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Dominant Jerks: People Infer Dominance From the Utterance of Challenging and Offensive Statements

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Supplementary Materials: Data, Materials, Preregistration [see Index of Supplementary Materials]

Abstract

Could there be upsides to rudely challenging people's positions? If no one calls out the speaker of a challenging or offensive statement, it might be because the audience is afraid to challenge the speaker, thereby suggesting the speaker holds a dominant position. In two experiments (N = 635), participants read vignettes in which a speaker uttered a statement that was challenging (it directly clashed with the audience's prior views) or unchallenging (it agreed with the audience's prior views). We also manipulated whether the audience accepted or rejected the statement after it was uttered. In Experiment 1 the statements were about mundane topics, while in Experiment 2 the statements were offensive. In both experiments, speakers uttering challenging statements that the audience nonetheless accepted were deemed more dominant and more likely to be the boss of the audience members. This shows that people use audience reactions to challenging statements to infer dominance, and suggests that people might use the utterance of challenging statements to demonstrate their dominance.

Keywords

dominance, social dominance, rumor, offensive, challenging, boss

Highlights

- Humans use communication to convey desired impressions, but why do they sometimes say things that their audience will disagree with or even find offensive?
- In two experiments we show that speakers uttering statements that clash with their audience's point of view are perceived as more dominant and more likely to be the boss of the audience.
- The reaction of the audience matters. The speaker is deemed more dominant, and more likely to be the boss of the audience, when the audience accepts the challenging statement rather than rejects it.
- Challenging and offensive statements could be displays of dominance.

In June 2020 across the US (and much of the world), protests against racism and police brutality took place. At one of these rallies, a woman holding a placard with pictures of Black people killed by the police was confronted by a man who, pointing to some of the pictures, repeated "no more felonies."[1] By implying that these victims somehow deserved to be killed, the man was making a particularly offensive statement. We have likely all faced people who do not directly insult us, but who instead make statements they know we will find outrageous, or even merely challenging (i.e., that directly and knowingly clash with our beliefs).

In this article, we study one potential social benefit of uttering offensive or, more generally, challenging statements: because the audience and bystanders might infer from this display that the speaker is dominant. An individual who can challenge their audience without being called out might be deemed to be more dominant or of higher status. We introduce two experiments testing whether individuals who make challenging or offensive statements that the audience nonetheless accepts are perceived as more dominant. In these experiments (U.K. samples, total $N = 635$), participants are asked to evaluate a speaker who utters either a challenging or an unchallenging statement, to an audience that either accepts or rejects the statement. The main prediction tested is that the speaker will be deemed more dominant, and more likely to be the boss, when they have uttered a challenging statement that the audience accepts, rather than an unchallenging statement, or a challenging statement that the audience rejects. Before describing the experiments, we briefly introduce the literature on dominance, and in particular the multiple cues that humans use to infer who is dominant.

Similar to many other species, humans live in groups that are structured by status hierarchies (Bernstein, 1981; Drews, 1993). Throughout the animal kingdom, status is typically established through physical conflicts and, when an individual has established

1) https://www.youtube.com/watch?v=DdcUPfR9QIw

its dominance over another, they have preferential access to limited resources such as food or mates. Compared to other animals, humans exhibit more variety in the manner in which status hierarchies are implemented (Charafeddine et al., 2019; Triandis & Gelfand, 1998). First, there is more variation in the importance of status, with some groups enforcing a relatively strict egalitarianism, greatly reducing status-based inequalities in access to resources (Boehm, 2001). Second, humans are more likely to acquire status not only through sheer dominance (e.g., threats of aggression), but also through prestige, when they are recognized as particularly competent, as good leaders, or as wise advice-givers (Cheng et al., 2013; Henrich & Gil-White, 2001; Maner, 2017). Third, even dominance does not have to come from physical strength, which can be replaced by being in a position of power—from a mafia boss to a manager—to gain dominance over others.

