The Precautious Nature of Prestige:
When Leaders are Hypervigilant to Subtle Signs of Social Disapproval

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Abstract

Some group leaders exhibit hypervigilance to signs of social disapproval and that vigilance manifests at basic levels of social information processing such as visual attention and face perception. The current research tests hypotheses about when, why, and in whom such vigilance occurs. Across two pilot studies and five experiments (N=1,667) we find that, when their social relationships are at stake, prestige-oriented leaders (but not dominance-oriented leaders) over-perceive signs of social discontent and disapproval. When delivering public (but not private) critical feedback to subordinates, prestige-oriented leaders attended vigilantly to social cues, especially negative emotional expressions indicating social discontent (Experiment 1). When delivering public (but not private) critical feedback, prestige-oriented leaders were also biased toward perceiving smiles as disingenuous (Experiment 2). Experimental manipulations of prestige produced similar results, suggesting that an orientation toward prestige causes leaders to perceive smiles as disingenuous (Experiment 3), interpret neutral facial expressions as concealing negative, rather than positive, emotions (Experiment 4), and fixate their attention on social cues (Experiment 5). Consistent with error management theory, hypervigilance to signs of social discontent and disapproval may prompt prestige-oriented leaders to strengthen their social relationships and help them avoid losing the support of their group. These findings are among the first to illuminate basic cognitive processes underlying the psychology of prestige.

Keywords: hierarchy; leadership; prestige; error management theory; organizational behavior
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People often envision leaders as powerful figures unfettered by social constraints. Indeed, although aspects of the social environment regularly and quite profoundly shape human behavior, the social situation often fails to influence the behavior of leaders (e.g., Galinsky, Magee, Gruenfeld, Whitson, & Liljenquist, 2008). Despite this apparent invulnerability, however, some leaders may be intensely sensitive to aspects of the social situation. Some leaders may be quite concerned with the quality of their social relationships with other group members and those concerns could affect the way those leaders think, interact with others, and make decisions (Case, Bae, & Maner, 2018; Van Vugt, 2006). In the current paper, we leverage recent theories of social hierarchy to identify which leaders, in particular, might experience concerns regarding their social relationships. Moreover, we explore implications of those concerns for a range of basic social cognitive processes. Across two pilot studies and five experiments, we investigate when and why such leaders might display fundamental biases in their perceptions of other people.

Dual strategies theory (Cheng, Tracy, Foulsham, Kingstone, & Henrich, 2013; Henrich & Gil-White, 2001; Maner & Case, 2016) provides a theoretical starting point for understanding when and why some leaders worry intently about being liked by their group, and how those worries might manifest in low-level cognitive processes. Dual strategies theory proposes that there are two strategies – dominance and prestige – people use to navigate their way to the top of social hierarchies. The dominance-based approach is marked by a tendency to demand deference from others through the use of force, coercion, and the manipulation of group resources. In contrast, the prestige-based approach is associated with earning others’ deference through
proving one’s worth, such as by displaying knowledge, traits, and skills that are highly valued by the group. In the current research, we suggest that prestige, in particular, is associated with a strong desire to garner social approval from group members, and that this desire is expressed in low-level cognitive biases designed to ensure that approval.

Although social psychological theories of hierarchy provide a strong basis for positing the existence of basic social cognitive mechanisms underlying people’s leadership strategies, empirical research has at times fallen short of examining such mechanisms directly, instead focusing on the downstream choices and behaviors of leaders. The current research advances the literatures on leadership and social hierarchy, in part, by directly investigating lower order cognitive mechanisms underlying prestige. We test the hypothesis that having an orientation toward prestige (but not dominance) causes leaders to exhibit hypervigilance to signs of social disapproval from their subordinates. Moreover, we hypothesize that this hypervigilance might express itself through mechanisms such as biases in social attention and face perception.

Thus, the current work advances the literature in two key ways. First, whereas previous work has focused primarily on power and dominance, the current work adds to a growing body of experimental research aimed at uncovering the social psychology of prestige. Second, whereas extant research has focused on examining the downstream decisions and behaviors of leaders, the current work extends the leadership and social hierarchy literatures by directly investigating the lower order social perception processes that could shape leaders’ decisions and behaviors.

**Prestige and Dominance: Two Routes to Attaining High Social Rank**

Dominance and prestige represent two distinct strategies people can use to regulate their position in a social hierarchy. The dominance strategy has deep evolutionary roots; it is one humans share in common with numerous other species, including nonhuman primates (e.g., de
THE PRECAUTIOUS NATURE OF PRESTIGE

Waal, 1982; Sapolsky, 2005), and is characterized by the use of coercion, intimidation, and manipulation (Cheng, Tracy, & Henrich, 2010, Cheng et al., 2013; Maner & Mead, 2010). Leaders who employ dominance typically demand deference from others and influence others partially through fear (Cheng et al., 2010; Cheng, Tracy, Ho, & Henrich, 2016). Several lines of experimental research suggest that dominance-oriented leaders tend to selfishly wield sources of power and prioritize their own power over the goals of their group (e.g., Case & Maner, 2014; Mead & Maner, 2012). Moreover, people who adopt the dominance strategy tend to be narcissistic and display hubristic pride, which is marked by feelings of arrogance and conceit (Cheng et al., 2010).

The prestige strategy, in contrast to the dominance strategy, is thought to have arisen later in human evolutionary history, during a time when groups were relatively small and hierarchies relatively flat (Boehm, 1999, van Vugt, Hogan, & Kaiser, 2008; van Vugt & Smith, 2019). Henrich and Gil-White (2001) proposed an “information goods” theory of prestige in which evolution favored adaptations that encouraged people to model themselves after highly successful group members. As human social groups became ever more complex, the development of social learning capacities played a central role in how people shared cultural information. The evolution of social learning would have favored information-sharing mechanisms that directed attention to the most competent and skilled group members, because those people were likely to possess knowledge and skills worth imitating. Such processes would have facilitated the effective transfer of valuable cultural information, such as how to hunt, gather, or make tools. Those oft-imitated group members received the respect and admiration of their group members and thus could be described as having prestige. In this way, prestigious leaders were people who served as role models in particular domains. They did not typically hold
roles of formal authority. Rather, they relied on the respect of other group members to undergird their leadership. Indeed, throughout most of human evolutionary history, leaders were people who, due to their knowledge and skills, received respect and were both listened to and emulated by other group members. Thus, in contrast to dominance, prestige involves a greater reliance on how one is perceived by other group members. Because a group’s success hinges on group members using their knowledge and skills to pursue shared goals, group members tend to defer to individuals who possess and use their talents to benefit the group. Even in modern human groups, people who use prestige to gain social rank do so by developing and displaying valued traits, knowledge, and skills which, in turn, allows them to amass influence within their group (Henrich, Chudek, & Boyd, 2015; Henrich & Gil-White, 2001). High-ranking individuals who gain and maintain influence through prestige often are highly motivated to behave in ways that benefit and ensure the well-being of their group (Case et al., 2018). For instance, if a professor wants a nomination for a prestigious teaching award, it would behoove that professor to use his or her knowledge, talents, and time in ways that maximize his or her students’ success.

While a sizable body of empirical research has identified dominance-based strategies leaders use to acquire and maintain power (for reviews see Cheng & Tracy, 2014 and Maner & Case, 2016), far less research has focused on the strategies used by prestige-oriented people. A small but fast-growing literature, however, is beginning to provide a detailed portrait of the psychology of prestige (e.g., Cheng, Kornienko, & Granger, 2018).

Although theories of prestige emphasize the role played by competence, more recent work hints at the possibility that prestige might entail a strong focus on maintaining positive social relationships, as well. In addition to displaying valued knowledge and skills, for example, prestige-oriented leaders have been shown to foster cooperative relationships among group
members (Case & Maner, 2014; Van Vugt, Hogan, & Kaiser, 2008). Because a core tenet of prestige is that group members must freely confer it, we hypothesize that a central aspect of the prestige strategy involves forming and maintaining positive relationships with group members. Protecting their social relationships, along with the high level of social approval those relationships entail, would help prestige-oriented people maintain their level of respect within the group. In this way, prestige-oriented people may seek to increase or maintain their high social rank, in part, by earning and preserving the social approval of their group members (Cheng et al., 2013; Hardy & van Vugt, 2006). Consequently, prestige-oriented people may be highly motivated to behave in ways that help them earn social approval and avoid social disapproval.

Thus, a central component of our theorizing is that people can gain prestige not only by behaving in ways that elicit admiration and respect, but also by building positive relationships with group members, avoiding social disapproval, and acting in ways that evoke liking and social acceptance.

We theorize that, although prestige-oriented people can and do earn social approval by behaving in ways that enhance their group’s success, they also can earn social approval merely by behaving in ways that increase their popularity with group members. For instance, although a professor can earn positive course evaluations by ensuring her students master the course material, she also can earn positive evaluations by ingratiating herself to the class. She might curry favor with her students by being exceptionally lenient when it comes to taking attendance or enforcing due dates, even when such behaviors undermine the effectiveness of the classroom environment. Indeed, recent evidence suggests that, in order to win the favor of their subordinates, prestige-oriented leaders sometimes eschew choices that would help achieve group goals and instead make choices that increase their own popularity (Case et al., 2018).
Although this recent work provides preliminary evidence that prestige-oriented leaders may be deeply concerned with gaining the social approval of their group, this hypothesis is in need of further development and testing. In particular, little is known about how this concern for social approval might be reflected in basic social cognitive processes. Indeed, while the literature on prestige and dominance is valuable for generating predictions about such processes, empirical research has yet to test such predictions. In the current research, we examine whether prestige-oriented leaders respond to situations that jeopardize their social approval by exhibiting functionally specific perceptual biases and attunements to signs of social disapproval.

**Prestige and Hypervigilance to Signs of Social Disapproval**

Maintaining social approval requires a high degree of vigilance to the social cues displayed by others. People who attend carefully to others’ emotional displays are in a good position to detect signs of approval or disapproval and can alter their behavior accordingly. For example, a manager who detects that one of her employees is upset with her can go out of her way to make amends, such as by providing the employee with praise or by expressing appreciation for the employee’s hard work.

Hypervigilance to social cues is reflected in activation of the social monitoring system, a psychological system that elevates one’s awareness of social cues signaling the potential for social threat or affiliation (Gardner, Pickett, & Brewer, 2000). The social monitoring system typically is activated when people are threatened by a loss of social approval or belonging (e.g., Pickett, Gardner, & Knowles, 2004). This activation of the social monitoring system is highly functional: when people are worried about incurring damage to their social relationships, it behooves them to monitor those relationships carefully to detect signs of social disapproval and respond in ways designed to restore their social esteem. This monitoring often takes the form of
attending carefully to other people's facial expressions and other nonverbal behaviors (Gardner et al., 2000, Pickett et al., 2004).

We theorize that prestige-oriented leaders have a strong desire for social approval. We therefore hypothesized that, when faced with situations in which their social approval is at stake, leaders who have an orientation toward prestige would display heightened vigilance to social cues. Although such vigilance would be expected among any group member with an orientation toward prestige, we focus here on people holding formal positions of leadership. This focus allowed us to shed light on leadership contexts that are both common in and important to modern day groups and organizations, which tend to rely on formal positions of leadership.

While we expected to see heightened social vigilance among prestige-oriented leaders, we did not expect to see heightened vigilance among dominance-oriented leaders. For prestige-oriented leaders, social approval may serve as a principal mechanism that affords social influence. Although coalition-building sometimes is an important component of dominance (e.g., de Waal, 1982), dominance-oriented leaders exercise influence largely through coercion and intimidation and are less likely to be concerned with maintaining a high degree of social approval (Case & Maner, 2014; Case et al., 2018).

