# Winning Faces Vary By Ideology:

## How Non-Verbal Source Cues Influence

## Election and Communication Success in Politics

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Abstract

*Not just the content of a communication but also the source of the communication shapes its persuasiveness. Recent research in political communication suggests that important source cues are non-verbal and relates to the physical traits of the source such that attractive- and competent-looking sources have better success in attracting votes and policy support. Yet, are all non-verbal source cues similarly received irrespective of audience, or does their reception vary across audiences? Specifically, we ask whether some physical traits are received positively by some audiences but backfire for others. Utilizing research on ideological stereotypes and the determinants of facial preferences, we focus on the relationship between the facial dominance of the source and the ideology of the receiver. Across five studies, we demonstrate that a dominant face is a winning face when the audience is conservative but backfires and decreases success when the audience is liberal. On the other hand, a non-dominant face constitutes a winning face among liberal audiences but backfires among conservatives. These effects seemingly stem from deep-seated psychological responses and shape both the election and communication success of real-world politicians. If the faces of politicians do not match the ideology of their constituency, they are more likely to lose in the competition for votes and policy support.*

**Key words:** Source cues, non-verbal cues, facial dominance, ideology, elections, persuasion, followership psychology.

Persuasive communication is at the core of political competition (Mutz, Sniderman, & Brody, 1996). Politicians compete to persuade the public to vote for them in elections and express support for their policies. Decades of political communication research have provided important evidence on how politicians seek to achieve these goals by strategically managing the content of their communication. Political elites have been shown to enhance the persuasiveness of their communication by, for example, emphasizing favorable features of multi-facetted issues and neglecting unfavorable ones (Chong & Druckman, 2007) and by appealing to generally accepted values (Brewer, 2002). While past research has demonstrated these strategies to be successful on average, recent studies suggest that there are limits to politicians' abilities to communicate persuasively with the public (Druckman, 2001). To a large degree, these limits stem from the fact that the persuasiveness of communication is not just influenced by the *content* of communication but also the *source* of the communication (Hartman & Weber, 2009).

In politics, little content is communicated without a source. The media rarely covers different positions and arguments without attributing these arguments to particular political sources and, most often, individuals such as particular politicians. Research has shown that communication from sources that are less of an authority (e.g., a lower-ranking politician), less credible (e.g., one with less of a track record on a particular issue) or less easy to identify with (e.g., from an opposing party) are systematically less persuasive, even when communication content is unaltered (Druckman, 2001; Hartman & Weber, 2009; Mondak, 1993). Yet, because of the mediatization of politics, the source cues available in politics extend beyond such verbal cues (e.g., Mutz & Reeves, 2005). Through televised debates, campaign ads, and election posters, the public are continuously exposed to non-verbal cues about politicians, including their physical appearance, their posture, their way of clothing, the pitch of their voice, and so forth.[1] Recent research has shown that many

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[1] For relevant documentation of this from the key site of the present studies, Denmark, see Hansen and Hoff, 2010.

of these non-verbal cues about the sources of communication are influential such that politicians with lower pitched voices (Klofstad, Anderson, & Peters, 2012; a signal of competence and physical prowess: Tigue, Borak, O'Connor, Schandl, & Feinberg, 2012), happy facial gestures (Sullivan & Masters, 1988), more attractive faces (Berggren, Jordahl, & Poutvaara, 2010), more competent-looking faces (Todorov, Mandisodza, Goren, & Hall, 2005; for a cross-cultural investigation of this relationship see also Rule, Ambady, Adams, Ozono, Nakashima, Yoshikawa, & Watabe, 2010. For features determining facial competence, see Olivola & Todorov, 2010a) are viewed as more credible and receive more support for their positions and in elections.

It is clear from past research that non-verbal source cues matter in political communication contexts. Yet, because most past research has primarily focused on the average effects of non-verbal source cues, surprisingly little is known about whether everybody is equally persuaded by all such cues.[2] This is an important question as some research opens for the possibility that non-verbal source cues that appeal to one voter might backfire in the case of other voters. For example, using a sophisticated experimental protocol, Bailenson, Garland, Iyengar, Yee, and Collins (2008) demonstrated that voters prefer politicians whose faces physically resemble their own, implying that a specific face will appeal to some but not all voters. In this paper, we focus directly on the question of whether specific non-verbal source cues differ in their effects for different voters. Focusing on facial traits of politicians, we demonstrate that facial dominance (i.e., a masculine and dominant look) *increases* the election and communication success of the source among conservative voters but *decreases* the success of the source among liberal voters.  In short,

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[2] This is not to suggest that moderators have not been investigated. For example, studies have investigated how verbal and non-verbal cues potentially compete in their effects (see, e.g., Budesheim & DePaola, 1994; Riggle, Ottati, Wyer, Kuklinski & Schwarz, 1992; Rosenberg, Bohan, McCafferty & Harris, 1986) and how, e.g., the less politically sophisticated are more swayed by non-verbal source cues (Lenz & Lawson, 2011). Yet, our primary goal is to investigate something different and, in particular, ask whether non-verbal source cues that increase persuasion for some, backfire and decrease persuasion for others.

we provide evidence that politicians whose faces do not match the ideology of their constituency are disadvantaged in the competition for votes and policy support.

Theoretically, we build on a large literature showing that people associate certain facial traits with certain ideological positions. Specifically, past research suggests that people (1) are significantly better than chance at guessing the party affiliation and ideological leaning of unfamiliar citizens and political candidates from facial photos alone (Jahoda, 1954; Bull & Hawkes, 1982; Rule & Ambady, 2010; Samochowiec, Wänke, & Fiedler, 2010); (2) associate dominant, masculine, and powerful faces and characteristics with being conservative and a Republican, and friendly, feminine, and warm (i.e., non-dominant) faces and characteristics with being liberal and a Democrat (Rule & Ambady, 2010; Winter, 2010; Hayes, 2005)[3]; and (3) are more likely to re-elect candidates whose appearances match the stereotype for their party and/or ideological position (Samochowiec et al., 2010).

In this manuscript, we integrate these insights on a perceived link between the ideology of individuals and their facial appearance with an important finding from studies of explicit verbal cues of ideology: that people are more persuaded by sources that share their ideology (Hartman & Weber, 2009). We predict and demonstrate that people react in a parallel fashion to non-verbal, facial cues of source ideology: Conservative voters are predicted to prefer and be more persuaded by dominant-looking sources, while liberal voters are predicted to prefer and be more persuaded by non-dominant-looking sources.

We substantiate this key prediction and pursue additional empirical implications by utilizing psychological research on the general moderators of preferences for dominance in leaders (Laustsen & Petersen, 2015; Little, Buriss, Jones, & Roberts, 2007; Spisak, Homan, Grabo, & van Vugt, 2012, Spisak, Dekker, Krüger, & van Vugt, 2012). This research has demonstrated the

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[3] Furthermore, Wilson and Rule (2014) and Young, Ratner and Fazio (2013) find that subjects' perception and ascription of traits to politicians is moderated by their own ideology and attitudes towards the target politician.

existence of a general psychological disposition to prefer dominant leaders under conflict. Because conservatives more than liberals tend to view society as more conflict-ridden (Duckitt & Sibley, 2010; Jost, Federico, & Napier, 2009; Hibbing, Smith, & Alford, 2013), we hypothesize that this general disposition could underlie the different preferences for dominant and non-dominant sources among conservative and liberal voters, respectively. In line with this, we provide additional evidence that the effect of receiver ideology on preferences for dominant-looking sources is driven by psychological differences related to perceptions of conflict, is paralleled by experimental manipulations of conflict levels (replicating past research: Little et al., 2007; Spisak et al., 2012a; Spisak et al., 2012b), generalizes to non-political contexts, and exists cross-nationally. We also show the limits of the effects of non-verbal source cues: When the source is widely known, the effect of non-verbal cues is diminished.

**The Ideology of the Receiver and the Dominance of the Source: A Theory of the Effects of Non-Verbal Source Cues in Communication**

Previous work on source cues in political communication has demonstrated that cues to the ideology of the source play an important role. Using both observational and experimental methods, people have been shown to be more persuaded by sources whose ideology matches their own (Druckman, 2001; Hartmann & Weber, 2009; Mondak, 1994; Zaller, 1992), presumably because they find such sources both more credible and easier to identify with (Druckman, 2001; Hartmann & Weber, 2009). Reversely, people are less persuaded by sources whose ideology does not match theirs. These past studies have all focused on explicit, verbal cues of source ideology. Yet, two complimentary literatures suggest that similar effects could emerge from specific types of non-verbal source cues: cues related to dominance. Below, we consider these literatures in turn.

*Non-Verbal Source Cues and Partisan Stereotypes*

Past studies have shown that people tend to make inferences about source ideology from certain

non-verbal cues and, in particular, from cues related to dominant looks. Specifically, several studies have shown that naive subjects can predict the party affiliation and ideological leanings of US, British, German, and Swiss politicians by merely looking at photos of the politicians' faces (Jahoda, 1954; Bull & Hawkes, 1982; Rule & Ambady, 2010; Samochowiec et al., 2010; however see also Olivola & Todorov, 2010b). As argued in a number of these studies, this suggests that voters hold (partly correct) stereotypic associations between the ideology of politicians and their facial metrics and gestures (Rule & Ambady, 2010; Carpinella & Johnson, 2012; Samochowiec et al., 2010). Detailed investigations of the content of these stereotypes have shown that a "dominant" look is associated with a right-wing rather than left-wing ideology (Samochowiec et al., 2010) and a "powerful" look is associated with being Republican and a "warm" and non-dominant look with being Democrat (Rule & Ambady, 2010).[4]

On this basis, we predict—in parallel to studies of explicit cues of ideology—that liberal audiences are more willing to follow non-dominant-looking sources and conservative audiences are more likely to follow dominant-looking sources. In contrast, dominant looks will hurt a source's success when the audience is liberal, and non-dominant looks will hurt the source when the audience is conservative. Such non-verbal cues, we suggest, could either influence source effects when verbal and more direct cues are not available or, potentially, take effect alongside verbal cues and be utilized as further cues to the credibility of the source (see, e.g., Budesheim & DePaola, 1994).

*Non-Verbal Source Cues and Followership Psychology*

On the basis of the above literature review, we predict that the political ideology of the receiver constitutes an *individual*-level moderator of the effect of non-verbal appearance cues related to

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[4] Part of these stereotypes also relate to sex typicality, such that Republican female candidates are viewed as being more feminine than their Democrat counterparts (Carpinella & Johnson, 2012).

dominance. A second literature, a large psychological literature on followership psychology, has previously illuminated the *contextual* moderators of the effects of such cues on preferences for leaders in both political and everyday situations (Little et al., 2007; Little, Roberts, Jones, & DeBruine, 2012; Little & Roberts, 2012; Spisak et al., 2012a, 2012b).[5] We propose that the insights of this literature can be used to further expand our understanding for why and how ideology could shape how voters respond to dominant-looking sources.

The previous psychological studies of leader preferences have demonstrated that subjects prefer a dominant-looking leader when facing social conflict such as war. In contrast, when facing peaceful conditions, subjects prefer leaders with less dominant and more feminine looks (Spisak, et al., 2012a, 2012b; Little et al., 2007; Little et al., 2012; Little & Roberts, 2012). According to this literature, the effect of social conflict on preferences for dominant leaders emerges from a general, context-sensitive psychology of followership, designed over human evolutionary history to align followers with the leader that most credibly could ensure their welfare under the specific circumstances (for a thorough discussion of the evidence supporting this view, see Laustsen & Petersen, 2015; van Vugt, 2006; van Vugt & Ahuja, 2010; Spisak et al., 2012b; Price & van Vugt, 2013).[6] When facing social conflict, our ancestors—according to this followership literature—benefitted from having a leader capable of providing punitive enforcement of collective action: a dominant leader (see, e.g., von Rueden, Gurven, Kaplan, & Stieglitz, 2014). However, following a dominant leader can also entail costs. In particular, according to the followership literature, there is an increased likelihood that a dominant leader will engage in within-

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[5] This psychology literature has focused on the specific facial dimension of masculinity versus femininity (with masculine faces being wider and having larger jaws, cheeks, and brow ridges). This dimension is related to perceptions of dominance with masculine faces being viewed as more dominant, less attractive, less friendly, and less trustworthy (Buckingham et al., 2006; Perrett et al., 1998; Penton-Voak & Chen, 2004; Stirrat & Perrett, 2010).

[6] The suggestion in this literature is *not* that leaders, ancestrally, were chosen in some democratic fashion. Rather, the anthropological evidence suggests that potential leaders needed to cater to followers to build a sufficiently strong coalition to help them move up in the hierarchy in competition against other potential leaders (Boehm, 2000; see also De Waal, 1996). As consequence, ordinary people make decisions about which specific leader candidate to follow and support in the competition.

group exploitation (Boehm, 2000). When peaceful circumstances relaxed the need for collective action, our ancestors were therefore better off following a non-dominant leader.

We propose that the predicted effects of individual ideology on responses to non-verbal source cues of dominance could reflect the general operations of this followership psychology. Conservatives, we suggest, are more likely to view the social world in a way that corresponds to the wartime contexts investigated in the followership literature. Liberals, in contrast, are more likely to view the social world in a way that corresponds to the peacetime contexts investigated in the followership literature. These differences in worldviews would—according to the followership literature—prompt conservative audiences to be responsive to dominant sources and liberal audiences to be responsive to non-dominant sources.