Given the importance of dominance in all group-living species, we should expect that there are ways of recognizing who is a dominant individual. The most straightforward way of assessing dominance is a direct physical confrontation, with the winner establishing their dominance. However, given the costs of such confrontations, other means of assessing dominance have evolved—such as relying on size as a proxy for the likelihood of winning a physical confrontation.

In humans, the complex role status and dominance play is reflected in the many—more or less subtle—ways in which status and dominance can be inferred by observers. As individuals develop, physical strength plays a decreasing role in establishing dominance (Hawley, 1999; Roseth et al., 2007). Instead, individuals turn to less physical forms of dominance displays. An example that is particularly germane is insults: insults, and how people react to them, can be used to infer who is dominant. In some cultures (such as honor cultures, see, e.g., Cohen et al., 1996; Freeman, 2002), if an individual fails to object to an insult they received, it indicates that they implicitly accept their inferior status, establishing a status difference between the two parties even in the eye of bystanders.

More subtle cues can also be used to infer dominance: for example, people tend to associate dominance with speaking loudly and quickly in a firm tone, staring at the speaker, and making intrusive gestures such as bending forward (Ridgeway, 1987). Similarly, people appear to infer the dominance of potential leaders by their facial appearance, voice pitch, political views, and behavior (Petersen & Laustsen, 2020). Overall, perception of dominance is complex and multifaceted (Burgoon & Dunbar, 2000), and the present article will not do justice to these subtleties. Instead, we focus on a specific mean of inferring dominance, related to the example of insults mentioned above.

We suggest that one way in which people might infer status differences between two or more parties is by looking at how one party reacts when the other utters a challenging statement. We define a challenging statement as any statement with which the speaker knows, or anticipates, their audience will sharply disagree, or even find

offensive, uttered without trying to blunt the disagreement. Much like insults, such statements, and how the audience reacts to them, could be used to infer dominance. By default, one expects the audience of such statements to react negatively. The absence of such a negative reaction could be interpreted by bystanders as a cue that the individual who made the challenging statement enjoys a dominant status. This prediction does not distinguish between different types of dominance—for instance, whether dominance has been previously established through physical strength, or through status differences such as a boss and their employee.

Related research has shown that a statement is deemed to be more offensive when it is made by an individual who might be expected to be in a more dominant position (Baron et al., 1991; Cunningham et al., 2009). However, to the best of our knowledge, it has never been shown that, under some conditions at least, people who make challenging statements are deemed more dominant.

For a challenging statement to be interpreted as a cue of dominance, two conditions must be met. First, the audience to which the statement is addressed must disagree with it: otherwise they do not find it challenging, and thus the statement cannot be used to assert one's dominance. Second, the audience has to accept the statement, even if implicitly: if they call out the speaker (by pointing out their statement is challenging, rejecting the statement, etc.), they reject the assertion of dominance (although bystanders might still recognize the failed attempt at demonstrating dominance). Challenging statements can take many forms. Here we focus on two: direct contradiction of the audience's opinion (e.g., "Messi is clearly the best football player ever" / "In fact, Ronaldo is the best football player ever"), and a more extreme form of challenge: offensive (and false) rumors (for example "the Israeli intelligence had warned Jews working at the World Trade Center not to come to work on September 11. Since there were no Jews as victims, this proves that they were well advised, or even that they helped orchestrate the whole thing"; see, Petersen et al., 2020). Note that here we do not focus on whether the challenging statements are true or false: for some audiences, true statements could also be challenging (e.g., statements negating the existence of a deity).