Beyond being sensitive to social cues, prestige-oriented leaders might also exhibit biased perceptions of the social environment, and those biases could involve over-perceiving signs of social disapproval and discontent. Rather than eliciting a purely accurate perception of the social landscape, the desire for social approval might promote biases in the way leaders perceive others – biased perceptions that could evoke behaviors aimed at increasing their level of social approval. Consider a new team leader who is interacting with her group members and who is concerned with gaining their approval. Her concerns about gaining approval might cause her to
THE PRECAUTIOUS NATURE OF PRESTIGE

be highly attentive to any signals of social approval or disapproval. Moreover, the leader might also tend to over-perceive cues that inform her pursuit of approval. Indeed, social motives often cause people to project onto others emotions and intentions that are functionally relevant to the perceiver’s own motivational state (Maner et al., 2005). For instance, the team leader might over-perceive signs of disapproval and discontent. Over-perceiving such signs would alert the leader to the possibility that her support may be waning, and might cause her to behave in ways designed to shore up her relationships within the group. Such behaviors, even if unnecessary, would help her achieve her goal of maintaining a high level of social esteem.

Biased perceptions of social disapproval would be consistent with the logic of error management theory (Haselton & Buss, 2000; Haselton & Nettle, 2006). According to that logic, when there are two types of social perception errors people can make, people tend to display biases that help them avoid the costlier of the two errors. Consider again our team leader. If she perceives her level of social approval as higher than it really is, she might not put forth enough effort into maintaining that approval and might neglect her relationships with her subordinates. This would be a costly error for a prestige-oriented leader whose influence hinges on the freely conferred deference and approval she receives from her group members. Alternatively, if she perceives her level of approval as lower than it really is, the main cost incurred would be potentially exerting more effort than needed to preserve positive relationships with her group members. Thus, given that maintaining a high degree of social approval may be a key goal for prestige-oriented leaders, it would be functional for them to over-perceive signs of social disapproval rather than over-perceive signs of approval. This hypothesis guided the current investigation.
The current studies evaluated hypervigilance to social cues from other people, generally, rather than from subordinates, specifically. As discussed earlier, the psychology of prestige is not characterized by a focus on formal positions denoting a person’s social rank. For a person seeking prestige, any group member is a source of admiration and social approval or, conversely, of social disapproval. The psychology of prestige is presumed to have evolved in the context of hunter-gatherer groups, in which essentially all social interactions held implications for a person’s social rank (Henrich & Gil-White, 2001). Although one’s subordinates are one important source of social approval or disapproval in modern-day organizations, the psychology of prestige is hypothesized to encompass a broader range of people, such that one’s concerns about social approval generalize to anyone perceived to be a group member. Thus, the designs of our studies evaluated hypervigilance to social cues using a range of social targets.

**Overview of Experiments**

Across two pilot studies and five experiments, we tested the hypothesis that, when their social approval is at stake, having an orientation toward prestige causes leaders to display hypervigilance to social cues and to over-perceive signs of social disapproval in others’ faces. Specifically, we predicted that an orientation toward prestige would be associated with (a) biased attention toward social cues, especially signs of social disapproval (Experiments 1 and 5), and (b) a tendency to over-perceive signs of social disapproval (Experiments 2-4). Experiments 1 and 5 assessed leaders’ low-level attention to facial expressions using a dot probe task (Salemink, Van den Hout, & Kindt, 2007). Experiments 2 and 3 leveraged signal detection measures to determine sensitivity and bias in how participants interpreted whether smiles were genuine or disingenuous (e.g., Bernstein, Sacco, Brown, Young, & Claypool, 2010; Kunstman, Tuscherer,
Trawalter, & Lloyd, 2016). Experiment 4 assessed the extent to which participants perceived neutral facial expressions as concealing negative versus positive emotions.

Experiments 1 and 2 leveraged the presence of individual differences in people’s orientation toward prestige and dominance. People vary in the extent to which they tend to employ one strategy over the other and a growing body of research has shown that stable individual differences in the tendency to use dominance or prestige are associated with distinct hierarchy-related goals and patterns of behavior (e.g., Cheng et al., 2010).

Experiments 3-5 used experimental manipulations of prestige. In doing so, we leveraged social psychological studies differentiating between status hierarchies and power hierarchies (e.g., Anicich, Fast, Halevy, & Galinsky, 2016; Blader, Shirako, & Chen, 2016; Fast, Halevy, & Galinsky, 2012; Hays & Bendersky, 2015; Magee & Galinsky, 2008). Status hierarchies are regulated by the level of respect earned by group members and, in those hierarchies, high social rank is freely conferred (Anderson, Srivastava, Beer, Spataro, & Chatman, 2006; Anderson & Kilduff, 2009; Berger, Cohen, & Zelditch, 1972; Hardy & van Vugt, 2006; Willer, 2009). Being in a status hierarchy thus activates normative expectations and standards for behavior that focus on influencing others via respect and admiration. Consequently, placing people into a status hierarchy primes an orientation toward adopting a prestige-oriented leadership strategy (Case et al., 2018). We compared participants in status hierarchies to those in neutral hierarchical contexts (Experiments 3 and 5) and power hierarchies (Experiments 4 and 5). In contrast to status hierarchies, power hierarchies are based on the extent to which group members can wield resources and exercise authority (Magee & Galinsky, 2008). Given that the use of power is characteristic of dominance, placing people into a power-based hierarchy should prime an orientation toward adopting a dominance-oriented leadership strategy.
Experiment 1

Experiment 1 tested the hypothesis that, when faced with a situation in which their social approval was at stake, participants with a prestige-oriented leadership style would fixate their attention on social cues. Participants were assigned to a leadership role and anticipated providing critical feedback to their group members. To manipulate whether their social approval was at stake, we experimentally manipulated whether they expected to give critical feedback publicly (in a one-on-one meeting with subordinates) or in private (their feedback would be anonymous).

While waiting to provide feedback, participants’ attention to social cues was measured with a visual dot probe task (Maner & Miller, 2014). The task measured attentional bias toward faces portraying varying facial expressions (angry, fearful, happy, or neutral), as well as toward neutral non-social stimuli. We predicted that, among leaders providing their criticism publicly, an orientation toward prestige would be associated with prolonged attention to social cues. A secondary hypothesis was that, consistent with error management theory, prestige would be most strongly associated with attention to signs of social disapproval and discontent (i.e., angry faces and fearful faces). In contrast, when leaders anticipated that their critical feedback would be anonymous, their social approval was not at stake, so we did not expect leaders’ orientation toward prestige to be associated with prolonged attention to social cues. Moreover, we did not expect any association between attentional bias and participants’ orientation toward dominance.

Pilot Test

Due to the limitations of relying on statistical tests of mediation with measured variables (e.g., confounding variables), we employed the “moderation-of-process” approach recommended by Spencer, Zanna, and Fong (2005) when designing our experiments. Specifically, we experimentally manipulated the potential for social disapproval (via private versus public
feedback conditions) rather than measuring concerns about social approval. Additionally, to ensure that this public-versus-private feedback manipulation was effective at altering participants’ social approval concerns, we conducted a pilot study. A full description of the methods and results are available in supplemental online materials. Online participants (N=188) read one of two leadership scenarios and then indicated how concerned they would be about losing their subordinates’ social approval. In the public feedback condition, participants imagined providing a subordinate with critical feedback in a face-to-face meeting. In the private feedback condition, participants imagined a subordinate receiving their critical feedback without knowing that the participant was the source of that feedback. This manipulation mirrors the one used in Experiments 1 and 2. We predicted that participants in the public feedback condition would report greater social approval concerns than would participants in the private feedback condition. In line with this prediction, compared to participants in the private feedback condition, participants in the public feedback condition reported a greater likelihood of experiencing social approval concerns, $\beta=.16$, $t=2.25$, $p=.03$, $sr=.16$. Thus, the pilot test provided evidence for the efficacy of the manipulation.

**Method**

**Participants.** The sample size for Experiment 1 was determined by performing a power analysis in G*Power using the most conservative effect size estimate reported in a study relying on a similar dependent variable ($\eta^2=.07$; Maner & Miller, 2014). Results from the power analysis indicated that, for a multiple regression analysis including six predictors, a minimum of 107 participants would be necessary to achieve power of .8. Ultimately, 125 undergraduate students and university staff members were recruited for Experiment 1 with the expectation that some participants’ data would need to be excluded from analyses due to a priori exclusion
criteria (having response times +/- 3 SD) or due to high levels of suspicion. All participants were compensated $20 for their time.

We excluded data from one participant for having an unusually high mean reaction time (3 SD above the sample mean). Additionally, we excluded data from seven participants who, during a suspicion probe, voiced substantial suspicion about being part of a group. We excluded data from four participants due to experimenter error (mixing up the experimental manipulation). All exclusions were determined before conducting analyses. The same pattern of results emerges when all participants’ data are included in analyses. Of the remaining 113 participants (\(M_{\text{age}}=20.0\) years, \(SD_{\text{age}}=1.7\) years), 37 were men and 76 were women.

**Design and Procedure.** Upon arriving to the laboratory, participants were informed that they would be performing group tasks with two other group members ostensibly located in different lab rooms. The instructions explained that participants had the potential to earn cash prizes in a raffle drawing, and that raffle tickets would be awarded based on their group’s performance on a series of group tasks. Next, all participants completed items from the Achievement Motivation Scale (AMS; Cassidy & Lynn, 1989) and a five-item multiple choice version of the Remote Associates Task (RAT; Mednick, 1968), which purportedly assessed verbal ability. The AMS served two functions in these studies. First, along with the RAT, it provided justification for assigning participants to the role of group leader. Because feelings of role illegitimacy can undermine leaders’ identification with their leadership role (Lammers, Galinsky, Gordijn, & Otten, 2008), all participants were told that their assignment to the leadership role was determined in part by responses on this “Leadership Assessment Scale.” Second, the AMS provided individual difference measures of participants’ orientation toward dominance and prestige. Prestige orientation was measured with seven items assessing
participants’ desire for respect and admiration (e.g., “I would like an important job where people look up to me,” “I like to be admired for my achievements”) ($\alpha=.71, M=3.91, SD=.53$). The dominance subscale consisted of seven items assessing a person’s desire for power and authority (e.g., “I enjoy planning things and deciding what other people should do,” “I think I would enjoy having authority over other people”; $1 = $ strongly disagree, $5 = $ strongly agree) ($\alpha=.77, M=3.55, SD=.55$). Measures of prestige and dominance orientations were positively correlated ($r=.55, p<.001$). Correlations of this magnitude have been observed in previous research and reflect the fact that both orientations share in common a desire for elevated social rank (e.g., Maner & Mead, 2010). Nevertheless, these measures also have been shown to be psychometrically distinct (Cassidy & Lynn, 1989) and to predict different behaviors and psychological outcomes (e.g., Mead & Maner, 2012; Case & Maner, 2014). It should be noted that to account for their shared variance, all regression analyses include both measures simultaneously.

The RAT required participants to select one word (from a list of four) that tied together a set of three other words. For clarification, the following example was provided: if the word set consisted of flying, monkey, and nut, the fourth word would be squirrel. Once participants completed both the AMS and RAT, the computer ostensibly scored both measures.

All participants were informed that they had earned the highest score on the leadership assessment and had demonstrated superior verbal ability on the word task and, as such, would be the group leader, tasked with making decisions for their group. Participants were told that their role as leader came with respect and admiration, and that they would serve as a role model for the other group members. Thus, the leadership role slanted toward describing the hierarchy as a status hierarchy as opposed to a power hierarchy (cf. Galinsky, Magee, Inesi, & Gruenfeld, 2006; Gruenfeld, Inesi, Magee, & Galinsky, 2008; Lammers, Stapel, & Galinsky, 2010).
After the leadership assignment, all participants were told that their group would be generating two cereal box labels for a new children’s cereal, “Cave Crave”, under the guise that marketing researchers at the school had paired up with a major cereal company to pilot some new products. Participants were told that the purpose of the study was to determine which of four potential cereals was the most marketable and that a marketing team from the cereal company would evaluate all groups’ cereal box labels. To enhance the cover story’s believability, participants were shown what their assigned cereal looked like and were given a brief description of its ingredients, nutrition, and taste. They also were provided an example cereal box label for a different cereal that was the (purported) winning label from a prior competition.

Participants then were told that each of their other group members would serve as a “marketing agent” and would be tasked with designing and creating a prototype of the cereal box label using a graphics program like Photoshop. All participants were told that their role, as their group’s leader, was to serve as the “creative director.” They were told that their overarching objective was to come up with critical feedback for each of the drafts their marketing agents would create. Participants also were informed that they would examine each of their group members’ labels with a critical eye in order to make them the best they could be. All participants were told that, once they received each of their group members’ labels, they would make a list of every flaw they could find in them.

