# Are the Powerful Really Blind to the Feelings of Others? How Hierarchical Concerns Shape Attention to Emotions

Eftychia Stamkou[1], Gerben A. van Kleef[1],
Agneta H. Fischer[1], and Mariska E. Kret[1]

## Abstract

Paying attention to others' emotions is essential to successful social interactions. Integrating social-functional approaches to emotion with theorizing on the reciprocal nature of power, we propose that attention to others' emotions depends on concerns over one's power position and the social signal conveyed by the emotion. Others' anger signals attack—information relevant to high-power individuals who are concerned about the legitimacy or suitability of their position. On the contrary, others' fear signals vulnerability—information relevant to low-power individuals who are concerned about their unfair treatment within an illegitimate hierarchy. Accordingly, when power roles were illegitimately assigned or mismatched with one's trait power, leaders were faster at detecting the appearance of anger (Studies 1 and 2), slower at judging the disappearance of anger (Study 2), and more accurate in recognizing subordinates' anger, whereas subordinates were more accurate in recognizing leaders' fear (Study 3). Implications for theorizing about emotion and social hierarchy are discussed.

## Keywords

power, hierarchical concerns, attention to emotion, meta-analysis

Paying attention to others' emotional expressions is vital to human social functioning—it improves understanding (Keltner & Kring, 1998; Van Kleef et al., 2008), social adjustment (Gleason, Jensen-Campbell, & Ickes, 2009), stress management (Mikolajczak, Roy, Luminet, Fillée, & de Timary, 2007), and job performance (Côté & Miners, 2006). Thus, having a sharp eye for others' emotions benefits social relationships, psychological and physical well-being, as well as occupational success. However, there are circumstances under which attention to others' emotions is hindered. According to popular wisdom, power dampens social sensitivity and makes people blind to the emotions of others. Despite this widespread belief, recent scientific evidence regarding how high- and low-power individuals perceive others' emotions is inconclusive.

Some studies suggest that high-power individuals are not very accurate at recognizing other people's emotions (Galinsky, Magee, Inesi, & Gruenfeld, 2006; Hall, Rosip, Smith LeBeau, Horgan, & Carter, 2006; Kraus, Côté, & Keltner, 2010). This finding fits theorizing and research suggesting that powerful individuals are not attuned to others due to their relative independence (Anderson, Keltner, & John, 2003; Fiske, 1993) and subjectively experienced social distance from others (Magee & Smith, 2013). Other studies

found that high-power participants were actually quite accurate in recognizing others' emotions (Schmid Mast, Jonas, & Hall, 2009; see also Côté et al., 2011). Schmid Mast and colleagues interpret this finding in light of powerful individuals' tendency to process information in a global rather than local way (Smith & Trope, 2006), which facilitates emotion recognition (Calder, Young, Keane, & Dean, 2000). Still, other work found that powerful individuals were unresponsive to others' emotional expressions, but not inaccurate at perceiving them (Van Kleef et al., 2008).

In short, empirical evidence regarding powerful individuals' ability to attend to others' emotions is inconclusive (Hall, Schmid Mast, & Latu, 2014). Here, we integrate social-functional approaches to emotion with theorizing about the reciprocal nature of power to illuminate how concerns about the appropriateness of one's power role shape attention to others' emotions.

[1]University of Amsterdam, The Netherlands

**Corresponding Author:**
Eftychia Stamkou, Department of Social Psychology, University of Amsterdam, Nieuwe Achtergracht 129B, 1018 WS, Amsterdam, The Netherlands.
Email: E.Stamkou@uva.nl

## Power, Hierarchical Concerns, and Attention to Emotions

Past research has examined the relationship between power and attention to others' emotions independent of social conditions that may critically influence the experience of power and the meaning of emotions. The way individuals experience power depends on conditions that (in)validate one's power role (Overbeck, 2010). For instance, a power role may feel groundless when it is acquired through illegitimate means or when it mismatches with one's dispositional dominance. Such conditions may breed concerns about one's hierarchical position, what we henceforth define as hierarchical concerns. The current study acknowledges this overlooked fact by examining for the first time how high- and low-power individuals perceive others' emotional expressions as a function of individuals' hierarchical concerns.

