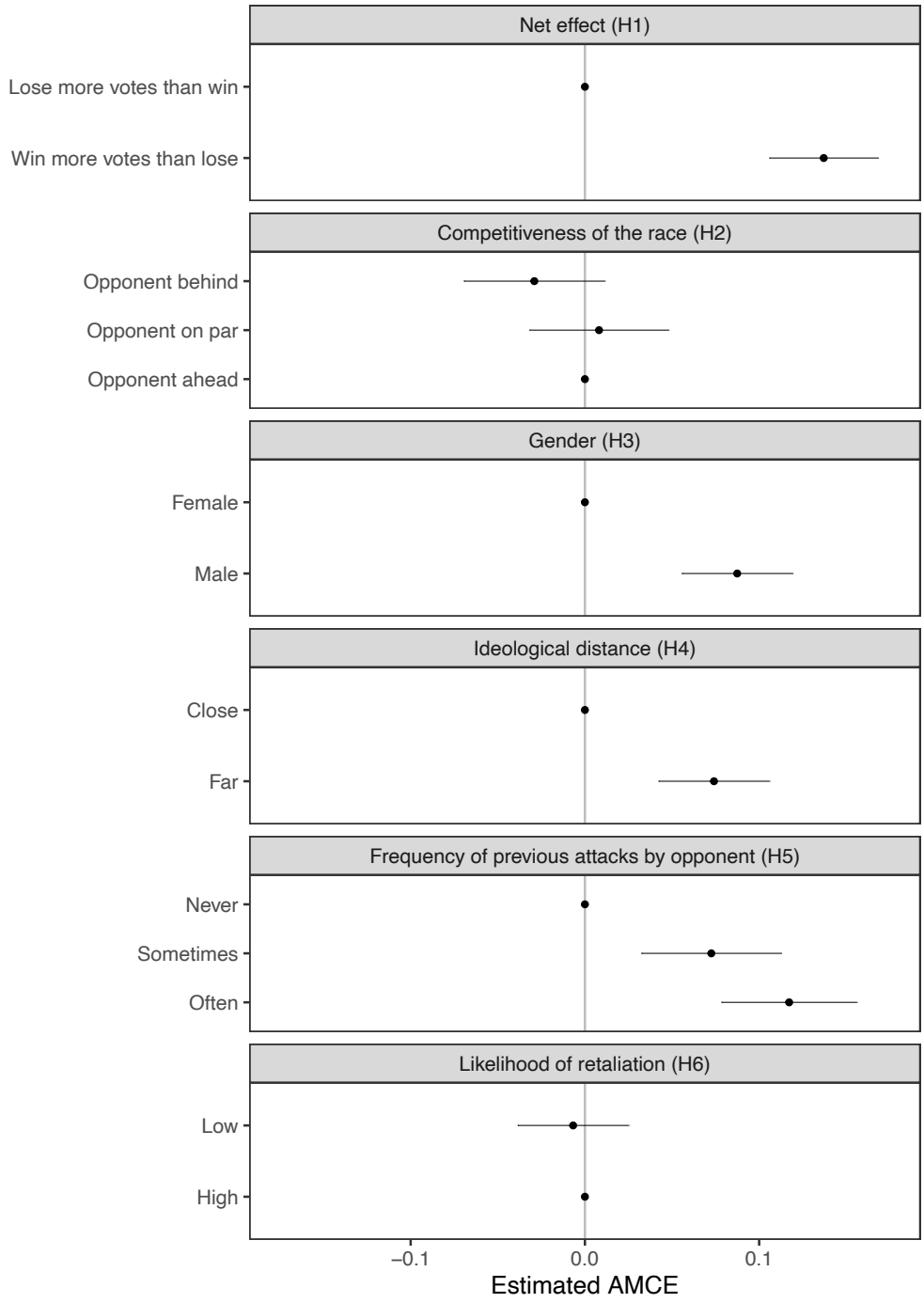


Figure E.1. Average marginal component effect

Appendix F: Diagnostics

Attribute distribution

Figure F.1 shows how often each attribute level was shown in the conjoint tasks. It illustrates that, as expected by virtue of randomization, levels within an attribute were shown at roughly equal rates.