In two experiments, we present participants with a series of vignettes in which a speaker utters a statement. Two variables are manipulated: whether the statement is challenging or not (i.e., whether the audience agreed or disagreed with the idea expressed in the statement before it was uttered), and whether the audience then accepts or rejects the statement (by nodding or by shaking their head respectively). Participants are then asked to rate the speaker on different traits, of which dominance is particularly relevant, and whether they think the speaker is the boss of the audience members. Our main prediction is that participants will be particularly likely to deem the speaker to be dominant, and to be the boss, when he makes a challenging statement which the audience accepts. More precisely:

> **H_1**: Participants rate the speaker as being more dominant when the audience accepts a statement by the speaker that clashes with their stated position (challenging statement), compared to when the audience rejects the speaker's statement.
>
> **H_2**: Participants rate the speaker as being more dominant when the audience accepts a statement by the speaker that clashes with their stated position (challenging statement), compared to when they accept a statement that did not clash, but agreed with the audience's stated position (unchallenging statement).
>
> **H_3**: Participants rate the speaker as being more likely to be the boss of the audience members when the audience accepts a statement by the speaker that clashes with their stated position (challenging statement), compared to when the audience rejects the speaker's statement.
>
> **H_4**: Participants rate the speaker as being more likely to be the boss of the audience members when the audience accepts a statement by the speaker that clashes with their stated position (challenging statement), compared to when they accept a statement that does not clash, but agrees with the audience's stated position (unchallenging statement).

In addition to these key hypotheses, we predicted that the act of uttering a challenging statement with the audience would make a speaker appear less warm:

> **H_5**: Participants evaluate the speaker less warmly when he disagrees with the audience's position (he utters a challenging statement) compared to when he shares the same position (unchallenging statement).

Although this latter prediction is unsurprising, it is still theoretically relevant, as it highlights the tradeoffs inherent in many dominance displays: even if they manage to make one appear more dominant, they might damage their reputation for warmth (which is often deemed to be the most important trait in reputation management, see Abele & Wojciszke, 2014; Suitner & Maass, 2008; Ybarra et al., 2012).

Finally, we investigated whether a speaker would appear more knowledgeable when the audience accepts a statement by the speaker that clashes with their stated position (challenging statement), compared to when the audience rejects the speaker's statement (RQ_1). We tested this as an alternative inference that the participants might draw from the audience accepting the challenging statement, i.e., that the audience accepts the statement not only because the speaker is dominant, but also because the speaker is deemed more competent. Statistical analyses, sample size, and hypotheses were pre-reg-

istered. Data, materials, pre-registrations, and the R scripts used to analyze the data are available on the Open Science Framework: https://osf.io/kpuc9/.

Experiment 1

In the first experiment participants were asked to evaluate the personality traits of an individual uttering a statement in front of an audience. We manipulated whether the audience already agreed with the statement or not (challenging or unchallenging statement), and whether the audience reacted by shaking their heads (rejecting the statement) or nodding (accepting the statement).

Participants

Based on a pre-registered power analysis, we recruited 315 participants (198 women, M_{Age} = 35.3, SD = 12.6) from the U.K. using Prolific Academic. Participants were paid £0.25.

Design, Materials, Procedure

We created three topics of discussion (Are Apple phones better than Samsung phones? Is coffee a better hot drink than green tea? Is Messi a better football player than Ronaldo?). For each topic, we created three vignettes in which a speaker addresses an audience. In one vignette, the speaker utters an unchallenging statement (which agrees with the audience's prior opinions), and the audience accepts the speaker's statement. In the other two vignettes, the speaker utters a challenging statement (which clashes with the audience's prior opinions), and the audience either accepts this statement, or rejects it. The positions taken by the speaker and the audience were counterbalanced, leading to a total of 18 vignettes (three topics, three types of vignettes per topic, two orders).

The design was fully between-participants, with only one vignette per participant. Example vignettes are provided below (the square brackets indicate the version of the text in which the point of view taken by the protagonist is counterbalanced):

The statement is challenging yet the audience accepts it.

> Four colleagues, Lisa, Sarah, Phil, and Allan are chatting during a coffee break. They start talking about football. Lisa says: "Messi [Ronaldo] is clearly the best football player ever." Phil says, "You're right, he's really the best," and Sarah agrees, adding "there's never been one like him." But Allan says: "in fact, Ronaldo [Messi] is the best football player ever." Lisa, Sarah, and Phil nod along approvingly.