Theoretical and empirical accounts suggest that hierarchical concerns may be raised in the context of illegitimate hierarchies. According to the reciprocal influence model of social power (Keltner, Van Kleef, Chen, & Kraus, 2008), power is afforded to individuals who advance the interests of the group. Individuals who fail to engage in the interests of the group, however, may become targets of subordinates' attempts to constrain the unjust exercise of power (e.g., through gossip or coalition formation). This implies that the legitimacy of the power relationship may influence how individuals interpret power differentials and, accordingly, how they respond to them. Consistent with this argument, the approach/inhibition theory of power (Keltner, Gruenfeld, & Anderson, 2003) predicts that when power is unstable, as is often the case with illegitimate hierarchies, the approach-related effects of power diminish and, instead, the powerful become vigilant to threat. Furthermore, when the power relationship is illegitimate, the powerless may show increased approach tendencies to restore justice, and consequently, they may become more attentive to situations that afford an opportunity to advance their hierarchical position.

Indeed, previous research has shown that legitimacy subdues power differentials (van der Toorn, Tyler, & Jost, 2011), whereas illegitimacy can inflame them by triggering cognitive alternatives to the status quo. For the powerful, the instability of illegitimate power foreshadows the possibility of losing control (Tajfel & Turner, 1979). Even though they feel guilty and uneasy about their undeserved position (Smith, Jost, & Vijay, 2008), they still want to maintain and defend their power (Tetlock, 1981). For the powerless, however, the inadequacy of illegitimate power opens up the opportunity of gaining control (Keltner et al., 2008). They feel angry and irritated (Feather & Sherman, 2002) and react with increased tendencies to change the unfair power relation (Lammers, Galinsky, Gordijn, & Otten, 2008).

Apart from the context of illegitimate hierarchies, hierarchical concerns may also be experienced when people are given a role that does not match their chronic personality traits (Kemper, 1990). For instance, a timid individual may be born into a powerful position as a result of birthright, without him welcoming the responsibilities a powerful position brings. Or, a modest yet eminent academic may be appointed dean as a result of scholarship without her being motivated to direct others. Empirical research shows that if an individual with low trait power lands a high-power role, the resulting mismatch between the desire to "fly below the radar" and the current high-power position triggers hierarchical concerns (Josephs, Newman, Brown, & Beer, 2003; Josephs, Sellers, Newman, & Mehta, 2006; Newman, Sellers, & Josephs, 2005; Rohwer, 1977). This finding suggests that low trait power individuals who are assigned a high-power role may experience hierarchical concerns because they lack a dominating personality, and their disputable position may be challenged (van Honk et al., 1999). Similarly, high trait power individuals who are assigned a low-power role may be concerned that their role deprives them of the power-related benefits they feel entitled to (De Cremer & Van Dijk, 2005; Piff, 2013). Seeking to fulfill their interests in the power struggle, individuals should be attuned to cues that indicate chances of losing or gaining power (Greer & Van Kleef, 2010).

We postulate that hierarchical concerns and concomitant status striving goals are informed by specific emotion cues, given emotions' quality to convey information to an observer about a sender's social intentions (Fischer & Manstead, 2008; Keltner & Kring, 1998; Kim & Pettit, 2014; Van Kleef, 2009). Anger displays are particularly relevant in the context of power disputes. Anger signals an aggressive tendency and antagonistic dominance (Davis et al., 2011; Hess, Adams, & Kleck, 2009). Accordingly, expressions of anger have been linked with increases in status and power (Brescoll & Uhlmann, 2008; Tiedens, 2001). Attention to others' anger may therefore be useful for high-power individuals who are concerned about losing their power position.

It stands to reason that attention to potential threat signals such as anger expressions is also important for low-power individuals, because they face more situational constraints, have less control over resources, and are more vulnerable to attack (Fiske, 1993). However, low-power individuals' attention to anger might relate less to their hierarchical concerns because the threat signaled by anger is always relevant for them, given the inherent vulnerability of their subordinate position.

