Adaptive Human Behavior and Physiology (2022) 8:383–406
https://doi.org/10.1007/s40750-022-00196-6

ORIGINAL ARTICLE

When Toughness Begets Respect: Dominant Individuals Gain Prestige and Leadership By Facilitating Intragroup Conflict Resolution

Joey T. Cheng[1] · **Nathan A. Dhaliwal**[2] · **Miranda A. Too**[1]

Received: 18 April 2022 / Revised: 19 July 2022 / Accepted: 20 July 2022 / Published online: 29 July 2022

Abstract

Objective Why do dominant leaders rise to power via the popular vote? This research tests whether when people feel threatened by intra-group disorder they desire stronger, more dominant leaders.

Methods Participants ($N = 1{,}026$) read a vignette that depicts a within-group norm violation. We then used a between-subjects design to randomly assign participants to a specific version of the vignette in which (a) a focal target individual in the scenario varied in their dominance (punitiveness: from no to moderate to strong); and (b) the local group faced little or substantial intra-group conflict and disorder (threat: from low to high). Following this, participants reported how much they endorse the target individuals as leader and the individual's perceived prestige.

Results We find that intra-group conflict motivates a psychology that favors the rise of dominant leaders: Highly punitive individuals (seen as highly dominant) are endorsed as leaders when in-group threat is high, but comparably disfavored when threat is low. Under low threat, non-punitive individuals (who are seen as less dominant) are endorsed as leaders. Subsequent analyses reveal that these shifts in leader preferences are explained by corresponding changes in prestige. Under conditions of high threat, dominance confers prestige, whereas under low threat, dominance suppresses prestige. Tests of mediation further show that the effect of dominance on increased leader support under high threat is mediated by prestige.

Conclusions In contexts of threat, such as internal disorder, dominant leaders are favored and gain prestige, owing to their perceived ability to supply benefits such as in mediating internal conflicts.

Keywords Punishment · Dominance · Prestige · Social status · Hierarchy · Leader endorsement

✉ Joey T. Cheng
chengjt@yorku.ca

Extended author information available on the last page of the article

Why do strong dominant leaders rise to power? The ongoing rise of tough, threatening, and authoritarian leaders around the world has been described as the dawn of a "strongmen era" (Bremmer, 2018). While some dominant leaders appear to derive their power from the ability to coerce others into submission by leveraging force, threat, and inflicting costs (Cheng, 2020; Cheng et al., 2013; Henrich & Gil-White, 2001; Zeng et al., 2022), remarkably the rise of many dominant leaders in past and current political affairs is actually rooted in their ability to win democratic elections and gain widespread follower support. Data from the Gallup World Poll show that, indeed, while some dictators rule through terror and repression, others are genuinely popular (Guriev & Treisman, 2020). People's willingness to tolerate or even support these "strongmen" leaders—despite their tendency to intimidate, threaten, and extract coercive compliance—remains an important puzzle to social scientists[1].

To see the popularity of certain dominant leaders, consider the role of appointed dictatorship in the Roman Republic. Despite being a democratic ancient state, in emergency situations the Roman government could constitutionally appoint a temporary dictator. This dictator was accorded extraordinary powers during their appointment, but since they were resorted to only in times of military and other internal crises, they must give up their power at the conclusion of the state emergency. Among the most well-known of these dictators was Julius Caesar, a charismatic "strongman" who rose through the ranks of the Roman Republic through his military prowess and successes on countless battlefields. Despite his increasingly ruthless and malicious reputation, Caesar gained broad support and popularity among the commoners. They considered him a military genius with extraordinary powers and capable of solving their problems and strengthening Rome's power through conquest. He was elected in rapid succession to key roles in Roman politics and later even appointed dictator. Caesar served as the Roman people's appointed dictator for over a decade. His rule was cut short when, in the final years of his reign, a group of senators grew fearful of Caesar's dictatorial style and unprecedented ambition to take full power over Rome by self-proclaiming its dictator for life. On the infamous "Ides of March", Caesar was assassinated by 60 conspiring senators who stabbed him repeatedly.

What explains the appeal of "strongmen" like Caesar and so many other political leaders? Much of the research on this question has focused on how certain stable traits, characteristics, and attributes can predispose individuals to favor dominant leaders (Adorno et al., 1950). For example, evidence from this stream of work indicates a heightened preference for "strong" leaders among people who are prone to a kind of conflict-oriented mindset characterized by a tendency to view the world as ridden by conflict and threat, including traits and characteristics such as "conservative" or "right-wing" political ideologies (Banai et al., 2018; Jiménez et al., 2021; Laustsen, 2017; Laustsen & Petersen, 2017, 2020b; Laustsen et al., 2015; Petersen & Laustsen, 2020; Winter, 2010), social dominance orientation—a preference for between-group

[1] Our use of term "strongmen" refers to a type of authoritarian political leader (Geddes et al., 2014; Scully et al., 1994; Weeks, 2012). Leaders who exhibit "strongmen" behavior can be of either gender, though historically have been predominantly male.

hierarchy and competition (Laustsen & Petersen, 2016; Laustsen et al., 2015), and dispositional dominance and aggressiveness (Laustsen & Petersen, 2017).

Until more recently, less attention has been paid to the effects of *situational* exposure to threat: can the situational experience of threat and conflict increase the appeal of dominant leaders? Here, we focus on this effect of context and use an experimental design to test whether people who experience greater intra-group threat and conflict increase their support of dominant leaders. Understanding whether and which contextual factors matter is crucial for a complete understanding of leader preferences. This is because, despite the contribution of follower traits to shaping leader preferences, these factors alone cannot fully account for the widespread support that dominant leaders sometimes gain from the masses, particularly from those followers whose default is to harbor anti-dominant sentiments and thus disapprove of the "strongmen's" reliance on force, intimidation, and coercion (Cheng, 2020). In other words, preferences that result from follower traits and contextual factors jointly operate to actively promote dominant individuals to positions of leadership (Harms et al., 2018; Laustsen & Petersen, 2017; Petersen & Laustsen, 2020).

Dominance Confers Prestige: When Toughness, Stress, and Belligerence Become Locally Valued Assets

Why would experiences of conflict and threat increase the appeal of dominant leaders? To approach this question, we draw on work that partitions human status asymmetries into dominance and prestige varieties. Unlike coercive dominance—which results from greater strength, threat, or intimidation—prestige-based status refers to a form of non-agonistic, freely conferred deference accorded to those who possess locally valued skills, know-how, or knowledge that translate into benefits for others (Henrich & Gil-White, 2001). Although both dominance and prestige forms of status increase social influence and preferential attention (Cheng et al., 2013; Foulsham et al., 2010), prestige—mediated by feelings of respect—leads to influence through voluntary deference, imitation, and true persuasion, while dominance—mediated by fear and represents a phylogenetically older form of status shared with many other species—relies on forced compliance, submission, and harm avoidance. This theoretical account proposes that, while these forms of status can operate independently (Cheng et al., 2013), they can at times positively overlap within the same individual in certain groups and social contexts (Chapais, 2015; Cheng et al., 2013; Durkee et al., 2020; Henrich et al., 2015; von Rueden et al., 2014; Zeng et al., 2022). The theory predicts that when threat-enhancing traits and abilities such as strength, toughness, and aggressiveness—which typically associate more strongly with dominance—can increase the actual or perceived ability to generate benefits (that is, prestige), dominance and prestige status will covary. This implies that under contexts or situations (whether perpetual and naturally occurring or transient and temporally activated by environmental triggers) that translate traits, attributes, and motivations associated with coercive threat into locally valued abilities worthy of emulation or

deference, dominant individuals will be both promoted within the prestige hierarchy and voluntarily chosen into positions of leadership.

Empirically, growing evidence indicates that, although these two forms of status tend to be uncorrelated across many contexts, dominance-enhancing traits can indeed at times evoke prestige, creating a positive overlap. In the first line of evidence, consider how physically larger and stronger men (dominance) may be seen as more capable at generating benefits for in-group members through their perceived greater ability and willingness to punish free-riders or facilitate inter-group competition (Durkee et al., 2020; Holbrook et al., 2016; Lukaszewski et al., 2016; von Rueden et al., 2014), or at compelling others into providing coalitional support (Chapais, 2015; Henrich et al., 2015). Consequently, physical stature not only cues dominance but also prestige, especially under inter-group competition. As another example, among West Point cadets, using one's athletic prowess (correlated with physical size and strength) to contribute to the unit's prominence in competitive intra-mural sports is considered a particularly prestige-worthy contribution to group goals, thus elevating the status of athletes above non-athletes (Mazur et al., 1984). Indirect cues of physical strength, such as vocal and facial markers of dominance (e.g., low voice pitch, wider face), similarly elicit both dominance and prestige psychologies (Klofstad et al., 2012; Laustsen & Petersen, 2017, 2020b; Oh et al., 2019; Todorov et al., 2005).

A second line of evidence suggests that, beyond physical stature and size, a large suite of other non-physical traits related to coercive capacity, which primarily cue dominance, may also elicit prestige-based deference. This includes cues of mental steadfastness such as competitiveness, risk-seeking, bravery, and emotional states such as anger—all of which have been shown in psychological studies to lead to inferences of skill, competence, and success (prestige) alongside force, threat, and aggression (dominance) (Sell et al., 2009; van Kleef et al., 2021; Wang et al., 2018). By the same logic, individuals with a known history of greater punitiveness can thwart free-riding through credible threats of punishment (dominance) and, along with this, elicit prestige-based deference through their perceived ability to improve collective action (Chen et al., 2021; Redhead et al., 2021). This is especially true for leaders, rather than non-leaders, who are typically responsible for resolving within-group conflicts and whose actions attract more attention (Cheng et al., 2013; Gerpott et al., 2018; Glowacki & von Rueden, 2015).