It was at that point that the experimental manipulation was introduced. Participants in the public feedback condition were told that they would go through their list of flaws with each of their group members during a one-on-one meeting and would tell each of their group members everything they think should be fixed in their label. In contrast, participants in the private condition were told that their feedback on the label would not be attributable to them: they were
informed that their group members would be told that the feedback had come from one of the experimenters. Additionally, participants in the private condition were told that, when they met with each of their group members, it would be before he or she had received any feedback and they would not discuss the cereal box labels. Thus, all participants anticipated generating negative feedback on their group members’ labels and all participants anticipated meeting their group members. Only leaders in the public condition expected to be accountable for the negative feedback they provided their group members. Thus, only for leaders in the public condition was the approval and acceptance of their group members at stake.

After the experimental manipulation, all participants were given instructions about the task they would perform while their group members worked on the first draft of their labels. They were told that, as part of a different study, the researchers were interested in examining leaders’ ability to respond quickly and accurately on various cognitive tasks. They then were given instructions about the visual cueing task used to assess participants’ low-level biases in attention to social stimuli versus nonsocial stimuli.

**Dot Probe Task.** To measure participants’ attention to social and nonsocial stimuli, they performed a dot probe task (e.g., Maner & Miller, 2014). The dot probe task measured how long (in milliseconds) it took participants to disengage their attention from various objects. Stimuli consisted of 32 nonsocial objects of neutral valance (e.g., bowls, dustpans, etc.) and 64 faces (4 male, 4 female, each displaying an angry, fearful, happy, or neutral expression). The faces were obtained from the Chicago Face Database (see Ma, Correll, & Wittenbrink, 2015).

On each trial of the dot probe task, a fixation cross first appeared in the center of the computer screen for 1000ms. Next, a target stimulus was displayed for 500ms in one quadrant of the computer screen (upper left, upper right, lower left, lower right). Immediately following the
disappearance of that stimulus, a categorization object (a circle or square) appeared in either the same location as the target stimulus (“filler trials”) or in a different location (“attentional shift trials”). Participants indicated via key press whether the categorization object was a circle or square. They were instructed to respond as quickly and as accurately as possible. Greater latencies on attentional shift trials indicated that participants took longer to disengage their attention from the target stimulus. After completing a block of 12 practice trials, participants completed four blocks of experimental trials. Each block consisted of 36 trials (approximately 12 “filler” and 24 “attentional shift” trials). The order in which stimuli and trials appeared was randomized across participants and every participant saw all stimuli.

Upon completion of the dot probe task, participants completed a demographics questionnaire and were probed for suspicion about the deceptive elements of the study. Finally, once all measures were completed, participants then were paid for their time and debriefed.

**Results**

The reaction time (ms) with which participants responded correctly on attentional shift trials for the social stimuli served as the dependent variable for the attentional adhesion task. For both the social and nonsocial trials, latencies greater than three standard deviations above or below each participant’s mean latency were excluded from analyses, in line with previous research (e.g., Maner & Miller, 2014; Maner, Gailliot, & Miller, 2009). Also in line with previous research, all individual latencies under 100ms were excluded from analyses because they indicated that the participant responded before processing the stimulus.

We used multiple regression to assess leaders’ attentional adhesion to social stimuli. Prestige and dominance orientations were included simultaneously in all regression models (to account for their shared variance), in addition to their centered interactions with experimental
condition, and the main effect of condition. Because the reaction time with which participants responded during attentional shift trials for the nonsocial stimuli represented their baseline reaction time, it served as a control variable (see McNulty, Meltzer, Makhanova, & Maner, 2018; Zhang, Maner, Xu, & Zheng, 2017). This allowed us to control for individual differences in overall reaction time, which can vary substantially (see Schmiedek, Oberauer, Wilhelm, Süß, & Wittmann, 2007). Thus, average reaction time for the social stimuli was predicted from experimental condition, prestige orientation (centered), dominance orientation (centered), the centered interaction between prestige orientation and feedback condition, the centered interaction between dominance orientation and feedback condition, and participants’ centered baseline reaction time. Results can be found in Table 1. We also conducted secondary analyses to examine leaders’ attentional bias toward faces displaying negative, neutral, and positive social cues separately to determine whether prestige may have been associated especially with attention to negative facial expressions communicating disapproval or discontent (i.e., anger or fear). Results broken down by facial expression can be found in Table 2.

**Primary Analyses.** We hypothesized an interaction such that prestige orientation would be positively associated with participants’ attentional adhesion to social stimuli, but that this association would be limited to the public feedback condition. In line with our hypothesis, we observed an interaction between leaders’ prestige orientation and feedback condition; in the public feedback condition, leaders’ orientation toward prestige was significantly and positively associated with attention to social stimuli (see Figure 1). Within the private feedback condition, however, we observed no association between prestige orientation and attention to social stimuli.

Results also indicated a marginally significant interaction between feedback transparency condition and leaders’ dominance orientation, opposite in direction from the interaction between
feedback transparency condition and prestige orientation. However, the simple effects for leaders’ dominance orientation did not approach significance in either the public or private feedback conditions. Participants’ baseline tendency to attend to nonsocial stimuli was significantly (positively) associated with their tendency to attend to social stimuli, reflecting individual differences in overall reaction time. No other significant effects were observed.

**Secondary Analyses.** Before examining attentional bias toward negative social cues, we first aggregated participants’ reaction times for targets exhibiting angry and fearful expressions. Participants’ attention to angry ($M_{\text{anger}}=590.6, SD=144.6$) and fearful ($M_{\text{fear}}=583.4, SD=117.8$) facial expressions were significantly correlated ($r=.72, p<.001$) and the aggregated reaction time measure for negative social cues was highly reliable ($M_{\text{neg}}=587.0, SD=121.9, \alpha=.83$). Moreover, when the angry and fearful targets were analyzed individually, the same pattern emerged for each of them. See Table 2 for results.

For targets displaying negative facial expressions, we observed an interaction between feedback transparency condition and participants’ prestige orientation that was in line with hypotheses. In the public feedback condition, but not the private feedback condition, leaders’ prestige orientation was significantly associated with prolonged attention to negative facial expressions. The same pattern did not emerge for faces exhibiting positive ($M_{\text{happy}}=568.4, SD=114.0$) or neutral expressions ($M_{\text{neutral}}=594.6, SD=130.3$).

For the faces displaying negative facial expressions, we also observed a significant interaction between feedback transparency condition and leaders’ dominance orientation that was opposite in direction from the effect for prestige orientation. Within the public condition, no simple effect of dominance orientation emerged. However, in the private feedback condition, we observed a marginal effect such that higher levels of dominance were associated with prolonged...
attention to faces exhibiting negative emotion. For both the neutral and positive facial expressions, we observed no interaction between feedback transparency condition and dominance orientation.

**Discussion of Experiment 1**

When they anticipated providing their subordinates with face-to-face criticism, prestige-oriented leaders exhibited vigilant attention to social cues. In response to this same situation, leaders less concerned with prestige tended to spend less time focusing on others’ faces. When their criticisms were anonymous and, thus, they were not at risk of losing social approval, leaders’ attention to facial expressions did not differ as a function of their prestige. The pattern in the public feedback condition could have been driven by leaders’ anticipation of meeting with subordinates upset by the negative feedback or by the fact that the leader him- or herself was the source of that feedback. Either way, findings are consistent with concerns about possible damage to the leader-follower relationship.

Evidence from this study also suggests that prestige-oriented leaders were especially attentive to negative social cues. For a leader wanting to avoid losing social approval, vigilance to signs of discontent is especially important. Attending closely to any signs of social disapproval could help leaders identify which group members are dissatisfied and promote reparative behaviors aimed at preserving those leaders’ social approval. This first study thus provides initial evidence that an orientation toward prestige may promote lower-order cognitive processes designed to help leaders avoid a loss of support from subordinates.

**Experiment 2**

Experiment 2 served as a highly powered conceptual replication and extension of Experiment 1. Although attending to the emotional displays of others is important for preserving
a leader’s social approval, how a leader interprets emotional displays is also critical. For instance, if a leader misinterprets an unhappy group member’s emotional expression as benign, that leader might fail to identify a threat to her social approval and, as such, might not take the appropriate measures to preserve her social approval. In the case of clearly negative emotional expressions—such as those exhibited by the angry and fearful targets in Experiment 1—identifying which people are unhappy is relatively easy. When a group member’s emotional expression is ambiguous, however, correctly identifying his or her underlying intentions is more difficult. As such, Experiment 2 examined how leaders whose social approval was threatened would interpret others’ ambiguous emotional displays.

Participants in Experiment 2 viewed 20 video clips of people exhibiting either a Duchenne or non-Duchenne smile. A Duchenne smile involves the automatic activation of facial muscles in response to the experience of pleasure and is considered a “true” smile associated with positive emotions (Ekman, Davidson, & Friesen, 1990). Moreover, Duchenne smiles are indicative of prosocial intentions (Brown & Moore, 2002). In contrast, non-Duchenne, or “masking” smiles sometimes are used to conceal the experience of negative emotions (Ekman, Friesen, & O’Sullivan, 1988). Immediately after watching video clips of people exhibiting either a Duchenne or non-Duchenne smiles, participants indicated whether they were displaying a genuine or disingenuous expression of happiness. Thus, the dependent measure for Experiment 2 afforded the opportunity to assess participants’ accuracy when discerning between the two types of smiles, as well as any bias toward categorizing smiles as genuine versus disingenuous.

If prestige-oriented leaders exhibit hypervigilance to social cues, they might be especially attuned to whether a subordinate’s smile is real versus fake. This would be consistent with evidence that, when faced with social exclusion (i.e., an extreme form of social disapproval)
people are especially good at differentiating between Duchenne and non-Duchenne smiles (Bernstein, Young, Brown, Sacco, & Claypool, 2008). Thus, one hypothesis for Experiment 2 was that, when social approval was at stake (in a public feedback condition, similar to Experiment 1), prestige orientation would be associated with heightened accuracy when discriminating between genuine and disingenuous smiles.

Consistent with an error management approach, however, a different prediction was that, in the public feedback condition, an orientation toward prestige would be associated with over-perceiving signs of social disapproval. That is, concerns about social approval might bias prestige-oriented leaders toward seeing real smiles as fake. As explained in the introduction, such a bias could promote behaviors aimed at strengthening what is perceived to be potentially tenuous relationships with other group members. The design of Experiment 2 allowed us to test for both accuracy and bias in the interpretation of facial expressions.

**Method**

**Participants.** Participants were recruited from Amazon’s Mechanical Turk. To minimize familiarity with studies including deceptive elements, we limited participants to those Mechanical Turk workers who had completed 50 or fewer hits. Sample size was determined by performing a power analysis in G*Power using the observed effect size from a published study similar in design (sr=.18, Case et al., 2018). Results from the power analysis indicated that, for a multiple regression analysis including five predictors, a minimum of 201 participants would be necessary to achieve power of .9. Anticipating that some participants’ data might need to be excluded due to suspicion or inattention, we aimed to recruit 240 participants. Ultimately, 236 participants consented to the use of their data after receiving the debriefing script (4 participants
exited the survey without completing the post-study consent questionnaire). All participants were compensated $1 for their time.

Data from seven participants were excluded for failing the attention checks and data from four participants were excluded for voicing suspicion about being part of a group. Additionally, data from three participants were excluded due to completing the study measures too quickly for the cover story to be believable (<15 minutes). All exclusions were determined a priori. Of the remaining 222 participants (\(M_{age}=32.8\) years, \(SD=11.2\) years), 60 were men, 147 were women, 2 identified as non-binary, and 13 did not disclose their gender.

**Design and Procedure.** Upon beginning the online experiment, participants were informed that they would be performing group writing tasks with two other group members with whom they would be connected remotely via a person-to-person program. Before participants joined the queue that would connect them to their ostensible group members, participants indicated their initials and wrote a short greeting for their group members. After a brief loading screen connected the participants to their group members—identified by the initials cjw and K.H.—participants saw their own greeting and the greetings of their group members in a chat-like format (i.e., “is this real?? If it is, hey ppl!” and “Hi.”). Participants then were informed that they had the potential to earn cash prizes as part of the study and that those prizes would be awarded based on their group’s writing performance.