The statement is challenging and the audience rejects it.

> Four colleagues, Lisa, Sarah, Phil, and Allan are chatting during a coffee break. They start talking about football. Lisa says: "Messi [Ronaldo] is clearly the best football player ever." Phil says, "You're right, he's really the best," and Sarah agrees, adding "there's never been one like him." But Allan says: "in fact, Ronaldo [Messi] is the best football player ever." Lisa, Sarah, and Phil shake their heads in disagreement.

The statement is unchallenging and the audience accepts it.

> Four colleagues, Lisa, Sarah, Phil, and Allan are chatting during a coffee break. They start talking about football. Lisa says: "Messi [Ronaldo] is clearly the best football player ever." Phil says, "You're right, he's really the best," and Sarah agrees, adding "there's never been one like him." and Allan says: "yes, Messi [Ronaldo] is the best football player ever." Lisa, Sarah, and Phil nod along approvingly.

Participants read the vignette and answered questions about the speaker (Allan). The dependent variables were chosen to allow us to test our hypotheses and answer the research question. We selected the items in the scale based on previous work on the Big Two—argued to be the two fundamental dimensions of social perception (Abele et al., 2008; Fiske et al., 2002; Gebauer et al., 2013; Trapnell & Paulhus, 2012), in particular empirical studies distinguishing between competence and assertiveness/dominance (e.g., Abele et al., 2016; Altay & Mercier, 2020). Two items bearing on the competence dimension were maintained in order to avoid task demands (i.e., making the purpose of the experiment too transparent to the participants). We also added more specific questions about the status and knowledgeability of the speaker relative to his audience.

First, participants rated how well each of six words (dominance, leadership, kindness, warmth, cleverness, competence), presented in a randomized order, described the speaker on a seven-point Likert scale (1 [Not at all] to 7 [Extremely well]). Second, participants rated how likely the speaker is to be the boss of the audience members on a seven-point Likert scale (1 [Very unlikely], 2 [Unlikely], 3 [Moderately unlikely], 4 [Neither likely nor unlikely], 5 [Moderately likely], 6 [Likely], 7 [Very likely]). Third, participants rated how much they thought the speaker to be more knowledgeable than the audience members about the topic (1 [Much less knowledgeable), 2 [Less knowledgeable], 3 [As knowledgeable], 4 [More knowledgeable], 5 [Much more knowledgeable]). Finally, participants rated how offensive they found the speaker's statement on a five-point Likert scale (1 [Not offensive at all], 2 [Somewhat offensive], 3 [Offensive], 4 [Very offensive], 5 [Extremely offensive]; this question is particularly relevant for comparison with Experiment 2).

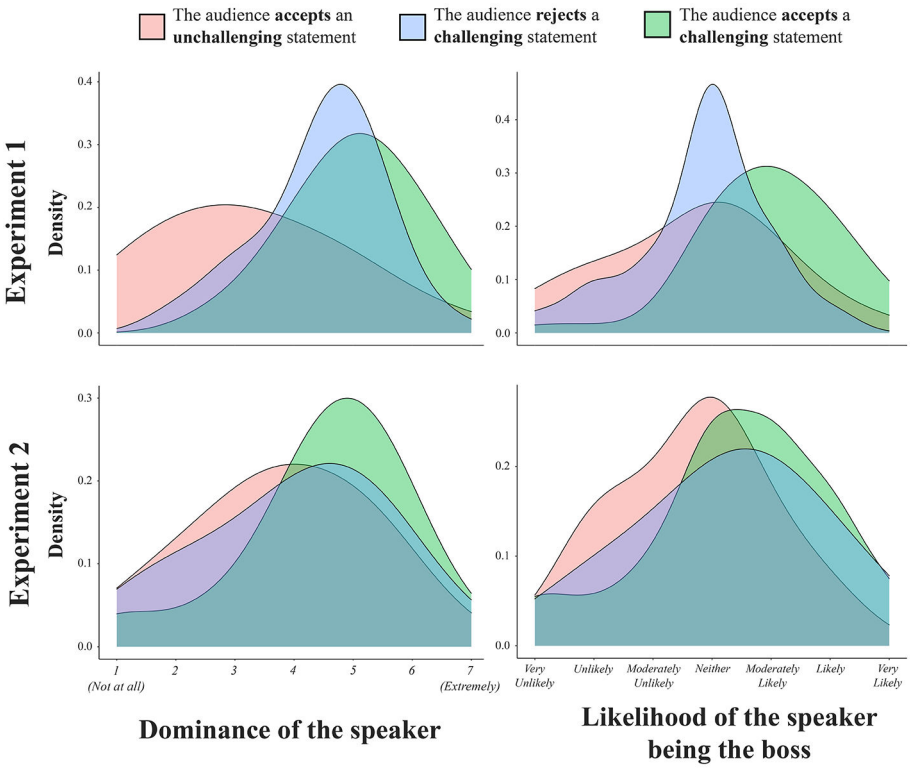
Finally, we gave participants an attention check (see ESM), which all participants passed, and the participants provided basic demographic information.