Across both of these lines of evidence, dominance-related traits can be understood to cue prestige, producing a positive overlap between dominance and prestige hierarchies, because these traits increase efficacy in conflict-resolution or other productive abilities that confer benefits. The point is that individuals who possess these dominance-related cues (both physical and non-physical) are expected to concomitantly evoke varying degrees of prestige status, and both forms of status will form the basis of these individuals' overall influence.

Central to this account, the experience of external or internal threat and conflict is expected to augment the degree to which dominance becomes a source of prestige and leader endorsement. This is because external threats increase

people's dependence on dominance-inclined group members who are able and willing to contribute to success in intergroup conflict such as by participating in warfare or compelling broader coalitional support from neighboring groups. In the case of internal threats, individuals equipped with dominance-enhancing traits can better promote the solidarity and cooperation required for collective well-being by punishing free-riders (Chen et al., 2021). This notion that dominance can signal benefit-generation potential provides a plausible theoretical account for why dominant individuals manage to attract a larger following and gain democratic leadership during periods of threat, scarcity, and other emergencies, including—but not limited to—inter-group conflict (Gelfand et al., 2011; Gordon & Lea, 2016; Halevy et al., 2012; Harms et al., 2018; Jiménez et al., 2021; Kakkar & Sivanathan, 2017; Laustsen & Petersen, 2017; Little et al., 2012; Mutz, 2018; Spisak et al., 2012b; van Kleef et al., 2021; van Vugt & Grabo, 2015) and intra-group turmoil (Bøggild & Laustsen, 2016; Zhu et al., 2021).

The Current Research

Here, we test this notion that dominance acts a particularly potent source of prestige and leader support under experiences of threat and conflict. We have several goals. First, we establish whether situations of intra-group conflict increase the preference for dominant leaders. That is, we investigate whether intra-group conflict moderates the effect of dominant traits—operationalized as harsher punishment for norm violators—on leader endorsement. This complements and extends existing lines of research that have more narrowly focused on inter-group conflict, when this may be only one of many diverse contexts that favors the rise of dominant leaders. As noted above, other kinds of threat that have the potential to undermine individual and collective well-being, such as intra-group conflict, likely also calibrate the tendencies of followers to favor dominant leaders (Bøggild & Laustsen, 2016). Thus, here we deliberately shift the focus from the much studied inter-group competition context to examine the more novel intra-group conflict. We also conduct a novel test of how leader preference varies across the full threat continuum, extending past work that tends to compare the binary presence or absence of threat. For example, in this prior work, leader preference is primarily elicited by asking participants to either rate or choose which individuals appear more well suited to lead when intergroup threat is present versus absent, as operationalized via diverse instructions to imagine decision-making "during a time of war" or "during a time of peace" (Little et al., 2007; Spisak et al., 2012a; Tigue et al., 2012), one's group is either competing or cooperating with an outgroup (Laustsen & Petersen, 2020a; Spisak et al., 2012b), or in the context of war versus flood (Laustsen & Petersen, 2016, 2017).

Second, we test the hypothesis that dominance confers prestige under intra-group threat by investigating whether the current level of threat experienced moderates the association between dominance and prestige. This extends prior

work in key ways, as no studies to date have tested whether the association between dominance and prestige vary under different conditions. Finally, integrating across these two predictions, we hypothesize and test whether the effect of dominance on increased leader endorsement is mediated by perceived prestige. Overall, this work expands the empirical focus to one, heretofore less studied, form of threat—namely, intra-group conflict—that may be crucial for understanding the connections between dominance, prestige, and leadership. Our evidence supports all three hypotheses.

Methods

Participants

Eight research assistants recruited participants in May-December 2017 at the University of Illinois at Urbana-Champaign, a public university in Midwestern United States. Participants were approached by research assistants on university campus grounds at a mobile testing site between the hours of 9am and 6 pm[2]. A total of 1,660 participants were recruited using a convenience sampling procedure. All study instructions were presented to participants in-person on a computer screen at the mobile testing site. After reading the instructions, participants completed a series of four quiz questions, which were presented to ensure that they understood the instructions provided in the experimental treatments. We included in our final sample only those participants who answered all four quiz questions correctly, which represented 61.81% of the total group[3]. The final sample included 1,026 participants (56.53% women; 42.30% men; 1.17% other) who were physically present on the grounds of this public university. Their ages ranged from 18 to 57 (mean age = 20.67 years old, $SD = 2.79$), and the majority of their ethnic backgrounds were Asian (42.88%), Caucasian (40.35%), and Hispanic (6.34%). The procedures for data collection were approved by the Institutional Review Board (IRB) in the Office for the Protection of Research Subjects at the University of Illinois at Urbana-Champaign. Participation was entirely voluntary, and participants could terminate their involvement at any time.

[2] In our research design, we deliberately recruited in-person participants (at a university campus) rather than workers from online labor markets in the light of prior evidence linking worker non-naïveté to skewed responses (Chandler et al., 2014; Paolacci & Chandler, 2014; Rand et al., 2014). It is estimated that 10% of workers complete roughly 41% of assignments (Chandler et al., 2014). This issue is especially relevant that, as in many other standard economic games, the third-party punishment game (TPPG) we deploy here is a relatively common experimental paradigm, thus further increasing concerns with practice effects. Thus, despite their more restricted age range and other demographic characteristics, the university students we sample here reduce concerns with participant non-naïveté in our specific experimental procedure, and is preferable to online workers.

[3] The same qualitative results are obtained across all research questions explored when we use the entire sample without eliminating participants who failed the comprehension check questions.

Experimental Design

To examine how dominance and in-group threat exposure contribute to leader endorsement, we used a 3 (candidate punishment behavior: no vs. moderate vs. strong punishment) × 10 (threat faced by local group: level 1 to 10) between-subjects experimental design[4]. Participants were randomly allocated to one of these treatments.

All participants in the study began by reading a scenario adapted from a third-party punishment game (TPPG), which was identical across all treatments. In this TPPG modified to examine how observers evaluate dominant others, three players are each allotted a stake of 100 tokens. Player A must decide whether to 'take' tokens (and the amount they wish to take) from Player B, who has no choice to make. Player C, the leader of the group chosen via popular vote, hears the amount that Player A took from Player B, and must decide whether to pay some portion of their own allocation to punish Player A. Our participant is not involved in these decisions, but instead, passively observes the ostensible decisions of Players A and C. Participants learn that if Player A chooses to take from Player B, he or she can remove either 6, 12, 18, 24, 30, 36, 42, 48, 54, or 60 tokens from Player B, who loses 1.67 tokens for every token gained by Player A[5]. If punished, Player A loses 5 times the amount paid by Player C to punish. Player C, however, does not personally gain any tokens (and in fact only *loses* tokens) for punishing Player A. To illustrate, suppose that Player A takes 24 tokens from Player B, and Player C removes 30 tokens from Player A, then Player A takes home 94 tokens (100 + 24—30 = 94), Player B gets 60 tokens (100 – 24 × 1.67 = 60), and Player C gets 94 tokens (100 – 30/5 = 94). If Player C had instead decided to not punish and thus remove 0 tokens from Player A, then the take-home amounts would be 124, 60, and 100 tokens for Players A, B,

[4] In this design, threat faced by local group (our independent variable) was manipulated across 10 levels, with each subsequent level corresponding to higher level of intra-group threat operationalized as greater theft or norm violation. This decision to implement this higher than usual number of levels was guided by two considerations. First, we sought to increase analytic flexibility. Many analytic approaches (including the kinds to be deployed here) are facilitated by variables with a larger number of ordered categories—6–7 categories or more—that can be treated as continuous variables with little bias (Rhemtulla et al., 2012). Second, the inclusion of these extreme levels of threat—that is, very modest threat when A stole only 6 tokens from B, or very severe threat when A stole 60 tokens from B—allows us to explore, using non-parametric methods, the possibility of non-linear effects. For example, one possibility is for punishment to exert a weak effect on leader endorsement across low to moderate or even moderately high levels of threat and conflict, but that when threat is exceptionally high the effect of punitive action suddenly double or triples in strength.

[5] Two features of this variation of the third-party punishment game are noteworthy. First, similar to other work on norm violations (Cubitt et al., 2011; Ouss & Peysakhovich, 2015; Rilke, 2017), we deploy the 'take' framing in which Player A 'took' tokens from Player B because this act of theft clearly harms Player B and therefore more unambiguously signals norm violation. This contrasts with the often used 'give' framing (Fehr & Fischbacher, 2004), in which Player A 'gave' less than a fair share of tokens to Player B. under this framing, what constitutes a norm violation is less clear and can vary across groups and cultures. Second, Player B loses 1.67 tokens for every token gained by Player A. By design, this multiplicative effect means that theft leads to a larger loss to one party than is gained by the other (similar to many real-world thefts), making theft in this context 'wasteful' and 'inefficient'. So the optimal behavior is to not steal.

and C, respectively. Player C's willingness to pay to punish Player A indicates the strength of their punitive inclination, which comes at a personal cost.

After reading these rules of this variant of the TPPG, participants answered three quiz questions to ensure that they understood the general rules of the game. Up to this point, participants across all treatments received identical information.

Following this game overview, we introduced our experimental manipulation unique to each treatment. We manipulated the strength of punishment demonstrated by Player C and the degree of in-group norm violation introduced by Player A. Specifically, we randomly assigned participants to a treatment with (1) a Player C who punishes Player A either not at all (removes 0 tokens), moderately (removes 30 tokens), or strongly (removes 60 tokens); and (2) a Player A who takes from Player B either 6, 12, 18, 24, 30, 36, 42, 48, 54, or 60 tokens (10 levels). Participants were presented with the decision of Player A (that is, the amount that Player A took from Player B) and subsequently the punishment decision of Player C (that is, how much Player C punished Player A) based on the punishment strength and local threat treatments to which they were randomly assigned.