As in Experiment 1, participants completed the AMS and RAT. Prestige orientation (\(\alpha=.79, M=3.63, SD=.64\)) and dominance orientation (\(\alpha=.83, M=3.50, SD=.65\)) were positively correlated (\(r=.64, p<.001\)). Once the participants’ scores (ostensibly) were calculated, all participants were placed into a leadership role, as in the previous study. After the leadership procedure, participants were given instructions regarding their first task as leader.
All participants were then told that they and their group members would be generating two creative writing essays. Participants were told that the researchers had partnered with the Department of English at their university and were interested in studying the spectrum of human creativity. All participants were told that, as the leader of their group, they would serve as their group’s Editor-in-Chief, and each of their group members would generate a creative writing essay (in 10 minutes) that they, as Editor-in-Chief, would then evaluate. To enhance the cover story’s believability, participants were shown the prompt that their two group members would receive. That prompt was modeled after exercises used by writing workshops to stimulate creative thought.

Then, the feedback transparency manipulation was introduced. That manipulation was adapted from the manipulation used in Experiment 1. Participants in the public feedback condition were informed that they would discuss, in a one-on-one chat with each of their group members, every element of that person’s essay they did not like. Participants in the private feedback condition were told that their lists would be shared anonymously with each of the group members, after their one-on-one chat had concluded. Thus, as in Experiment 1, all participants anticipated interacting with their group members, though only in the public condition was their relationship with subordinates at stake. Due to the online nature of the experiment, in addition to emphasizing the public versus private feedback conditions (as in Experiment 1), we included a subtle priming technique to boost the power of the manipulation. Participants in the public condition saw a logo for the person-to-person program, “DigitEyez,” that ostensibly connected them to their group members (see Figure 2). This logo, which was designed to include an image of a pair of eyes, was employed to activate cognitions associated with public scrutiny. Because people feel watched when in the presence of an image of eyes
(e.g., Harley & Fessler, 2005), the Digiteyez logo was employed in conjunction with the public manipulation to override participants’ presumed online anonymity. Participants in the private condition saw a logo for the program “Digitize” that did not include an image of a pair of eyes.

After the experimental manipulation, all participants read instructions about the task they would perform while their group members wrote the first draft of their creative essays. They read that, in addition to assessing the writing talent of people who are not professional writers, the researchers also were interested in assessing the acting talent of people who are not professionally trained in the performing arts. Participants were told that they would be evaluating a series of videos of people expressing happiness. They were informed that, although some people in the videos were exhibiting genuine expressions of happiness, others were faking happiness in an effort to conceal their true emotions. The participant’s job was to determine which people were displaying genuine expressions of happiness and which were displaying disingenuous ones.

Participants then performed the smile categorization task (Bernstein, et al., 2010). As part of that task, participants watched 20 color videos (approximately four seconds each), one at a time, and indicated via forced choice whether the individual in each video exhibited a genuine versus disingenuous expression of happiness (i.e., “Was the smile of the person in the last video real or fake?”). All videos had been validated by prior research (Bernstein, et al., 2008). In each video, an individual who initially had a neutral expression smiled, and then the video clip ended. The videos originally were hosted on the BBC Science & Nature Website (BBC, n.d.) and consisted of seven women and 13 men. Of the 20 videos, 10 portrayed Duchenne smiles and 10 portrayed non-Duchenne smiles. Previous research using these stimuli determined that the faces exhibiting Duchenne versus non-Duchenne smiles did not differ in attractiveness or positivity.
(Bernstein, et al., 2008). Upon completion of the smile discrimination task, participants completed a demographics questionnaire and were probed for suspicion. Once all measures were completed, participants were compensated and debriefed.

Results

To assess the extent to which participants accurately disambiguated genuine from disingenuous smiles, we calculated $d'$, a signal detection measure of sensitivity, that is, the ability to discriminate non-Duchenne smiles from Duchenne smiles. This measure simultaneously considers hits (correctly identifying a non-Duchenne smile as real) and false alarms (incorrectly identifying a Duchenne smile as fake) and has been used in prior research using the smile discrimination task (e.g., Bernstein et al., 2008; Kunstman et al., 2016). To calculate $d'$, we first determined the raw number of hits (H) and false alarms (FA) for each participant. Then, following the loglinear approach, we added .5 to each of those raw values and added 1 to each of the total trial sets before determining the proportion of H and FA (see Hautus, 1995; Stanislaw & Todorov, 1999). We then determined the Z-score value associated with each those proportions ($Z_H$ and $Z_{FA}$). Finally, $d'$ was calculated by subtracting $Z_{FA}$ from $Z_H$. Thus, a $d'$ value of zero indicates participants were unable to distinguish disingenuous smiles from genuine smiles. Positive values indicate an ability to correctly identify disingenuous smiles.

We also evaluated potential biases in people’s perceptions of smiles, as indicated by a signal detection measure of response bias, $c$. To calculate $c$, we took the average of participants’ previously calculated $Z_H$ and $Z_{FA}$. Positive $c$ values indicate a bias toward categorizing smiles as disingenuous and negative $c$ values indicate a bias toward categorizing smiles as genuine. A $c$ value of zero indicates no presence of bias.
As in Experiment 1, we used multiple regression. We conducted separate analyses of sensitivity and response bias. Sensitivity ($d'$) and response bias ($c$) were predicted from feedback transparency condition (public vs. private), prestige orientation (centered), dominance orientation (centered), the centered prestige orientation-condition interaction, and the centered dominance orientation-condition interaction. Results for both accuracy and bias can be found in Table 3.

**Sensitivity.** We observed a significant interaction between leaders’ prestige orientation and feedback transparency condition that was inconsistent with the accuracy hypothesis. Within the public feedback condition, we observed a nonsignificant trend such that leaders’ prestige orientation was negatively associated with the ability to discriminate between Duchenne and non-Duchenne smiles. Within the private feedback condition, we observed a nonsignificant trend in the opposite direction, indicating that higher levels of prestige orientation were associated with a heightened ability to discriminate Duchenne from non-Duchenne smiles. We did not observe any interaction between feedback transparency condition and participants’ dominance orientation. No main effect of feedback transparency condition was observed for participants’ ability to discriminate between Duchenne and non-Duchenne smiles. Similarly, no main effects were observed for leaders’ prestige orientation or dominance orientation.

**Bias.** In line with the hypothesis that participants would over-perceive signs of social disapproval, we observed a significant interaction between leaders’ prestige orientation and feedback transparency condition on response bias (see Figure 3). Within the public feedback condition, leaders’ prestige orientation was significantly associated with a bias toward categorizing smiles as disingenuous. Among leaders who were highly prestige orientated (+1 SD) and in the public feedback condition, the tendency to over-perceive disingenuous smiles was significantly different from the “no bias” midpoint of the scale, $b=.35$, $SE=.15$, $t=2.27$, $p=.02$. 
Leaders low in prestige orientation (-1 SD) and in the public feedback condition did not exhibit response bias, $b=-.17$, $SE=.15$, $t=-1.08$, $p=.28$.

Within the private feedback condition, no association between leaders’ prestige orientation and response bias emerged. Moreover, among leaders who were highly prestige-oriented and in the private feedback condition, the tendency to over perceive genuine smiles was not significant, $b=-.22$, $SE=.17$, $t=-1.32$, $p=.19$. Similarly, no evidence of response bias among leaders who were low in prestige orientation and in the private feedback condition emerged, $b=.01$, $SE=.15$, $t=.08$, $p=.94$.

We did not observe any interaction between experimental condition and participants’ dominance orientation on response bias. No main effect of feedback condition was observed for participants’ response bias. Similarly, no main effects on bias were observed for leaders’ prestige orientation or dominance orientation.

**Discussion of Experiment 2**

When prestige-oriented leaders anticipated providing their group members with negative feedback in a public forum, they were biased toward interpreting others’ smiles – expressions of positive emotion – as being disingenuous. When leaders were free to criticize their group members’ work without having their criticisms attributed to them, however, leaders’ prestige orientation was not associated with how they interpreted others’ expressions. These findings are consistent with the hypothesis that, when social approval is at stake, an orientation toward prestige promotes the over-perception of cues signaling social disapproval or discontent.

Findings are also consistent with the logic of error management theory, insofar as the observed bias could serve to promote behaviors aimed at increasing one’s level of social approval. Seeing
fake smiles as real, on the other hand, would presumably put leaders at risk for damaging their relationships with colleagues and subordinates.

While findings from Experiment 2 supported the bias hypothesis, they did not support the accuracy hypothesis. In neither experimental condition was participants’ prestige orientation associated with significantly greater accuracy in differentiating real from fake smiles. Thus, when their social approval is at risk, highly prestige-oriented leaders err on the side of caution – and are biased toward over-perceiving signs of social disapproval – when interpreting the emotional displays of others.

**Experiment 3**

Experiments 1 and 2 highlighted the association between individual differences in prestige orientation and biases in attention to and perception of social cues. Experiments 3-5 extended the investigation by experimentally manipulating participants’ orientation toward prestige. Experiments 3-5 manipulated the situational relevance of the leaders’ social approval and, as such, provided more rigorous, causal tests of our hypotheses. In Experiment 3, participants were assigned either to a leadership role atop a status hierarchy or a neutral control hierarchy in which their role as leader was not described in terms of power or status. The status hierarchy manipulation was modeled after that used in prior research (Case et al., 2018; Hays & Bendersky, 2015) and was designed to make it salient to participants that their role as the leader was dependent on the freely conferred deference and social approval of their followers. Status hierarchies are regulated by the level of respect earned by group members and high social rank is freely conferred. Being in a status hierarchy thus activates normative expectations and standards for behavior that focus on influencing others via respect and admiration. Consequently, placing people into a status hierarchy primes an orientation toward adopting a prestige-oriented
leadership strategy. In the neutral hierarchy, participants received no information about the role respect or admiration played in the group. They merely were informed that they would serve as their group’s leader. Thus, in both conditions, participants occupied the role of leader but only in the status hierarchy condition were leaders expected to adopt an orientation toward prestige. We predicted that placing leaders atop a status hierarchy (versus a neutral hierarchy) would cause them to display negatively biased social perceptions.

As in the previous experiments, leaders in Experiment 3 anticipated providing critical feedback to their subordinates. However, unlike previous experiments, we did not manipulate feedback condition; all participants anticipated giving public (not private) feedback. We decided against including a private feedback condition in Experiment 3 (and in subsequent experiments) in order to maximize the statistical power of our analyses. Our dependent measures for Experiment 3 were the same as Experiment 2: sensitivity and bias in the perception of real versus fake smiles. In line with the results of Experiment 2, we expected participants in the status hierarchy condition (compared with the neutral control condition) to display biased perceptions of smiles as being disingenuous, rather than genuine.

Pilot Test

In Experiments 3-5, we manipulate whether participants are atop status-based hierarchy (Experiments 3-5), a power-based hierarchy (Experiments 4 and 5), or a neutral control hierarchy (Experiments 3 and 5) under the assertion that participants atop hierarchies marked by status experience greater social approval concerns than participants atop neutral or power-based hierarchies. To confirm that the hierarchy manipulations alter participants’ social approval concerns, we conducted a pilot study. Full methods and results for this study are described in detail in the supplemental online materials. Online participants (N=284) read one of three
leadership scenarios and then indicated how concerned they would be about losing their
subordinates’ social approval. Participants in the status condition read a passage that highlighted
the status that came with their managerial role. Participants in the power condition read a passage
that highlighted the power afforded by their managerial role. Participants in the control condition
did not receive additional information describing their role beyond that it was a managerial
position. Participants in the status hierarchy condition reported experiencing greater concerns
about social approval than did participants in the power hierarchy condition, $\beta=-.17$, $t=2.42$,
$p=.02$, $sr=-.14$. Participants in the status hierarchy condition also reported greater social approval
concerns than did participants in the neutral control condition, $\beta=-.18$, $t=-2.58$, $p=.01$, $sr=-.15$.
The power condition did not differ from the neutral control condition, $\beta=0.01$, $t=0.19$, $p=.85$,
$sr=.01$. Thus, the pilot test provided evidence for the efficacy of the manipulations.