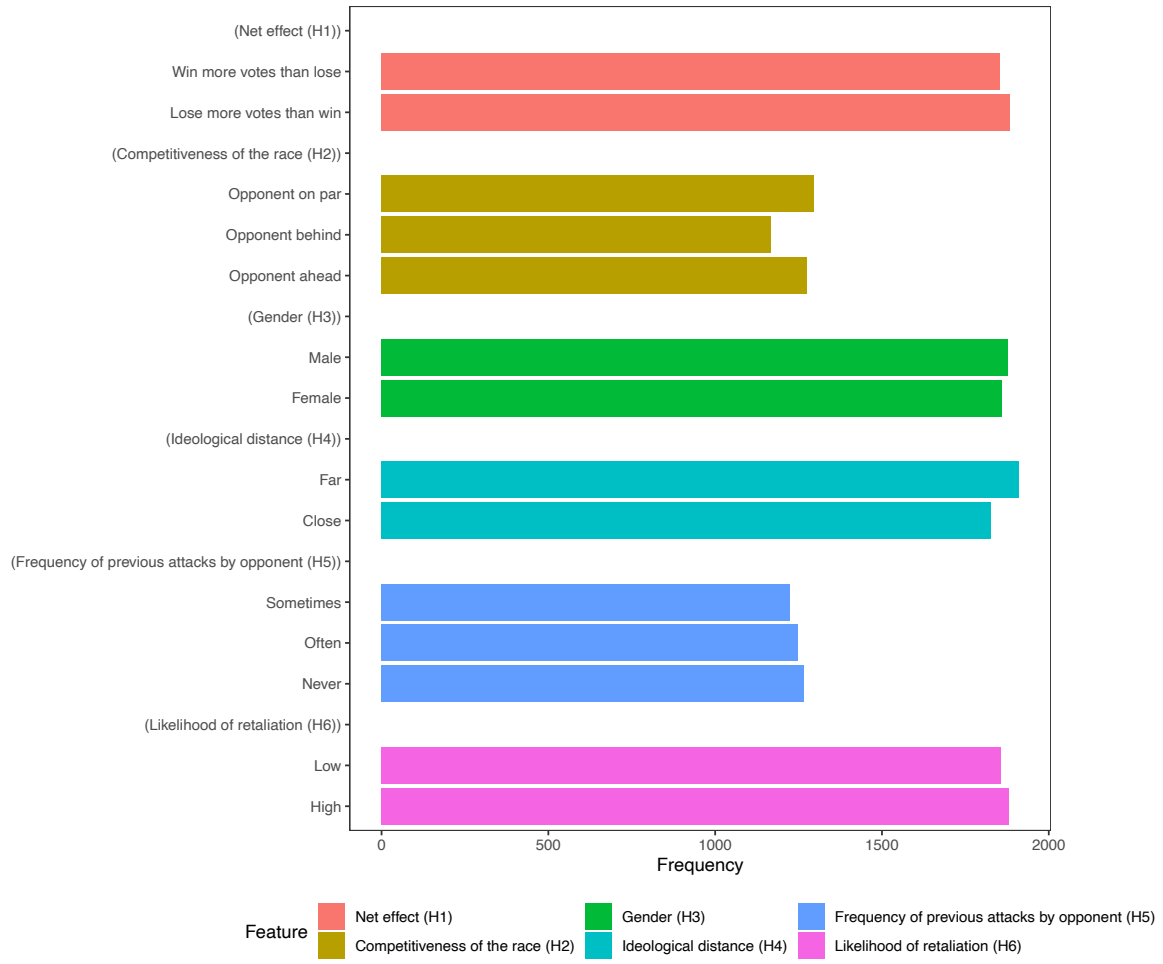


Figure F.1. Distribution of attribute levels

Balance testing

Figures F.2 though F.4 show balance tests for some key observable demographics. Even though in expectation, randomization will ensure that covariates are equally distributed between conditions, imbalances can always emerge in a particular experiment, which in turn could influence differences between treatments. Each plot shows whether the central tendency of the covariate differs between attribute levels. We use the proportion of women,

the proportion of incumbents, and the average age. As all confidence intervals overlap with each other, there is no indication for any imbalance.