That conservatives and liberals hold different worldviews is well-documented in the literatures on ideology in both psychology and political science. According to the literature on motivated social cognition, a conservative belief system is adopted to help the individual cope with an uncertain and threatening world (Jost, Glaser, Kruglanski, & Sulloway, 2003). In line with this, conservatives relative to liberals (1) view the social world as more competitive (Duckitt & Sibley, 2010), (2) tend to value group-based inequality more (Pratto, Sidanius, Stallworth, & Malle, 1994), and (3) perceive out-groups as more threatening (Duckitt & Sibley, 2010; Smith, Oxley, Hibbing, Alford, & Hibbing, 2011). Indeed, one of the primary predictors of individual differences in political ideology is individual differences in the personality construct called Social Dominance Orientation—a construct specifically designed to measure people's perception and valuation of the level of group-based conflict in society—with conservatives being more oriented towards social dominance (Pratto et al., 1994). If differences in perceptions of social conflict underlie the predicted reactions to dominant sources among liberal and conservative audiences, it entails the additional prediction that measures of deeper individual differences directly tied to perceptions of conflict (such as Social Dominance Orientation) should modulate communication effects in a similar way as measures of ideology. Below, we test this and a number of additional predictions from the

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followership perspective.

*Overview: Winning Faces Vary by Ideology*

Summing up, we propose that a combination of (1) partisan stereotypes and (2) ideology-induced followership decisions will prompt liberal audiences to view non-dominant sources as more credible and dominant sources as less credible and vice versa for conservative audiences. A non-dominant face is predicted to be a "winning face" when the audience is liberal. A dominant face is predicted to be a "winning face" for a source when the audience is conservative.

**Overview of Studies**

We test the prediction that winning faces vary by ideology by focusing on the two key resources that politicians compete for: votes and policy support. We begin by investigating the effect of non-verbal cues of dominance on voting and end by investigating the effect of these source cues on policy support in explicit communication settings. Because we are interested in investigating how general these effects are, we utilize five studies that vary across a number of dimensions. Some studies are collected in Denmark (Studies 1 and 3-5), some in United States (Study 2). Some focus on non-political settings (Studies 1 and 2), others focus on local (Study 3) and national politics (Studies 4 and 5). Some focus on real elections, measuring actual numbers of votes obtained by real candidates (Study 3), others on fictional vignettes (Studies 1 and 2). Finally, some use experimental methods (Studies 1-2 and 4-5), while others use observational methods (Study 3). The specific aims and purposes of each study will be discussed as we proceed.

**Studies 1 and 2: Ideology and The Psychological Reponses to Non-Verbal Source Cues**

In our first tests, we focus narrowly on the psychological basis of the predicted effects of ideology, and a range of considerations have shaped the research design in this regard.

First, we argue that people's ideology influences their reactions to dominant and

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agreeable sources, in part, because of the existence of a general followership psychology (i.e., a psychology not exclusively tied to democratic politics). For example, we do not argue that people consciously use these non-verbal cues to heuristically guess the ideology of the sources (which could be consistent with, e.g., Mondak, 1994). As a consequence, in these first tests, we utilize a context in which it would be irrelevant to do so. We investigate responses using vignettes about a fictional small-scale foraging tribe; a context fully removed from ideology-related, democratic elections.

Second, the extant literature argues that human followership psychology is universal rather than tied to particular cultures. Accordingly, if this psychology is responsible for the predicted effects of ideology, ideology should shape reactions to dominant and non-dominant sources across cultures. To test this, we administered the same vignettes to respondents in both Denmark (Study 1) and the United States (Study 2). While Denmark and the United States are not opposite extremes, they are surely culturally different in many relevant aspects. The United States embodies federalism, presidentialism, first-past-the-post elections, and a two-party system. Denmark embodies corporatism, parlamentarism, proportional elections, and a multi-party system. These differences also extend into broader culture with the United States being markedly more individualistic and Denmark more collectivistic (Nelson & Shavitt, 2002).

Third, we argue that this followership psychology influences reactions to dominant and non-dominant sources by changing the perceived credibility of the sources in handling immanent problems. To focus directly on this psychological role of credibility, the vignettes used in the studies therefore describe a problem scenario and ask respondents to choose who they prefer to oversee the solution of this problem between a dominant and a non-dominant version of the same computer-generated face.

Fourth, the extant literature has built the theory of the existence of a general, context-sensitive follower psychology around consistent effects of context-induced conflict perceptions on preferences for dominant and non-dominant leaders. Because we argue that the effects of ideology

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emerge from the same psychological mechanisms, we found it important to directly and empirically demonstrate that the effects of ideology truly parallel the effects of context-induced conflict. Hence, the scenarios that we used experimentally varied the degree of conflict. This design thereby allows us to simultaneously assess the contextual and individual-level moderators of cue effects related to dominance and test whether effects are indeed parallel.

Fifth, we argue that individual differences in ideology influence the reception of cues related to dominance because this individual difference variable is strongly associated with perceptions of social conflict levels. Conservatives more than liberals view the social world as a world of conflict (Duckitt & Sibley, 2010; Hibbing et al., 2013; Thomsen, Green, & Sidanius, 2008; Pratto, 1994). As discussed above, one of the most widely accepted constructs to directly tap views about social conflict is Social Dominance Orientation, SDO (Pratto et al., 1994); a construct measuring support for between-group dominance. Hence, in one of the studies (Study 2), we measure SDO in addition to political ideology. We expect that SDO will have effects similar to political ideology and, furthermore, will capture the variance that causes political ideology to influence source preferences.


*Materials and Methods*

Data for Study 1 (the Danish version) was gathered among 322 political science students (172 females), who volunteered to participate in an online survey. Study 2 (the American version of the study) includes 392 approximately representative subjects, who were recruited through the YouGov survey agency (213 females).

Both Studies 1 and Study 2 consist of an experiment with two conditions presented as vignettes. In both conditions, respondents were asked to imagine themselves living in a small-scale tribal society in the jungle. Half of the respondents were randomly assigned to a No Conflict condition where a non-conflict related need for cooperation was emphasized. The vignette described the tribe's camp site as being threatened by flooding and that everybody needed to help

create a dam to prevent this from happening. The other half was assigned to a Conflict condition

where the need for a leader that could lead the tribe to victory against an enemy group was

emphasized. The vignette described how a neighboring tribe, because of disputes over access to

hunting grounds, was about to attack. Thus, we follow existing research and experimentally vary

the degree of conflict, but unlike existing studies, we hold the level of threat (flooding and war,

respectively) constant (see Supporting Information SI1 for the full vignettes).

After reading the vignettes, the respondents were asked to choose who they preferred

to lead the tribe towards solving the described problem among digital images of two male faces.

From an open access face database (Oosterhof & Todorov, 2008), we chose two different versions

of the same male face generated to vary two standard deviations from a dominance-neutral version

of the same target face in the more or less dominant direction, respectively.[7, 8] The two faces are

presented in Panel A of Figure 1 below. As described in the Supporting Information SI2, an

additional rating study demonstrated that the dominant and the non-dominant faces varied as

expected on facial dominance and related facial traits.


[Figure 1 about here]


After subjects had indicated their face preference, we obtained measures of ideology

in the form of ideological self-placement. In both studies, scales are recoded such that "0"

constitutes the most liberal position and "1" the most conservative position (Study 1 (Denmark):

Mean = 0.445; std. dev. = 0.202; Study 2 (US): Mean = 0.556; std. dev. = 0.284). The Danish study

also included six items measuring subjects' Social Dominance Orientation ($\alpha = 0.753$, mean =

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[7] We followed prior work and included only male faces in Studies 1 and 2 (e.g., Little et al. 2007; Spisak et al. 2012a).
[8] The Danish version of the experiment included four faces altogether: two different versions—a symmetric and an asymmetric version—of both the Dominant and the Non-dominant faces. However, for reasons of simplicity we restrict our analyses here to only focus on choice between the Dominant and Non-dominant faces.

0.257, std. dev. = 0.184) (see Supporting Information SI3 for the exact wording of the items).

*Results*

The data is analyzed using t-tests and logistic regressions, and throughout the paper, we report one-tailed P-values because of the directionality of our hypotheses. To match the American sample in Study 2 to its population, we weight this data, and to avoid omitted variable bias in this heterogeneous sample, we control the effects of ideology for key traditional confounds: age, sex, race, and level of education (the full models are presented in the Supporting Information SI3). We expect the dominant face to be preferred by conservative subjects and in the Conflict condition. In contrast, the Non-dominant face should be preferred by liberal subjects and in the No Conflict condition. Below, we investigate these contextual and ideological predictions in turn.

*Do subjects have stronger preferences for dominant faces under conflict?* Yes. Study 1 constitutes a conceptual replication of previous research on contextual differences in preferences for leader faces (Little et al., 2007; Little et al., 2012; Little & Roberts, 2012; Spisak et al., 2012a, 2012b). Based on a t-test, we find that a significantly larger proportion of the Danish subjects choose the dominant face in the Conflict condition compared to the No Conflict condition (conflict (n=154): 72 per cent; No Conflict (n=162): 41 per cent. t-test for difference: t=5.89, p<0.000).

In Study 2, this result further replicates with a significantly larger proportion of the representative American sample choosing the dominant face in the Conflict condition than in the No Conflict condition (conflict (n=191): 50 per cent; No Conflict (n=201): 32 per cent. F-test for difference using weighted data: F=12.59, p<0.001).

These results are illustrated in Figure 1 in the left-hand graphs of Panel B (Study 1, Denmark) and Panel C (Study 2, US), which present the proportion of the respondents choosing a Dominant or a Non-dominant face in the Conflict and No Conflict condition, respectively.

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*Do conservatives have a stronger preference for dominant leader faces than liberals?* Yes. In Study 1, a logistic regression predicting leader choice from context and ideology shows that the probability of choosing the Dominant face increases across the ideological spectrum (b=1.788, p=0.002, Odds ratio=5.977).

Study 2 replicates this finding with a growing probability for subjects to choose the Dominant face the more conservative they are (b=0.812, p=0.043, odds ratio=2.253). In Figure 1, the right-hand graphs of Panel B (Study 1, Denmark) and Panel C (Study 2, US) show predicted probabilities of choosing the Dominant face across the ideological spectrum and for the Conflict condition (black line) and No Conflict condition (grey line), respectively. That is, in both Studies 1 and 2, the effect of contextual conflict is paralleled in an ideological effect such that conservative subjects have a stronger preference for dominant-looking leaders than their liberal counterparts.[9]

Theoretically, we have offered two explanations for this effect: one from the literature on partisan stereotypes and one from the literature on followership psychology. The former predicts that the effect of ideology is driven by a (more or less) conscious attempt to heuristically guess the sources' ideology, while the latter suggest that the effect reflects broader considerations (in particular, about leader credibility). While the sources' ideology is rationally irrelevant in the context of the vignette, a partisan stereotype perspective might still entail that respondents prefer an individual who they guess share their ideology. We conducted additional, more exploratory analyses to address the extent of this. Specifically, after they had stated their leader preference, we asked respondents in Study 2 to guess the ideology of their favored leader face (as well as of the leader face they did not choose). Using structural equation modeling, we find a significant statistical mediation effect of subjects' ideology on leader preference through the ideological position

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[9] We tested for potential interactions between context, ideology, and subjects' sex, but found none of these to be consistently significant across studies 1 and 2 (see Supplementary Information SI4).

attributed to the preferred leader (b=0.134, p=0.004 (two-tailed)).[10] That is, conservative individuals

tend to attribute conservatism to their preferred leader.[11] This is in line with a partisan stereotype

perspective. At the same time, however, the effect of ideology seems to go beyond what can be

explained as an outcome of subjects that scan for an ideologically similar source. Specifically, we

performed an additional analysis in which we focused exclusively on the subjects who did not

perceive the two faces as ideologically different. These subjects do not display any stereotypical

links between facial dominance and liberal or conservative ideologies. Among these subjects we

still find a marginally significant effect of ideology such that conservatives more than liberal tend to

choose the dominant face (b=0.942, p=0.089, Odds ratio=2.564). Moreover, an investigation of

whether the effect of ideology differs between subjects who perceive the faces as ideological similar

or dissimilar shows that this is not the case (b=0.217, p=0.824, Odds ratio=1.242 (two-tailed)).

In tandem, these analyses suggest that there is an effect of ideology on preferences for

non-verbal cues to dominance in leaders such that conservative individuals prefer dominant leaders.

These effects are seemingly a result of both partisan stereotypes (i.e., the use of non-verbal cues to

search for a leader with the same ideology as the self) and followership decisions that extend

beyond heuristically guessing the source's ideology (i.e., the use of non-verbal cues to search for a

leader that can adaptively handle perceived problems).


*Are ideological differences in leader preferences driven by individual differences in SDO?* Yes. The

followership perspective suggests that the effect of ideology reflects ideological differences in

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[10] The model is estimated in Stata 12, and because of limitations in the software's SEM module, we are required to impose the assumption on the data that the dependent variable is continuous.