Method

Participants. We recruited undergraduate students to participate in a study on group
performance in exchange for partial course credit. We calculated our target sample size by
setting the power threshold to $.8$ and estimating the effect size ($sr=.17$) based on a recently
published study using the same manipulation (Case et al., 2018). Results of that power analysis
indicated that 266 participants would be needed. Because we anticipated needing to exclude
some data due to suspicion about belonging to a group, we aimed to recruit 274 participants. Of
those 274 participants, data from 13 participants were excluded from analyses a priori because
they voiced suspicion about being part of a group. When data from all participants were included
in analyses, the same pattern of results emerged. Of the remaining 261 participants ($M_{age}=20.1$
years, $SD=.6$ years), 145 were men and 115 were women, and one participant did not disclose
their gender.
**Design and Procedure.** Upon arriving to the laboratory, participants were informed that they would be performing group writing tasks with two other student group members with whom they would be connected via an online person-to-person program. This element of the study design was identical to Experiment 2. After being informed that they had the potential to earn cash prizes based on their group’s writing performance, participants completed both the AMS and RAT, as in Experiments 1 and 2. These measures were retained in the study design because they served as a believable basis on which to assign participants to the role of leader.

Once the participants’ scores (ostensibly) were calculated, all participants were assigned to be the leader (i.e., the “Editor-in-Chief”). This element of the design was identical to Experiment 2. First, a loading screen informed all participants that they had received the highest score on the task (e.g., “PJO has been identified as the top performer…”). Then, the screen advanced, and indicated that roles were being assigned based on everyone’s individual scores and that the participant had been assigned to the role of leader.

The next segment of the experiment differed from Experiment 2 in that participants also received the hierarchy manipulation as part of their assignment to the leadership role. Participants in the status hierarchy condition saw an additional loading screen that indicated that their assignment to the leader role was in the process of being confirmed with each of their group members. After a few moments, participants received confirmation that their group members approved of their assignment to the leadership role. We implemented this feature as part of the status hierarchy condition to underscore the conferred nature of prestige. Once the loading screen had finished assigning group members to their leadership role, participants in the status hierarchy received additional information about their role as Editor-in-Chief. That information underscored
the status and admiration that came with their role; they were told that Editors-in-Chief generally are looked up to and admired by their writers and serve as role models for their team.

Participants in the neutral hierarchy condition did not view an additional screen after learning that they were the top performer in their group. Although they learned that they had received the highest score on the leadership task and were assigned the role of leader, no further information about the basis of the hierarchy was provided.

After being assigned to their leadership role, all participants learned that their group members would be generating two creative writing essays that they, as Editor-in-Chief, would evaluate. This element of the study was nearly identical to Experiment 2 but differed in that all participants expected to provide their criticisms in a face-to-face meeting with their group members. Thus, all participants faced a situation in which their social approval was at stake.

Next, as in Experiment 2, participants completed the smile discrimination task. Once participants finished the smile discrimination task, they completed a demographics questionnaire. Finally, participants were queried for suspicion and were then debriefed.

Results

As in Experiment 2, we calculated $d'$ and $c$ for each participant based on $Z_H$ and $Z_{FA}$. To maintain analytic consistency with Experiments 1 and 2, we analyzed the results of Experiment 3 using regression. Because Experiment 3 had only two conditions (status hierarchy and neutral hierarchy), experimental condition served as the sole predictor in the model.

**Sensitivity.** We observed a marginally significant effect such that leaders atop the status hierarchy were more accurate than were leaders atop the neutral hierarchy, $\beta=.11$, $t=1.75$, $p=.08$, $sr=.11$. In the status hierarchy condition, leaders were unable to distinguish disingenuous smiles from genuine ones, $b=.10$, $SE=.09$, $t=1.12$, $p=.26$ (this test was conducted by re-centering the
status hierarchy condition at zero and testing the intercept). Similarly, leaders in the neutral hierarchy were unable to distinguish disingenuous smiles from genuine smiles, $b=-.12$, $SE=.09$, $t=-1.35$, $p=.18$. Thus, results for accuracy in this experiment were inconclusive.

**Bias.** The type of hierarchy the participants were in affected their response bias, $\beta=.19$, $t=3.14$, $p=.002$, $sr=.19$ (see Figure 4). In line with the results of Experiment 2, leaders atop the status hierarchy were biased toward categorizing smiles as disingenuous, $b=.17$, $SE=.09$, $t=2.02$, $p=.04$. In contrast, leaders atop the neutral hierarchy were biased toward categorizing smiles as genuine, $b=-.21$, $SE=.09$, $t=-2.41$, $p=.02$.

**Discussion of Experiment 3**

Experiment 3 provides the first causal evidence that an orientation toward prestige promotes low-level perceptual biases that favor a negative interpretation of ambiguous social cues. When faced with a leadership responsibility that could undermine their popularity with subordinates, leaders atop status hierarchies tended to interpret others’ smiles – even genuine ones – as being disingenuous. No such tendency emerged among leaders atop neutral hierarchies that did not emphasize prestige; if anything, those leaders were biased toward seeing smiles as genuine. Thus, findings from Experiment 3 corroborate those of Experiment 2, supporting the hypothesis that when their social approval is at risk, highly prestige-oriented leaders over-perceive signs of social disapproval.

**Experiment 4**

Experiment 4 extended the investigation in two key ways. First, building off Experiment 3, which compared leaders atop status hierarchies to leaders atop neutral hierarchies, Experiment 4 tested whether leaders atop status hierarchies also behaved differently than leaders atop hierarchies marked by power. Because the use of power is a central component of dominance,
we reasoned that leaders atop hierarchies marked by power would be primed with an orientation toward dominance. Thus, by including a power hierarchy condition, we were able to test whether the predicted effects were specific to hierarchies that promote a prestige-oriented strategy (versus a dominance-oriented strategy). Second, to further examine how an orientation toward prestige colors the way leaders perceive ambiguous social cues, Experiment 4 examined a new dependent measure: the extent to which leaders’ perceived negative (versus positive) emotion in neutral facial expressions. Based on the results of the first three studies, we predicted that leaders atop hierarchies marked by status would perceive neutral facial expressions as being more negative than would leaders atop hierarchies marked by power.

**Method**

**Participants.** Participants were recruited from Amazon’s Mechanical Turk. As in Experiment 2, we limited participants to those Mechanical Turk workers who had completed 50 or fewer hits. Sample size was determined by performing a power analysis using the observed effect size for participants’ response bias in Experiment 3 and setting the power threshold to .9. Results from the power analysis revealed that, for one predictor, 283 participants would be necessary to achieve our power threshold. Anticipating that we would need to exclude some data from analyses due to high levels of suspicion or inattention to the study procedures (as assessed via an attention check question and survey duration), we recruited 320 participants. Ultimately, 309 participants consented to the use of their data after receiving the online debriefing script. All participants were compensated $1 for their time.

We excluded from analyses five participants who failed the attention check question and ten participants who voiced suspicion about being part of a group. No data were excluded due to completing the study measures too quickly for the cover story to be believable (<15 minutes).
because the one participant who failed the quality check metric also failed the attention check question. All exclusions were determined a priori. Of the remaining 294 participants ($M_{age}=31.4$ years, $SD=9.8$ years), 92 were men, 191 were women, two identified as non-binary, and nine did not disclose their gender.

**Design and Procedure.** As in Experiments 2 and 3, upon beginning the experiment, participants learned that they would be performing group-based writing tasks remotely with two other group members. All participants saw the Digiteyze person-to-person software (described in Experiment 2) to enhance their experience of social visibility during the online experiment. As in prior experiments, participants also indicated their initials and wrote a short greeting to their group members, which was reciprocated with their (ostensible) group members’ greetings. As in the previous experiments, participants then learned that, based on their group’s performance, there was potential for their group to earn additional prizes.

Next, participants completed the RAT and a scale to assess their orientations toward dominance and prestige (Cheng et al., 2013). As in Experiment 3, the main goal of including these initial scales was to establish a basis on which to assign participants to the role of leader. After completing those measures, all participants were placed into the Editor-in-Chief leadership role. As in Experiment 3, participants learned about the nature of their group’s hierarchy at the time they received their assignment to the leadership role. The type of hierarchy was manipulated such that participants were either leaders atop a status hierarchy or a power hierarchy. The status hierarchy condition was identical to that used in Experiment 3. The power hierarchy condition differed from the status hierarchy condition in that participants atop the power hierarchy received instructions that emphasized the power, authority, and control they had over their writers. Specifically, they learned that they would have the opportunity to evaluate
their subordinate group members’ writing and would be able to decide how the bonus money their group earned would be allocated to themselves and to each of their subordinates.

Following the hierarchy manipulation, participants read instructions about the emotional valence task they would perform while their group members wrote the first draft of their creative essays. This task was presented as an assessment of emotional intelligence and served as the dependent measure. Participants in both conditions were told that they would view a series of photographs, one at a time, and that each photograph was of a person asked to make a neutral facial expression that concealed his or her current emotion (see Deska, Lloyd, & Hugenberg, 2018 and Maner et al., 2005 for similar methods). Participants were told that each person was photographed immediately after reading a story and that some of those stories were designed to evoke a strong emotion (e.g., happiness, sadness, joy, anger, etc.). The point of the exercise, participants read, was to see whether participants could accurately determine how positive or negative the person was feeling at the time the photo was taken, based on their facial expression.

Stimuli for the emotional valence task were from the Chicago Face Database. All 24 faces (12 male, 12 female; all Caucasian) were previously rated as neutral (i.e., very low in expression of anger, sadness, fear, surprise, and happiness). Before beginning the task, participants completed practice trials. Then, participants saw each face for one second before it disappeared. Before each face appeared, participants received a cue to pay attention so that they would not miss the image. Immediately following each face, participants indicated whether the person in the photo was feeling a negative or a positive emotion (i.e., a forced-choice response). They also indicated how strongly the depicted person was feeling that negative or positive emotion via a moving a slider along a continuous scale (-3 = strongly negative, 0 = neutral, +3 =
strongly positive). Finally, participants indicated whether they were unable to see the face (e.g., in the case of computer malfunction).

After completing the task, participants provided demographic information and were queried for suspicion. Participants then read the debriefing script and received compensation.

Results

To maintain analytic consistency with the previous experiments, we analyzed data from Experiment 4 using regression. Because Experiment 4 only had two conditions (status hierarchy and power hierarchy), experimental condition served as the sole predictor in the model.

*Categorization of Emotional Valence.* To create the dependent measure for the dichotomous questions in which participants indicated whether the targets were feeling a positive or a negative emotion, we tallied the number of faces participants indicated were concealing a negative emotion. In line with our predictions, we observed a significant effect of experimental condition ($\beta=.23, t=4.09, p<.001, sr=.23$) such that leaders atop the status hierarchy categorized more of the neutral faces as concealing negative (versus positive) emotions than did leaders atop the power hierarchy (see Figure 5). We also tested whether participants categorized others’ emotions as negative at a level greater than chance. This test was conducted by re-centering the dependent variable at the 50% mark (a score of 12) and testing the intercept within each condition. Leaders atop status hierarchies categorized the faces as concealing negative emotion at a level that significantly exceeded chance, $b=1.72, SE=.25, t=6.90, p<.001$. Leaders atop hierarchies marked by power, however, did not categorize faces in a manner that differed from chance, $b=.26, SE=.26, t=1.01, p=.31$.

*Perceived Magnitude of Emotional Valence.* We then assessed participants’ perceptions of how strongly the targets were feeling positive or negative emotions. On this emotional valence
metric, scores closer to zero indicated that participants thought the people generally were feeling neutral emotions; higher values represent stronger emotional positivity and negative values represent stronger emotional negativity. In line with our predictions, we observed a significant effect of experimental condition ($\beta=-.23$, $t=-4.08$, $p<.001$, $sr=.23$) such that leaders atop status hierarchies perceived the neutral faces as concealing stronger negative emotions than did leaders atop the power hierarchy (see Figure 6). Leaders atop hierarchies marked by status rated the emotions as significantly more negative than the neutral midpoint of the scale, $b=-.21$, $SE=.03$, $t=-6.93$, $p<.001$. Leaders atop hierarchies marked by power, however, did not differ from the neutral point when rating the strength of others’ emotions, $b=-.03$, $SE=.03$, $t=-1.05$, $p=.29$.