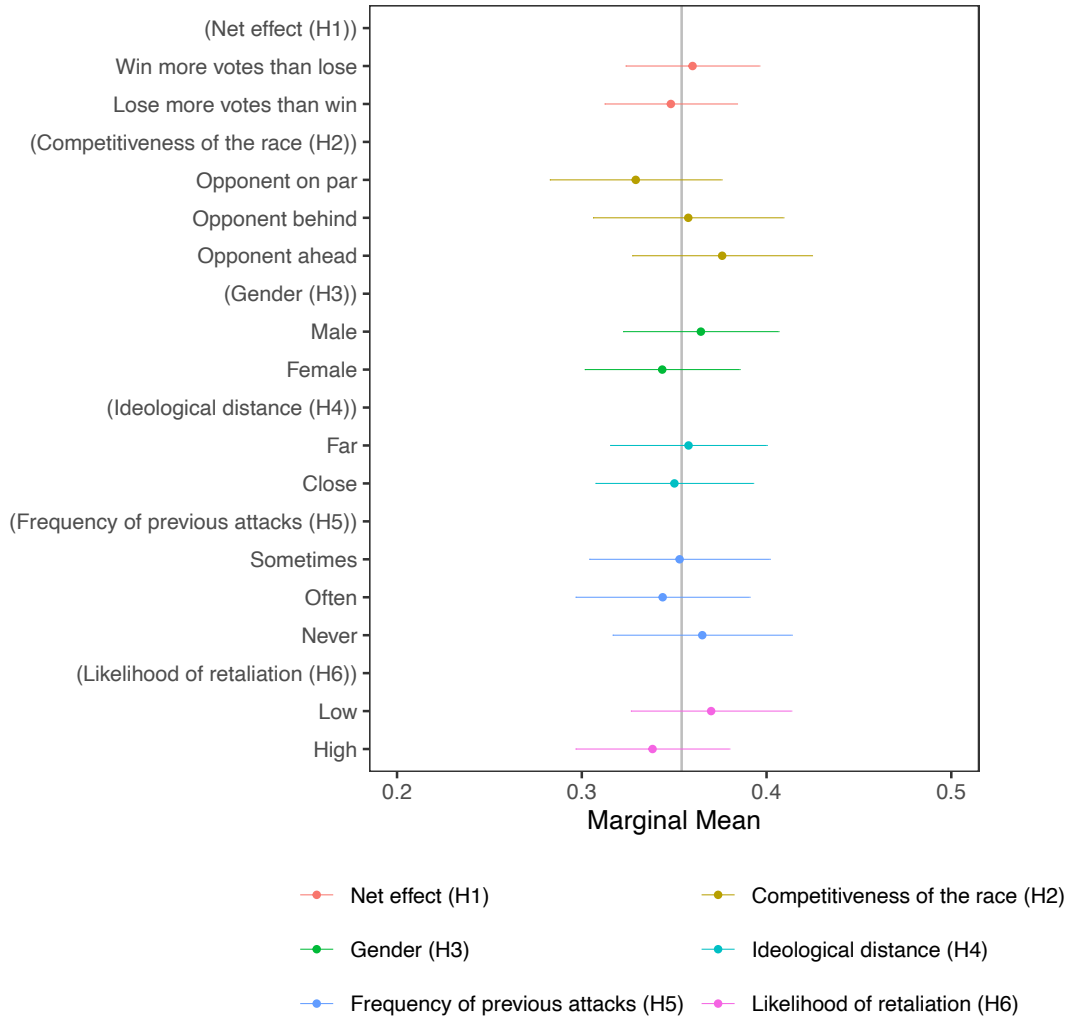


Figure F.2. Balance of gender (proportion female) across attribute levels

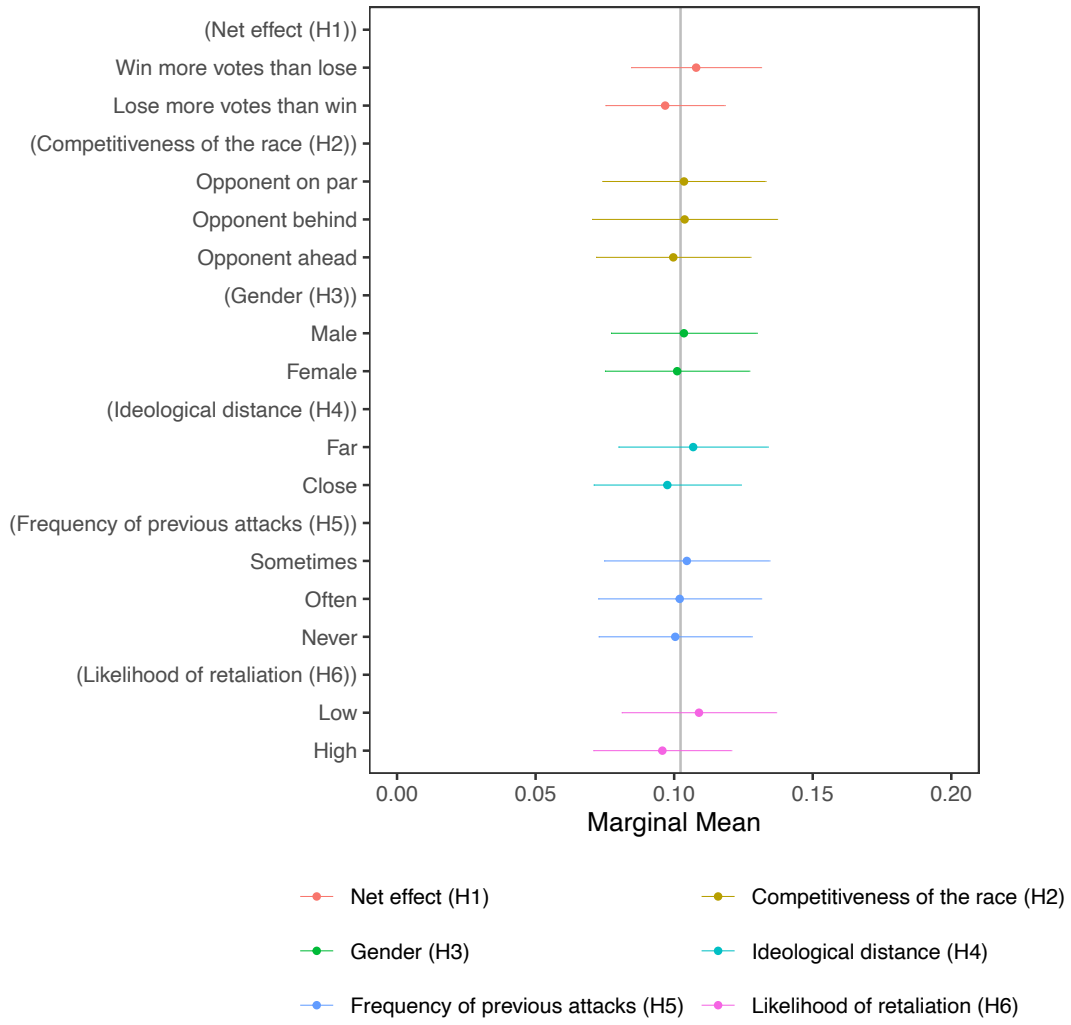


Figure F.3. Balance of incumbency (proportion incumbents) across attribute levels