[11] We would like to note an important caveat. As argued by Bullock, Green and Ha (2010), mediational analysis without random assignment of the mediator does not reveal much (if anything) about the causal relationship between the mediator (here, the ideology attributed to the leader) and the outcome variable (here, the preferred leader). That is, we do not know whether our subjects prefer the leader they see as most ideologically similar to themselves or whether the attribute their ideology to a leader they prefer for other reasons. In the present data, this problem is particularly acute since subjects chose their preferred leader before guessing his ideology.

perceptions of conflict levels. To investigate this, we turn to the effects of SDO. In Study 1, the correlation between political ideology and SDO is positive and of a significant size (r=0.465), suggesting that they constitute related, yet distinct constructs. Substituting political ideology with SDO yielded a significant effect: Subjects' preference for the Dominant face increases with SDO (b=2.060, p=0.001, odds ratio = 7.845).When including context, SDO, and political ideology as simultaneous predictors, only context and SDO remain significant (context: b=1.313, p<0.001, odds ratio=3.716; SDO: b=1.496, p=0.026, odds ratio=4.458; ideology: b=1.104, p=0.057, odds ratio=3.016) (full models are presented in Supporting Information SI5). This suggests that the predictive variance in the ideology variable is related to SDO. Consistent with this, a structural equation model shows a significant and positive indirect effect of political ideology on leader preferences through SDO (b=0.137, p=0.026).[12] These analyses support that conservatives' stronger preference for dominant-looking leaders is tightly linked to SDO and the tendency to perceive the social world in terms of group conflicts.

**Study 3: Non-Verbal Cues And Election Success in Danish Local Elections**

Studies 1 and 2 support the notion that differences in worldviews cause conservative and liberal individuals to view non-dominant and dominant sources, respectively, as most credible. In Study 3, we turn towards the direct implications for political communication. One key context in which politicians seek to persuade people to support them is elections, and the support they seek is in the form of voting. Study 3 therefore investigates whether the ideology of the audience influences the ability to attract votes for dominant and non-dominant politicians, respectively. The study does so using the vote shares for real politicians in an actual election.

In Study 3, we move from analyzing preferences on the level of the subject in an

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[12] The model is estimated in Stata 12, and because of limitations in the software's SEM module, we are required to impose the assumption on the data that the dependent variable is continuous.

experiment to analyzing patterns of electoral success across the population of candidates nominated in three Danish municipalities in the local elections of 2009. Because we expect to find that the electoral success of politicians is moderated by the ideology of the audience that they address, we hypothesize that conservative candidates (i.e., candidates catering to conservative audiences) will benefit from looking dominant and liberal candidates (catering to liberal audiences) from looking non-dominant. To test this, we utilize the design from previous studies (e.g., Todorov et al., 2005; Berggren et al., 2010) and combine real election results with naïve respondents' ratings of actual candidates' facial appearance (for more information about Danish local elections, see Supplementary Information SI6).

*Materials and Methods*

Standardized photos (200 X 250 pixels) of 257 candidates (34 liberal females; 84 liberal males; 33 conservative females, and 106 conservative males) running for city councils in three northern Danish municipalities were compiled from an online database offered by the regional newspaper. To obtain valid ratings of candidates' faces, we rely on 646 voluntary raters (386 females) from Danish high schools.[13] To eliminate potential effects of familiarity with the candidates, we relied on respondents and candidates who live in very different regions of Denmark, and furthermore, when asked, respondents did not recognize any of the candidates used in the study. We randomly assigned subjects to rate eight or nine candidate photos. Following the procedure of Berggren et al., (2010), raters rated each candidate photo on several dimensions, yielding a rater-to-photo ratio of 19 (for similar numbers of raters per photo, see Banducci, Karp, Thrasher, & Rallings, 2008; Rosar, Klein, & Beckers, 2008).[14] Using online surveys, each candidate photo was rated on seven different facial

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[13] Regarding respondents' age, research suggests that student samples in general do not constitute a threat to generalizability in political science (Druckman & Kam, 2011). Likewise, research indicates that respondent age should not be a concern regarding inferences from candidate faces (Antonakis & Dalgas, 2009).

[14] Berggren et al. (2010, p. 14) find that reducing the number of raters per photo to 10 or even six raters does not change

traits using 0-10 scales ("0" indicated minimal and "10" maximal degree of a given trait). The exact verbal expression was copied from a recent Danish study on facial effects (Jensen & Petersen, 2011), and the general rating procedures of Study 3 follow existing procedures applied in other multi-party and multi-candidate electoral contexts (Berggren et al., 2010; Rosar et al., 2008).

To test our predictions, we need a common scale capturing perceived facial dominance. For this purpose, subjects rated perceived dominance, physical strength, friendliness, and attractiveness of the candidates. In addition, we obtained ratings related to competence: competence, accountability, and intelligence. Previous studies have consistently found effects of the perceived facial competence of political candidates on electoral success, and hence, this constitutes an important control variable (for an overview, see Olivola & Todorov, 2010a). Based on the average ratings of all 257 candidates on each of the seven traits, we conducted a principal component factor analysis to investigate whether candidate perceptions flow along a competence and a dominance dimension, respectively. Table 1 shows the factor loadings from this analysis on the only dimensions that reach Eigenvalues above 1.0.


[Table 1 about here]


Table 1 shows that all seven traits relate to the first dimension. However, competence, accountability, and intelligence are particularly closely related to this dimension, and hence, it is interpreted as a competence dimension. The second dimension is most strongly related to dominance and friendliness—in opposite directions—and, hence, captures a dominance dimension. The candidates' independent factor scores on the competence and dominance dimensions constitute our operationalizations of competence and dominance and, consequently, our primary independent

the results (for an overview on this topic, see King and Leigh (2009), pp. 582–583), which suggests that the applied rater-to-photo ratio should be sufficient to yield valid estimates of candidates' facial traits.

variables in the analyses. Both scales are recoded to 0-1 scales with "0" and "1" reflecting low and high competence and dominance, respectively.

In proportional electoral systems—such as Danish local elections—several candidates become elected from each district. To measure electoral success in proportional electoral systems, we follow Berggren et al. (2010), calculating candidates' relative success as $(p_i/v_j)$, where $p_i$ is the number of votes cast for candidate i; $v_j$ is the total number of personal votes cast for party j divided by party j's number of candidates. This measure is recoded to a 0-1 scale with "0" and "1" reflecting minimal and maximum (observed) Electoral Success, respectively.[15]

Finally, we need measures of the candidates' political ideology. Based on voters' perceptions of the parties' positions on a left-right scale in the 2007 National Danish Election Study, we code candidates from parties in the left-wing block as liberal ("0") and candidates from the right-wing block as conservative ("1").

Following previous studies, we also control for candidate sex (coded from a central list of all candidates running in each of the 98 local elections), age (trichotomized: under 30 years; between 30 and 60 years; over 60 years of age),[16] incumbency, and local belonging (municipality) as controls in all of our models (Todorov et al., 2005; Rosar et al., 2008; Berggren et al., 2010).

Our hypothesis is tested using OLS regression with robust standard errors clustered at the party level.[17] Due to the limited available degrees of freedom, we partial out the effect of the control variables (rather than estimating their coefficients; following Baum et al. 2010) (see

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[15] First, the logarithm of Relative Success is calculated as the measure is highly skewed to the right because a few top candidates receive disproportionately large numbers of personal votes. Next, this measure, log(Relative Success), is recoded to a 0-1 scale by subtracting the smallest observed value of log(Relative Success) from every other value, and finally, these values are divided by the range of log(Relative Success).

[16] Because we do not have access to the actual ages of all candidates, our measure of age is the observers' perception of candidates' ages. Following Berggren et al. (2010, p. 14), this is afterwards trichotomized. Berggren et al. find that the same substantial relationship between candidates' facial traits and their electoral success is reached using candidates' real ages and using observers' perceptions of candidates' ages.

[17] We do not include party fixed effects in our models (cf. Berggren et al. 2010) since an F-test indisputably shows that the fixed effects for the parties are all zero ($F(7, 249) = 0.40$ and $p = 0.904$). The same conclusion is reached testing for the necessity of party*municipality fixed effects ($F(20, 236) = 0.40$ and $p = 0.991$) (cf. Rabe-Hesketh and Skrondahl 2008: 70–71).

Supplementary Information SI6 for more details on sampling, measurements and operationalizations and SI7 for details on the specification of the models).

*Results*

We expect that facial dominance relates differently to electoral success depending on the ideology of the candidate's constituency such that it positively predicts electoral success for conservative candidates but negatively for liberal candidates. This entails the existence of a significant two-way interaction between ideological leaning and dominance on actual electoral success.

*Does facial dominance predict the electoral success of real-world conservative and liberal candidates?* Yes. The interaction between dominance and ideology is statistically significant ($b=0.259$, $p=0.008$). To investigate the empirical pattern more in depth, we estimate marginal effects of dominance for liberal and conservative candidates, respectively. Consistent with our argument, we find that dominant-looking liberal candidates lose votes ($b =-0.163$, $p<0.003$). However, our expectations for the conservative candidates are not as strongly supported. We do find a relationship in the predicted (positive) direction, but it turns out not to reach statistical significance ($b=0.096$, $p=0.098$). Importantly, the interaction between facial dominance and ideology is found when we simultaneously partial out and control for the potential effect of facial competence. If we estimate this effect of facial competence (controlling for facial dominance), we find a positive main effect on electoral success of looking competent ($b = 0.126$; $p = 0.022$,), but this effect is not moderated by candidate ideology ($b=-0.107$; $p = 0.235$ (two-tailed)) (See Supplementary Information SI7 for the effects of facial competence).This shows that all candidates are positively affected by looking competent, whereas the effects of looking dominant vary across the ideological spectrum, as predicted. Model A in Table 2 shows the estimated effects of facial dominance, ideology and their interaction.

[Table 2 about here]

Based on these findings, our predictions are only partially supported. In accordance with our prediction, liberal candidates lose votes from looking dominant (or gain votes from looking non-dominant), while conservative candidates are only trending towards benefitting from a dominant look. Together, these findings comprise a less clear pattern than the findings in Studies 1 and 2. However, this might be because only male faces were used in Studies 1 and 2, while Study 3 has investigated the relationship between facial dominance and electoral success for all candidates regardless of their gender. Therefore, we investigate if a clearer pattern is revealed when the effect of facial dominance is also investigated separately for male and female candidates.

*Is the interaction between facial dominance and candidate ideology moderated by the sex of the candidate?* Yes. The interaction between facial dominance, ideology, and sex is statistically significant (b=-0.306, p=0.007). To investigate the empirical patterns responsible for the three-way interaction, we estimate marginal effects of facial dominance for male and female candidates from the conservative and liberal party blocks, respectively. Consistent with our argument, we find that conservative male candidates significantly win real votes from looking dominant (b=0.191, p=0.016), while the exact opposite applies to the liberal male candidates, who lose votes the more dominant they look (b=-0.149, p=0.010). The same pattern does not apply to female candidates since both conservative (b=-0.159, p=0.038) and liberal candidates (b=-0.194, p=0.003) are harmed from looking dominant. Model B in Table 2 shows the estimated effects of facial dominance, ideology, candidate sex, the three-way interaction as well as all two-way interactions. The marginal effects for the different candidate categories are shown in Figure 2.

[Figure 2 about here]

*Does the effect of facial dominance obtain among both well-known and less known male candidates?* In sum, the predicted effects obtain among male candidates. In the theory section, we argued that such effect of non-verbal, facial cues could take effect alongside explicit, verbal cues to ideology—or they could potentially disappear when relevant explicit cues were available (for the latter kind of argument, see Lenz & Lawson, 2011). Exploratory robustness analyses support the former view as facial cues have equal effects among less known and well-known political candidates. Hence, the three-way interaction between dominance, ideology, and sex is significant among former incumbents (b=-0.906, p = 0.011) as well as among candidates who have not held any office before (b=-0.352, p = 0.011) (See Supplementary Information SI8).

**Studies 4 and 5: Non-Verbal Cues and Communication Success Among Danish National Politicians**

In their attempts to persuade voters to support them on Election Day, some politicians fare better: those who expose non-verbal cues that match the ideology of the voters they seek to persuade. Study 3 showed that for liberal politicians, non-dominant looks increased their election success. On the contrary, for conservative politicians, looking dominant was beneficial and increased their election success. This ideologically different effect of facial dominance was, however, only evident for male but not female politicians. We return to this sex difference in the conclusion. In Studies 4 and 5, we focus exclusively on male candidates (as in Studies 1 and 2) and turn towards the other key focus of politicians' persuasion attempts: to generate support for their policies.

In Studies 4 and 5, we investigate the effects of non-verbal source cues in a strict communication context. We explore how non-verbal cues related to facial dominance influence a communication source's ability to generate support for a policy proposal. We predict that the psychological responses uncovered in Studies 1 and 2 will prompt liberals to be more persuaded by sources that look non-dominant while conservatives are more persuaded by dominant-looking sources. To investigate this claim in ways that maximize both external and internal validity, we (1)

focus on a salient case of fights between rival gangs in Denmark; (2) integrate the methods from Studies 1 and 2 to morph the faces of real politicians from the same party in the Danish national parliament, thereby creating extremely realistic dominant and non-dominant versions of their faces; (3) apply experimental methods such that respondents are randomly assigned to exposure to one and only one of these versions; (4) describe this politician as the source of a realistic policy proposal on how to deal with these gangs, the content which is held strictly constant across conditions. In essence, these features allow us to explore how persuasive a particular politician would be, if his face were just a little different? Finally, we explore these effects with politicians that varied in recognizability, to further investigate the extent to which the effects of non-verbal cues are conditioned by the availability of other cues.