**Discussion of Experiment 4**

Experiment 4 provides additional evidence that an orientation toward prestige causes leaders to over-perceive potential signs of social disapproval. Leaders whose hierarchy was status-based and thus predicated on prestige (versus power), tended to categorize a greater number of neutral facial expressions as masking negative emotion, and their tendency to do so was significantly greater than chance. Compared to leaders atop power hierarchies, leaders whose hierarchy was based on prestige also perceived that other people were concealing stronger negative emotions. Indeed, leaders atop status hierarchies perceived significantly stronger negativity than the neutral point of the scale, meaning they did not merely perceive others’ emotions as less positive than did leaders atop power hierarchies, but saw them as markedly negative. We observed no evidence that leaders atop power hierarchies were biased in their perception of neutral targets; they merely saw the targets as expressing neutral emotions.
Experiment 5

Experiment 5 extended the investigation in several ways. First, Experiment 5 simultaneously included all three conditions tested across Experiments 3 and 4. Thus, in addition to comparing participants atop the status hierarchy to those atop a power hierarchy (as in Experiment 3) or those in a neutral hierarchy (as in Experiment 4), the design of Experiment 5 afforded the ability to perform two additional analyses. One of those analyses compared participants atop the status hierarchy to an aggregated control group – a comparison group comprised of both the power hierarchy and the neutral hierarchy conditions.

A second analysis afforded by the three-condition design of Experiment 5 tested whether participants atop a power hierarchy differed from participants in the control hierarchy. This disconfirmatory test was important for demonstrating the specificity of the previously observed effects. It allowed us examine whether participants focused on a dominance approach (i.e., participants in the power hierarchy) displayed greater vigilance than did those in the neutral hierarchy control condition. If participants in the power hierarchy attended longer to social cues than did participants in the neutral hierarchy, such evidence would run counter to our underlying theory, which posits that hypervigilance to social cues is a key component of prestige. If, however, participants in the power hierarchy were no more socially vigilant than were participants in the neutral hierarchy, such results would be in line with the broader theory guiding this investigation.

A third strength of Experiment 5 is that it served to replicate findings observed in Experiment 1 with a stronger, experimental method and a large sample size. We manipulated rather than measured participants’ orientation toward prestige, thus providing causal evidence for
the role prestige plays in biased attention to social cues. In addition, we amassed a larger sample than we had in Experiment 1, thus ensuring adequate statistical power.

As previously mentioned, the dependent measure of Experiment 5 was identical to the dependent measure in Experiment 1: participants’ attention to social targets. The task used to capture this dependent measure assessed attential bias toward faces portraying varying facial expressions (angry, fearful, happy, or neutral), as well as toward neutral stimuli. In line with theory and the results of the prior studies, we predicted that leaders atop hierarchies marked by status would attend longer to social targets than would leaders atop hierarchies marked by power and leaders in the neutral hierarchy control condition.

**Method**

**Participants.** Participants for Experiment 5 were students and university staff members who were a part of a paid subject pool on campus. The sample size for Experiment 5 was determined with the goal of maximizing statistical power. We aimed for over 300 participants (100 per condition). Our stopping rule was to end data collection at the end of the semester or when we reached our goal of 300 participants (whichever came later). Ultimately, 318 participants completed the experiment within the semester. Participants were compensated $10 for their time.

In line with prior work using the same dependent measure (Maner & Miller, 2014), to include Experiment 1 of the current investigation, we excluded data from nine participants for having an unusually high mean reaction time (3 SD above the sample mean). Although two individuals failed a suspicion probe (i.e., voiced substantial suspicion about being part of a group), those participants were already excluded from analyses for unusually high mean reaction times. All exclusions were determined before conducting analyses. Moreover, when data from all
participants were included in our analyses, the observed effect sizes were stronger, not weaker. Of the remaining 309 participants ($M_{age} = 24.72$ years, $SD_{age} = 11.29$ years), 96 were men, 210 were women, two individuals identified as “other,” and one person chose to not disclose their gender.

**Design and Procedure.** Upon arriving to the laboratory, participants learned that they would be performing group tasks with other participants purportedly in different rooms in the lab. Experimenters told all participants that, as a part of a marketing study, their group would be generating cereal box labels for a new cereal, “Cave Crave.” Moreover, participants learned that they would be assigned a role within the group and would perform tasks reflective of their role before they met with the other group members. These elements of the study were identical to those in Experiment 1.

All participants then completed a demographics questionnaire, the RAT, and a scale to assess their orientations toward dominance and prestige (Cheng et al., 2010). As in Experiments 3 and 4, the goal of including these initial scales was to establish a basis on which to assign participants to the role of leader.

Once the participants’ scores (ostensibly) were calculated, all participants learned that they had been assigned to be the group leader (the “Creative Director”), as in Experiment 1. The next segment of the experiment differed from Experiment 1 and more closely resembled Experiments 3 and 4. We manipulated hierarchy type such that participants were leaders atop a status hierarchy, a power hierarchy, or a neutral hierarchy. The descriptions of each type of hierarchy were identical to those used in the previous experiments.

Once assigned to their leadership role, all participants learned that their group members would be generating a cereal box label that they would evaluate. This element of the study was
nearly identical to Experiment 1 but differed in that all participants expected to provide their criticism in a face-to-face meeting with each of their group members. Thus, all participants faced a situation in which their social approval was at stake.

Experimenters then told participants that, while the rest of their team completed their first draft of the cereal box label, the leader would complete another assessment (the dot probe task) which would test their ability to respond quickly and accurately to cognitive stimuli. This task was identical to the dot probe task administered in Experiment 1 and served as the dependent measure for the study. Once participants completed the dot probe task, they answered questions that probed for suspicion about the deceptive elements in the study procedure. Finally, once all measures were completed, participants then were paid for their time and debriefed.

**Results**

As in Experiment 1, the reaction time (ms) of the participants’ correct responses on the attentional shift trials served as the dependent variable. We processed the data in the same way as Experiment 1; all latencies greater than three standard deviations above or below each participant’s mean latency were excluded from analyses (see Maner & Miller, 2014, Maner et al., 2009). Because individual latencies under 100ms indicate that the participant responded before processing the stimulus, they also were excluded from analyses.

Taking the same approach as Experiment 1, we used multiple regression to assess leaders’ attentional adhesion to social stimuli. Because the reaction time with which participants responded on attentional shift trials for the nonsocial stimuli represented participants’ baseline reaction time, it served as a control variable in all of our reported analyses (see Zhang et al., 2017). Those results can be found in Table 4. As in Experiment 1, we also conducted secondary analyses to examine leaders’ attentional bias toward faces displaying negative, neutral, and
positive social cues. These secondary analyses allowed us to determine whether prestige may have been associated especially with attention to negative facial expressions communicating disapproval or discontent (i.e., anger or fear). Results broken down by facial expression can be found in Table 5.

Because Experiment 5 had three conditions (status hierarchy, power hierarchy, and a neutral hierarchy) we created dummy-coded condition variables that allowed us to make four key comparisons. The first dummy variable compared the status hierarchy to the power hierarchy. The second dummy variable compared the status hierarchy to the control hierarchy. Those two comparisons, reported below, allowed us to replicate (conceptually) the patterns observed in Experiments 3 and 4. The third dummy variable compared the status hierarchy to an aggregated control group consisting of both the power hierarchy and the neutral hierarchy. The fourth and final dummy variable directly compared the power hierarchy to the neutral hierarchy control condition. That comparison served to demonstrate the specificity of the hypothesized effects to the status condition.

**Primary Analyses.** In the first regression model, we compared the status hierarchy to the power hierarchy and the status hierarchy to the control hierarchy. We predicted that leaders atop a status hierarchy would attend longer to social targets than would participants atop a power hierarchy. In line with that hypothesis, leaders atop the status hierarchy attended significantly longer to social stimuli than did leaders atop the power hierarchy, \( \beta = -0.05, \, t = -2.28, \, p = .02, \, sr = -0.04 \). We also predicted that leaders atop a status hierarchy would attend longer to social targets than would leaders atop the neutral hierarchy. We found marginal support for this hypothesis. Compared to the control hierarchy, participants in the status hierarchy attended marginally longer to social stimuli, \( \beta = -0.04, \, t = -1.81, \, p = .07, \, sr = -0.03 \).
In a second regression model, we compared the status hierarchy to an aggregated control group consisting of both the power hierarchy and the neutral hierarchy. This test allowed us to determine the overall strength of the status hierarchy manipulation. Results from that analysis revealed that, in line with our expectations, participants in the status hierarchy attended to social stimuli significantly longer than did participants in the aggregated control group, $\beta= -.04$, $t=-2.35$, $p=.02$, $sr=-.04$. We also directly compared the power hierarchy to the neutral hierarchy control condition. We ran this analysis to verify that the observed effects were unique to the status hierarchy; we did not expect participants atop the power hierarchy to differ from participants in the neutral hierarchy control condition. Results confirmed this prediction. We observed no difference between the power hierarchy and the neutral hierarchy, $\beta=.01$, $t=.48$, $p=.63$, $sr=.01$.

**Secondary Analyses.** As in Experiment 1, we examined attentional bias toward targets displaying negative, positive, and neutral facial expressions separately. See Table 5 for results. Before conducting analyses for the faces displaying negative emotions, we first aggregated reaction times for targets exhibiting angry and fearful expressions. Participants’ attention to angry ($M_{anger}=607.0$, $SD=130.2$) and fearful ($M_{fear}=610.4$, $SD=131.0$) facial expressions were significantly correlated ($r=.87$, $p<.001$). The aggregated reaction time measure for negative social cues was highly reliable ($M_{neg}=608.7$, $SD=126.2$, $a=.92$). Nevertheless, when analyzed separately, different patterns emerged for the fearful targets and the angry targets. As such, in addition to reporting results for the aggregated reaction time measure, we also report results for each emotion, individually.

**Negative Expressions.** We first compared the status condition to the power condition. Results revealed that leaders atop the status hierarchy attended longer to targets displaying negative facial expressions than did leaders atop the power hierarchy. However, this pattern was
driven primarily by participants in the status hierarchy (versus the power hierarchy) fixating on faces displaying fearful expressions, $\beta=-.06$, $t=-2.33$, $p=.02$, $sr=-.05$. Participants in the status hierarchy (versus the power hierarchy) did not fixate on faces displaying anger, $\beta=-.03$, $t=-1.12$, $p=.26$, $sr=-.03$. We then compared the status hierarchy to the neutral hierarchy control condition. Participants in the status condition attended longer to negative facial expressions than did participants in the neutral hierarchy. Again, participants in the status hierarchy (versus the power hierarchy) fixated longer on faces displaying fearful expressions ($\beta=-.05$, $t=-1.94$, $p=.05$, $sr=-.04$), but not angry expressions, $\beta<.01$, $t=.09$, $p=.93$, $sr<.01$.

We then compared the status condition to the aggregated control group consisting of the power hierarchy and the neutral control hierarchy. We observed a marginally significant effect such that participants in the status hierarchy attended somewhat longer to targets displaying negative facial expressions than did participants in the aggregated control group. Again, this effect was driven primarily by participants in the status hierarchy (versus the aggregated control group) fixating on faces displaying fearful expressions, $\beta=-.06$, $t=-2.46$, $p=.02$, $sr=-.06$. Participants in the status hierarchy did not differ from those in the aggregated control group in their attention to angry faces, $\beta=-.01$, $t=-.59$, $p=.55$, $sr=-.01$. Next, we examined whether participants in the power hierarchy differed from participants in the neutral hierarchy control condition. Results revealed no significant difference between the power hierarchy and the neutral hierarchy with regard to how long participants attended to targets displaying negative facial expressions. Participants atop the power hierarchy did not differ from those atop the neutral hierarchy in their attention to fearful faces ($\beta=.01$, $t=.40$, $p=.69$, $sr=.01$) or angry faces ($\beta=.03$, $t=1.22$, $p=.22$, $sr=.03$).
Positive Expressions. We then examined participants’ attention to positive facial expressions (i.e., happy expressions, $M_{\text{happy}}=595.9$, $SD=124.0$). We observed no significant effects. See Table 5.