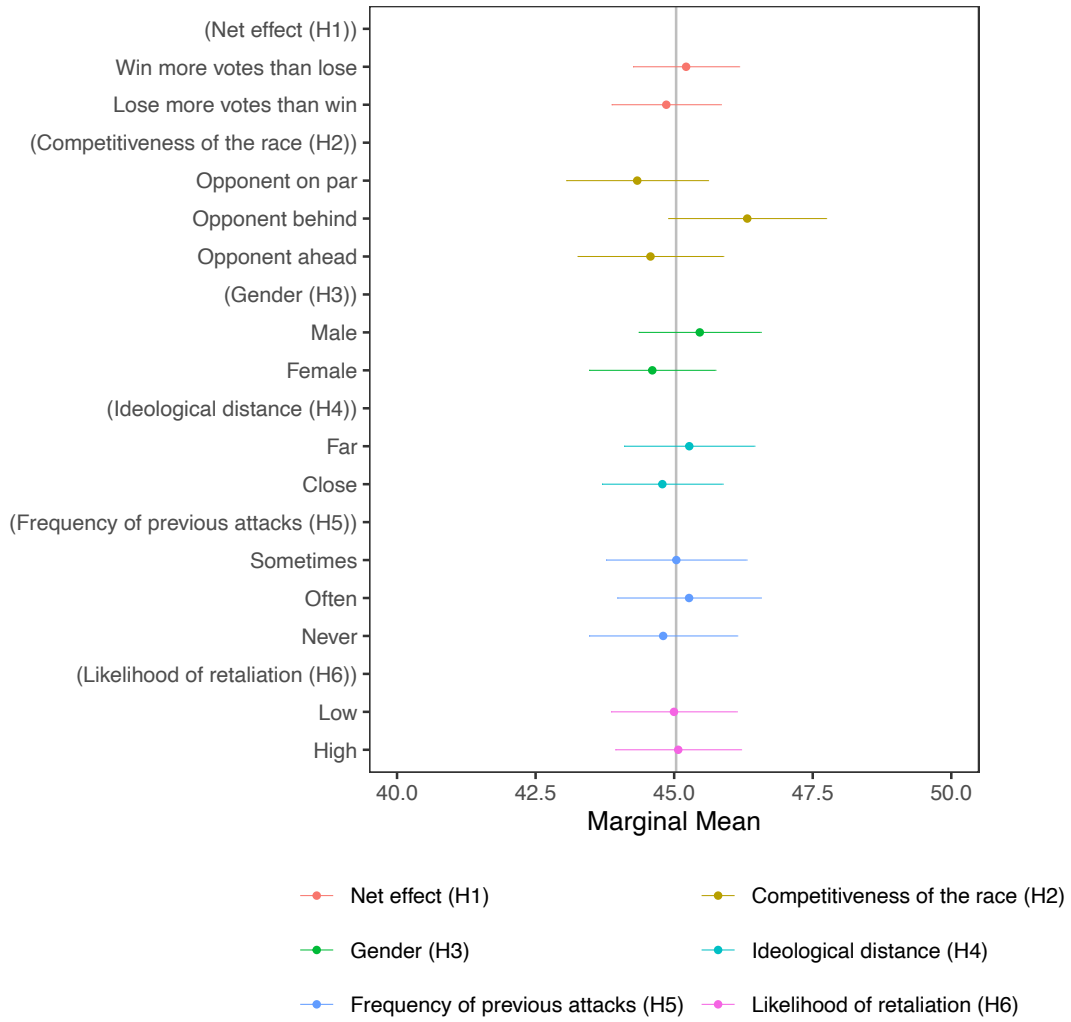


Figure F.4. Balance of age (average) across attribute levels

Appendix G: Robustness checks

Table G.1: Description of covariates

Concept	Question	Mean	SD	Alpha
Conflict approach	Index	3.404	0.81	0.617
	"Ich mag es, andere herauszufordern." ("I like challenging others.")	3.536	1.049	
	"Ich finde Konflikte interessant." ("I find conflict interesting.")	3.553	1.067	
	"Streit stört mich nicht." ("I don't mind arguing.")	3.02	1.143	
Dark personality	Index	2.587	0.666	0.651
	"Ich habe schon mal kleine Nachteile in Kauf genommen, um eine Person zu bestrafen, die es verdiente." ("I've taken small penalties before to punish someone who deserved it.")	1.826	1.054	
	"Menschen bereuen es immer, wenn sie sich mit mir anlegen." ("People always regret messing with me.")	2.309	1.065	
	"Es ist ratsam, Informationen im Auge zu behalten, die man später gegen andere verwenden kann." ("It's wise to keep track of information that you can later use against others.")	2.953	1.164	
	"Es gibt Dinge, die du vor anderen Menschen verbergen solltest, um dein Ansehen zu wahren." ("There are things you should hide from other people to protect your reputation.")	2.838	1.158	
	"Ich beharre darauf, den Respekt zu bekommen, den ich verdiene." ("I insist on getting the respect I deserve.")	2.636	1.124	
	"Ich will, dass meine Konkurrenten scheitern." ("I want my competitors to fail.")	2.687	1.149	
Ideology	Left-right scale	4.75	2.232	
Negative campaigning attitude	Index	2.928	0.894	0.709
	"Angriffe auf den politischen Gegner sind ein angemessenes Mittel, um sich einen Vorteil im Wahlkampf zu verschaffen." ("Attacks on political opponents are an appropriate means of gaining an advantage in an election campaign.")	3.046	1.126	
	"Wenn Angriffe auf den politischen Gegner nur das Ziel haben, sich einen Vorteil zu verschaffen, ist das unfair." ("If attacks on the political opponent are only aimed at gaining an advantage, this is unfair.")	3.453	1.26	
	"Angriffe auf den politischen Gegner sind gerechtfertigt, da man so die eigenen Wähler mobilisieren kann." ("Attacks on the political opponent are justified, since one can mobilize one's own voters in this way.")	2.961	1.105	
Value: achievement	Index	2.668	0.936	0.796
	"Meine Fähigkeiten zu zeigen; danach zu streben, dass die Leute bewundern, was ich tue." ("to show my skills; to strive for people to admire what I do.")	2.398	1.216	
	"Sehr erfolgreich zu sein; andere Leute zu beeindrucken." ("To be very successful; to impress other people.")	2.132	1.085	
	"Ehrgeizig zu sein; zu zeigen, wie fähig ich bin." ("to be ambitious; to show how capable I am.")	3.132	1.266	

	"Im Leben vorwärts zu kommen; danach zu streben, besser zu sein als andere." ("To get ahead in life; to strive to be better than others.")	2.811	1.27	
Value: power	Index	2.26	0.813	0.689
	"Reich zu sein; viel Geld und teure Sachen zu besitzen." ("to be rich; having a lot of money and expensive things.")	1.463	0.736	
	"Die Führung zu übernehmen und anderen zu sagen, was sie tun sollen; andere dazu zu bewegen zu tun, was ich sage." ("Taking the lead and telling others what to do; to get others to do what I say.")	2.427	1.163	
	"Immer derjenige zu sein, der die Entscheidungen trifft; Führungspositionen zu übernehmen." ("Always being the one who makes the decisions; to take on management positions.")	2.667	1.18	

Subgroup analyses: F-tests

Gender

Table G.2: Test of interaction of net effect with respondent gender

Model	*Resid..Df*	*Resid..Dev*	*df*	*Deviance*	*statistic*	*p.value*
Basic model	*3732*	*916.357*	*NA*	*NA*	*NA*	*NA*
Interaction model	*3730*	*916.346*	*2*	*0.01*	*0.021*	*0.979*

Table G.3: Test of interaction of closeness of race with respondent gender

Model	Resid..Df	Resid..Dev	df	Deviance	statistic	p.value
Basic model	3731	932.671	NA	NA	NA	NA
Interaction model	3728	932.583	3	0.089	0.118	0.949

Table G.4: Test of interaction of gender with respondent gender

Model	Resid..Df	Resid..Dev	df	Deviance	statistic	p.value
Basic model	3732	926.644	NA	NA	NA	NA
Interaction model	3730	926.398	2	0.246	0.495	0.61

Table G.5: Test of interaction of ideological distance with respondent gender

Model	Resid..Df	Resid..Dev	df	Deviance	statistic	p.value
Basic model	3732	927.866	NA	NA	NA	NA
Interaction model	3730	927.844	2	0.022	0.044	0.957

Table G.6: Test of interaction of attack frequency with respondent gender

Model	Resid..Df	Resid..Dev	df	Deviance	statistic	p.value
Basic model	3731	924.747	NA	NA	NA	NA
Interaction model	3728	924.238	3	0.509	0.684	0.562

Table G.7: Test of interaction of retaliation likelihood with respondent gender

Model	Resid..Df	Resid..Dev	df	Deviance	statistic	p.value
Basic model	3732	933.473	NA	NA	NA	NA
Interaction model	3730	931.821	2	1.652	3.307	0.037

Incumbency

Table G.8: Test of interaction of net effect with respondent incumbency

Model	Resid..Df	Resid..Dev	df	Deviance	statistic	p.value
Basic model	3732	916.357	NA	NA	NA	NA
Interaction model	3730	915.919	2	0.438	0.892	0.41

Table G.9: Test of interaction of competitiveness of race with respondent incumbency

Model	Resid..Df	Resid..Dev	df	Deviance	statistic	p.value
Basic model	3731	932.671	NA	NA	NA	NA
Interaction model	3728	932.66	3	0.011	0.015	0.998

Table G.10: Test of interaction of gender with respondent incumbency

Model	Resid..Df	Resid..Dev	df	Deviance	statistic	p.value
Basic model	3732	926.644	NA	NA	NA	NA
Interaction model	3730	926.643	2	0.001	0.001	0.999

Table G.11: Test of interaction of ideological distance with respondent incumbency

Model	Resid..Df	Resid..Dev	df	Deviance	statistic	p.value
Basic model	3732	927.866	NA	NA	NA	NA
Interaction model	3730	927.798	2	0.068	0.137	0.872

Table G.12: Test of interaction of attack frequency with respondent incumbency

Model	Resid..Df	Resid..Dev	df	Deviance	statistic	p.value
Basic model	3731	924.747	NA	NA	NA	NA
Interaction model	3728	924.191	3	0.556	0.748	0.523

Table G.13: Test of interaction of retaliation likelihood with respondent incumbency

Model	Resid..Df	Resid..Dev	df	Deviance	statistic	p.value
Basic model	3732	933.473	NA	NA	NA	NA
Interaction model	3730	933.329	2	0.144	0.288	0.75