After reading all parties' decisions, participants answered a fourth quiz question that probed a mixture of their comprehension and memory of Player C's punitive action (whether they removed 0, 30, or 60 tokens from Player A); this ensured our ability to confirm the success of our punishment strength manipulation for a given participant.

In the final part of the study, we administered a number of measures designed to elicit perceptions of Player C. We turn to these measures next.

Measures

After participants read about the punishment strength of Player C and the amount of in-group norm violation committed by Player A (our two independent or treatment variables) in the TPPG, they completed measures designed to elicit their intentions to endorse Player C as a leader and perceptions of Player C's prestige (our two primary outcome measures). All ratings were completed on a 7-point scale (1 = *Not at all* to 7 = *Very much*).

For our measure of leader endorsement, participants rated Player C on 7 items (e.g., "If there was to be a next round, I would elect C as the leader of this group", "I'm willing to have C head the group on subsequent group tasks", "I support C as the leader of this group", "C would be a good leader"). Many of these items were adapted from existing work on leader endorsement (e.g., Michener & Lawler, 1975). Ratings on these items were aggregated into a leader endorsement composite ($\alpha = 0.93$).

For our measure of perceived prestige, we used a subset of items drawn from a scale validated in prior work (Cheng et al., 2010, 2013). The prestige scale consisted of 4 items (i.e., "I respect and admire C", "C's unique talents and abilities are recognized by others", "I would seek C's advice on a variety of matters", "I consider C an expert on some matters"). Ratings on these items were aggregated into a perceived prestige composite ($\alpha = 0.80$).

In addition to these two outcome measures, we also obtained a measure of perceived dominance as a check of whether our punishment strength manipulation elicited varying degrees of dominance. Verifying the effects of our punishment manipulation on dominance is key in light of evidence suggesting non-trivial inter-perceiver differences in dominance (as well as prestige) perceptions (Jiménez et al., 2021). Asserting one's coercive dominance may augment prestige but not dominance in the eyes of loyal followers who share the leader's values, goals, preferences, or ideology. Whether an act is seen as dominant (or prestigious) depends on who is doing the judging. This highlights the importance of gauging whether our dominance manipulation indeed elicits concomitant levels of perceived threat and intimidation (dominance). For this measure of perceived dominance, we again used a subset of items drawn from a validated scale (Cheng et al., 2010, 2013). The dominance scale consisted of 4 items (i.e., "C is willing to use aggressive tactics to get his/her way", "C enjoys having control over others", "C tries to get his/her own way regardless of what others may want", "C tries to control others rather than permit them to control him/her"). Ratings on these items were aggregated into a perceived dominance composite ($\alpha = 0.83$)[6].

Results

Manipulation Check: Do Stronger Punishment Conditions Elicit Greater Perceived Dominance?

Yes. Our three punishment experimental conditions—no vs. moderate vs. harsh punishment, which correspond to the removal of 0, 30, or 60 tokens from the offender respectively—successfully elicited varying levels of perceived dominance. As shown in Figure S1 in the supplemental materials, as punishment severity increases, so do mean ratings of the punisher's perceived dominance. The candidate who meted out harsh punishment is evaluated as more dominant ($M = 0.55$; $SD = 0.86$) compared to when he or she punishes moderately ($M = 0.10$; $SD = 0.84$; $t = 6.94$, $p < 0.0001$) or does not punish at all ($M = -0.66$; $SD = 0.89$; $t = 18.39$, $p < 0.0001$). Comparing the two latter conditions, perceived dominance is also higher when he or she punishes moderately than not at all ($t = 11.45$, $p < 0.0002$). Importantly, this pattern holds across the 10 different threat and conflict experimental conditions regardless of whether threat in the local group is high or low. These patterns confirm that perceived dominance increases linearly in accordance with stronger punishment. Consequently, for convenience of interpretation, here we present our results based on comparing the harsh versus no punishment conditions and verify these results by

[6] Beyond these primary outcome measures, for exploratory purposes we also asked participants to indicate the degree to which they trust Player C, and feel anger as well as embarrassment over Player C's response to Player A's behavior. Moreover, in the non-zero punishment treatments (i.e., Player C either moderately or strongly punished conditions), we also measured inferences of Player C's punishment motives in terms of deterrence and retribution.

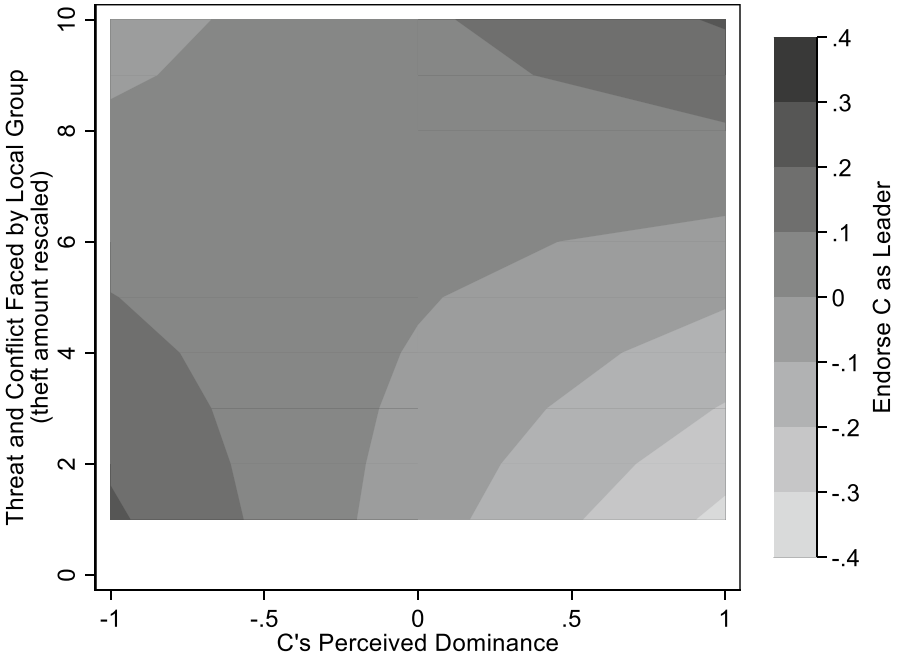

Fig. 1 Individuals in groups with a high degree of threat and conflict tend to endorse a dominant group member as leader. C = the focal target. This contour plot displays how the effect of dominance of the candidate on leader endorsement differs across levels of threat faced by the group. Colored bands represent ranges of the leader endorsement at different combinations of threat faced and candidate perceived dominance, with darker bands (positive values) indicating greater leader support and lighter bands (negative values) indicating weaker leader support. Group-level threat and conflict refers to the degree of theft and exploitation as manipulated in the experimental condition. Both candidate perceived dominance and leader endorsement were standardized to mean of 0 and *SD* of 1. Visual inspection of this plot indicates that the strongest leader support is obtained when threat faced by the group is highest (i.e., when threat level > 8) *and* the candidate's perceived dominance is the highest (i.e., when the perceived dominance of the candidate > 0). By contrast, the weakest leader support occurs when exposed to low degree of group threat (i.e., when threat level < 3) *and* the candidate's perceived dominance is the highest (i.e., perceived dominance has a score of > 0.5)

comparing the harsh versus moderate punishment conditions (reported in the supplemental materials); the same qualitative results are obtained across both sets of comparisons.

When are Dominant Leaders More Preferred By Followers?

Our results show that the degree to which dominant individuals are preferred as leaders depends on the extent of threat and conflict faced by the group. Using our evaluations of candidate dominance (our manipulation check), the contour graph in Fig. 1 shows that the strongest leader support is obtained at high levels of both threat faced by group and candidate perceived dominance (which corresponds to

the upper right region of plot). Conversely, the weakest leader support is obtained at low threat and high candidate dominance (bottom right region of plot), as well as at high threat and low candidate dominance (top left region of plot). These patterns hint at how, overall, those more exposed to threat and conflict are more likely to endorse a highly dominant individual as leader; conversely, when threat and conflict are minimal, a less dominant individual is preferred.

To formally investigate these patterns visible in Fig. 1, we next tested whether threat and conflict moderates the effect of our punishment experimental conditions (which gave rise to the different levels of perceived dominance plotted in Fig. 1) on leader endorsement. We thus regressed leader endorsement on the main and interaction effects of punishment condition, controlling for various control variables. All continuous variables were standardized prior to model estimation. Table S1 in the supplemental material contains the full series of regression results. The regression coefficients on the punishment × threat and conflict in group interaction term are statistically significant and consistent in magnitude, ranging between 0.1128 to 0.1176.

This interactive effect is robust to controls for various observable characteristics including participant gender, age, and ethnicity (Table S1, columns 2–4). Models of simple effects (without the inclusion of controls) estimate that, when under the highest threat faced by group (that is, when theft and exploitation level equals 10), C is more strongly endorsed as leader when he or she punished strongly ($M = 0.35$; $SE = 0.10$) than when he or she did not punish at all ($M = -0.24$; $SE = 0.11$; $t = 4.01$, $p < 0.001$). By sharp contrast, the opposite effect is found under the lowest threat condition (that is, when theft level equals 1), wherein C is *less* endorsed as leader when he or she punished strongly ($M = -0.35$; $SE = 0.10$) than when he or she did not punish at all ($M = 0.07$; $SE = 0.10$; $t = 2.94$, $p = 0.003$). These simple effects are depicted in Fig. 2 alongside those from other intermediary threat conditions. Similar results are obtained when we contrast strong and moderate punishment conditions (Table S2). Together, these results show that whether more punitive candidates are endorsed as leaders depends on the level of threat and conflict faced. When threat is high, more punitive individuals are preferred as leaders. By contrast, when threat is low, punitive individuals receive less support as leaders.