Neutral Expressions. Finally, we examined participants’ attention to targets displaying neutral facial expressions ($M_{\text{neutral}}=610.3$, $SD=133.9$). Analyses revealed no significant effects. See Table 5.

Discussion of Experiment 5

Experiment 5 provides causal evidence linking the psychology of prestige to vigilant attention to social cues. When faced with a leadership responsibility that could undermine their level of social approval, leaders atop status-based hierarchies were vigilant toward other people’s faces. This effect was specific to the status hierarchies, and did not generalize to power hierarchies (or neutral hierarchies). This is consistent with the hypothesis that vigilance to social cues is a feature specific to prestige. Secondary analyses suggested that findings were driven primarily by attention to negative emotional expressions, and especially fear. Thus, findings from Experiment 5 corroborate those of Experiment 1 and provide further evidence that, in response to situations that jeopardize their social approval, leaders focused on prestige exhibit attentional attunements that could help them quickly identify discontented people.

General Discussion

How do leaders perceive others? Intuition might suggest that leaders would perceive others in a self-serving manner that reflects positively on themselves. Leaders often are admired and respected and, as such, they might translate those positive social sentiments directly into social perceptions, viewing others as expressing high levels of admiration, respect, and social approval. Moreover, leaders often have power, and power tends to make people happy (Keltner,
Gruenfeld, & Anderson, 2003) and optimistic (Anderson & Galinsky, 2006). That happiness and optimism, in turn, could cause leaders to see others as also experiencing happiness or other positive emotions (Forgas & Bower, 1987).

We predicted and found just the opposite, however. Leaders in the current studies were highly vigilant to signs of social discontent, and saw in others’ faces exaggerated negative emotions – not happiness or social approval. Applying the dual strategies theory of social hierarchy allowed us to identify when, why, and in whom those negatively biased social perceptions occur. These studies suggest that, when their relationships with subordinates were at stake, leaders adopting a prestige-oriented leadership strategy perceived others as expressing social disapproval because such perceptions could ultimately promote behaviors aimed at managing and enhancing their relationships with other group members. Thus, these studies provide new insight into the basic cognition of prestige and, in doing so, advance the literatures on social hierarchy, leadership, and social perception.

The Precautious Nature of Prestige

When the possibility of negative social evaluation loomed large, prestige-oriented leaders were highly vigilant to signs of social disapproval and discontent. Moreover, that vigilance was observed at basic levels of social cognition. Prestige-oriented leaders attended preferentially to negative (but not positive) facial expressions at an early stage of visual perception (Experiments 1 and 5), were biased toward seeing smiles as disingenuous (Experiments 2 and 3), and perceived neutral facial expressions as disguising negative, rather than positive, emotions (Experiment 4).

These biases in attention and face perception are consistent with the logic of error management theory (Haselton & Buss, 2000; Haselton & Nettle, 2006). Erroneously perceiving
others as communicating social approval would be a very costly error, indeed, for prestige-oriented leaders who rely heavily on the support and endorsement of group members. In contrast, although perceiving others as communicating less approval than they actually feel might be unpleasant, it presumably would cause prestige-oriented leaders to take actions aimed at increasing their level of support. By quickly identifying or even over-perceiving signs of discontent, leaders are equipped to respond with relationship-enhancing behaviors designed to manage and improve their social relationships. Thus, the biased social perceptions observed in the current studies are functionally consistent with a desire to manage and enhance one’s relationships with others.

We saw little evidence in the current studies for greater person perception accuracy among prestige-oriented leaders. Although prestige-oriented leaders in Study 3 were marginally more accurate in differentiating real from fake smiles, that effect was not observed in Study 2, which relied on the same dependent variable. Similarly, prestige-oriented leaders were not more accurate in perceiving neutral facial expressions in Study 4. Thus, evidence from these studies provides support for hypotheses pertaining to biases, rather than accuracy, in social perceptions.

Several elements of the current studies buttress the conclusion that the social perception biases were caused by a desire among leaders to enhance their relationships with others. First, those biases were observed only among prestige-oriented leaders, not dominance-oriented leaders. The prestige strategy, unlike the dominance strategy, may involve managing relationships with other group members. Prestige is predicated on receiving freely conferred deference, so prestige-oriented leaders are highly motivated to ensure high levels of social approval. The dominance strategy, in contrast, is enacted through wielding power and using coercion, and so it relies less on social approval. Thus, the fact that prestige-oriented, but not
dominance-oriented, leaders perceived others as expressing discontent is consistent with the hypothesis that such perceptions are aimed at ensuring a high level of social approval.

Second, prestige-oriented leaders displayed hypervigilance to social disapproval only when their level of approval was at stake. When negative feedback was attributable to the leader, their relationships with subordinates could be threatened. Under those circumstances, prestige-oriented leaders attended carefully to and over-perceived signs of social discontent. When negative feedback was to be delivered anonymously, however, leaders did not need to worry as much about their relationships with subordinates. Under those circumstances, we saw no evidence of biased social perceptions. These findings provide evidence for the psychological mechanism underlying the social perception biases observed in these studies. Findings suggest that such biases are driven by concerns about maintaining the quality of one’s relationships with other group members. Indeed, such concerns may well prove to be a hallmark of the psychology of prestige.

Third, biased perceptions of social disapproval were linked with individual differences in prestige orientation and experimental manipulations of prestige. Both people who were dispositionally high in their orientation toward prestige, and those for whom an orientation toward prestige was experimentally manipulated, attended to social cues and viewed others as expressing negative emotions and social disapproval. That these different methods converged on a common set of findings adds to our confidence that biased perceptions of social disapproval reflect a fundamental aspect of the psychology of prestige. The use of experimental manipulations also helps bridge the literature on dominance and prestige with the social psychological literature on power and status. Whereas dominance and prestige refer to the behavioral strategies people use to navigate social hierarchies (e.g., Cheng et al., 2013; Henrich
& Gil-White, 2001; Maner & Case, 2016), power and status refer to structural elements of social hierarchies (e.g., Fast et al., 2012; Magee & Galinsky, 2008). Yet, as the current studies illustrate, the two literatures can contribute to one another in important ways. Because particular strategies operate more effectively within certain types of hierarchies, for example, people may alter their strategies to fit with the groups in which they reside. Questions pertaining to the fit between leadership strategy and type of group hierarchy could be fruitfully explored in future research, and the current investigation provides a useful springboard for undertaking such work.

**Limitations and Opportunities for Further Research**

Limitations of the current work provide additional opportunities for future research. For example, the theoretical framework guiding the current research is based in part on the presumption that biased perceptions of social disapproval might promote behaviors aimed at shoring up relationships with dissatisfied group members. However, the current studies fell short of directly linking the cognitive biases observed in these studies to downstream social behaviors. Future research would benefit from examining more directly how biased perceptions of social disapproval might translate into socially strategic behaviors and leadership decisions. Leaders who over-perceive disapproval are well positioned to shore up their relationships with discontented group members, such as by engaging in reconciliatory behavior. However, the tendency to over-perceive disapproval might also come with a cost. For instance, the tendency to over-perceive disapproval might cause leaders to doubt themselves unnecessarily, to second-guess their decisions, or to avoid constructive conflict. Future research is needed to determine whether the low-level cognitive biases observed in the current investigation serve as a boon or a burden for leaders and the groups they lead.
Another set of limitations pertains to the specific social situations used in the current research. First, we examined the responses only of people holding formal positions of leadership. Second, we only examined responses to situations in which those leaders anticipated giving negative feedback. Third, we only examined situations in which that feedback was directed toward subordinates. Each of these factors limits the generalizations one can draw from these studies. We consider each of these factors in turn.

Although the current studies focused on formal leadership positions, the psychology of prestige is understood to have evolved during a time in human evolutionary history when leaders held no such positions (Henrich & Gil-White, 2001; Van Vugt & Smith, 2019). One advantage of focusing on formally appointed leaders is that it allowed us to shed light on leadership contexts that are both common in and important to modern day groups and organizations, which typically rely on formal positions of leadership. Our findings thus have direct bearing on situations commonly faced in real-world organizational settings. Moreover, previous findings suggest that people in such positions tend to be less attentive – not more – to the feelings of their subordinates (Galinsky, Magee, Inesi, & Gruenfeld, 2006; Gruenfeld, Inesi, Magee, & Galinsky, 2008). Yet, our theoretical framework led us to predict just the opposite for prestige-oriented leaders. Thus, our focus on formally held leadership positions yielded conservative tests of our hypotheses. Nevertheless, we do not know the extent to which the patterns of cognition observed in these studies generalize to prestige-oriented people who do not currently hold formal leadership positions.

The current studies were also limited to situations in which participants expected to give negative feedback. We chose to focus on these situations for two reasons. First, because providing others with negative feedback can be uncomfortable for the feedback giver (Ashford,
Blatt, & VandeWalle, 2003; Larson, 1984), these experiments involved a strong context in which to test our hypotheses. Second, understanding how leaders respond to situations in which they must deliver negative feedback has valuable implications for group and organizational settings. Although negative feedback plays a critical role for improving performance and achieving goals by generating diagnostic information (e.g., Ammons, 1956, Ashford & Tsui, 1991, Payne & Hauty, 1955), people often avoid giving negative feedback (Ilgen & Knowlton, 1980). Because the current research uncovers key factors in both the individual (i.e., prestige orientation) and the situational contexts (i.e., public feedback-giving settings, status-based hierarchies) that underlie vigilant social cognitive responses to feedback-giving situations, findings elucidate the conditions under which leaders might be particularly likely to avoid giving much-needed critical feedback to their subordinates. The extent to which the patterns of cognition observed here rely on this context, however, is unknown and our focus on contexts involving negative feedback circumscribe the conclusions we can draw from these studies.

Other types of leadership situations could produce different patterns of social perception. For example, an orientation toward prestige might be less likely to produce biased perceptions of social disapproval in situations consisting of more good-natured interactions with subordinates, such as when delivering positive feedback. Moreover, the current studies do not rule out the possibility that, in some cases, prestige-oriented leaders might display heightened vigilance to signs of approval and admiration. Such vigilance might occur especially in cases in which leaders are confident about their expertise and abilities, although such a hypothesis needs to be evaluated with additional research. Indeed, future studies would benefit from examining a range of leadership situations and the implications different situations have for how leaders perceive group members.
The current set of studies focused on situations in which a leader anticipated providing feedback to a subordinate (i.e., downward feedback). We did not examine situations in which a person anticipated providing feedback to a peer (i.e., peer-to-peer feedback) or to someone higher up in the hierarchy (i.e., upward feedback). We chose to focus on leader-to-subordinate feedback, in part, because negative feedback most commonly flows down the hierarchy such that those higher up in the hierarchy provide negative feedback to those below them in the hierarchy (Ashford, De Stobbeleir, & Nujella, 2016). However, research suggests that, for some individuals, the social status of the target may affect their accuracy in face processing (Ratcliff, Bernstein, Cundiff, & Vescio, 2012; Ratcliff, Hugenberg, Shriver, & Bernstein, 2011). Thus, future research is needed to determine whether the patterns observed in the current paper would hold in contexts in which a person anticipates providing feedback to targets of equal (i.e., peer-to-peer feedback) or higher (i.e., upward feedback) status.

An additional limitation is that we examined only newly formed groups involving strangers. Thus, our data cannot speak to how the current findings might generalize to extant groups involving long-term relationships. It is possible that, in such groups, familiarity improves people’s social-perceptual accuracy (Nater & Zell, 2015). Future work would benefit from examining the possibility that familiarity or other aspects of the social relationship might moderate the way leaders perceive others. In a related vein, the targets of social perception in these studies reflected neutral third parties (i.e., not actual group members). We intentionally chose third parties to provide clear evaluation of “pure” social perception biases that were unconstrained by the immediate social context. However, it is important to assess how the biases we observed might translate into real group interactions, and it remains for future research to investigate how the current findings generalize to perceptions of extant group members.
Finally, the current studies investigated only a few candidate cognitive processes, specifically, leaders’ attention to and encoding of facial expressions. A variety of other processes could play an important role in leadership behavior. As one example, prestige-oriented leaders might display enhanced memory for signs of social disapproval or approval. They might recall specific memories more vividly and more often than others, and those lingering memories might guide their behavior long after the remembered interaction took place. For instance, perhaps prestige-oriented leaders are especially likely to recall instances in which they experienced embarrassment or shame, and those lingering memories could cause them to make decisions aimed at enhancing their rapport with their group over time. Future work would benefit from examining such possibilities directly.