Subgroup analysis by state

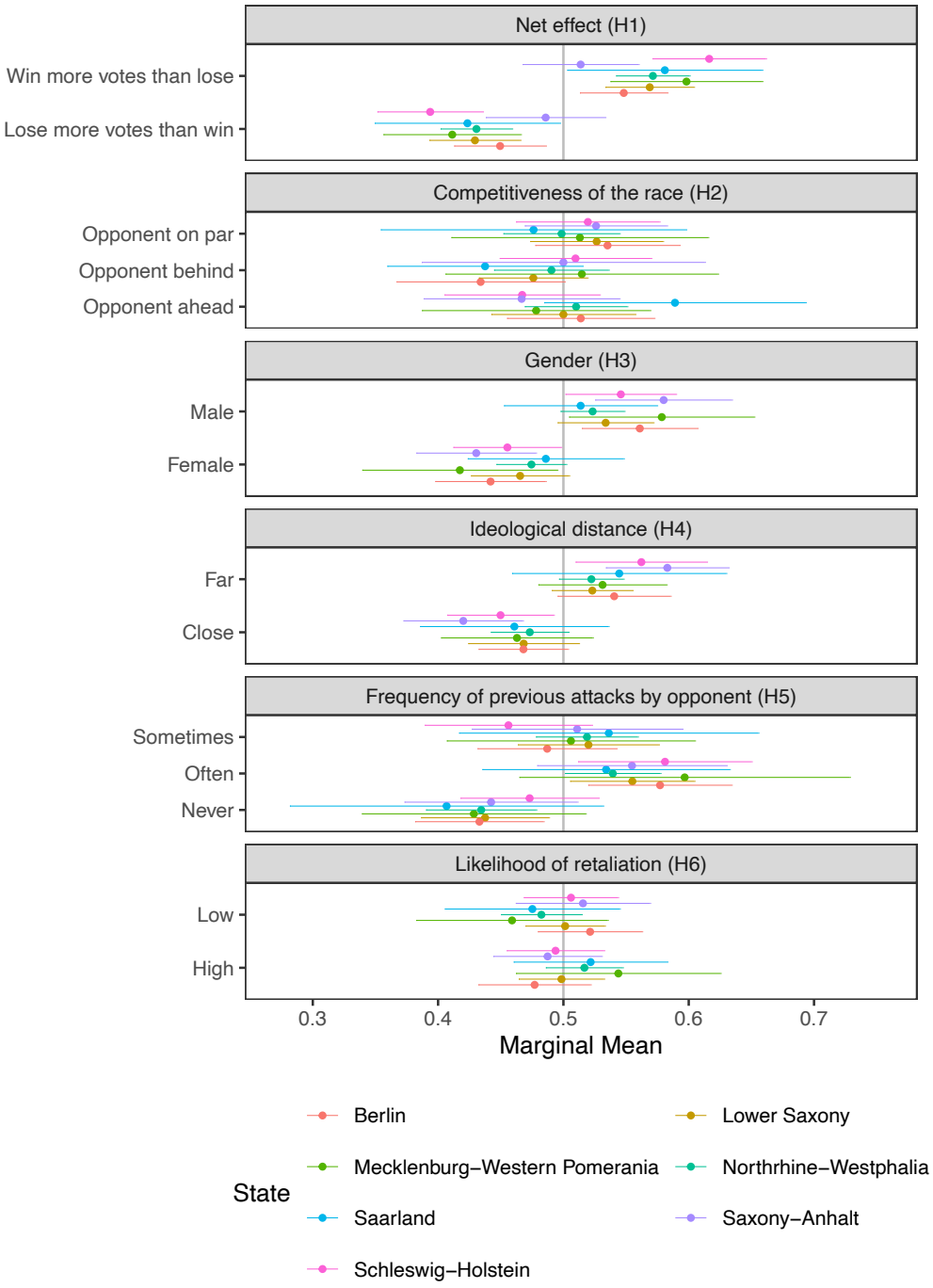


Figure G.1: Marginal means by state

Subgroup analysis by other psychological traits

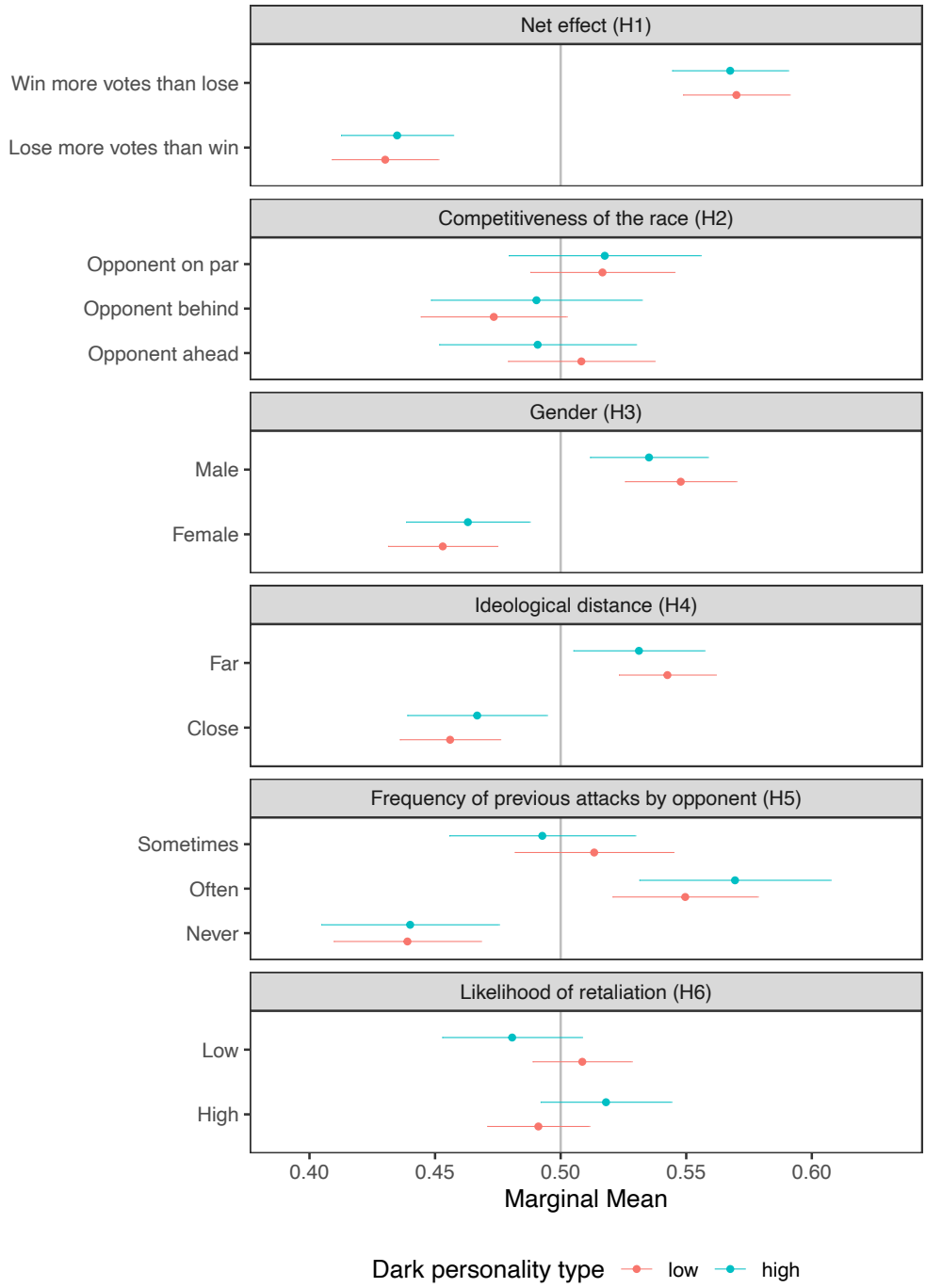