In contrast, attention to fear may be differentially relevant when subordinates' hierarchical concerns are high rather than low. Fear communicates weakness, need for assistance, and lack of control over the situation (Davis et al., 2011; Frijda, Kuipers, & Ter Schure, 1989). Attention to others' fear may thus be especially relevant for subordinates who are concerned about their unfair relegation because they may be motivated to gain more power by attacking apparently vulnerable power holders (Fischer & Manstead, 2008).

## Hypotheses and Overview of Studies

Considering the above, we propose that individuals' attention to emotions depends on their concerns over their power position and the relevance of the specific emotion within that social context. Given this theoretical framework, we predicted differences between conditions of high- and low-hierarchical concerns. Compared with individuals who have low-hierarchical concerns, we propose that powerful individuals with high-hierarchical concerns are more attentive to anger expressions, whereas powerless individuals with high-hierarchical concerns are more attentive to fear expressions.

In research paradigms that assess individuals' emotional abilities, attention to emotions is usually operationalized in terms of the speed or accuracy of individuals' responses (Yiend, 2010). Because there is often a speed-accuracy trade-off in emotional ability tasks (Lindquist, Barrett, Bliss-Moreau, & Russell, 2006), we assessed both the speed and the accuracy of participants' responses as separate indices of attention to others' emotions. Furthermore, we operationalized hierarchical concerns in terms of both (il)legitimacy of the power role (Studies 1 and 3) and mismatch between power role and trait power (Study 2) to cover an ecologically valid set of conditions that nurture hierarchical concerns (Josephs et al., 2006; Keltner et al., 2008).

Consequently, in Study 1, we examined whether individuals with an illegitimate high-power role would be faster in detecting the appearance of anger expressions than individuals with a legitimate high-power role (Hypothesis 1). In Study 2, we investigated whether low trait power individuals with a high-power role would be slower in judging the disappearance of anger expressions than high trait power individuals with a high-power role (Hypothesis 2). We expected that individuals with a low-power role would not differ in detecting the appearance and disappearance of anger in a legitimate versus illegitimate hierarchy or as a function of the mismatch between their power role and trait power, because anger is relevant for them across the board given their inherent vulnerability. In Study 3, we tested whether individuals with an illegitimate high-power role would be more accurate in recognizing anger expressions (Hypothesis 3a), whereas individuals with an illegitimate low-power role would be more accurate in recognizing fear expressions (Hypothesis 3b). We specified no hypothesis about a potential main effect of legitimacy on attention to emotions, because we are not aware of relevant theory that could inform such a hypothesis.

We investigated Hypotheses 1 and 2 using two different anger detection tests and Hypotheses 3a and 3b using an emotion recognition test including eight different emotions. In Study 3, we further explored whether participants' experienced emotions would account for their attention to specific emotions of others to shed some initial light on possible underlying mechanisms.

The procedure we followed was similar across the studies. Participants were invited to the lab in groups of two or more persons, because we wanted them to believe that they would be paired with another participant to complete a study that consisted of three parts; first, two individual tasks that would be performed in separate rooms and then a joint task that would be performed with their partner (procedure adapted from Côté et al., 2011). In reality, participants completed the study in separate cubicles from which they could not see each other. In Part 1, we first manipulated participants' power role and then manipulated legitimacy (Studies 1 and 3) or estimated participants' trait power (Study 2). In Part 2, participants completed a task measuring attention to others' emotions. Finally, participants were told that Part 3 (the joint task) would not take place in the interest of time, and they were debriefed, compensated, and dismissed.

## Overview of Analyses

We examined the main hypotheses in three stages that were similar across studies. In the first stage, we carried out a multiple regression analysis where each dependent variable was predicted by participants' power role, legitimacy (Studies 1 and 3), or trait power (Study 2) and the interaction between power role and legitimacy or power role and trait power. In the second stage, we probed the interaction effect observed in the previous stage by estimating the effect of illegitimacy or trait power on each dependent variable separately for leaders and subordinates (simple-slope analyses). In the third stage, we entered the individual correlation estimates obtained from the simple-slope analyses into a meta-analytic model to examine whether the effect of hierarchical concerns (i.e., illegitimacy in Studies 1 and 3, and trait power in Study 2) on attention to anger differs between leaders and subordinates across the three studies.