Overall, in this first section of results, we provide evidence establishing the prioritization of punishment (and by implication dominance) in leader selection under situations of high threat and conflict, but an opposite pattern under low threat and conflict wherein punitive (or dominant) leaders are *dis*favored.

When Dominance Confers Prestige, Thus Creating a Positive Overlap Between the Two Kinds of Status

The findings above address the notion that traits that signal strength and toughness, such as a willingness to punish, which increase one's perceived dominance, are preferred in leaders under conditions of threat. But, beyond conferring dominance-based status, do these strength-signaling traits also confer prestige-based status, creating a positive overlap between dominance and prestige forms of status?

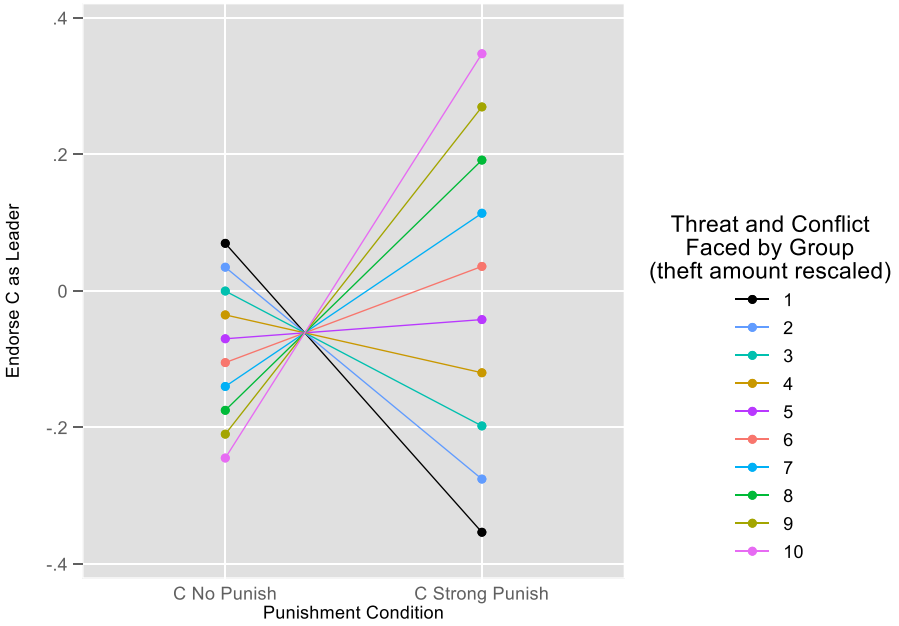

Fig. 2 Leader endorsement increases with candidate punitiveness at higher degrees of threat faced by group, but decreases at lower degrees of threat faced. C = the focal target. Group-level threat and conflict refers to the degree of theft and exploitation as manipulated in the experimental condition. Higher values reflect higher levels of theft and exploitation within the group (i.e., more tokens were stolen from an in-group victim). $N = 701$ across these between-subject punishment (strong vs. no punishment) and threat conditions (10 levels of threat)

To begin exploring this question, it may be fruitful to consider: When do dominance and prestige forms of status remain independent, and when may they covary? Existing theory predicts a positive overlap between dominance and prestige when apparent coercive capacity becomes a valued asset (Cheng et al., 2013; Henrich & Gil-White, 2001; Henrich et al., 2015; Zeng et al., 2022). This suggests that while dominance and prestige may be uncorrelated generally, such as under conditions of low threat, they positively covary under conditions of high threat. This is because traits, attributes, and motivations that foment coercive threat may themselves constitute valued abilities worthy of emulation or deference under certain situations. For example, consider how physically formidable individuals may be seen as capable of generating benefits for in-group members through their perceived capacity to facilitate intergroup competition (Chen et al., 2021; Lukaszewski et al., 2016; Redhead et al., 2021) or to compel broader coalitional support from others (Chapais, 2015; Henrich et al., 2015).

By the same logic, individuals who are willing and able to punish norm violators are expected to garner prestige by virtue of supplying public goods at the personal risk of incurring future retaliation (Barclay, 2006; Gordon & Lea, 2016; Redhead et al., 2021), particularly when norm violation is rampant and thus their punitive inclination generates the most benefits. This leads to the prediction that while dominance and prestige may be relatively independent or negatively associated in most occasions, the context of threat and conflict such as high intra-group norm violation

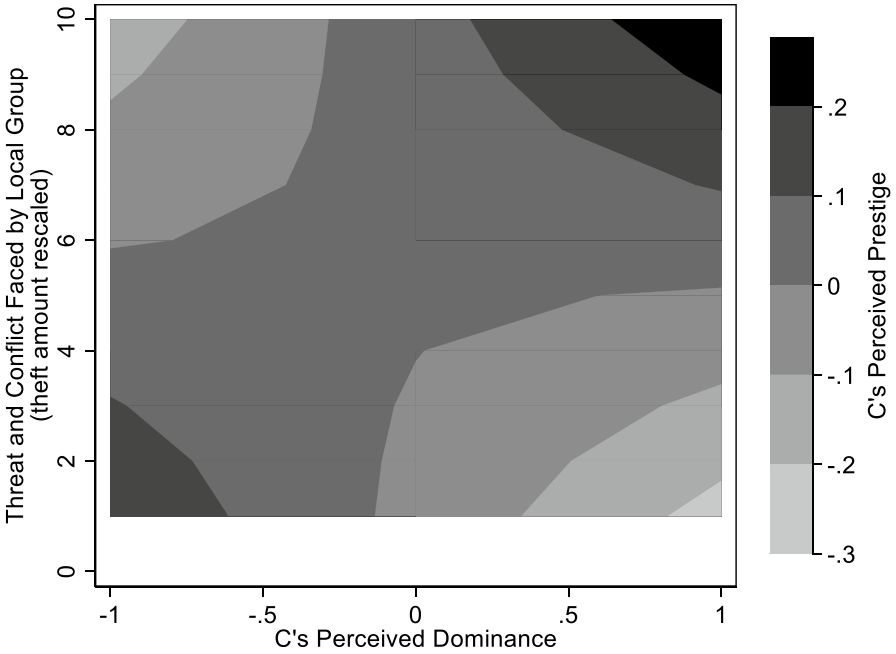

Fig. 3 Dominance and prestige positively covary in groups with a high degree of threat and conflict, but remain relatively independent when threat is low. C = the focal target. This contour plot displays the association between the perceived dominance and prestige of the candidate at varying levels of threat faced by the group. Colored bands represent ranges of candidate perceived prestige at different combinations of threat faced and candidate perceived dominance, with darker bands (positive values) indicating higher perceived prestige and lighter bands (negative values) indicating lower perceived prestige. Group-level threat and conflict refers to the degree of theft and exploitation as manipulated in the experimental condition. Both candidate perceived dominance and prestige were standardized to mean of 0 and *SD* of 1. Visual inspection of this plot indicates that threat produces a positive overlap between dominance and prestige. Prestige is most strongly conferred when threat faced by the group is highest (i.e., when threat level > 9) *and* the candidate's perceived dominance is the highest (i.e., when the perceived dominance of the candidate > 0.5). Prestige is also strongly conferred when threat is the weakest (i.e., when threat level < 3) *and* the candidate's dominance is the weakest (i.e., perceived dominance < -0.5). By contrast, prestige is least likely conferred when exposed to low degree of group threat (i.e., when threat level < 2) *and* the candidate's perceived dominance is the highest (i.e., perceived dominance has a score of > 0.7)

may produce an overlap (a positive covariation) between dominance and prestige status components.

Here, we find support for this prediction. As found in the bulk of prior evidence from both the laboratory and the field (Cheng et al., 2010, 2013, 2021b), in the current data perceived dominance and prestige are statistically independent ($r = -0.008$, $p = 0.8039$) when we look *across* all threat and punishment conditions (i.e., collapsing across all treatments). However, as predicted, as within-group threat and conflict increases, the positive overlap between dominance and prestige increases. First, as shown in Fig. 3, under relatively low threat faced by the group, punishment severity does not alter the punisher's perceived prestige, whereas under the highest levels of threat punishment severity leads to linearly greater perceived prestige. Confirming

this visual pattern, at the highest level of threat (threat equals 10), dominance and prestige positively covary ($r = 0.281$, $p = 0.004$). By contrast, at the lowest level of threat (threat equals 1), the raw association between dominance and prestige is negative ($r = -0.230$, $p < 0.001$). This hints at the hypothesized pattern that, under situations of high threat, projecting strength leads to *both* dominance and prestige status.

Second, to formally test whether threat and conflict moderates the effect of punishment severity conditions and prestige, we regressed perceived prestige the main and interaction effects of punishment condition and local threat, with the inclusion of control variables. All continuous variables were again standardized prior to model estimation. As shown in Table S3 in the supplemental material, the regression coefficients on the punishment × threat and conflict in group interaction term are statistically significant and consistent in magnitude, ranging between 0.1093 to 0.1155. This interactive effect is robust to controls for various observable characteristics including participant gender, age, and ethnicity as well as passing all comprehension checks (Table S3, columns 2–4).