Figure G.2: Marginal means by dark personality

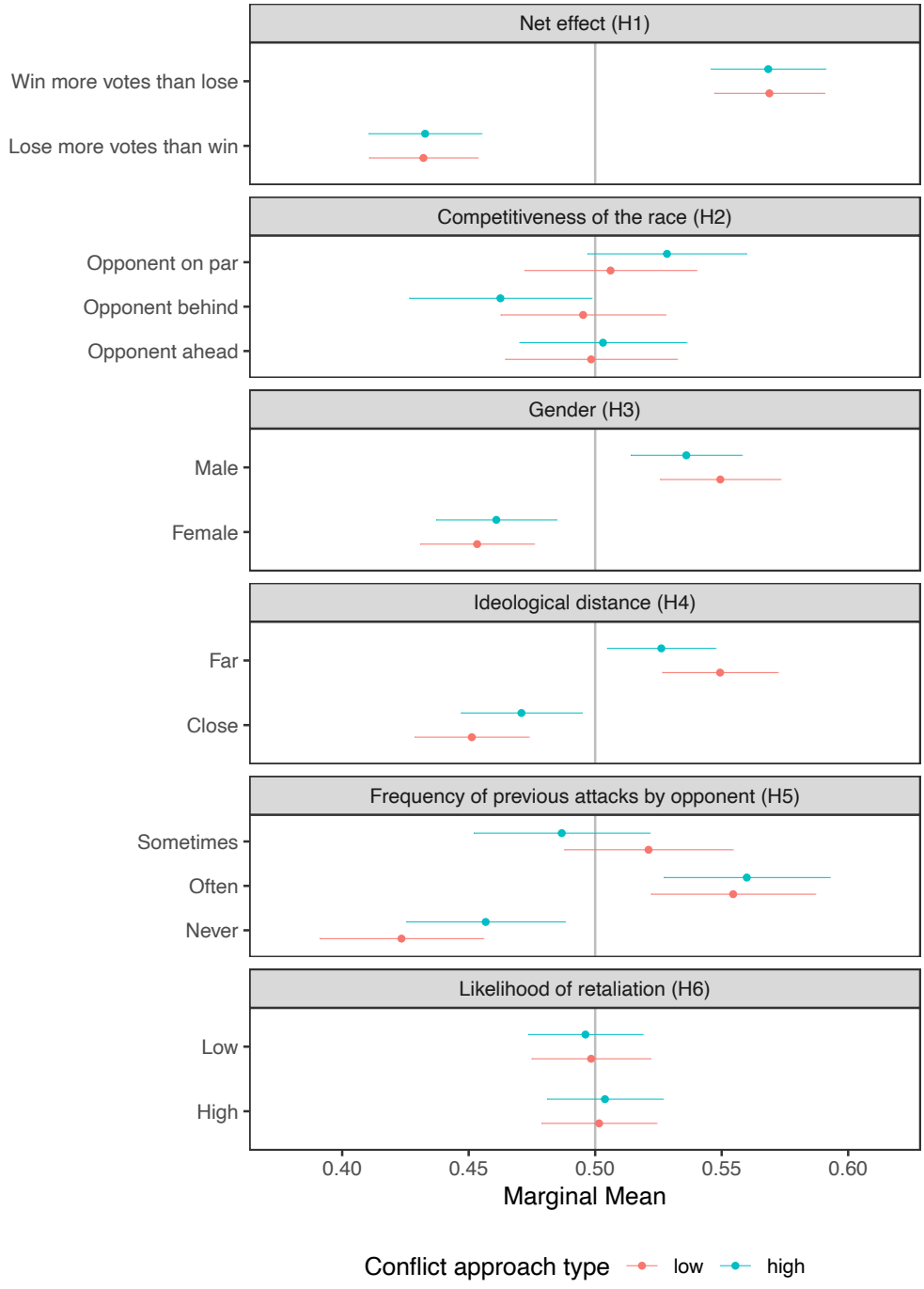


Figure G.3: Marginal means by conflict approach