*Materials and methods*

Studies 4 and 5 are essentially replications of each other—in terms of design and results. In Study 4, 101 political science students (59 females) volunteered and participated in an online survey, while 331 students (189 females) from another university were recruited for Study 5.

Both studies investigate the persuasion effect of facial dominance in relation to two male members of the Danish parliament from the Social Democrats who varied with respect to recognizability. As a highly exposed and recognized member of parliament, we chose the minister of justice, Morten Bødskov, in both Studies 4 and 5 given the substantive focus of the studies on law and order. Attesting to his recognizability, 94 percent of the subjects correctly stated his party affiliation and 86 percent his job. As a less recognized and exposed parliamentary member, we chose Ole Hækkerup in Study 4, the Social Democrats' member of the committee for judicial affairs. Consistent with his presumed lower level of recognizability, only 62 percent stated his party correctly (t-test of difference to Bødskov: t=4.16, p<0.001), and only 13 percent stated his specific job in parliament correctly (t-test of difference: t=10.40, p<0.001). In Study 5, Ole Hækkerup was substituted with another social democratic member of parliament, Troels Ravn, to ensure that key

results of Study 4 were not related to idiosyncratic features related to this politician but would generalize to other politicians. Besides recognizability, the three politicians were chosen to maximize similarity with respect to gender, age, and party affiliation.

Studies 4 and 5 presented the same story and communication regarding a policy proposal to the subjects. First, subjects read about the growing tension between motorcycle gangs in Copenhagen, which increasingly caused insecurity among ordinary Copenhageners. Next, subjects read that members of parliament were also aware of the growing problem, which had caused Morten Bødskov, Ole Hækkerup, or Troels Ravn to state that the motorcycle gangs should be treated harder following a more punitive line of zero tolerance (see full texts in Supplementary Information SI9). Importantly, above this statement, a photo of the politician making the statement was shown, and this photo constitutes the experimental condition in Studies 4 and 5. Specifically, a non-dominant or a dominant version of one of the three target politicians was assigned to the subjects. Figure 3 shows the different photos.

[Figure 3 about here]

The non-dominant and dominant face versions were created from standardized high-resolution photos of the three target politicians compiled from the Danish parliament's website. Using the morphing software Psycho Morph, we loaded and changed the target photo +/- 40 percent along a dominance dimension. This dominance dimension was comprised of composite faces reflecting high and low dominance as anchors. Each of these anchors was created based on the same open access face database used in Studies 1 and 2 (Oosterhof and Todorov, 2008) from which three target faces were chosen. The +3 standard deviations dominance versions of the faces were averaged to create the dominance anchor, while the -3 standard deviations dominance versions were averaged to create the agreeable anchor (for more information about the morphing software see Tiddeman, 2011).

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In our analyses, we use subjects' punitiveness towards the criminal motorcycle gangs as a dependent variable. This measure is comprised of five items forming a fairly reliable punitiveness scale (Study 4: $\alpha = 0.594$; Study 5: $\alpha = 0.718$) (see Supplementary Information SI9 for concrete question wordings). We recode the scale to a 0-1 framework such that "0" and "1" constitute the least and most punitive positions, respectively.

In both Studies 4 and 5, we measure the subject's ideology on 0-10 self-placement scales, which are recoded such that "0" represents the most liberal and "1" the most conservative position (Study 4: Mean = 0.422; std. dev. = 0.223; Study 5: Mean = 0.508; std. dev. = 0.227).

We test our prediction using OLS regression with robust standard errors. Results are presented separately for each of the three target politicians.

*Results*

*Do communication effects depend on an interaction between receiver ideology and non-verbal cues to dominance in real-world sources?* Yes, for sources with lower recognizability. In Study 4, we found a significant interaction effect between facial dominance and ideology among subjects receiving the policy proposal from Ole Hækkerup (b=0.352, p=0.035). However, in Study 4, the same interaction remains insignificant for subjects who receive the policy proposal from the minister of justice, Morten Bødskov (b=0.019, p=0.460) (full regression models are shown in Supplementary Information SI10). Panel A in Figure 4 shows the marginal persuasion effect of politicians' facial dominance across political ideology.

[Figure 4 about here]

In accordance with our prediction, Panel A shows that liberal subjects are persuaded to hold a more punitive position against the criminal gang when Ole Hækkerup looks non-dominant, while conservatives are persuaded when he looks dominant. No such effects are found for Morten

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Bødskov, whose facial dominance does not affect subjects' punitiveness attitudes.

*Do these effects of non-verbal source cues replicate using another, less recognizable source?* Yes. In Study 5, we found a significant interaction between facial dominance and political ideology among subjects who received the policy proposal from Troels Ravn (b=0.200, p=0.021). Again, in Study 5, this was not the case for subjects receiving the same policy proposal from Morten Bødskov (b=0.088, p=0.235) (full regression models are shown in SI10). Panel B in Figure 4 illustrates the marginal persuasion effect of facial dominance across political ideology for Troels Ravn and Morten Bødskov, respectively. The result for Troels Ravn parallels the facial dominance persuasion effect for Ole Hækkerup in Study 4: The most liberal subjects hold a significantly more punitive position towards the criminal gangs when assigned to the non-dominant face. Moving towards the conservative end of the ideological spectrum, the persuasion effect of facial dominance flips such that the dominant face becomes ever more persuasive moving towards the conservative end of the ideological spectrum. Again, no such effects are found for Morten Bødskov.

*Why does recognizability diminish the source effect of non-verbal cues to dominance?* As argued above, one possibility is that voters use dominance cues to heuristically guess the source's ideology and, hence, rely on non-verbal cues less because they already know the ideology of the recognizable source. This argument can be tested in Study 4. In the case of Ole Hækkerup, we measured and obtained variation in explicit knowledge about his party affiliation. If knowing the source's party affiliation (and, hence, the source's ideology) is enough to make the reliance on non-verbal cues go away, we should find no effect of these cues among the respondents who know this. However, there are no statistical differences in the interaction between facial dominance and respondents' ideology between the respondents who know and those who do not know Ole Hækkerup's party affiliation (b=0.077, p=0.877, two-tailed); in fact, if anything, the effects are stronger among those who do know his affiliation. Hence, explicitly knowing the source's ideology does not seem to be enough to diminish the reliance on non-verbal cues. Study 5 provides some clues to what is going on instead. In Study 5, after everything else, we asked subjects to rate the

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politician on the photo to which they had been assigned on several dimensions (see Supplementary Information SI11). Most importantly, subjects rated the politicians' perceived dominance. Differences between the dominant and the non-dominant versions for both Troels Ravn and Morten Bødskov show that the former version is perceived as more dominant than the latter version (Troels Ravn: t=4.12, p<0.001; Morten Bødskov: t=1.56, p=0.061). However, interestingly, the facial dominance manipulation yields significantly stronger perceptual differences for Troels Ravn than for Morten Bødskov (b=-0.084, p=0.086 (two-tailed)). This could suggest that it is not just a matter of knowing Morten Bødskov's ideology but that people—because of more exposure—have a much clearer idea about his overall personality and his level of dominance. Subtle manipulations of non-verbal cues are not enough to sway this pre-formed understanding.

**Conclusion**

There is growing recognition in research on political communication that communication effects are not just a matter of *what* was said but also *who* said it. Some sources are simply better communicators than others and, hence, have an advantage in the political competition for votes and policy support. Many of these source effects are politically reasonable. People are, for example, more likely to be persuaded by credible experts (Druckman, 2001) and by people from their preferred political party (Hartman & Weber, 2009). However, in the context of modern, mediatized politics, people are exposed to a wide range of information about the sources of communication: their facial looks, their bodily posture, their voice and so on. Recent research on the effects of such non-verbal source cues suggests that this information has robust effects on how the audience receives the communication. While the facial traits of a politician might not seem politically relevant, they consistently shape political outcomes such that attractive and competent-looking politicians have more success (Olivola & Todorov, 2010a; Berggren et al., 2010).

In this manuscript, we have extended the research on non-verbal source cues in politics by adding novel evidence on both the specificity and strength of the effects of such cues.

While all voters favor certain types of non-verbal cues such as competent looks, our key finding is that other types of cues increase credibility of the source for some but decrease it for others. Our focal cue related to dominant facial looks, and we demonstrated that conservative audiences are more likely to be persuaded to provide votes (Study 3) and policy support (Studies 4 and 5) to a dominant-looking politician, but if the source is non-dominant looking, they are less likely to be persuaded. For liberals, it is exactly the opposite. Whether a source's specific look is beneficial or not in political communication is, accordingly, not a question that can be answered without taking the specific audience into account: Does this particular look match this particular audience? Winning faces vary by ideology, and this provides an important limitation on who can successfully communicate with the public.

Theoretically, we have identified two mechanisms underlying these effects. First, research on non-verbal components of partisan stereotypes suggests that winning faces could vary by ideology because different faces have different ideological connotations. For example, people could heuristically think of a non-dominant looking source as liberal, and hence, liberal receivers would be more likely to accept the source's messages. Second, research on followership psychology suggests that winning faces could vary by ideology because (a) ideology influences perceptions of the problems confronting society and (b) humans are predisposed to follow different leaders in the face of different problems. For example, conservatives are more predisposed to see the world as conflict ridden and, as consequence, also more likely to follow the messages of a dominant source that could more credibly handle those problems. We have provided evidence for both mechanisms in Studies 1 and 2 and, hence, uncovered a strong psychological basis of the predicted effects. Consistent with the involvement of partisan stereotypes, we found that subjects tend to attribute their own ideology to their preferred face. But we also found that the effects of receiver ideology extend beyond this. Consistent with the involvement of a general, followership psychology, we found that the effect of receiver ideology was cross-nationally robust, extended even to contexts that are far removed from democratic politics and are ultimately driven by Social Dominance

Orientation, a psychological construct tapping individual differences in perceptions of social conflict and hierarchy. This final result shows that individual differences in perceptions of conflict are at the heart of the effect of receiver ideology.

How important are these effects for actual politics? In a sense, they are surprisingly important. For example, in two independent cases (Studies 4 and 5), we demonstrated that actual members of parliament would increase and decrease their persuasiveness (depending on the ideology of the audience) if their facial appearance was just a slightly bit different. Furthermore, while we have only analyzed the political implications of these psychological responses in Denmark, their general nature suggest that they would generalize beyond the Danish case to other countries and contexts. Furthermore, a range of additional analyses suggest that they will continue to shape voter decisions even when substantial knowledge about the sources is available. Hence, the effects hold even if the respondents know the ideology of the source (cf. Study 4); they go beyond preferring a source that shares the respondent's ideology (cf. Study 2); and they hold among both incumbents and non-incumbents that run for office (cf. Study 3). Yet, our analyses also pointed to important limitations of the effects. When the source is highly exposed and voters have a well-formed impression of the source's personality, non-verbal cues matter less as was the case with the Danish minister of justice (cf. Studies 4 and 5). Hence, in highly exposed campaigns—and, in particular, in candidate-centered political systems such as the United States—the effects of facial dominance might be smaller. Also, and maybe surprisingly, the predicted effects only hold for male but not female politicians (Study 3). It is not that the success of female politicians is not shaped by non-verbal cues, but we found that, independently of the ideology of their core constituency, voters supported non-dominant looking females more. This is consistent with some arguments that followership psychology might be more attuned to males (van Vugt & Ahuja, 2010) but inconsistent with research that suggests that context-induced conflict perceptions do moderate preferences for dominance in female leaders (Spisak et al., 2012b). Future research needs to address this discrepancy.

Summing up, this manuscript has demonstrated that to be successful in politics, strong arguments are not always enough. Arguments need to be delivered by a source, and the non-verbal cues associated with this source need to fit the narrow preferences of the audience. To attract votes and support for their policies, politicians that cater to conservative audiences need to look dominant. Politicians catering to liberal audience, in contrast, are required to look non-dominant. If not, it will significantly hurt their chances to attract votes and policy support. In essence, politicians whose ideology does not match their looks are at a disadvantage in the political game.