Results and Discussion

All statistical analyses were conducted in R (v.3.6.2), using R Studio (v.1.1.419). In the analyses below, we conducted Welch's *t*-tests. We refer to estimates as 'statistically significant' if the *p*-value is lower than an alpha of 0.05. We display the distribution of our main dependent variables split by condition in the top panel of Figure 1 and report the descriptive statistics in Table 1. In the ESM we report the results for the individual items composing the communion, dominance, and competence dimension.

Figure 1

Density Plots of the Main Results



Note. Dominance ratings and likelihood of the speaker being deemed the boss across the two experiments are represented as a function of whether the audience initially agreed or disagreed with the statement being shared and whether they reacted by nodding as a sign of agreement or shook their heads as a sign of disagreement. We see that across the two experiments, speakers are deemed more dominant when the audience accepts a

challenging statement (green) than when the audience rejects a challenging statement (blue), or accepts an unchallenging statement (pink).

Table 1

Descriptive Results for Experiments 1 and 2

	Likelihood of being the boss		Dominance		Warmth		Competence		Knowledgeable	
Condition	**Exp. 1**	**Exp. 2**	**Exp. 1**	**Exp. 2**	**Exp. 1**	**Exp. 2**	**Exp. 1**	**Exp. 2**	**Exp. 1**	**Exp. 2**
The audience accepts an unchallenging statement	3.69 (1.11)	3.71 (1.31)	3.26 (1.59)	3.82 (1.47)	4.39 (1.01)	2.63 (1.16)	3.88 (0.99)	2.99 (1.33)	2.74 (0.59)	3.86 (0.62)
The audience rejects a challenging statement	3.84 (1.11)	4.28 (1.56)	4.47 (1.07)	4.03 (1.56)	3.97 (0.95)	2.31 (1.22)	4.42 (1.01)	2.76 (1.44)	3.11 (0.59)	2.93 (0.51)
The audience accepts a challenging statement	4.98 (1.15)	4.43 (1.52)	5.03 (1.07)	4.56 (1.38)	3.78 (1.07)	2.67 (1.22)	4.38 (1.01)	3.25 (1.43)	3.06 (0.59)	2.88 (0.53)

Note. Likelihood of the speaker being deemed the boss, dominance ratings (dominant + leadership), warmth ratings (kindness + warmth), competence ratings (cleverness + competence), and knowledgeable ratings, across the two experiments, as a function of whether the statement was challenging of not, and whether the audience accepted or rejected the statement. We report the means with the standard deviations in parentheses.

In line with H_1, participants deemed the speaker more dominant when the audience accepted a challenging statement, compared to when the audience rejected a challenging statement, $t(206.9) = 3.80$, $p < .001$, $d = 0.53$.