Models of simple effects (without the inclusion of controls) estimate that, when under the highest threat faced by group (that is, when theft and exploitation level equals 10), C is conferred greater prestige when he or she punished strongly ($M = 0.33$; $SE = 0.10$) than when he or she did not punish at all ($M = -0.20$; $SE = 0.11$; $t = 3.59$, $p < 0.001$). By sharp contrast, the opposite effect is found under the lowest threat condition (that is, when theft level equals 1), wherein C is conferred *less* prestige when he or she punished strongly ($M = -0.30$; $SE = 0.10$) than when he or she did not punish at all ($M = 0.15$; $SE = 0.10$; $t = 3.15$, $p = 0.002$). These simple effects are depicted in Fig. 4 alongside those from other intermediary threat conditions. Similar results are obtained when we contrast strong and moderate punishment conditions (Table S4). Together, these results show that the effect of punitiveness (and thus by implication dominance) on prestige depends on the level of threat and conflict faced. When threat is high, punitiveness confers prestige, leading to a positive overlap between dominance- and prestige-based status. By contrast, when threat is low, punitiveness is associated with receiving *less* prestige, such that dominance- and prestige-based status become negatively correlated.

Together, this second section of results reveals that, as theory predicts, when intragroup norm violation is high, coercive dominance confers prestige, thus creating a positive overlap between the two forms of status; by contrast, when threat is relatively low, dominance and prestige are either *negatively* associated or uncorrelated.

Displaying Strength Promotes Follower Support as Leader Via Increasing Prestige

The findings above indicate that displaying strength, which invokes dominance-based status, leads respectively to the conferral of prestige and follower support as leaders, but is there evidence that earning prestige fosters leader endorsement? To examine this, we performed a path analysis to test the mediating role of prestige in the association between punishment strength and leader endorsement. We restrict this test to participants assigned to the relatively high threat and conflict conditions (theft levels equal 5 to 10, rescaled), given the a priori expectation that harsher punishments for

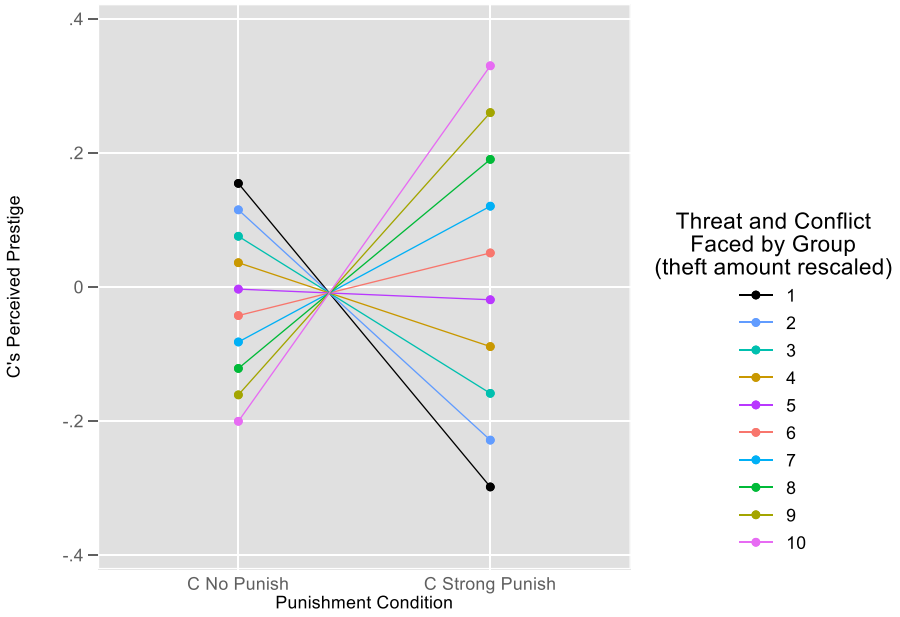

Fig. 4 Punishment (and by implication dominance) increases prestige at higher degrees of threat faced by group, but decreases it at lower degrees of threat faced. C = the focal target. Group-level threat and conflict refers to the degree of theft and exploitation as manipulated in the experimental condition. Higher values reflect higher levels of theft and exploitation within the group (i.e., more tokens were stolen from an in-group victim). $N = 701$ across these between-subject punishment (strong vs. no punishment) and threat conditions (10 levels of threat)

violators (and other displays of strength) is especially favored when it is needed to generate benefits by galvanizing in-group cooperation, public goods, and coordination—in the presence of norm violators and internal threats to cooperation.

As shown in Fig. 5, results showed that punishing norm violation (compared to not punishing) is positively related to prestige ($\beta = 0.12$, $p = 0.016$), which is in turn

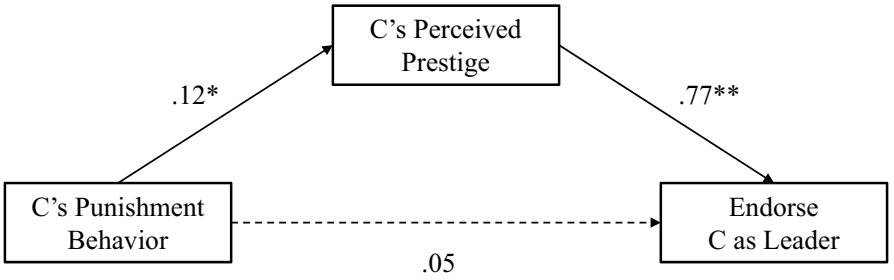

Fig. 5 Standardized parameter estimates. This model presents results based on relatively high threat and conflict (i.e., among participants assigned to theft levels that equal 5 to 10, rescaled). Punishment behavior contrasts the effect of a candidate who punishes strongly versus a candidate who does not punish at all. Dotted line refers to the direct effect of punishment behavior on leader endorsement net of the indirect effect through perceived prestige. C = the focal target. $N = 408$; ** $p < 0.001$; * $p < 0.05$

positively related to leader endorsement ($\beta = 0.77$, $p < 0.001$)[7]. Moreover, mediation analyses using 10,000 bootstrapped samples showed that prestige significantly mediated the positive relationship between candidate punishment and leader endorsement (indirect effect = 0.09, 95% CI [0.017, 0.167], $p = 0.016$)[8]. As expected by our foregoing logic, when we perform analyses parallel to this model but based instead on participants assigned to the relatively *low* threat and conflict conditions (theft levels equal 1 to 4, rescaled), we find that harsher punishment contributes to a *less* prestigious reputation, and prestige significantly mediated the *negative* effect of candidate punishment on leader endorsement (see Figure S2). This suggests that in the absence of serious threat to internal disorder, leaders who mete out harsh punishment suffer a loss in prestige and their leader appeal.

Taken together, our results suggest that threat and conflict exposure create a preference for leaders with traits and qualities associated with strength and toughness. These individuals acquire greater status based on both fear and respect, and the latter form of status provides a core psychological basis for followership.

Discussion

Motivated by real-world patterns of the rise of dominant leaders across diverse nations and by recent scholarly work on inter-group conflicts and follower psychology, here we examined how an understudied contextual factor contributes to the ascent of dominant leaders. We find that experiences of intra-group conflict leads people to confer greater prestige to group members with a more punitive (that is, dominant) history of behavior and voluntarily promote these dominant individuals to formal positions of leadership. In the absence of threat, people generally have a distaste for dominant leaders. Further, through tests of mediation, results demonstrate that people's wish for a strong leader is in part explained by the perception that these strong leaders possess valuable skills, abilities, and expertise, generate

[7] In the mediation model, C's perceived dominance, which served us our manipulation check, was not included in the model as a second mediator (alongside C's perceived prestige, the primary mediator). At first glance, it would appear sensible to include ratings of dominance to examine how C's punitive action contributes to both kinds of status. However, this variable is strongly correlated with punishment condition ($r > .55$), which is unsurprising given that participant ratings of C's dominance is, in theory, simply a direct function of the punishment condition to which they allocated (plus some interindividual noise or error). Excluding dominance ratings thus avoids collinearity concerns and produces a more conceptually meaningful model.

[8] As in much other work seeking to identify mediating pathways, caution is warranted in interpreting the mediation results here. More rigorous experimental studies designed for establishing causality, such as studies in which prestige (our putative mediator) is manipulated randomly rather than merely observed and any unobserved confounders are carefully eliminated (Bullock et al., 2010; Green et al., 2010; MacKinnon et al., 2002), are needed to firmly establish the mediating pathways by which punishment increases leader appeal. Moreover, while our results indicate that punishers garner prestige, we lack evidence on what specific skills, attributes, competencies, or know-how are deemed particularly prestige-worthy among these willing punishers. Addressing this using measures of perceived skills and attributes, which were not gathered in the present study, is an important direction for future work.

value for others, and warrant respect and admiration (that is, they deserve prestige). These effects on prestige conferral and leader preference hold for people with different gender, age, and ethnicity.

Our results have implications for understanding the nexus of dominance, prestige, and leadership, as well as for the design of social and political systems aimed at curbing the rise of leaders with an authoritarian, dictatorial, or tyrannical orientation. As illustrated by the case of Julius Caesar, "strongmen" leaders who rise by the popular vote may have a proclivity to pursue unconstrained power, repress dissent, challenge democratic values and practices, and ultimately undermine the very democratic system through which they rose. In the light of existing evidence that authoritarian leaders and regimes actively stoke—and thrive on—a climate of fear (Gelfand, 2020; Guo et al., 2018; Guriev & Treisman, 2020), the existence of a causal pathway between threat and preference for dominant leaders suggests a pernicious feedback loop; weaponizing fearfulness and threat fuels greater support for dominant leaders and then dominant leaders catalyze greater actual or perceived societal division, unrest, and disorder that further cement their political power and leads to more civil or national unrest, conflict, and dysfunction.