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## Figures and Tables

FIGURE 1    *Panel A shows the facial stimuli used in Studies 1 and 2. Panels B and C show subjects' choices of the dominant versus non-dominant face in Studies 1 and 2, respectively. In Panels B and C, left-hand figures present t-tests for proportions choosing the dominant face for each contextual condition. Right-hand figures present predicted probabilities for choosing the dominant face across ideology and experimental condition.*
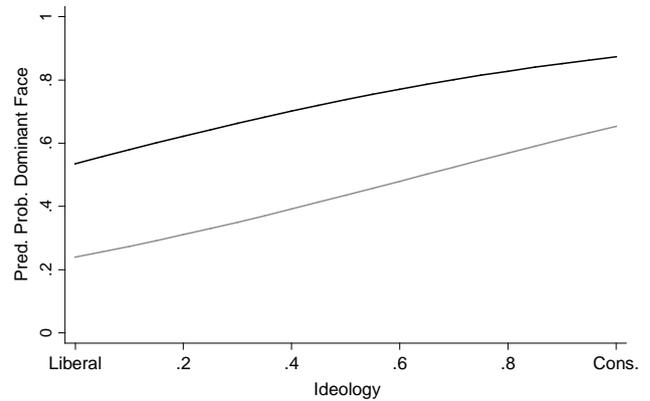


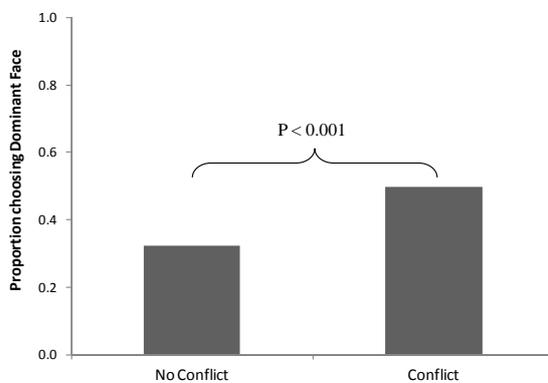**A: Facial stimuli for Studies 1 and 2**

**Non-dominant face**    **Dominant face**

**Proportion choosing the dominant face across experimental conditions.**
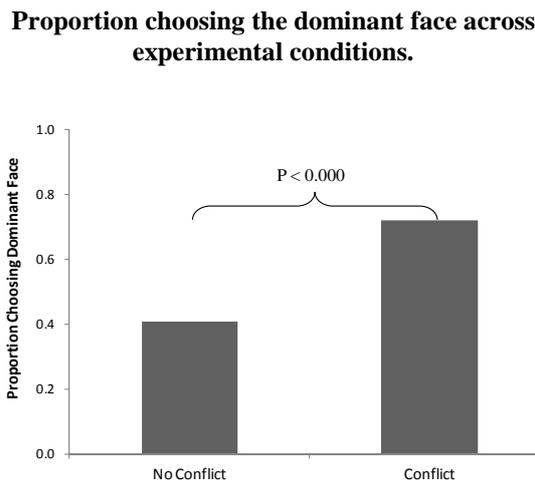
**Predicted probability for the dominant face across ideology and for Conflict (black line) and No Conflict (grey line) conditions, respectively.**

**B: Study 1 (Danish version)**

**C: Study 2 (US version)**
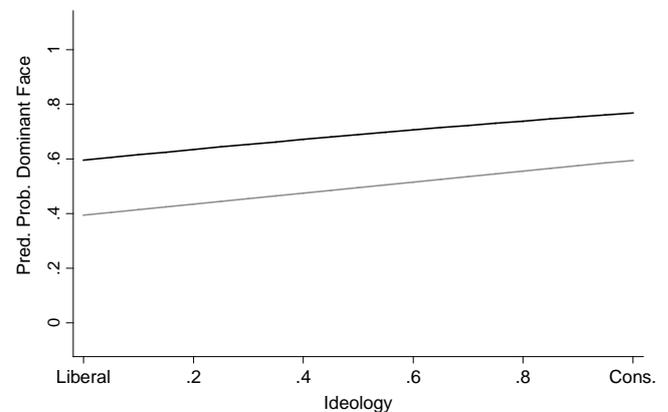
*Note: Faces in Panel A are taken from the face database created by Oosterhof and Todorov (2008). Given the directionality of the predictions, p-values reported in Panels B and C are one-tailed.*

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FIGURE 2 *Marginal effects of facial dominance on candidates' Electoral Success in Study 3. Effects of facial dominance for liberal and conservative candidates, respectively, grouped by candidate sex.*
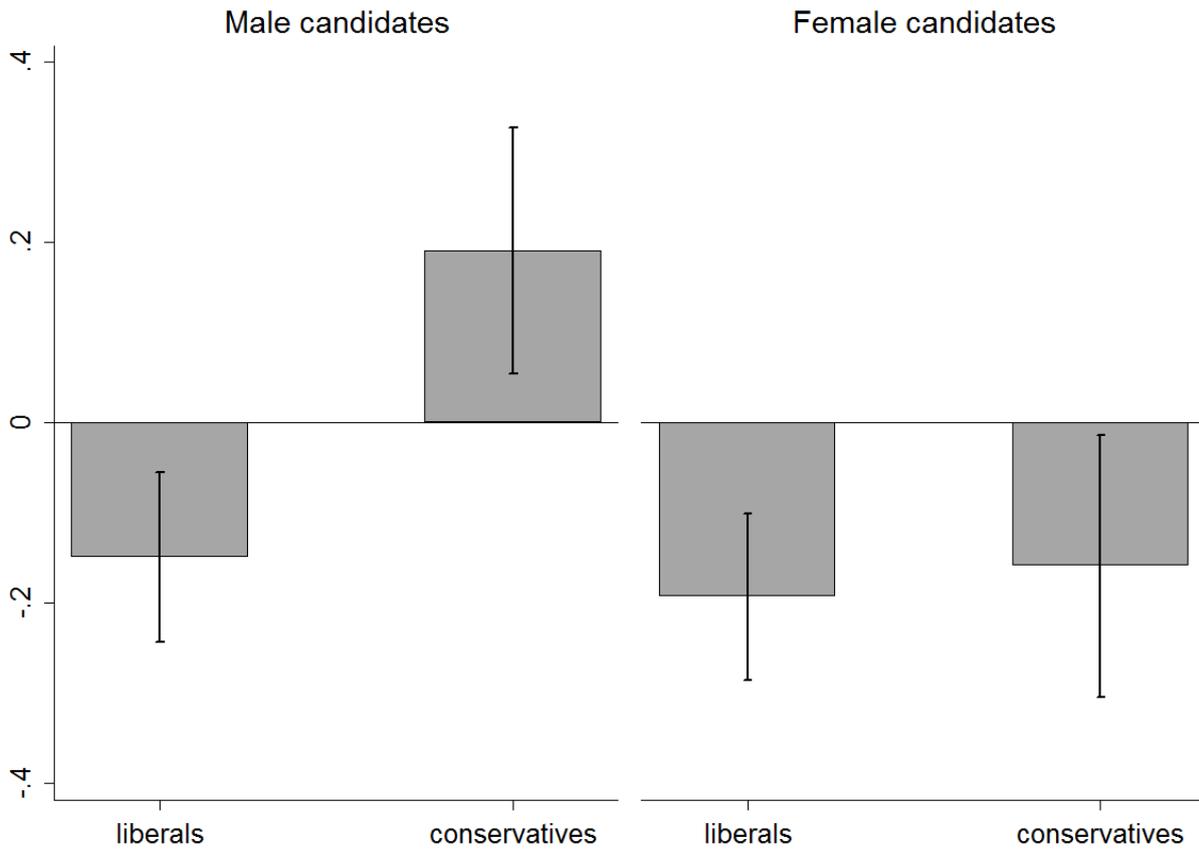


Note: Candidates are grouped on their sex and ideology. Bars show unstandardized regression coefficients with their corresponding standard errors.

FIGURE 3    *Facial stimuli used in Studies 4 and 5. Morten Bødskov, the highly recognized minister of justice, was used in both Studies 4 and 5. Ole Hækkerup and Troels Ravn, the less recognized members of parliament (MP), were used in Studies 4 and 5, respectively.*

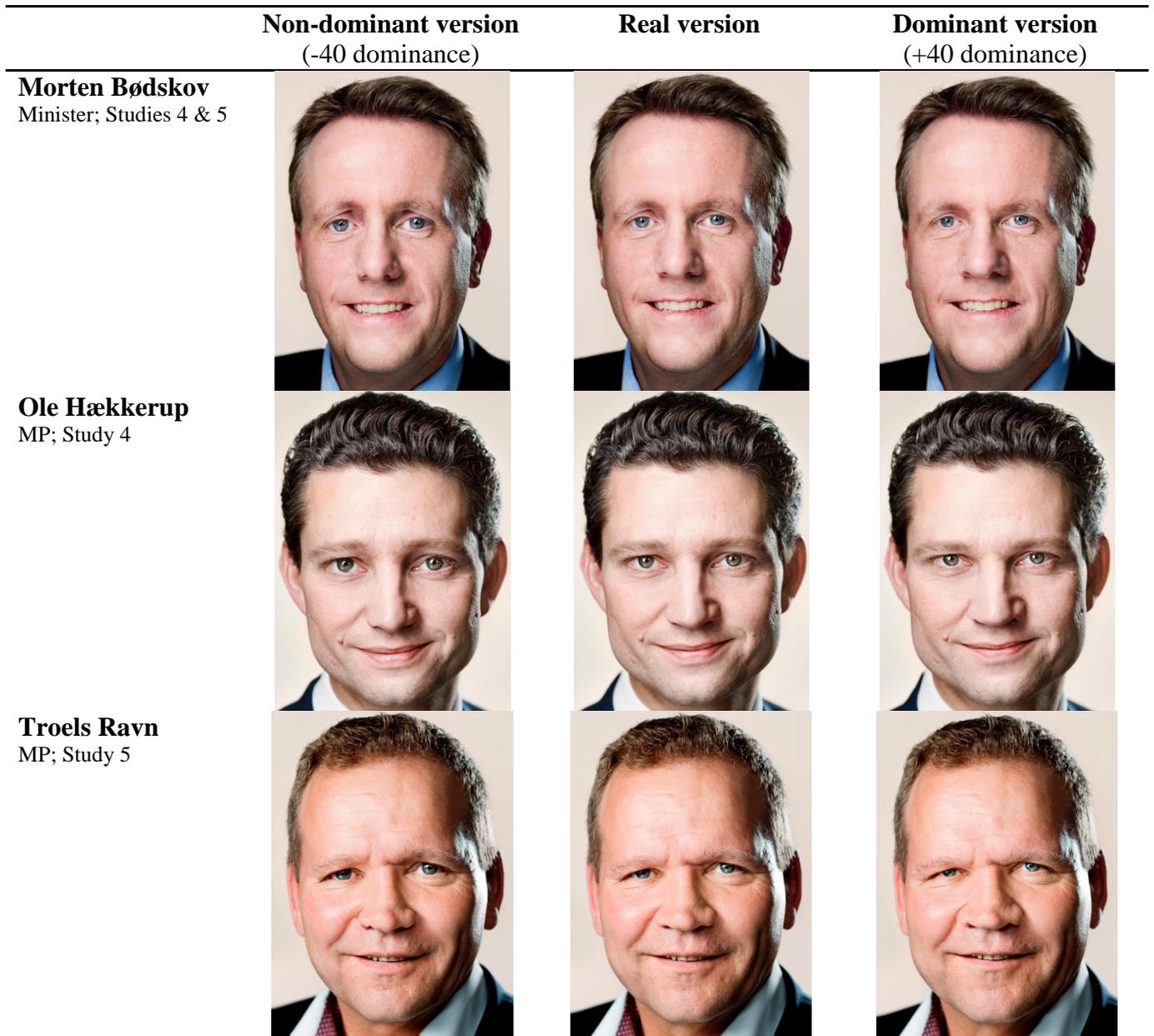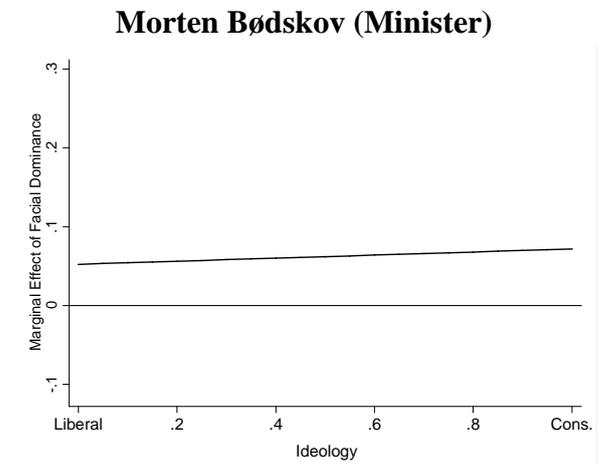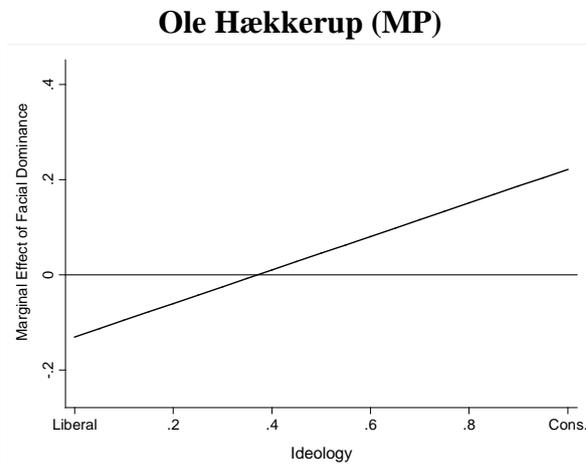| | **Non-dominant version** (-40 dominance) | **Real version** | **Dominant version** (+40 dominance) |
|---|---|---|---|
| **Morten Bødskov** Minister; Studies 4 & 5 | | | |
| **Ole Hækkerup** MP; Study 4 | | | |
| **Troels Ravn** MP; Study 5 | | | |