In line with H_2, participants deemed the speaker more dominant when the audience accepted a challenging statement, compared to when the audience accepted an unchallenging statement, $t(206.9) = 9.52$, $p < .001$, $d = 1.31$.

In line with H_3, participants deemed the speaker more likely to be the boss of the audience members when the audience accepted a challenging statement, compared to when the audience rejected a challenging statement, $t(206.8) = 7.32$, $p < .001$, $d = 1.01$.

In line with H_4, participants deemed the speaker more likely to be the boss of the audience members when the audience accepted a challenging statement, compared to when the audience accepted an unchallenging statement, $t(198.9) = 7.13$, $p < .001$, $d = 0.98$.

In line with H_5, participants deemed the speaker to be less warm when he uttered a challenging, compared to an unchallenging statement, $t(208.2) = 4.25$, $p < .001$, $d = 0.59$.

Participants did not deem the speaker more knowledgeable when the audience accepted a challenging statement, compared to when the audience rejected a challenging statement, $t(206.9) = 0.60$, $p = 0.55$, $d = 0.08$.

All our hypotheses were confirmed, suggesting that participants can use the simple utterance of a challenging statement, in conjunction with the reaction of the audience, as a cue to infer dominance.

Experiment 2

Experiment 2 is a replication of Experiment 1 with offensive rumors. We selected offensive rumors that are notoriously famous, such as rumors about 9/11. That such rumors can be used to infer—and thus potentially to assert—dominance is particularly relevant, since it could help understand their cultural success.

Participants

Based on a pre-registered power analysis, we recruited 320 participants (215 women, M_{Age} = 34.95, *SD* = 11.73) from the U.K. using Prolific Academic. Participants were paid £0.25.

Design, Materials, Procedure

The design and procedure are identical to Experiment 1, with only the materials being modified. Instead of using challenging statements about mundane topics, we used three offensive rumors found online against either Jewish people, Black people, or Muslim people, as in the following example (complete list available in ESM):

The statement is challenging yet the audience accepts it.

> Four colleagues, Lisa, Sarah, Phil, and Allan are chatting during a coffee break. They start talking about conspiracy theories involving Jewish people. Lisa says: "it's clear that all of these conspiracy theories are false." Phil says, "I don't believe in these conspiracy theories either" and Sarah agrees, adding "me either," but Allan says: "actually, the Israeli intelligence had warned Jews working at the World Trade Center not to come to work on September 11. Since there were no Jews as victims, this proves that they were well advised, or even that they helped orchestrate the whole thing." Lisa, Sarah, and Phil nod along approvingly.

The statement is challenging and the audience rejects it.

> Four colleagues, Lisa, Sarah, Phil, and Allan are chatting during a coffee break. They start talking about conspiracy theories involving Jewish people. Lisa says: "it's clear that all of these conspiracy theories are false." Phil says, "I don't believe in these conspiracy

> theories either" and Sarah agrees, adding "me either," but Allan says: "actually, the Israeli intelligence had warned Jews working at the World Trade Center not to come to work on September 11. Since there were no Jews as victims, this proves that they were well advised, or even that they helped orchestrate the whole thing." Lisa, Sarah, and Phil shake their heads in disagreement.

The statement is unchallenging and the audience accepts it.

> Four colleagues, Lisa, Sarah, Phil, and Allan are chatting during a coffee break. They start talking about conspiracy theories involving Jewish people. Lisa says: "it's clear that all of these conspiracy theories are true." Phil says, "I also think many of these conspiracy theories are true," Sarah agrees, adding "me too," and Allan says: "for example, the Israeli intelligence had warned Jews working at the World Trade Center not to come to work on September 11. Since there were no Jews as victims, this proves that they were well advised, or even that they helped orchestrate the whole thing." Lisa, Sarah, and Phil nod along approvingly.

Before the attention check and the demographics, participants were debriefed regarding the inaccuracy of the rumors and the purpose of the experiment.