A key implication of these results is that combatting authoritarian leadership rests on correcting any unfounded or exaggerated narratives of turmoil, and more importantly actively solidifying in voters a relative sense of safety and promoting actual conditions of social, economic, and global security and well-being. An interesting direction for future work involves direct tests of whether safety and security leads to *reduced* support for dominant leaders, particularly among people who tend to favor "strongmen". This may include, for example, conservatives or right-wingers and people living in countries that have historically experienced more threats such as invasion from neighboring states or internal conflicts, as evidence has linked these groups to increased attraction to dominant leaders (Jiménez et al., 2021; Laustsen & Petersen, 2017; Petersen & Laustsen, 2020). Further, support for dominant leaders may also wean when the risks of exploitation or abuse by leaders inclined towards coercive dominance become salient (Bøggild & Laustsen, 2016). Evidence suggests that although dominantly inclined leaders may benefit collective action through their willingness to sanction norm violators (Chen et al., 2021), their inclination towards aggression, antagonism, and hubris also disposes them to corruption, exploitation, and abuse of power motivated by narrow self-interest (Case & Maner, 2014; Cheng et al., 2010; Maner & Mead, 2010; Mead & Maner, 2012; Price et al., 2017; Stulp et al., 2015). This suggests that followers' preferences are likely calibrated to the tension in balancing between of the risk of exploitation by dominant leaders on one hand, and their potential to improve collective action or supply other benefits on the other (Bøggild & Laustsen, 2016).

By highlighting that in certain conditions coercive capacity (that is, dominance) can translate into prestige, the current results offer clarity to an existing confusion: Many so called 'dominant leaders' or 'strong leaders' may in actuality possess substantial prestige in the eyes of their supporters. For many strong leaders, their political and social influence stems from a mixture of dominance- and prestige-based status (Cheng et al., 2013; Henrich et al., 2015; von Rueden et al., 2014; Zeng et al.,

2022). Thus, while it is conceivable that a myriad of dominance-enhancing traits, qualities, and tactics may lead to dominance status among observers, 'dominant leaders' can simultaneously be considered to be 'prestigious leaders' *to their followers*. As noted in our prior work, whether a set of skills or know-how are prestige-worthy can "depend on who is doing the judging" (Cheng et al., 2013; Jiménez et al., 2021). Put simply, one follower's "dominant leader" may be another person's "prestigious leader". Under extreme emergencies such as large-scale warfare or intense societal strife, which create a dependence on group members who can resolve these challenges, dominance-inclined individuals (such as those who are physically strong, intimidating, or aggressive) may be elevated to the top of the group's prestige hierarchy. This finding that strong leaders wield a particularly effective strategy of leveraging *both* dominance and prestige simultaneously to amplify their influence complements other work on the efficacy of deploying a mix of fear and respect tactics (Dahm & Greenbaum, 2019; Hawley, 2002; Zeng et al., 2022). The "strongman's" substantial prestige and, along with it, his ability to attract loyal followers explains why followers are often willing to overlook, tolerate, and offer unwavering support to their chosen "strongman" leader in the face of the leader's bending or even breaking of rules (Kakkar et al., 2020).

To provide a clear test of the effects of intra-group conflict, here we rely primarily on self-reports of leader preference in a vignette that depicts conflict and leadership within a small group of three principal individuals (Players A, B, and C). It is unclear whether and how these results based on triadic groups will generalize to the kinds of large groups that have been central to successful collective action in our species' evolutionary history (such as in raiding and warfare;Bowles, 2012; Glowacki et al., 2016). Nevertheless, formal and agent-based models suggests that, especially in large groups, individual decision-makers prefer hierarchically organized groups with a centralized leader over more egalitarian structures that lack a leader–follower arrangement, owing to the ability of leaders to sustain large-scale cooperation and overcome debilitating within-group conflict (Hooper et al., 2010; Kohler et al., 2012). This preference strengthens as group size increases because larger groups face greater risks of free-riding and coordination failures, and thus have greater demands for a leader who monitors group members and punishes defectors. This association between group size and preference for hierarchy implies that, if anything, in larger groups (where collective action is more difficult) followers may express an even stronger preference for fear-inspiring, punitive dominant leaders. Thus, not only is there reason to suspect that the results found here based on small groups may extend to groups of significant size, but moreover our effects may be capturing the lower-bound of any preference for dominant leaders under contexts of threat. Future work should directly examine how preferences for punitive leaders, and the tolerance for coercive dominance more generally, may vary in the context of large groups.

Finally, our findings offer novel insights into when dominance and prestige hierarchies remain uncorrelated, and the contexts under which they overlap positively. Theoretical work has emphasized how while they are distinct forms of status, individuals often enjoy *both* dominance and prestige status (Cheng et al., 2013, 2021a). As noted in earlier work, "although one may find prestige and dominance

status within the same individual, the fact remains that qualitatively different stimuli elicit prototypical prestige and dominance responses" (Henrich & Gil-White, 2001, p. 171). Supporting this, a number of existing studies of naturalistic and laboratory groups have found that dominance and prestige form two distinct and uncorrelated status hierarchies (Cheng et al., 2010, 2013; McClanahan et al., 2021; Redhead et al., 2019) or that they are only weakly negatively correlated (Brand & Mesoudi, 2019; Snyder et al., 2008). Consistent with this, here we also find that these forms of status are uncorrelated generally—that is, when their association is examined independently of degree of threat faced. However, converging with some other field evidence that they can covary (Garfield & Hagen, 2020; von Rueden et al., 2008, 2014), our study reveals that threat and conflict exposure causes dominance and prestige to become positively correlated. Yet, at low threat the two remain negatively correlated, suggesting that, in the absence of fomenting situations, dominance generally suppresses prestige (Cheng, 2020). The finding that threat exposure moderates the association between dominance and prestige confirms that threat is one of plausibly a broad array of conditions that allows dominance to lead to prestige. Beyond our effort here to focus a narrow beam on intra-group conflicts, future research should explore the full array of social, ecological, historical, and institutional factors (such as famine, natural disasters, disease threat, and current and historical territorial invasion, to name a few) that may induce a positive overlap between dominance and prestige forms of status.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s40750-022-00196-6.

Acknowledgements We thank our Action Editor Pranjal Mehta and the two anonymous reviewers for their helpful comments on this work.

Data Availability The dataset analyzed in the current study are available in the Open Science Framework repository: https://osf.io/v8mf2/.

Declarations

Conflict of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

References

Adorno, T. W., Frenkel-Brunswik, E., Levinson, D. J., & Sanford, R. N. (1950). *The authoritarian personality* (pp. xxxiii, 990). Harpers.

Banai, B., Laustsen, L., Banai, I. P., & Bovan, K. (2018). Presidential, but not prime minister, candidates with lower pitched voices stand a better chance of winning the election in conservative countries. *Evolutionary Psychology, 16*(2), 1474704918758736. https://doi.org/10.1177/1474704918758736

Barclay, P. (2006). Reputational benefits for altruistic punishment. *Evolution and Human Behavior, 27*(5), 325–344. https://doi.org/10.1016/j.evolhumbehav.2006.01.003

Bøggild, T., & Laustsen, L. (2016). An intra-group perspective on leader preferences: Different risks of exploitation shape preferences for leader facial dominance. *The Leadership Quarterly, 27*(6), 820–837. https://doi.org/10.1016/j.leaqua.2016.09.003

Bowles, S. (2012). Warriors, levelers, and the role of conflict in human social evolution. *Science, 336*(6083), 876–879. https://doi.org/10.1126/science.1217336

Brand, C. O., & Mesoudi, A. (2019). Prestige and dominance-based hierarchies exist in naturally occurring human groups, but are unrelated to task-specific knowledge. *Royal Society Open Science, 6*(5), 181621. https://doi.org/10.1098/rsos.181621

Bremmer, I. (2018). What the 'tough guy' era means for global politics. *Time*. https://time.com/5264170/the-strongmen-era-is-here-heres-what-it-means-for-you/. Accessed 17 Apr 2022

Bullock, J. G., Green, D. P., & Ha, S. E. (2010). Yes, but what's the mechanism? (Don't expect an easy answer). *Journal of Personality and Social Psychology, 98*(4), 550–558. https://doi.org/10.1037/a0018933

Case, C. R., & Maner, J. K. (2014). Divide and conquer: When and why leaders undermine the cohesive fabric of their group. *Journal of Personality and Social Psychology, 107*(6), 1033–1050. https://doi.org/10.1037/a0038201

Chandler, J., Mueller, P., & Paolacci, G. (2014). Nonnaïveté among Amazon Mechanical Turk workers: Consequences and solutions for behavioral researchers. *Behavior Research Methods, 46*(1), 112–130. https://doi.org/10.3758/s13428-013-0365-7

Chapais, B. (2015). Competence and the evolutionary origins of status and power in humans. *Human Nature, 26*(2), 161–183. https://doi.org/10.1007/s12110-015-9227-6

Chen, F. X., Zhang, X., Laustsen, L., & Cheng, J. T. (2021). Harsh but expedient: Dominant leaders increase group cooperation via threat of punishment. *Psychological Science, 32*(12), 2005–2022. https://doi.org/10.1177/09567976211031208

Cheng, J. T. (2020). Dominance, prestige, and the role of leveling in human social hierarchy and equality. *Current Opinion in Psychology, 33*, 238–244. https://doi.org/10.1016/j.copsyc.2019.10.004

Cheng, J. T., Tracy, J. L., Foulsham, T., Kingstone, A., & Henrich, J. (2013). Two ways to the top: Evidence that dominance and prestige are distinct yet viable avenues to social rank and influence. *Journal of Personality and Social Psychology, 104*(1), 103–125. https://doi.org/10.1037/a0030398

Cheng, J. T., Tracy, J. L., & Henrich, J. (2010). Pride, personality, and the evolutionary foundations of human social status. *Evolution and Human Behavior, 31*(5), 334–347. https://doi.org/10.1016/j.evolhumbehav.2010.02.004