FIGURE 4    *Marginal persuasion effects of facial dominance (assigned to the high facial dominance version compared to the low facial dominance version) across subjects' ideology. Panel A shows effects for morphed versions of Ole Hækkerup and Morten Bødskov across ideology based on Study 4. Panel B shows effects for morphed versions of Troels Ravn and Morten Bødskov across ideology based on Study 5.*
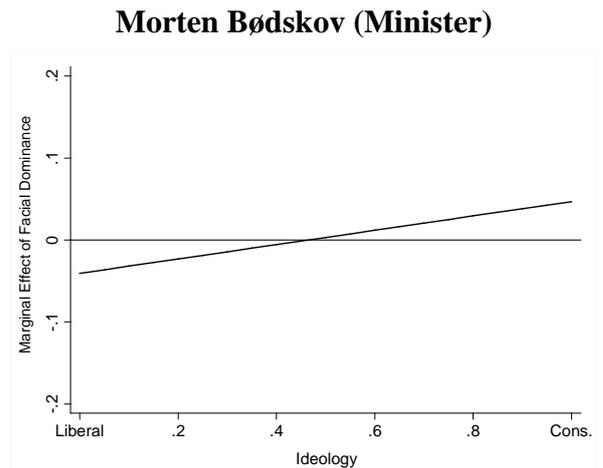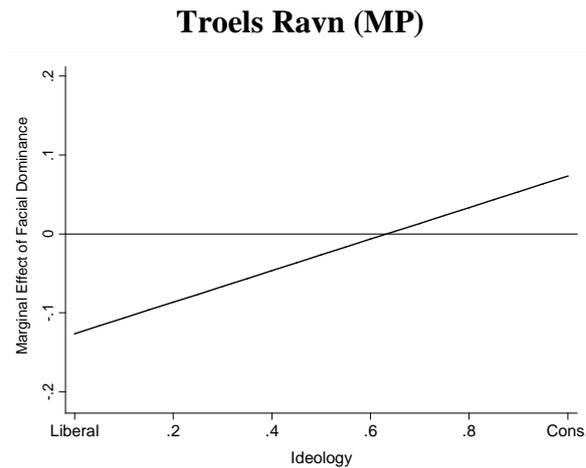
TABLE 1     *Factor loadings from un-rotated Principal Component Factor Analysis of candidate ratings on seven different traits.*

|  | **Competence Dimension** (Eigenvalue = 3.863) | **Dominance Dimension** (Eigenvalue = 1.309) |
|---|---|---|
| Competence | 0.939 | -0.172 |
| Intelligence | 0.879 | -0.049 |
| Accountability | 0.900 | 0.091 |
| Attractiveness | 0.678 | 0.276 |
| Friendliness | 0.510 | 0.809 |
| Physical Strength | 0.565 | -0.070 |
| Dominance | 0.601 | -0.730 |

Note: Factor loadings are based on an un-rotated Principal Component Factor Analysis.

TABLE 2    *Estimated effects of facial dominance, ideology and candidate sex. Model A shows the effects of facial dominance, ideology and the two-way interaction. Model B reports estimated effects of facial dominance, ideology and candidate sex and the three-way interaction between these variables. Unstandardized coefficients from OLS regressions with Electoral Success as the dependent variable (robust standard errors clustered at the party level in parentheses).*

| | **Model A:** Two-way interaction | **Model B:** Three-way interaction |
|---|---|---|
| Dominance | -0.163** (0.041) | -0.149* (0.050) |
| Dominance X Ideology | 0.259* (0.082) | 0.340** (0.078) |
| Dominance X Sex | - | -0.044 (0.066) |
| Ideology X Sex | - | $0.121^{\dagger}$ (0.052) |
| Dominance X Ideology X Sex | - | -0.306* (0.095) |
| Ideology | -0.072 (0.053) | $-0.106^{\dagger}$ (0.052) |
| Sex | 0.025 (0.015) | 0.034 (0.020) |
| N | 257 | 257 |
| Centered $R^2$ | 0.311 | 0.326 |

Note: Unstandardized coefficients with robust standard errors clustered at the party level in parenthesis. Reference categories for categorical variables: liberal (ideology), male (sex). Effects of facial competence and the control variables age, incumbency and local belonging are partialled out. $^{\dagger}p < 0.10$; $^*p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$. All p-values reported for two-tailed tests.

# Winning Faces Vary By Ideology:

## How Non-Verbal Source Cues Influence

## Election and Communication Success in Politics

# Contents:

**SI1. Supplemental materials for Study 1 and Study 2**

*Vignettes*

Below we present English versions of the vignettes from Study 1. The vignettes were used in their original Danish versions in the Danish study.

No Conflict condition – Dam Scenario:

Imagine that you belong to a small-scale tribal society residing in the middle of the jungle. The tribe's village is located near a river from where you get drinking water. However, the rainy season has made the water level rise dramatically. In order to control the water and steer it away from the village, all fellow tribesmen have agreed upon constructing a dam. Every single member of the tribe has different talents and skills to contribute to the construction of the dam and the collaborative endeavor needs to be carefully coordinated in order to build the most solid dam possible. Therefore, a good leader to oversee and coordinate the construction of the dam is important.

    Below are four/two persons. Who would you prefer to lead the construction of the dam?

Conflict condition – War Scenario:

Imagine that you belong to a small-scale tribal society residing in the middle of the jungle. The tribe's village is located in close proximity to another tribe. For a long time, the relationship between your tribe and the other tribe has been extremely tense. Both tribes try to secure the right to an important hunting ground located between the two villages. You and your fellow tribesmen anticipate that war can break out anytime and that the enemy will show no mercy. You have to win the war. Therefore, a good leader, who can ensure that your tribe is victorious, is important.

    Below are four/two persons. Who would you prefer as the leader during the war?

**SI2. Validation of facial stimuli used in Study 1 and Study 2**

To provide extra validation for the manipulated differences of the two faces used in Study 1 and Study 2, we conducted a rating survey with 18 Danish student subjects. Results show that the

dominant and non-dominant faces vary as expected. Subjects were asked to compare the faces with regards to four focal traits: Dominance, physical strength, attractiveness and friendliness. Specifically, subjects were asked to indicate which face was highest on each of the four traits. As expected, significantly more subjects judged the dominant face as being more dominant and more physically strong (for both traits: 89 per cent vs. 11 per cent; t-test of difference: t=5.10, p < .001). Furthermore, significantly more subjects judged non-dominant face as being more friendly and more attractive (for both traits: 94 per cent vs. 6 per cent; t-test of difference: t=8.00, p < .001).

**SI3. Full models predicting leader choice from context and ideology in Studies 1 and 2**

Below, Table SI 3.1 first provide the full models for the prediction of subjects' leader preferences in Study 1 ($n_{conflict, \, males} = 61$; $n_{conflict, \, females} = 96$; $n_{no \, conflict, \, males} = 89$, $n_{no \, conflict, \, female} = 76$) and Study 2 ($n_{conflict, \, males} = 90$; $n_{conflict, \, females} = 101$; $n_{no \, conflict, \, males} = 89$, $n_{no \, conflict, \, female} = 112$). In the studies we have measured subjects' ideology on self-placement scales (Study 1 (males): Mean = 0.470; std. dev. = 0.197; n = 147; Study 1 (females): Mean = 0.424; std. dev. = 0.205; n = 168; Study 2 (males): Mean = 0.581; std. dev. = 0.286; n = 179; Study 2 (females): Mean = 0.535; std. dev. = 0.282; n = 213). In Study 1 we further replicate our results with the alternative measure of ideology by subjects' party choice ($n_{conservative, \, males} = 30$; $n_{conservative, \, females} = 29$; $n_{liberal, \, males} = 111$; $n_{liberal, \, females} = 133$).

*Predictions of leader choice from context and ideology in Studies 1 and 2:*

TABLE SI3.1 *Logistic regressions for Study 1 and Study2. Effects of ideology and context on choice of non-dominant (coded 0) vs. dominant face (coded 1). Model A and B show results for Study 1 (Denmark) with ideology measured as subjects' self-placements on scale in Model A and as party choice in Model B. Model C shows results from Study 2 (United States) with ideology measured as subjects' self-placements on scale and controlling for birth year, sex, race and education. Data in Model C is weighted on birth year, sex, race and education. All models report unstandardized coefficients with their standard errors in parentheses.*

|  | Study 1 (Denmark) | | | | Study 2 (United States) | |
|---|---|---|---|---|---|---|
|  | **Model A** (non-dominant/dominant face) | | **Model B** (non-dominant/dominant face) | | **Model C** (non-dominant/dominant face) | |
| Conflict condition | 1.295*** | (0.244) | 1.402*** | (0.252) | 0.818** | (0.284) |
| Ideology |  |  |  |  |  |  |
| - Self-report scale | 1.788** | (0.621) | - | - | 0.812$^\dagger$ | (0.472) |
| - Party choice | - | - | 0.981** | (0.341) | - | - |
| Birth year |  |  |  |  | 0.016 | (0.010) |
| Sex |  |  |  |  | -0.202 | (0.287) |
| Race |  |  |  |  | 0.375 | (0.324) |
| Education |  |  |  |  |  |  |
| - High school grad. |  |  |  |  | -1.623$^\dagger$ | (0.927) |
| - Some college |  |  |  |  | -1.842$^\dagger$ | (0.943) |
| - 2-year college |  |  |  |  | -2.993** | (1.017) |
| - 4-year college |  |  |  |  | -1.766$^\dagger$ | (0.938) |
| - Post-grad |  |  |  |  | -2.431* | (0.985) |
| Constant | -1.154*** | (0.319) | - 0.571*** | (0.174) | -31.113 | (19.447) |
| N | 315 | | 303 | | 392 | |
| Pseudo R$^2$ | 0.093 | | 0.106 | | 0.086 | |

Note: $^\dagger$p < 0.10; *p < 0.05; **p < 0.01; ***p < 0.001. All p-values reported for two-tailed tests. Ideology coded 0-1 with higher values indicating more conservatism (Model A and C) or choice of liberal (coded 0) versus conservative party (coded 1) (Model B). Context coded 0 for No Conflict and 1 for Conflict. For Study 2 (United States): Birth year indicate year of respondent's birth. Sex coded 0 for males and 1 for females. Race coded 0 for white and 1 others. Reference category for education is "No High School".

**SI4. Exploring potential interactions between context, ideology and subject sex in Study 1 and Study 2.**

Study 1 and Study 2 analyze the main effects of context and ideology. However, one could imagine that the contextual effect on leader choice interacts with subjects' ideology or sex. First, Table S4.1 and Figure SI4.1 investigate the possible interaction between context and ideology. Second, Table S4.2 investigates whether subject sex moderates any effects of context or ideology.

Potential context and ideology interactions:

As is evident from Table SI4.1 below the interaction between context and ideology is marginally significant in Study 1 (Demark) (for each of the operationalizations of ideology: self-report scale, b = -2.125, p = 0.090 (two-tailed); party choice, b = -1.083, p = 0.103 (two-tailed)), while it is insignificant in Study 2 (United States) (chi$^2$ ( 1) = 0.73, p = 0.393 (two-tailed)). That is, no clear pattern is found across studies 1 and 2. Therefore, we argue that the results can at most be taken as a preliminary indication that liberals' choice of leader could be more sensible to contextual influences than is conservatives'. However, this interpretation only holds in the Danish study. Further research should look deeper into this. At the present—and consistent with our theoretical argument—we can just conclude that *both* context and ideology affect leader choice.

TABLE SI4.1 *Logistic regressions for Studies 1 and 2 including context\*ideology interactions. Effects of ideology and context on choice of non-dominant face (coded 0) vs. dominant face (coded 1) as Leader. Data in Model C is weighted on birth year, sex, race and education. Unstandardized coefficients with standard errors in parenthesis.*

| | Study 1 (Denmark) | | | | Study (US) | |
|---|---|---|---|---|---|---|
| | **Model A** | | **Model B** | | **Model C** | |
| | (non-dominant/dominant face) | | (non-dominant/dominant face) | | (non-dominant/dominant face) | |
| Conflict condition | 2.237*** | (0.615) | 1.584*** | (0.279) | 0.350 | (0.625) |
| Ideology | | | | | | |
| - Self-report scale | 2.744** | (0.861) | - | - | 0.435 | (0.639) |
| - Party choice | - | - | 1.460** | (0.462) | - | - |
| Conflict X Ideology | -2.125$^\dagger$ | (1.253) | -1.083 | (0.663) | 0.826 | (0.966) |
| Birth year | | | | | 0.016 | (0.010) |
| Sex | | | | | -0.197 | (0.286) |
| Race | | | | | 0.367 | (0.321) |
| Education | | | | | | |
| - High school grad. | | | | | -1.523$^\dagger$ | (0.906) |
| - Some college | | | | | -1.726$^\dagger$ | (0.927) |
| - 2-year college | | | | | -2.836** | (1.000) |
| - 4-year college | | | | | -1.631$^\dagger$ | (0.921) |
| - Post-grad | | | | | -2.297* | 0.957) |
| Constant | -1.580*** | (0.420) | -0.649*** | (0.182) | -30.784 | (19.292) |
| N | 315 | | 303 | | 303 | |
| Pseudo R$^2$ | 0.100 | | 0.112 | | 0.112 | |

Note: $^\dagger$p < 0.10; *p < 0.05; **p < 0.01; ***p < 0.001. All p-values reported for two-tailed tests. Ideology measured on a 0-1 scale with 1 indicating most conservative position (or measured as dichotomy with 1 indicating conservative party in Model C). Context coded 0 for No Conflict and 1 for Conflict. For US study: Birth year indicate year of respondent's birth. Sex coded 0 for males and 1 for females. Race coded 0 for white and 1others. Reference category for education is "No High School".