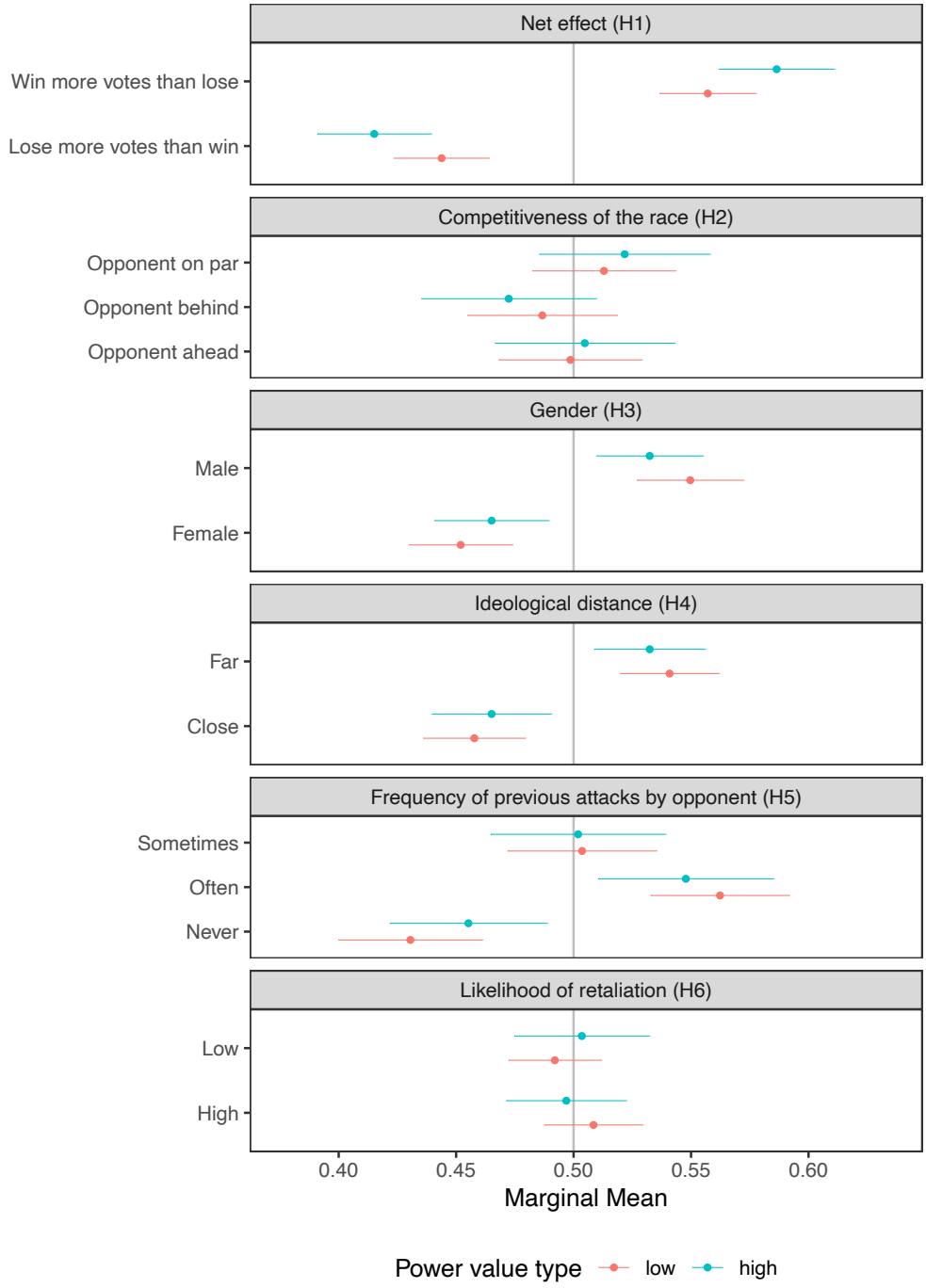


Figure G.4: Marginal means by power values

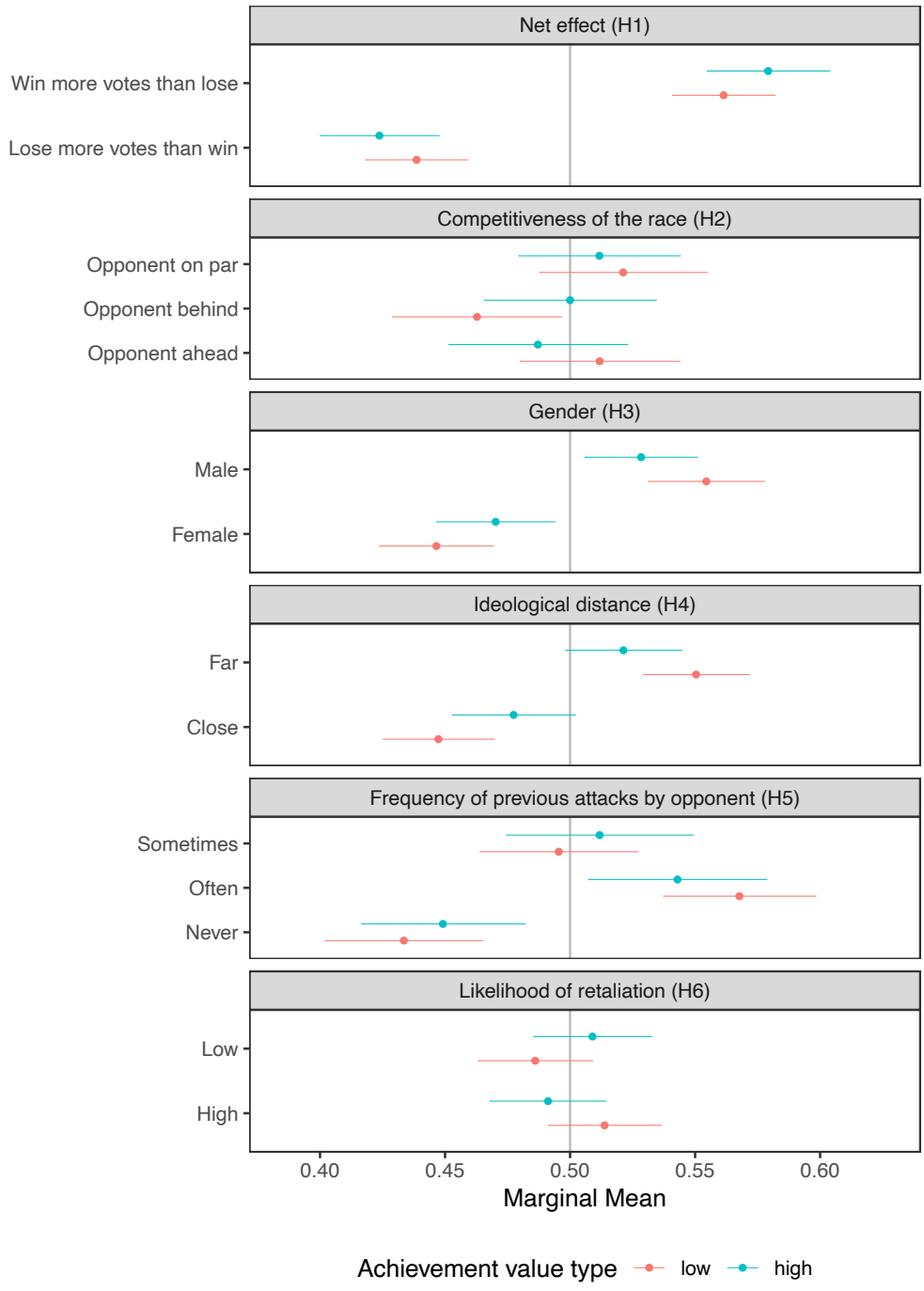


Figure G.5: Marginal means by achievement values