Cheng, J. T., Tracy, J. L., & Henrich, J. (2021a). *Dominance is necessary to explain human status hierarchies [exposition of three concerns]*. PsyArXiv. https://doi.org/10.31234/osf.io/ub6dk

Cheng, J. T., Tracy, J. L., & Henrich, J. (2021b). Dominance is necessary to explain human status hierarchies. *Proceedings of the National Academy of Sciences*, *118*(22). https://doi.org/10.1073/pnas.2103870118

Cubitt, R. P., Drouvelis, M., & Gächter, S. (2011). Framing and free riding: Emotional responses and punishment in social dilemma games. *Experimental Economics, 14*(2), 254–272. https://doi.org/10.1007/s10683-010-9266-0

Dahm, P. C., & Greenbaum, B. E. (2019). Leadership through love and fear: An effective combination. *Journal of Managerial Psychology, 34*(5), 326–338. https://doi.org/10.1108/JMP-08-2018-0346

Durkee, P. K., Lukaszewski, A. W., & Buss, D. M. (2020). Psychological foundations of human status allocation. *Proceedings of the National Academy of Sciences, 117*(35), 21235–21241. https://doi.org/10.1073/pnas.2006148117

Fehr, E., & Fischbacher, U. (2004). Third-party punishment and social norms. *Evolution and Human Behavior, 25*(2), 63–87. https://doi.org/10.1016/S1090-5138(04)00005-4

Foulsham, T., Cheng, J. T., Tracy, J. L., Henrich, J., & Kingstone, A. (2010). Gaze allocation in a dynamic situation: Effects of social status and speaking. *Cognition, 117*(3), 319–331. https://doi.org/10.1016/j.cognition.2010.09.003

Garfield, Z. H., & Hagen, E. H. (2020). Investigating evolutionary models of leadership among recently settled Ethiopian hunter-gatherers. *The Leadership Quarterly, 31*(2), 101290. https://doi.org/10.1016/j.leaqua.2019.03.005

Geddes, B., Frantz, E., & Wright, J. G. (2014). Military rule. *Annual Review of Political Science, 17*, 147–162. https://doi.org/10.1146/annurev-polisci-032211-213418

Gelfand, M. J. (2020). Authoritarian leaders thrive on fear. We need to help people feel safe. *The Guardian*. https://www.theguardian.com/commentisfree/2020/jan/02/authoritarian-leaders-people-safe-voters. Accessed 17 Apr 2022

Gelfand, M. J., Raver, J. L., Nishii, L., Leslie, L. M., Lun, J., Lim, B. C., Duan, L., Almaliach, A., Ang, S., Arnadottir, J., Aycan, Z., Boehnke, K., Boski, P., Cabecinhas, R., Chan, D., Chhokar, J., D'Amato, A., Ferrer, M., Fischlmayr, I. C., … Yamaguchi, S. (2011). Differences between tight and

loose cultures: A 33-nation study. *Science*, *332*(6033), 1100–1104. https://doi.org/10.1126/science.1197754

Gerpott, F. H., Lehmann-Willenbrock, N., Silvis, J. D., & Van Vugt, M. (2018). In the eye of the beholder? An eye-tracking experiment on emergent leadership in team interactions. *The Leadership Quarterly, 29*(4), 523–532. https://doi.org/10.1016/j.leaqua.2017.11.003

Glowacki, L., Isakov, A., Wrangham, R. W., McDermott, R., Fowler, J. H., & Christakis, N. A. (2016). Formation of raiding parties for intergroup violence is mediated by social network structure. *Proceedings of the National Academy of Sciences, 113*(43), 12114–12119. https://doi.org/10.1073/pnas.1610961113

Glowacki, L., & von Rueden, C. R. (2015). Leadership solves collective action problems in small-scale societies. *Philosophical Transactions of the Royal Society B: Biological Sciences, 370*(1683), 20150010. https://doi.org/10.1098/rstb.2015.0010

Gordon, D. S., & Lea, S. E. G. (2016). Who punishes? The status of the punishers affects the perceived success of, and indirect benefits from, "moralistic" punishment. *Evolutionary Psychology, 14*(3), 1474704916658042. https://doi.org/10.1177/1474704916658042

Green, D. P., Ha, S. E., & Bullock, J. G. (2010). Enough already about "black box" experiments: Studying mediation is more difficult than most scholars suppose. *The ANNALS of the American Academy of Political and Social Science, 628*(1), 200–208. https://doi.org/10.1177/0002716209351526

Guo, L., Decoster, S., Babalola, M. T., De Schutter, L., Garba, O. A., & Riisla, K. (2018). Authoritarian leadership and employee creativity: The moderating role of psychological capital and the mediating role of fear and defensive silence. *Journal of Business Research, 92*, 219–230. https://doi.org/10.1016/j.jbusres.2018.07.034

Guriev, S., & Treisman, D. (2020). The popularity of authoritarian leaders: A cross-national investigation. *World Politics, 72*(4), 601–638. https://doi.org/10.1017/S0043887120000167

Halevy, N., Chou, E. Y., Cohen, T. R., & Livingston, R. W. (2012). Status conferral in intergroup social dilemmas: Behavioral antecedents and consequences of prestige and dominance. *Journal of Personality and Social Psychology, 102*(2), 351–366. https://doi.org/10.1037/a0025515

Harms, P. D., Wood, D., Landay, K., Lester, P. B., & Vogelgesang Lester, G. (2018). Autocratic leaders and authoritarian followers revisited: A review and agenda for the future. *The Leadership Quarterly, 29*(1), 105–122. https://doi.org/10.1016/j.leaqua.2017.12.007

Hawley, P. H. (2002). Social dominance and prosocial and coercive strategies of resource control in preschoolers. *International Journal of Behavioral Development, 26*(2), 167–176. https://doi.org/10.1080/01650250042000726

Henrich, J., Chudek, M., & Boyd, R. (2015). The Big Man Mechanism: How prestige fosters cooperation and creates prosocial leaders. *Philosophical Transactions of the Royal Society B: Biological Sciences, 370*(1683), 20150013. https://doi.org/10.1098/rstb.2015.0013

Henrich, J., & Gil-White, F. J. (2001). The evolution of prestige: Freely conferred deference as a mechanism for enhancing the benefits of cultural transmission. *Evolution and Human Behavior, 22*(3), 165–196. https://doi.org/10.1016/S1090-5138(00)00071-4

Holbrook, C., Fessler, D. M. T., & Navarrete, C. D. (2016). Looming large in others' eyes: Racial stereotypes illuminate dual adaptations for representing threat versus prestige as physical size. *Evolution and Human Behavior, 37*(1), 67–78. https://doi.org/10.1016/j.evolhumbehav.2015.08.004

Hooper, P. L., Kaplan, H. S., & Boone, J. L. (2010). A theory of leadership in human cooperative groups. *Journal of Theoretical Biology, 265*(4), 633–646. https://doi.org/10.1016/j.jtbi.2010.05.034

Jiménez, Á. V., Flitton, A., & Mesoudi, A. (2021). When do people prefer dominant over prestigious political leaders? *Evolutionary Human Sciences*, *3*. https://doi.org/10.1017/ehs.2021.12

Kakkar, H., & Sivanathan, N. (2017). When the appeal of a dominant leader is greater than a prestige leader. *Proceedings of the National Academy of Sciences*, 201617711. https://doi.org/10.1073/pnas.1617711114

Kakkar, H., Sivanathan, N., & Gobel, M. S. (2020). Fall from grace: The role of dominance and prestige in the punishment of high-status actors. *Academy of Management Journal, 63*(2), 530–553. https://doi.org/10.5465/amj.2017.0729

Klofstad, C. A., Anderson, R. C., & Peters, S. (2012). Sounds like a winner: Voice pitch influences perception of leadership capacity in both men and women. *Proceedings of the Royal Society B: Biological Sciences, 279*(1738), 2698–2704.

Kohler, T. A., Cockburn, D., Hooper, P. L., Bocinsky, R. K., & Kobti, Z. (2012). The coevolution of group size and leadership: An agent-based public goods model for prehispanic pueblo societies. *Advances in Complex Systems, 15*(01n02), 1150007. https://doi.org/10.1142/S0219525911003256

Laustsen, L. (2017). Choosing the Right Candidate: Observational and Experimental Evidence that Conservatives and Liberals Prefer Powerful and Warm Candidate Personalities, Respectively. *Political Behavior, 39*(4), 883–908. https://doi.org/10.1007/s11109-016-9384-2

Laustsen, L., & Petersen, M. B. (2016). Winning faces vary by ideology: How nonverbal source cues influence election and communication success in politics. *Political Communication, 33*(2), 188–211. https://doi.org/10.1080/10584609.2015.1050565

Laustsen, L., & Petersen, M. B. (2017). Perceived conflict and leader dominance: Individual and contextual factors behind preferences for dominant leaders. *Political Psychology, 38*(6), 1083–1101. https://doi.org/10.1111/pops.12403

Laustsen, L., & Petersen, M. B. (2020a). Online tallies and the context of politics: How online tallies make dominant candidates appear competent in contexts of conflict. *American Journal of Political Science, 64*(2), 240–255. https://doi.org/10.1111/ajps.12490

Laustsen, L., & Petersen, M. B. (2020b). Why are right-wing voters attracted to dominant leaders? Assessing competing theories of psychological mechanisms. *The Leadership Quarterly, 31*(2), 101301. https://doi.org/10.1016/j.leaqua.2019.06.002

Laustsen, L., Petersen, M. B., & Klofstad, C. A. (2015). Vote choice, ideology, and social dominance orientation influence preferences for lower pitched voices in political candidates. *Evolutionary Psychology, 13*(3), 1474704915600576. https://doi.org/10.1177/1474704915600576