Correspondingly, Figure SI4.1 illustrates the models from Table SI4.1. Subjects are simultaneously grouped on context and ideology. A left-right self-placement scale is used for the US study (liberals: left-right position < 0.5; conservatives: left-right position > 0.5), while party choice is used for the Danish Study. Panel A shows the proportion of the respondents choosing the dominant face in Study 1 (Study 1); Panel B shows the proportion choosing the dominant face in Study 2 (US study).

FIGURE SI4.1 *Subjects' choice of leader face for Study 1 and Study 2 with subjects grouped simultaneously on context (experimental treatment) and ideology (liberal vs. conservative). Panel A and B present the proportion choosing the dominant face rather than the non-dominant face as leader in Study 1 and Study 2, respectively.*

**Panel A: Proportion choosing the dominant face as leader in Study 1 (Denmark) grouped on experimental treatment and ideology.**
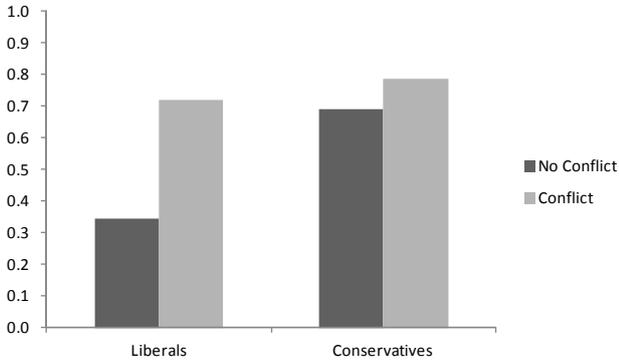
**Panel B: Proportion choosing the dominant face as leader in Study 2 (US) grouped on experimental treatment and ideology.**
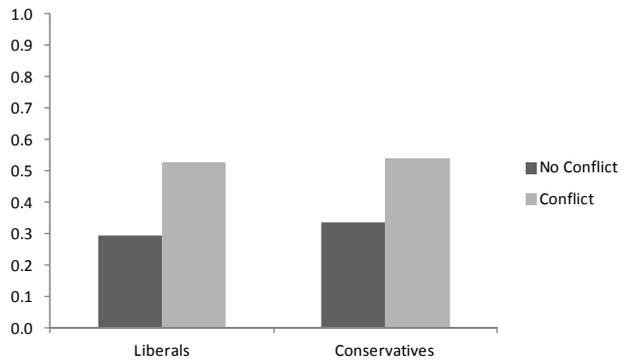


Among Danish subjects (in Panel A) the difference in proportions choosing the dominant face in the No Conflict condition compared to the Conflict condition is larger for liberals than for conservatives. However, this result does not replicate among American subjects where instead the context influences leader preferences liberals and conservatives to the same degree (Panel B). That is, in the Danish study (Study 1)—but not in the US (Study 2)—there is a tendency such that liberals could be more sensible to contextual circumstances when choosing their leader than conservatives. At the present—and consistent with our theoretical argument—we can just conclude that *both* context and ideology affect leader choice.

Potential interactions between context and ideology, respectively, and subject sex:

Table SI4.2 presents separate models with the possible interactions between subject sex (coded 0

for males and 1 for females) and context and ideology, respectively.

TABLE SI4.2 *Logistic regressions for Studies 1 and 2 including possible subject sex\*context or*
*subject sex\*ideology interactions, respectively. Effects of ideology and context on*
*choice of non-dominant face (coded 0) vs. dominant face (coded 1) as leader. Data in*
*Models C and D is weighted on birth year, sex, race and education Unstandardized*
*coefficients with standard errors in parenthesis.*

| | Study 1 (Denmark) | | | | Study 2 (US) | | | |
|---|---|---|---|---|---|---|---|---|
| | **Model A** (non-dom./dominant face) | | **Model B** (non-dom./dominant face) | | **Model C** (non-dom./dominant face) | | **Model D** (non-dom./dominant face) | |
| Conflict cond. | 0.842*** | (0.356) | 1.321*** | (0.249) | 1.153** | (0.427) | 0.818** | (0.284) |
| Ideology | 1.773** | (0.630) | 0.989 | (0.907) | 0.810$^\dagger$ | (0.470) | 1.055 | (0.677) |
| Sex | -0.505 | (0.331) | -0.753 | (0.610) | 0.137 | (0.436) | 0.077 | (0.628) |
| Conflict X Sex | 0.886$^\dagger$ | (0.496) | - | - | -0.643 | (0.593) | - | - |
| Ideology X Sex | - | - | 1.440 | (1.262) | - | - | -0.499 | (0.960) |
| Birth year | | | | | 0.015 | 0.010 | 0.016$^\dagger$ | (0.010) |
| Race | | | | | 0.408 | 0.323 | 0.380 | 0.327 |
| Education | | | | | | | | |
| - High school | | | | | -1.727$^\dagger$ | (0.977) | -1.682$^\dagger$ | (0.959) |
| - Some college | | | | | -1.961* | (0.999) | -1.894$^\dagger$ | (0.970) |
| - 2-year college | | | | | -3.100** | (1.079) | -3.047** | (1.036) |
| - 4-year college | | | | | -1.807$^\dagger$ | (0.982) | -1.858$^\dagger$ | (0.971) |
| - Post-grad | | | | | -2.456* | (1.026) | -2.516* | (1.013) |
| Constant | -0.923*** | (0.361) | -0.734 | (0.462) | -29.603 | (19.570) | -31.708 | (19.573) |
| N | 315 | | 315 | | 392 | | 392 | |
| Pseudo R$^2$ | 0.101 | | 0.097 | | 0.090 | | 0.087 | |

Note: $^\dagger$p < 0.10; *p < 0.05; **p < 0.01; ***p < 0.001. All p-values reported for two-tailed tests. Ideology measured on a
0-1 scale with 1 indicating most conservative position. Context coded 0 for No Conflict and 1 for Conflict. For Study 2:
Birth year indicate year of respondent's birth. Sex coded 0 for males and 1 for females. Race coded 0 for white and 1
others. Reference category for education is "No High School".

From table SI4.2 there are no clear signs of moderation by subject sex. Only context\*subject sex is

marginally significant in the Danish study (Study 1), whereas all other interactions remain

insignificant. In addition, the direction of the interaction terms differs between models from the US

and Danish studies, respectively, indicating that Danish females are more affected by the contextual manipulation (marginally significant) and by ideology (insignificant) than are the Danish males. However, in the US study (Study 2), if anything, females are less influenced by the context and by ideology than are males (both interactions are insignificant). At the present—and consistent with our theoretical argument—we can just conclude that *both* context and ideology affect leader choice for female as well as for male subjects.

## SI5. Full models predicting leader choice from context, ideology and Social Dominance Orientation (SDO) in Study 1.

Table SI 5.1 reports the full models for Study 1 when predicting subjects' choices of leader faces from context, ideology and Social Dominance Orientation (SDO). We measured subjects' ideology on self-placement scales from 0-1 (1 most conservative). Furthermore, we measured subjects' SDO with six items which provided a fairly reliable scale ($\alpha = 0.753$) and reasonable distributions for both male (mean = 0.320, std. dev. = 0.201) and female subjects (mean = 0.203, std. dev. = 0.149).[18]

TABLE SI5.1 *Logistic regressions for Study 1. Effects of ideology, context and SDO on choice of non-dominant (coded 0) vs. dominant face (coded 1). Model A shows the effects of context and ideology on choice of leader face; Model B shows the effects of context and SDO; Model C shows the simultaneous effects of context, ideology and SDO. All models report unstandardized coefficients with their standard errors in parentheses.*

| | **Model A** (non-dominant/dominant face) | | **Model B** (non-dominant/dominant face) | | **Model C** (non-dominant/dominant face) | |
|---|---|---|---|---|---|---|
| **Study 1 (Denmark)** | | | | | | |
| Conflict condition | 1.295*** | (0.244) | 1.337*** | (0.248) | 1.313*** | (0.249) |
| Ideology | 1.788** | (0.621) | - | - | 1.104 | (0.697) |
| SDO | - | - | 2.060** | (0.688) | 1.495† | (0.769) |
| Constant | -1.154*** | (0.319) | -0.927*** | (0.248) | -1.257*** | (0.328) |
| N | 315 | | 309 | | 309 | |
| Pseudo $R^2$ | 0.093 | | 0.092 | | 0.098 | |

Note: †$p < 0.10$; *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$. All p-values reported for two-tailed tests. Ideology and SDO coded 0-1 with higher values indicating more conservatism (Models A and C) or more socially dominant positions (Models B and C). Context coded 0 for No Conflict and 1 for Conflict.

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[18] The exact wording for six the chosen items are: "Some groups of people are simply not the equals of others"; "Some people are just more worthy than others"; "This country would be better off if we cared less about how equal all people were"; "It is not a problem if some people have more of a chance in life than others"; "Some people are just inferior to others"; "To get ahead in life, it is sometimes necessary to step on others".

The results presented in table SI 5.1 suggest that the predictive variance in the ideology variable is related to SDO. In support of this, a structural equation model also shows a significant and positive indirect effect of political ideology on leader preferences through SDO (b=0.137, p=0.026).[19] Altogether, these analyses support that conservatives' stronger preference for dominant-looking leaders is tightly linked to SDO and the tendency to perceive the social world in terms of group conflicts.

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[19] The model is estimated in Stata 12, and because of limitations in the software's SEM module, we are required to impose the assumption on the data that the dependent variable is continuous.

**SI6. Supplemental materials for Study 3**

*Information on Danish Local Elections*

Danish local elections are held every fourth year. They are proportional representative elections with multiple candidates nominated from most often eight or nine parties in each municipality. Members of Danish city councils must be resident within their municipality and in that sense most candidates have rather deep roots in their municipality. Before the actual election, local party associations nominate their candidates and list them on the ballot in preferred order. After the election seats are first distributed to parties in accordance to their total number of votes and afterwards within the parties in accordance to the candidates' number of personal votes. Voters can vote for either the party or for a given candidate from a party with more than half of the voters choosing the latter. Mostly media coverage and public attention is smaller on local than on national elections in Denmark, which is also apparent from the turnouts for the last local and national elections respectively: 65.8 percent of the registered Danish voters took part in the 2009 local elections while 87.7 percent voted for the 2011 national elections.

*Ratings of Politicians*

On average each candidate was rated by 19 naïve high school students. That is, the respondents and candidates live in different regions of Denmark and when asked respondents did not recognize any of the candidates used in the study. Candidate photos were compiled from an online database offered by the regional newspaper. Respondents were randomly assigned to rate eight or nine candidate photos on seven facial traits. Specifically, 34 different packages—each including 8 or 9 candidate faces—were created, and these packages were distributed on random to the 646 subject raters (aged 16–20 years). The candidate photos were shown to the raters one at a time and rated on each of the seven facial traits: Competence, intelligence, accountability, attractiveness, friendliness, physical strength, dominance. Concretely, raters rated each facial trait on a 0-10-scale, 0 being 'not at all competent', dominant etc., while 10 being 'very competent', dominant etc. The exact verbal

expression was copied from another recent Danish study on facial effects (Jensen & Petersen 2011) and is similar to the wording elsewhere in the literature (Berggren et al. 2010; Todorov et al. 2005). Figure SI6.1. depicts an example from the rating survey:

FIGURE SI6.1 *Example from rating survey of perceptions of candidates based on their facial appearance (translation from Danish to English).*



Take a look at the photo. Please rate the person in the photo based on your first impressions. You must rate the person on all seven traits stated below. Choose the number between 0 and 10 that best suits your impressions of the person. 0 indicates that the person is minimally competent (dominant, or…). 10 indicates that the person is maximally competent (dominant, or…). To which extent do you perceive the person in the photo as…

*Measurement of Electoral Success*

To measure actual electoral success, we follow Berggren et al. (2010). Specifically, the number of votes for both parties and candidates are gathered from the official website of the Danish election authority. These numbers are used to calculate candidates' electoral success—Relative Success—as defined in two studies of candidates' facial appearance in proportional representation election systems (Berggren et al. 2010, p. 11; Poutvaara et al. 2009). Relative Success is calculated as $(p_i/v_j)$, where $p_i$ is the number of votes cast for candidate i; $v_j$ is the total number of personal votes cast for party j divided by party j's number of candidates. The measure compares the number of personal votes for a given candidate, $p_i$, to the hypothetical number of votes the candidate would have received if personal votes within the party were equally distributed, $v_j$. However, a few top candidates receive disproportionately large numbers of personal votes making Relative Success highly skewed to the right, for which reason the logarithm of Relative Success is calculated. Finally this measure is recoded to a 0–1 scale with 0 reflecting minimal (observed) Electoral Success and 1 reflecting maximum (observed) Electoral Success. More specifically, the logarithmic values of

Relative Success, log(Relative Success), are recoded to a 0–1 scale by subtracting the smallest observed value of log(Relative Success) from every other value and finally these values are divided by the range of log(Relative Success).