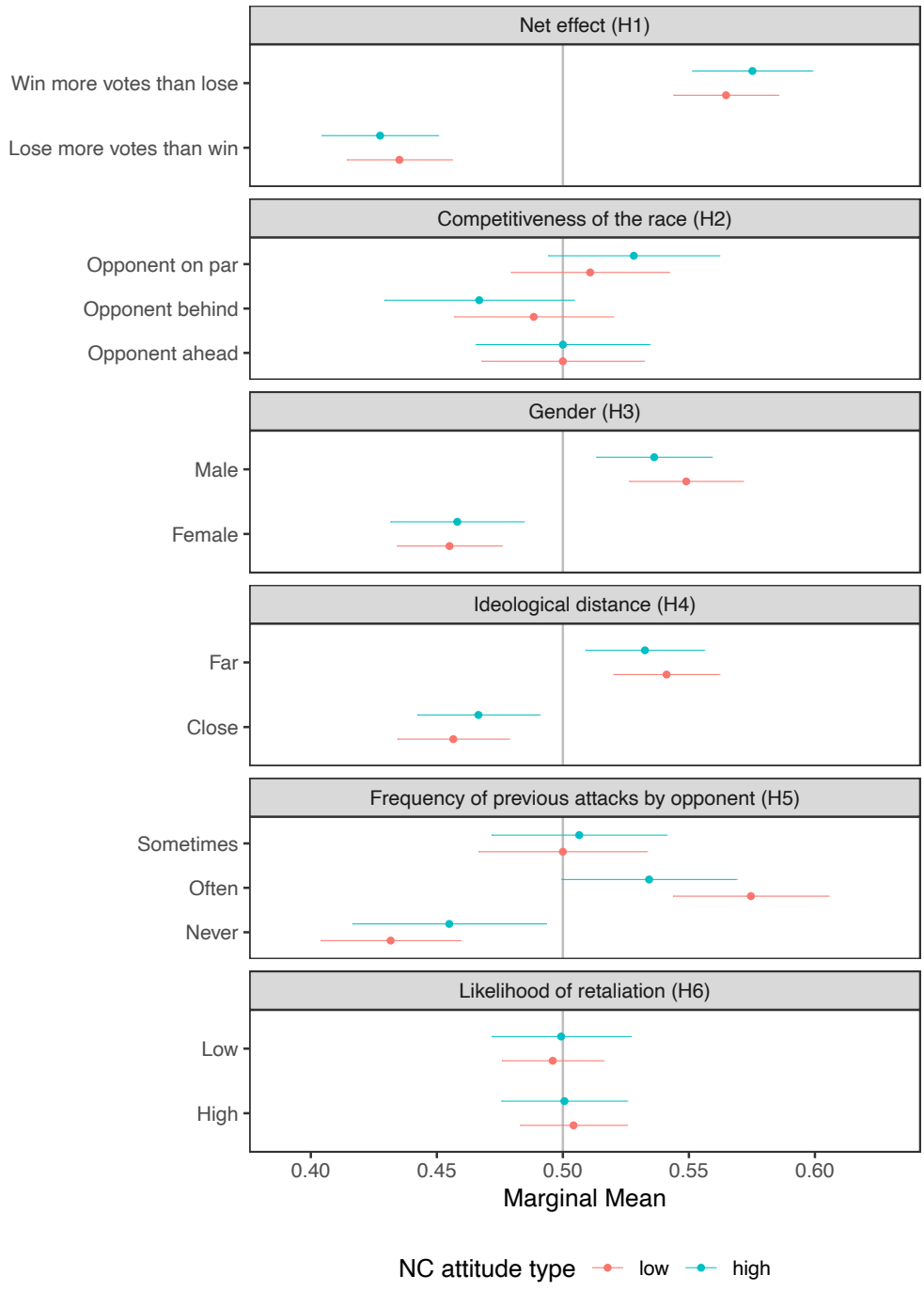


Figure G.6: Marginal means by negative campaigning attitudes

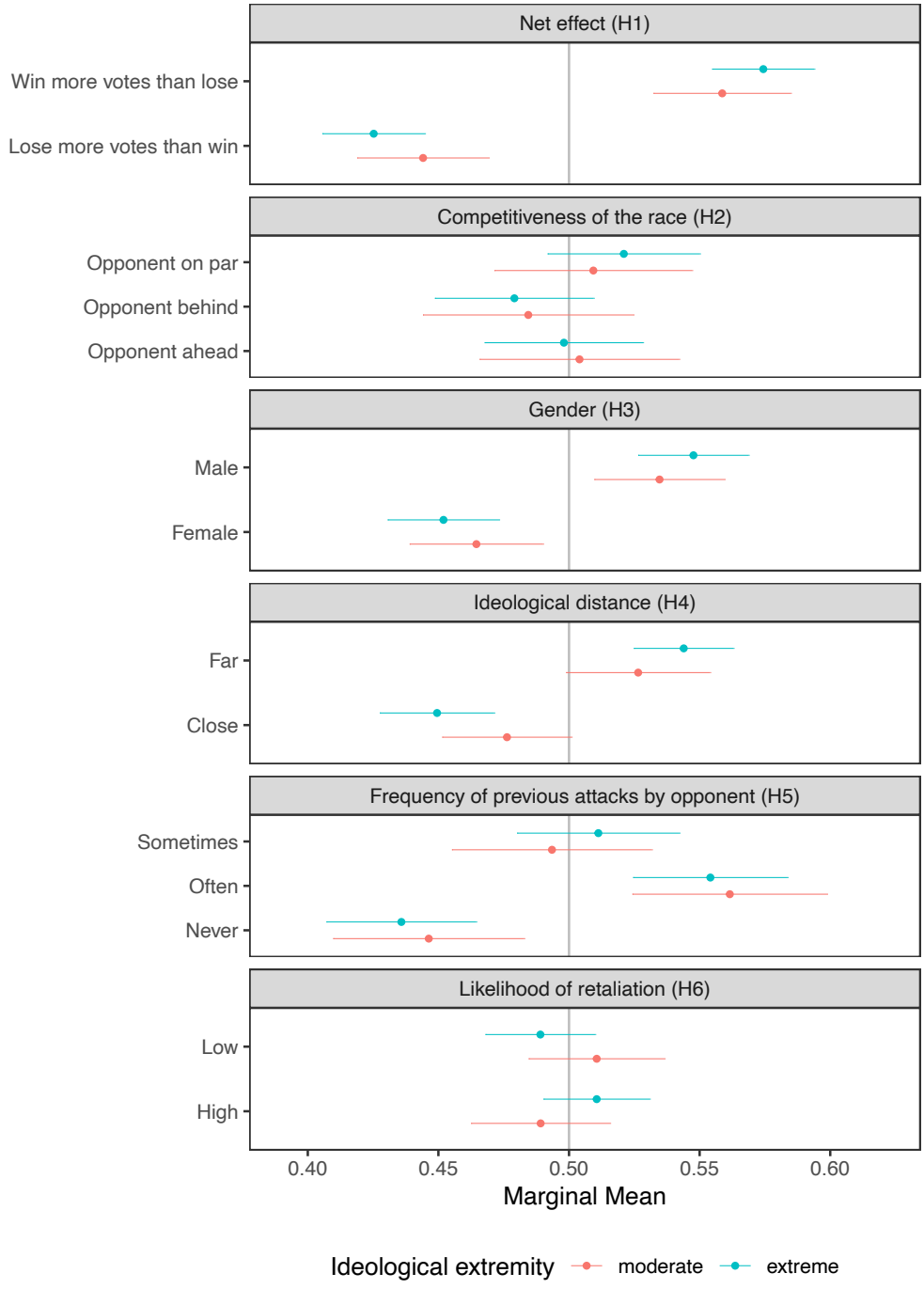


Figure G.7: Marginal means by ideological extremity