Little, A. C., Burriss, R. P., Jones, B. C., & Roberts, S. C. (2007). Facial appearance affects voting decisions. *Evolution and Human Behavior, 28*(1), 18–27. https://doi.org/10.1016/j.evolhumbehav.2006.09.002

Little, A. C., Roberts, S. C., Jones, B. C., & Debruine, L. M. (2012). The perception of attractiveness and trustworthiness in male faces affects hypothetical voting decisions differently in wartime and peacetime scenarios. *Quarterly Journal of Experimental Psychology (2006), 65*(10), 2018–2032. https://doi.org/10.1080/17470218.2012.677048

Lukaszewski, A. W., Simmons, Z. L., Anderson, C., & Roney, J. R. (2016). The role of physical formidability in human social status allocation. *Journal of Personality and Social Psychology, 110*(3), 385–406. https://doi.org/10.1037/pspi0000042

MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods, 7*(1), 83–104. https://doi.org/10.1037/1082-989X.7.1.83

Maner, J. K., & Mead, N. L. (2010). The essential tension between leadership and power: When leaders sacrifice group goals for the sake of self-interest. *Journal of Personality and Social Psychology, 99*(3), 482–497. https://doi.org/10.1037/a0018559

Mazur, A., Mazur, J., & Keating, C. (1984). Military rank attainment of a West Point class: Effects of cadets' physical features. *American Journal of Sociology, 90*(1), 125–150. https://doi.org/10.1086/228050

McClanahan, K. J., Maner, J. K., & Cheng, J. T. (2021). Two ways to stay at the top: Prestige and dominance are both viable strategies for gaining and maintaining social rank over time. *Personality and Social Psychology Bulletin*, 01461672211042319. https://doi.org/10.1177/01461672211042319

Mead, N. L., & Maner, J. K. (2012). On keeping your enemies close: Powerful leaders seek proximity to ingroup power threats. *Journal of Personality and Social Psychology, 102*(3), 576–591. https://doi.org/10.1037/a0025755

Michener, H. A., & Lawler, E. J. (1975). Endorsement of formal leaders: An integrative model. *Journal of Personality and Social Psychology, 31*(2), 216–223. https://doi.org/10.1037/h0076282

Mutz, D. C. (2018). Status threat, not economic hardship, explains the 2016 presidential vote. *Proceedings of the National Academy of Sciences, 115*(19), E4330–E4339. https://doi.org/10.1073/pnas.1718155115

Oh, D., Buck, E. A., & Todorov, A. (2019). Revealing hidden gender biases in competence impressions from faces. *Psychological Science, 30*(1), 65–79. https://doi.org/10.1177/0956797618813092

Ouss, A., & Peysakhovich, A. (2015). When punishment doesn't pay: Cold glow and decisions to punish. *The Journal of Law and Economics, 58*(3), 625–655. https://doi.org/10.1086/684229

Paolacci, G., & Chandler, J. (2014). Inside the Turk: Understanding Mechanical Turk as a participant pool. *Current Directions in Psychological Science, 23*(3), 184–188. https://doi.org/10.1177/0963721414531598

Petersen, M. B., & Laustsen, L. (2020). Dominant leaders and the political psychology of followership. *Current Opinion in Psychology, 33*, 136–141. https://doi.org/10.1016/j.copsyc.2019.07.005

Price, M. E., Sheehy-Skeffington, J., Sidnaius, J., & Pound, N. (2017). Is sociopolitical egalitarianism related to bodily and facial formidability in men? *Evolution and Human Behavior, 38*(5), 626–634. https://doi.org/10.1016/j.evolhumbehav.2017.04.001

Rand, D. G., Peysakhovich, A., Kraft-Todd, G. T., Newman, G. E., Wurzbacher, O., Nowak, M. A., & Greene, J. D. (2014). Social heuristics shape intuitive cooperation. *Nature Communications, 5*(1), 3677. https://doi.org/10.1038/ncomms4677

Redhead, D., Cheng, J. T., Driver, C., Foulsham, T., & O'Gorman, R. (2019). On the dynamics of social hierarchy: A longitudinal investigation of the rise and fall of prestige, dominance, and social rank in naturalistic task groups. *Evolution and Human Behavior, 40*(2), 222–234. https://doi.org/10.1016/j.evolhumbehav.2018.12.001

Redhead, D., Dhaliwal, N., & Cheng, J. T. (2021). Taking charge and stepping in: Individuals who punish are rewarded with prestige and dominance. *Social and Personality Psychology Compass*, *15*(2), e12581. https://doi.org/10.1111/spc3.12581

Rhemtulla, M., Brosseau-Liard, P. É., & Savalei, V. (2012). When can categorical variables be treated as continuous? A comparison of robust continuous and categorical SEM estimation methods under suboptimal conditions. *Psychological Methods, 17*(3), 354–373. https://doi.org/10.1037/a0029315

Rilke, R. M. (2017). On the duty to give (and not to take): An experiment on moralistic punishment. *Journal of Business Economics, 87*(9), 1129–1150. https://doi.org/10.1007/s11573-017-0851-y

Scully, J. A., Sims, H. P., Olian, J. D., Schnell, E. R., & Smith, K. A. (1994). Tough times make tough bosses: A meso analysis of ceo leader behavior. *The Leadership Quarterly, 5*(1), 59–83. https://doi.org/10.1016/1048-9843(94)90006-X

Sell, A., Tooby, J., & Cosmides, L. (2009). Formidability and the logic of human anger. *Proceedings of the National Academy of Sciences, 106*(35), 15073–15078. https://doi.org/10.1073/pnas.0904312106

Snyder, J. K., Kirkpatrick, L. A., & Barrett, H. C. (2008). The dominance dilemma: Do women really prefer dominant mates? *Personal Relationships, 15*(4), 425–444. https://doi.org/10.1111/j.1475-6811.2008.00208.x

Spisak, B. R., Dekker, P. H., Krüger, M., & van Vugt, M. (2012a). Warriors and peacekeepers: Testing a biosocial implicit leadership hypothesis of intergroup relations using masculine and feminine faces. *PLoS ONE, 7*(1), e30399. https://doi.org/10.1371/journal.pone.0030399

Spisak, B. R., Homan, A. C., Grabo, A., & Van Vugt, M. (2012b). Facing the situation: Testing a biosocial contingency model of leadership in intergroup relations using masculine and feminine faces. *The Leadership Quarterly, 23*(2), 273–280. https://doi.org/10.1016/j.leaqua.2011.08.006

Stulp, G., Buunk, A. P., Verhulst, S., & Pollet, T. V. (2015). Human height is positively related to interpersonal dominance in dyadic interactions. *PLoS ONE, 10*(2), e0117860. https://doi.org/10.1371/journal.pone.0117860

Tigue, C. C., Borak, D. J., O'Connor, J. J. M., Schandl, C., & Feinberg, D. R. (2012). Voice pitch influences voting behavior. *Evolution and Human Behavior, 33*(3), 210–216. https://doi.org/10.1016/j.evolhumbehav.2011.09.004

Todorov, A., Mandisodza, A. N., Goren, A., & Hall, C. C. (2005). Inferences of competence from faces predict election outcomes. *Science, 308*(5728), 1623–1626.

van Kleef, G. A., Heerdink, M. W., Cheshin, A., Stamkou, E., Wanders, F., Koning, L. F., Fang, X., & Georgeac, O. A. M. (2021). No guts, no glory? How risk-taking shapes dominance, prestige, and leadership endorsement. *Journal of Applied Psychology, 106*(11), 1673–1694. https://doi.org/10.1037/apl0000868

van Vugt, M., & Grabo, A. E. (2015). The many faces of leadership. An evolutionary-psychology approach. *Current Directions in Psychological Science, 24*(6), 484–489. https://doi.org/10.1177/0963721415601971

von Rueden, C. R., Gurven, M., & Kaplan, H. (2008). The multiple dimensions of male social status in an Amazonian society. *Evolution and Human Behavior, 29*(6), 402–415. https://doi.org/10.1016/j.evolhumbehav.2008.05.001

von Rueden, C. R., Gurven, M., Kaplan, H., & Stieglitz, J. (2014). Leadership in an egalitarian society. *Human Nature, 25*(4), 538–566. https://doi.org/10.1007/s12110-014-9213-4

Wang, L., Restubog, S., Shao, B., Lu, V., & Van Kleef, G. A. (2018). Does anger expression help or harm leader effectiveness? The role of competence-based versus integrity-based violations and abusive supervision. *Academy of Management Journal, 61*(3), 1050–1072. https://doi.org/10.5465/amj.2015.0460

Weeks, J. L. (2012). Strongmen and straw men: Authoritarian regimes and the initiation of international conflict. *American Political Science Review, 106*(2), 326–347. https://doi.org/10.1017/S0003055412000111

Winter, N. J. G. (2010). Masculine republicans and feminine democrats: Gender and Americans' explicit and implicit images of the political parties. *Political Behavior, 32*(4), 587–618. https://doi.org/10.1007/s11109-010-9131-z

Zeng, T. C., Cheng, J. T., & Henrich, J. (2022). Dominance in humans. *Philosophical Transactions of the Royal Society B: Biological Sciences, 377*(1845), 20200451. https://doi.org/10.1098/rstb.2020.0451

Zhu, N., Chen, B., Lu, H. J., & Chang, L. (2021). Life history-related traits predict preferences for dominant or prestigious leaders. *Evolutionary Psychological Science, 7*(3), 284–297. https://doi.org/10.1007/s40806-020-00274-6

Authors and Affiliations

Joey T. Cheng[1] · **Nathan A. Dhaliwal**[2] · **Miranda A. Too**[1]

[1] York University, Toronto, Canada

[2] University of British Columbia, Vancouver, Canada