*Measurement of Ideology*

Candidates from eight major parties ran in the local government elections used in Study 1. The candidates from the four parties in the left-wing block were coded '0' as liberal (*Enhedslisten*, *SF*, *Socialdemokraterne* and *Radikale Venstre*). The candidates from the four right-wing parties were coded '1' as conservative (*Dansk Folkeparti*, *Konservative*, *Liberal Alliance* and *Venstre*). Respondents' placements of the parties' left-right positions on a 0-10 (10 most conservative) scale from the 2007 National Danish Election Study (the latest national election from which data is publicly available) support this. Parties ordered from left to right with their average score in parentheses: Enhedslisten (2.14), SF (3.54), Socialdemokraterne (4.93), Radikale Venstre (5.31), Liberal Alliance (in 2007 named Ny Alliance: 6.55), Dansk Folkeparti (7.48), Venstre (7.84), Konservative (7.89). From 2001 to 2011, Venstre and Konservative held government with support from Dansk Folkeparti and Liberal Alliance (after 2007). From 2011, SF, Socialdemokraterne og Radikale Venstre hold government with support from Enhedslisten.

*Control variables*

Following previous studies, we also include candidate sex (coded from a central list of all candidates running in each of the 98 local elections), age (perceived age trichotomized: under 30 years; between 30 and 60 years; over 60 years of age), incumbency, and local belonging (municipality) as controls in our models (Todorov et al. 2005; Rosar et al. 2008; Berggren et al. 2010). Furthermore, we include ratings of perceived competence based on candidate photos (see above) as a control variable.

**SI7. Specification of the models in Study 3 and estimated coefficients for facial competence**

In our analyses in Study 3 we use OLS regressions and report unstandardized coefficients with clustered standard errors at the party level. Following Baum et al. (2007) and Cameron et al. (2011), we adjust the clustered standard errors for the small number of clusters. To estimate a covariance matrix of full rank with the limited available degrees of freedom (equal to the number of clusters), we partial out the effect of control variables (rather than estimating their coefficients) when estimating the F-tests in the main text (Baum et al. 2010). Finally, we do not include party fixed effects in our models (cf. Berggren et al. 2010) since an F-test indisputably shows that the fixed effects for the parties are all zero ($F(7, 249) = 0.40$ and $p = 0.904$). The same conclusion is reached testing for the necessity of party*municipality fixed effects ($F(20, 236) = 0.40$ and $p = 0.991$) (cf. Rabe-Hesketh and Skrondahl 2008: 70–71).

Table 2 in the main text presents the estimated regression coefficients for facial dominance, ideology and candidate sex while partialling out the effects of the control variables including facial competence. In this section we focus on the effects of facial competence while partialling out the effect of facial dominance and its interactions with ideology and candidate sex. Table SI7.1 below provides estimates for facial competence, ideology and candidate sex while in all three models partialling out the effect of facial dominance and its two-way and three-way interactions with ideology and candidate sex. Model A provides estimates from a model without any interactions. Model B presents estimated coefficients from a model including the possible two-way interaction between facial competence and ideology. Finally Model C reports coefficients for the three-way interaction between facial competence, ideology and candidate sex.

TABLE SI7.1 *Estimated effects of facial competence, ideology and candidate sex as well as relevant two-way and three-way interactions. Model A reports coefficients for the main effect of facial competence. Model B includes the two-way interaction between facial competence and ideology. Model C includes the three-way interaction between facial competence, sex and ideology. Unstandardized coefficients with robust standard errors clustered at the party level are reported in parentheses.*

| | Model A | Model B | Model C |
|---|---|---|---|
| Competence | 0.119† (0.053) | 0.178* (0.059) | 0.200† (0.085) |
| Ideology | -0.106† (0.052) | -0.040 (0.048) | -0.043 (0.063) |
| Sex | 0.034 (0.020) | 0.031 (0.020) | 0.066 (0.083) |
| Competence X Ideology | - | -0.115 (0.082) | -0.112 (0.091) |
| Competence X Sex | - | - | -0.063 (0.111) |
| Ideology X Sex | 0.121† (0.052) | 0.127$^†$ (0.055) | 0.157 (0.153) |
| Competence X Ideology X Sex | - | - | -0.044 (0.172) |
| N | 257 | 257 | 257 |
| Centered R2 | 0.062 | 0.067 | 0.070 |

Note: Facial competence coded 0-1 with 1 being maximum facial competence. Ideology coded 0 for liberal candidates and 1 for conservative candidates). Reference categories for categorical variables: liberal (ideology), male (sex). $^†$p < 0.10; *p < 0.05; **p < 0.01; ***p < 0.001. All p-values reported for two-tailed tests.

Robustness test of the effects of facial dominance

Finally, we have conducted a robustness analysis with respect to the estimated effects of facial dominance and its three-way interaction with ideology and candidate sex by excluding the different control variables except for the main effect of facial competence. That is, we ignore potential omitted variables bias from the different controls, but even when we do so we reach the same substantial conclusion with a significant three-way interaction between facial dominance, ideology and candidate sex (b=-0.296, p = 0.094 (two-tailed)).

In short, the three-way interaction between facial dominance, ideology and candidate sex is a robust finding and it is *only* the effect of facial dominance—and not the effect of facial competence—that differs across candidates depending on their ideology and sex.

**SI8. Does candidate incumbency moderate the effects of facial dominance in Study 3?**

The different effects of facial dominance—presented in Table 2 in the main text—could potentially be driven by the least recognized candidates which would suggest that the described effects of facial dominance only matter for candidates of less or minor importance (for such an argument see Lenz & Lawson, 2011). To investigate this possibility we tested if candidates' incumbency status moderates the three-way interactions between facial dominance, candidate ideology and candidate sex which turns out not to be the case (b=-0.360, p=0.285 (two-tailed)). To further explore whether the results of Study 3 are driven by unknown non-incumbents, we replicated the results for non-incumbents and incumbents, respectively. In these analyses we find that the three-way interaction between facial dominance, candidate ideology and candidate sex is significant for non-incumbents (b=-0.352, p=0.022 (two-tailed)) as well as for incumbents (b=-0.906, p=0.022 (two-tailed)).

**SI9. Supplemental materials for Study 4 and Study 5**

Below we present English versions of the written material from Study 4 and Study 5. The vignettes were used in their original Danish versions in Study 4 and Study 5. Below, the information that was shown to the subjects on succeeding screens is reported. "Rockers" refer to the Danish name ("Rockere") for the violent motorcycle gangs (such as Hells Angels) who comprise the target for the policy proposal in Studies 4 and 5.

*First Screen: Common introduction:*

The streets of Copenhagen are increasingly marked by Rockers. Recently, several rocker gangs had arranged an encounter in the middle of the pedestrian street, Strøget, causing widespread insecurity among ordinary citizens. Likewise, the police have been called out for a series of angry clashes at Amager involving knives and gun fight. Based on these episodes, the police in Copenhagen now fear that an outright war between rival rocker gangs might break out which necessarily will enhance the insecurity among the citizens of Copenhagen.

*Source: P4 Copenhagen*

*Second screen: Introduction of the policy proposal and the corresponding politician (called "Politician X" here for purposes of generalizability).*

The escalating violence from rocker gangs has also attracted attention at Christiansborg [the Danish parliament]. Some politicians state that society always should seek to resocialize criminals—including the rockers—facilitating that they in the longer run will be able to contribute to the community. However, [politician X] completely disagress in this. Instead he suggests a much more rough reaction towards the rockers: "When fights between hardcore criminal groups instills this kind of widespread insecurity among ordinary citizens we need to draw a line. We need to stop this rocker violence once and for all."

*Third to seventh screen: Each of the five items constituting the punitiveness scale was presented separately with the photo of the assigned politician positioned on the upper half of the screen. English versions of the five items comprising the punitiveness scale*:


1) How much do you agree with [politician X] that a stricter and harder fight of the gang members is necessary?

2) How much do you agree with [politician X] that the gang members should be punished harder?

3) How important do you think it is to reinstall and maintain peace and order in Copenhagen?

4) How willing would you be at supporting [politician X's] fight of the gang members, reporting violent gang members to the police and testifying against them in the Court?

5) How good do you think [politician X] is as the leading figure in fighting the gang members?

## SI10. Full models for analyses from Study 4 and Study 5

Below, Tables SI10.1 and SI10.2 present full models for the interactions between the facial dominance manipulation of the politicians' faces and subjects' political ideology from Study 4 and Study 5, respectively. We measured subjects' ideology on 0-1 self-placement scales where '0' and '1' represent the most liberal and conservative positions, respectively (Study 4 (males): Mean = 0.457; std. dev. = 0.243; n = 42; Study 4 (females): Mean = 0.400; std. dev. = 0.207; n = 59; Study 5 (males): Mean = 0.541; std. dev. = 0.242; n = 140; Study 5 (females): Mean = 0.485; std. dev. = 0.214; n = 190).

Study 4 – facial dominance X political ideology: Ole Hækkerup and Morten Bødskov

TABLE SI10.1 *Full models for Study 4 predicting punitiveness towards a criminal out-group from two-way interaction between facial dominance and subject ideology. Model A reports results for Ole Hækkerup (MP) and Model B forMorten Bødskov (Minister).Unstandardized coefficients with robust standard errors in parentheses.*

|  | **Model A** Ole Hækkerup | **Model B** Morten Bødskov |
|---|---|---|
| Facial Dominance | -0.130 (0.078) | 0.052 (0.103) |
| Political Ideology | 0.005 (0.162) | 0.216 (0.174) |
| Facial Dominance*Political Ideology | 0.352[†] (0.190) | 0.019 (0.194) |
| Constant | 0.553*** (0.055) | 0.493*** (0.096) |
| N | 52 | 49 |
| $R^2$ | 0.180 | 0.183 |

Note: Facial Dominance coded '0' for non-dominant version and '1' for dominant version. Ideology measured on 0-1 scale where '0' and '1' represent the most liberal and conservative positions, respectively. [†]$p < 0.10$; *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$. All p-values reported for two-tailed tests.

Study 5 – facial dominance X political ideology: Troels Ravn and Morten Bødskov

TABLE SI10.2 *Full models for Study 5 predicting punitiveness towards a criminal out-group from two-way interaction between facial dominance and subject ideology. Model A reports results for Troels Ravn (MP) and Model B forMorten Bødskov (Minister).Unstandardized coefficients with robust standard errors in parentheses.*

|  | **Model A** Troels Ravn | **Model B** Morten Bødskov |
|---|---|---|
| Facial Dominance | -0.126* (0.054) | -0.041 (0.068) |
| Political Ideology | 0.209** (0.067) | 0.186* (0.085) |
| Facial Dominance*Political Ideology | 0.200* (0.097) | 0.088 (0.121) |
| Constant | 0.469*** (0.039) | 0.500*** (0.047) |
| N | 167 | 164 |
| $R^2$ | 0.216 | 0.107 |

Note: Facial Dominance coded '0' for non-dominant version and '1' for dominant version. Ideology measured on 0-1 scale where '0' and '1' represent the most liberal and conservative positions, respectively. [†]$p < 0.10$; *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$. All p-values reported for two-tailed tests.

**SI11. Supplementary analyses for Study 5**

In Study 5 we asked subjects to rate the politician to whom they had been assigned on several dimensions from his facial appearance in the photo. Table SI11.1 provides an overview of these ratings. Two conclusions stand out. First, the manipulated versions of same politician photos only vary significantly and substantially on perceptions of traits linked to the dominance dimension: Dominance, physical strength and friendliness. Second, the facial dominance manipulation—which follows the exact same procedure for the two politicians—yields stronger perceptual differences for Troels Ravn (MP) than for Morten Bødskov (Minister) (as also highlighted in the main text). This suggests that subjects do indeed hold clearer prior opinions about a prominent Minister such as Morten Bødskov than about an ordinary member of parliament like Troels Ravn.

TABLE SI11.1 *Averaged perceptions on 0-1 scales of Troels Ravn (MP) and Morten Bødskov (Minister) from manipulated photos of their faces. '0' and '1' represent minimal and maximal degree of a certain trait, respectively. P-values are from t-tests of the differences in ratings between the dominant and the non-dominant face on a specific trait (two-sided).*

|  | Troels Ravn | | | Morten Bødskov | | |
|---|---|---|---|---|---|---|
|  | Dominant (N=83) | Non-dominant (N=84) | difference | Dominant (N=79) | Non-dominant (N=83) | difference |
| **Dominant** | 0.615 | 0.477 | 0.138*** | 0.420 | 0.365 | 0.055 |
| **Physically strong** | 0.530 | 0.438 | 0.092** | 0.354 | 0.301 | 0.053 |
| **Friendly** | 0.554 | 0.609 | -0.056† | 0.631 | 0.629 | 0.002 |
| **Attractive** | 0.268 | 0.287 | 0.019 | 0.290 | 0.268 | 0.022 |
| **Competent** | 0.552 | 0.530 | 0.023 | 0.555 | 0.576 | -0.021 |
| **Intelligent** | 0.520 | 0.520 | 0.000 | 0.572 | 0.581 | 0.009 |
| **Responsible** | 0.580 | 0.557 | 0.023 | 0.578 | 0.621 | 0.044 |

†$p < 0.10$; *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$. All p-values reported for two-tailed t-tests.

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