In all analyses, power role was coded as −1 for subordinates and 1 for leaders, legitimacy condition was coded as −1 for legitimacy and 1 for illegitimacy, and trait power was centered on the sample mean. Participants' scores on all measured variables were standardized to facilitate meta-analytic integration (see below).

## Study 1

### Method

*Participants and design.* We did not have specific expectations regarding effect size because, to our knowledge, our research question has never been addressed by past studies. We therefore relied on our experience with similar tasks in our lab and aimed for 20 to 25 participants per condition. Our final sample comprised 88 students (59 women; $M_{age} = 21.55$ years, $SD = 3.82$ years) who were randomly assigned to the leader or the subordinate role (power role manipulation) according to a legitimate or illegitimate procedure (legitimacy manipulation). Two participants were excluded from the analyses because the first one gave no responses and the second one did not believe the cover story.

**Table 1.** Main and Interaction Effects of Power and Hierarchical Concerns on Emotion Attention Measures Across Studies.

| Emotion attention measure | Power | | | | Hierarchical concerns | | | | Power × Hierarchical Concerns | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | β | t | p | 95% CI | β | t | p | 95% CI | β | t | p | 95% CI |
| Study 1 | | | | | | | | | | | | |
| Anger detection (onset) | .01 | 0.02 | .987 | [−0.21, 0.21] | −.08 | −0.70 | .485 | [−0.29, 0.14] | −.22 | −2.02 | .046 | [−0.43, −0.01] |
| Study 2 | | | | | | | | | | | | |
| Anger detection (onset) | .03 | 0.47 | .641 | [−0.11, 0.17] | .03 | 0.31 | .757 | [−0.16, 0.23] | .20 | 1.97 | .050 | [0.00, 0.39] |
| Anger detection (offset) | −.03 | −0.38 | .703 | [−0.17, 0.11] | −.02 | −0.23 | .820 | [−0.22, 0.17] | −.24 | −2.43 | .016 | [−0.44, −0.05] |
| Study 3 | | | | | | | | | | | | |
| Anger recognition | <.01 | 0.01 | .997 | [−0.20, 0.20] | .12 | 1.26 | .211 | [−0.07, 0.32] | .16 | 1.63 | .106 | [−0.04, 0.36] |
| Fear recognition | −.04 | −0.40 | .694 | [−0.24, 0.16] | .06 | 0.55 | .581 | [−0.14, 0.25] | −.20 | −2.00 | .048 | [−0.39, −0.01] |

*Note.* Power was coded as −1 for subordinates and 1 for leaders. Hierarchical concerns were operationalized as illegitimacy in Studies 1 and 3 and as mismatch between power role and trait power in Study 2. Legitimacy was coded as −1 for the legitimacy condition and 1 for the illegitimacy condition. Trait power was centered at the sample mean. The *t*-test degrees of freedom were 82 in Study 1, 194 for the onset task and 193 for the offset task in Study 2, and 97 in Study 3. CI = confidence interval.

*Materials and procedure.* In Part 1, we used a validated procedure (Lammers et al., 2008) to manipulate power and legitimacy through bogus feedback on a set of eight items that was completed at the beginning of the experiment and was presented as a leadership aptitude test (e.g., "I think that a good leader rules with an iron hand"). Participants in the *legitimate* powerful (powerless) condition learned that they had done well (poorly) compared with their partner and would therefore be assigned the leader (subordinate) role. Participants in the *illegitimate* powerful (powerless) condition learned that they had done poorly (well) and would normally be the subordinate (leader) but instead would be assigned the leader (subordinate) role due to the need for an equal distribution of men and women across roles. To emphasize these roles, the experimenter asked the leaders (subordinates) to sign a contract stating that they would evaluate (be evaluated by) their partner after Part 3. Moreover, the experimenter placed a role tag with the word "Leader" ("Subordinate") in front of the participants and left a sheet of paper containing both partners' manipulated scores on the leadership aptitude test. Finally, we gave leaders the possibility to influence the outcome of a lottery that would take place at the end of the experiment by asking them to distribute an uneven number of lottery tickets between themselves and their partner.