Results and Discussion

First, participants deemed the offensive rumors to be offensive (Mdn = 3, M = 3.07, SD = 1.42). By comparisons, participants deemed the statements of the first experiment to be not offensive at all (Mdn = 1, M = 1.11, SD = 0.38).

We display the distribution of our main dependent variables split by condition in the bottom panel of Figure 1. In line with H_1, participants deemed the speaker more dominant when the audience accepted a challenging statement, compared to when the audience rejected a challenging statement, $t(208.6) = 2.62$, $p = .009$, $d = 0.36$.

In line with H_2, participants deemed the speaker more dominant when the audience accepted a challenging statement, compared to when the audience accepted an unchallenging statement, $t(208.8) = 3.80$, $p < .001$, $d = 0.52$.

Contrary to H_3, participants did not deem the speaker significatively more likely to be the boss of the audience members when the audience accepted a challenging statement, compared to when the audience rejected a challenging statement, $t(210) = 0.73$, $p = .47$, $d = 0.10$.

In line with H_4, participants deemed the speaker more likely to be the boss of the audience members when the audience accepted a challenging statement, compared to when the audience accepted an unchallenging statement, $t(209) = 3.70$, $p < .001$, $d = 0.51$.

Contrary to H_5, participants did not deem the speaker to be significatively less warm when he uttered a challenging, compared to an unchallenging statement, $t(207.7) = 0.26$, $p = .80$, $d = 0.04$. This might be explained by the fact that, in every condition, the speaker shared an offensive rumor.

Participants did not deem the speaker more knowledgeable when the audience accepted a challenging statement, compared to when the audience rejected a challenging statement, $t(208.7) = 0.58$, $p = .56$, $d = 0.08$.

Overall, Experiment 2 replicated the results of Experiment 1, suggesting that participants can use the uttering of offensive rumors as a sign of dominance, when the rumors are offensive to the speaker's audience, and when the audience accepts the rumors. The only exception to this pattern is that participants deemed the speaker more likely to be the boss whenever he uttered an offensive rumor that challenged the audience (i.e., a rumor with which the audience initially disagreed), even if the audience rejected it. Given the offensiveness of the rumor, it is possible that the way in which the audience rejected it (i.e., by shaking their heads) was deemed suspiciously weak, suggesting that the audience had reasons to show restraint in their rejection of the speaker.

Conclusion

Saying things we know will rudely challenge or offend our audience might seem to only have social downsides. We have hypothesized that, in fact, such behavior might yield social benefits. In particular, we suggested that bystanders might use the utterance of such challenging statements to infer the dominance of the speaker.

In two experiments, we found that speakers who uttered challenging statements that were nonetheless accepted by the audience, compared to speakers who uttered unchallenging statements, or whose challenging statements were rejected by the audience, were deemed more dominant and more likely to be the boss of the audience members. In Experiment 1, the challenging statements bore on mundane disagreements (e.g., who is the best football player), while Experiment 2 used offensive rumors. Note that in both experiments, speakers were deemed to be more dominant when they uttered a challenging rather than an unchallenging statement, even if that statement was rejected by the audience. This might reflect the meekness of the rejection (shaking one's head), which was not commensurate to the challenge raised by the statement. A more pronounced rejection could have led to lower dominance ratings.

Our findings thus add to the literature on dominance in humans, by identifying another cue people use to infer dominance and status (e.g., Petersen & Laustsen, 2020; Ridgeway, 1987). In particular, uttering challenging statements might be a useful alternative, for some, to the more straightforward uttering of insults: uttering challenging statements might be less likely to result in direct retaliation (e.g., Cohen et al., 1996; Freeman, 2002), and might be less frowned upon.

If bystanders sometimes infer dominance from the uttering of challenging statements, this offers a way for people to assert their dominance. Our findings open up the possibility that people who are keen to display their dominance might choose to utter challenging or even offensive statements. Some evidence suggests that this is the case. People preoccupied with achieving higher status appear to be responsible for most online political hostility (Bor & Petersen, 2022). Indeed, people who seek status specifically via dominance (but not those pursuing prestige) are particularly likely to engage in offensive forms of political expression; for example, they share hostile rumors and take part in political fights (Petersen, Osmundsen, & Bor, 2021).