Conclusion

The current findings offer new insight into basic cognitive mechanisms underlying the psychology of prestige. They also serve as a launching pad for further research into the processes through which people acquire and maintain the esteem of others. Indeed, this research provides the first rigorous empirical investigation into lower order cognitive mechanisms that guide leaders in their pursuit of prestige. In response to situations that jeopardize a leader’s social approval, prestige-oriented leaders are vigilant to signs of social disapproval and over-perceive discontent in the emotional expressions of others. As such, these studies have important implications for understanding leader-follower dynamics in social groups.

More broadly, the current research provides important evidence illustrating the value of dual strategies theory as a framework for understanding human social hierarchies. Both dominance and prestige serve as viable routes to attaining high social rank, though they differ from one another in profoundly important ways. By shedding new light on the psychology of
prestige, this research advances the literatures on social hierarchy, leadership, and person perception. In so doing, these studies help illuminate the psychological processes people use to navigate social hierarchies – one of life’s most central and ubiquitous domains.
References


Footnotes

1. We deemed it necessary to incorporate elements of deception in the design of this experiment and the following experiments because participants in these studies were tasked with providing critical, face-to-face feedback to subordinates. If participants did not believe that they were interacting with other people on a task for which their behaviors had real social consequences, they would not have experienced the key psychological mechanism (i.e., social approval threat) under investigation.

2. When the hit rate or false alarm rate equals zero or one, the corresponding z-score is $\infty$ or $-\infty$, respectfully. These extreme values can arise when participants adopt extremely liberal or conservative categorization criteria, such as when the costs associated with false alarms are severe. One solution to this problem is to take the loglinear approach (Stanislaw & Todorov, 1999), the method we employed in Experiments 2 and 3.

3. We incorporated this scale into Experiments 4 and 5 to serve as a basis on which to assign participants to the role of leader. This scale, like the AMS, is used to assess participants’ orientations toward dominance and prestige. Participants respond to 17 scale items by indicating the extent to which each statement is representative of themselves. Prestige statements include, “my unique talents and abilities are recognized by others,” and “others seek my advice on a variety of matters”. Items to assess dominance include, “I am willing to use aggressive tactics to get my way” and “I try to control others rather than permit them to control me”.
Table 1. Experiment 1: Attentional Adhesion to Social Stimuli

<table>
<thead>
<tr>
<th>Outcome Variable</th>
<th>Attentional Adhesion to Social Stimuli</th>
<th>( \beta )</th>
<th>( t )</th>
<th>( p )</th>
<th>( sr )</th>
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<tbody>
<tr>
<td>Baseline Attention</td>
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<td>.91</td>
<td>21.88</td>
<td>&lt;.001</td>
<td>.89</td>
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<td>Condition</td>
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<td>1.38</td>
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<td>.06</td>
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<td>.09</td>
<td>.93</td>
<td>.004</td>
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<tr>
<td>Prestige Orientation</td>
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<td>.04</td>
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<tr>
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<td>-.07</td>
</tr>
<tr>
<td>Condition X Prestige</td>
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<td>.03</td>
<td>.09</td>
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<tr>
<td>Dominance effect within Private</td>
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<td>.05</td>
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<tr>
<td>Dominance effect within Public</td>
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<td>-.06</td>
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<tr>
<td>Prestige effect within Private</td>
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<td>-.92</td>
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<td>Prestige effect within Public</td>
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<td>.18</td>
<td>2.37</td>
<td>.02</td>
<td>.10</td>
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</tbody>
</table>

Note. The top panel presents primary results. The bottom panel presents tests of simple effects.
Table 2. Experiment 1: Attentional Adhesion to Facial Expressions

<table>
<thead>
<tr>
<th>Outcome Variable</th>
<th>Attentional Adhesion</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Negative Expressions</td>
</tr>
<tr>
<td></td>
<td>β  t     p    sr</td>
</tr>
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<td>Condition X Prestige</td>
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<td>Dominance effect within Public</td>
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<tr>
<td>Prestige effect with Private</td>
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<tr>
<td>Prestige effect within Public</td>
<td>.22 2.34 .02 .12</td>
</tr>
</tbody>
</table>

Note. The top panel presents primary results. The bottom panel presents tests of simple effects.
Table 3. Experiment 2. Accuracy and Bias in Judgements of Emotional Expressions

| Outcome Variable         | Accuracy: Correct Categorization of Non-Duchenne Smiles | | | | | | Response Bias: Tendency to Categorize Smiles as Disingenuous | | | |
|--------------------------|--------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|
|                          | $\beta$ | $t$ | $p$ | $sr$ | $\beta$ | $t$ | $p$ | $sr$ | $\beta$ | $t$ | $p$ | $sr$ |
| Condition                | .04     | .58 | .57 | .04 | .10     | 1.46 | .15 | .10 | .07     | -1.07 | .83 | .41 | .06 |
| Dominance Orientation    | .06     | .68 | .50 | .05 | -.07    | -1.83 | .41 | .06 | .07     | .80   | .42 | .05 |
| Prestige Orientation     | .001    | .01 | .99 | <.001 | .07     | .80   | .42 | .05 | .07     | .80   | .42 | .05 |
| Condition X Dominance    | .06     | .74 | .46 | .05 | .03     | .36   | .72 | .02 | .18     | 2.13  | .04 | .14 |
| Condition X Prestige     | -.20    | -2.27 | .02 | -.15 | .18     | 2.13  | .04 | .14 | .18     | 2.13  | .04 | .14 |
| Dominance effect within Private | -.01   | -0.04 | .97 | -.03 | -.10    | -0.86 | .39 | -.06 |
| Dominance effect within Public | .12     | .98 | .33 | .07 | -.04    | -0.33 | .75 | -.02 |
| Prestige effect within Private | .20     | 1.57 | .12 | .11 | -.11    | -0.91 | .36 | -.06 |
| Prestige effect within Public | -.20    | -1.64 | .10 | -.11 | .25     | 2.13  | .03 | .14 |

Note. The top panel presents primary results. The bottom panel presents tests of simple effects.
Table 4. Experiment 5: Attentional Adhesion to Social Stimuli

<table>
<thead>
<tr>
<th>Outcome Variable</th>
<th>Attentional Adhesion to Social Stimuli</th>
<th>β</th>
<th>t</th>
<th>p</th>
<th>sr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline Attention</td>
<td></td>
<td>.95</td>
<td>53.7</td>
<td>&lt;.001</td>
<td>.95</td>
</tr>
<tr>
<td>Status Hierarchy vs Power Hierarchy</td>
<td></td>
<td>-.05</td>
<td>-2.28</td>
<td>.02</td>
<td>-.04</td>
</tr>
<tr>
<td>Status Hierarchy vs Neutral Hierarchy</td>
<td></td>
<td>-.04</td>
<td>-1.81</td>
<td>.07</td>
<td>-.03</td>
</tr>
<tr>
<td>Baseline Attention</td>
<td></td>
<td>.95</td>
<td>53.7</td>
<td>&lt;.001</td>
<td>.95</td>
</tr>
<tr>
<td>Status Hierarchy vs Aggregated Control</td>
<td></td>
<td>-.04</td>
<td>-2.35</td>
<td>.02</td>
<td>-.04</td>
</tr>
<tr>
<td>Neutral Hierarchy vs Power Hierarchy</td>
<td></td>
<td>-.01</td>
<td>-.48</td>
<td>.63</td>
<td>-.01</td>
</tr>
</tbody>
</table>

Note. Results above and below the line represent separate models, each testing a different set of comparisons.
Table 5. Experiment 5: Attentional Adhesion to Emotional Expressions

<table>
<thead>
<tr>
<th>Outcome Variable</th>
<th>Attentional Adhesion</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative Expressions</td>
<td>Neutral Expressions</td>
<td>Positive Expressions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>β        t    p      sr</td>
<td>β        t    p      sr</td>
<td>β        t    p      sr</td>
<td></td>
</tr>
<tr>
<td>Baseline Attention</td>
<td>.95 .50 76 &lt;.001</td>
<td>.95 .30 13 &lt;.001</td>
<td>.87 .35 37 &lt;.001</td>
<td></td>
</tr>
<tr>
<td>Status Hierarchy vs Power Hierarchy</td>
<td>-.05 -.22 00 .03 -.04 -1.28 .20 -.04</td>
<td>.03 -1.13 .26 -.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Status Hierarchy vs Neutral Hierarchy</td>
<td>-.03 -1.15 .25 -.02</td>
<td>-.04 -1.16 .25 -.03</td>
<td>-.05 -1.52 .13 -.04</td>
<td></td>
</tr>
<tr>
<td>Baseline Attention</td>
<td>.95 .50 76 &lt;.001</td>
<td>.95 .30 13 &lt;.001</td>
<td>.87 .35 37 &lt;.001</td>
<td></td>
</tr>
<tr>
<td>Status Hierarchy vs Aggregated Control</td>
<td>-.04 -1.93 .06 -.04</td>
<td>-.04 -1.40 .16 -.04</td>
<td>-.04 -1.52 .13 -.04</td>
<td></td>
</tr>
<tr>
<td>Neutral Hierarchy vs Power Hierarchy</td>
<td>-.02 -1.06 .29 -.02</td>
<td>-.01 -1.12 .90 -.01</td>
<td>.01 .39 .70 .01</td>
<td></td>
</tr>
</tbody>
</table>

Note. Results above and below the line represent separate models, each testing a different set of comparisons.
Among leaders assigned to provide group members with public (versus private) feedback, prestige orientation was positively associated with attentional adhesion to social stimuli. Within the private feedback condition, however, attentional adhesion to social stimuli did not differ as a function of leaders’ prestige orientation. Error bars represent standard errors. High and low prestige orientations are delineated at +/- 1 SD.
Figure 2. Experiment 2: Participants in the public feedback condition saw a logo for the person-to-person program “Digiteyez,” (left panel). We incorporated this logo in the public feedback condition to activate cognitions associated with public scrutiny. Participants in the private feedback condition saw a logo for the program “Digitize” (right panel) that did not include an image of a pair of eyes.
Figure 3. Experiment 2: Bias in Judgement of Emotional Expressions. In the public feedback condition, prestige orientation was positively associated with response bias ($c$). Highly prestige-oriented leaders were biased toward categorizing smiles as disingenuous. No association with prestige orientation was observed in the private feedback condition. Error bars represent standard errors. High and low prestige orientations are delineated at +/- 1 SD.
Figure 4. Experiment 3: Bias in Judgement of Smiles. Leaders atop hierarchies marked by status were biased toward perceiving smiles as disingenuous. In contrast, leaders atop the neutral hierarchy were inclined to categorize smiles as genuine. Error bars represent standard error of the estimate.
Figure 5. Experiment 4: Bias in Categorization of Emotional Valence. Compared to leaders in the power hierarchy, leaders in the status hierarchy categorized a greater number of neutral facial expressions as concealing negative emotion. Leaders in the status hierarchy condition categorized significantly more than half of the neutral expressions as concealing negative emotion. No such bias was found in the power hierarchy condition. Error bars represent standard errors.
Figure 6. Experiment 4: Perceived Magnitude of Emotional Valence. Compared to leaders in the power hierarchy condition, leaders in the status hierarchy condition interpreted others’ emotions as being more strongly negative. Although leaders in the power hierarchy condition interpreted other people’s emotions as neutral in valence, leaders in the status hierarchy condition perceived those same emotional expressions as significantly negative. Error bars represent standard errors.
Figure 7. Experiment 5: Attentional Adhesion (in milliseconds) to Social Stimuli.

Leaders in the status hierarchy condition exhibited greater attentional adhesion to social targets than did leaders atop the power hierarchy. Leaders atop the status hierarchy displayed marginally prolonged attention to social targets when compared to leaders in the neutral control hierarchy. Error bars represent standard errors.