Even if the present results might help understand why people who want to assert their dominance utter challenging or offensive statements, it is unclear whether this strategy is in fact effective in an online environment, since both the prior opinion of the audience, and the audience's reaction are harder to assess online. For example, someone who sees an inflammatory post on Facebook only has access to what the people who have reacted to the post think: If no one interacts with an inflammatory post, is it because they are cowed by the dominance of the poster, or because they cannot be bothered to engage? Future research should thus investigate whether the strategy of uttering challenging or offensive statements to express one's dominance can be effective in a variety of online settings.

Another important result of our experiments is that even if people who utter challenging statements can be deemed more dominant, they are consistently rated as being less warm. There is thus a clear tradeoff, which helps explain why even people who might want to assert their status generally refrain from uttering statements that clearly clash with their audience's views (see, e.g., Gerber et al., 2012).

From a practical standpoint, it is important for bystanders to realize that the audiences of challenging statements do not passively accept them, lest they be misled into thinking that the speaker is dominant. As mentioned above, in online environments audiences' reactions can sometimes be very opaque, and sometimes positive reactions are much more salient than negative reactions.

Our experiments have several limitations. First, they were conducted with participants from the U.K., with a convenience sample. The latter point is likely unproblematic, as such experimental manipulations tend to replicate between convenience samples and representative samples (see Coppock et al., 2018). The former point is more important, since expressions of dominance are known to vary across cultures (see, e.g., the importance of insults in cultures of honor; Cohen et al., 1996; Freeman, 2002). Indeed, even within a given culture, there will be substantial contextual variation in the appropriateness of different dominance displays. As a result, our results only suggest that in some cultural contexts the uttering of challenging statements is used to infer dominance. We also note that we did not gather detailed information about the demographic makeup of

our sample (such as ethnicity or religion), even though this might have interacted with the perceived offensiveness of the statements in Experiment 2.

A second limitation concerns our use of vignettes. Text based vignettes allowed us to control what participants were exposed to in each condition, maximizing internal validity at the detriment of external validity. More work is needed to assess how well our findings generalize in different ecological settings. Moreover, the vignettes were limited in the number and type of challenging statements that were tested, in the situation in which the challenging statement was uttered (face-to-face, rather than on social media for instance), and in the gender of the individual uttering the offensive statements (always a male, which might have an influence on perceptions of the offensiveness of the statements, see Baron et al., 1991).

There are many avenues for future research. First, the limitations of the present study could be overcome by experiments with more diverse population samples, more diverse vignettes, and methods that do not rely on vignettes (e.g., showing participants actual face-to-face exchanges, or social media posts and the reactions to these posts). Second, experiments could attempt to show that, under some conditions, people motivated to display their dominance use the uttering of challenging and offensive statements to do so.

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Competing Interests: The authors have declared that no competing interests exist.

Ethics Approval: The present research received approval from an ethics committee (CER-Paris Descartes; N° 2019-03- MERCIER). Participants had to give their informed consent to participate in the study.

Author Contributions: Emma De Araujo and Sacha Altay contributed equally.

Data Availability: Statistical analyses, sample size, and hypotheses were pre-registered. Data, materials, pre-registrations, and the R scripts used to analyze the data, are available on the Open Science Framework, see Index of Supplementary Materials.

Supplementary Materials

For this article, data, materials, pre-registrations, and the R scripts used to analyze the data, are freely available on OSF (for access see Index of Supplementary Materials below).

Index of Supplementary Materials

De Araujo, E., Altay, S., Bor, A., & Mercier, H. (2022). *Supplementary materials to "Dominant jerks: People infer dominance from the utterance of challenging and offensive statements"* [Data, scripts, materials, pre-registration]. OSF. https://doi.org/10.17605/OSF.IO/KPUC9

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