In Part 2, participants performed an anger detection test, which was an adapted version of the morph movie paradigm (Niedenthal, Halberstadt, Margolin, & Innes-Ker, 2000). Participants watched 10-s movies depicting faces whose emotional expression was gradually changing from neutral to full-blown anger (see Appendix A, upper array). Participants were instructed to press a button as soon as they saw the onset of an anger expression. There was one practice trial followed by eight test trials.[1] We estimated the speed of detecting the appearance of anger by averaging the reaction times across the eight test trials.[2]

Before telling participants that Part 3 (joint task) would not take place, we used a verbal funnel debriefing method to

check whether the experimental procedure raised any suspicions and whether our manipulations were credible. No participant guessed the true purpose of the study and only one disbelieved the role manipulation.

## Results and Discussion

Multiple regression analysis showed no significant main effects of power or legitimacy on average speed of detecting the onset of anger. It did reveal the anticipated interaction effect between power and legitimacy (see Table 1, for standardized coefficient estimates). Probing of the interaction effect showed that leaders were faster at detecting the onset of anger in the illegitimate (*M* = 4,596, *SD* = 1,161) rather than legitimate condition (*M* = 5,216, *SD* = 888), β = −.29, *t*(41) = −1.96, *p* = .057, 95% confidence interval (CI) = [−0.59, 0.01], whereas subordinates did not differ in their speed of detecting the onset of anger (legitimacy: *M* = 4,662, *SD* = 847 vs. illegitimacy: *M* = 4,939, *SD* = 1,118), β = .14, *t*(41) = 0.92, *p* = .363, 95% CI = [−0.17, 0.45]. The interaction effect is depicted in Figure 1.

Study 1 thus revealed that high-power individuals detected the appearance of anger faster when they had an illegitimate rather than legitimate position, supporting Hypothesis 1. These results suggest that illegitimately powerful individuals are more attuned to expressions of anger than legitimately powerful individuals, which enables them to detect relatively subtle anger expressions. In Study 2, we aimed to replicate and extend the Study 1 finding by incorporating several methodological adaptations.

## Study 2

In Study 2, we tried to rule out an alternative explanation to the main finding of Study 1. Illegitimate high-power individuals might have been faster at detecting the appearance of anger not because they were more attentive to anger expressions but
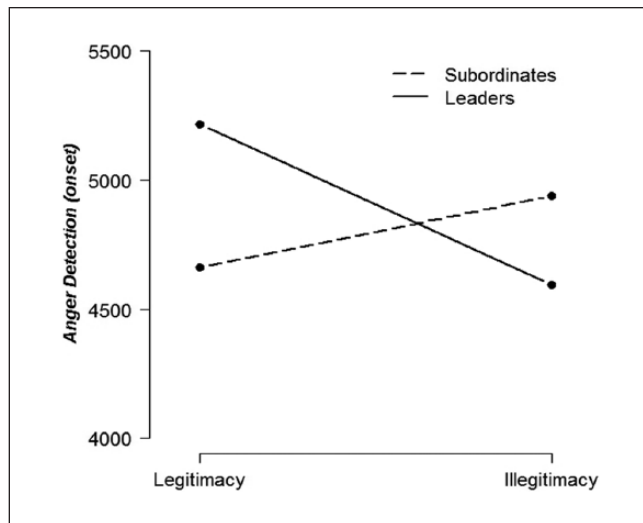
**Figure 1.** Mean detection time (in milliseconds) of the appearance of anger expressions as a function of legitimacy and power role in Study 1.
*Note.* Values represent unstandardized scores. Lower values indicate a lower threshold for detecting the appearance of anger (higher attention).

because they wanted to make themselves feel justified in their current position by making a faster, more decisive judgment. We therefore included an alternative anger detection test in which participants had to suppress a fast response as an indication of their attention to anger displays.

## Method

*Participants and design.* Study 2 used a design that included a categorical variable (power role: subordinate vs. leader), a continuous variable (trait power), and a repeated-measures factor (anger detection test: onset/offset). To ensure that we would have a sufficient number of participants with higher and lower trait power within the high- and low-power role conditions, we recruited a larger sample. Two hundred and one students (146 women; $M_{age}$ = 21.63 years, $SD$ = 2.90 years) were randomly assigned to the leader or the subordinate role. Before the power role manipulation, we measured participants' trait power. Two participants were excluded for disbelieving the cover story. Furthermore, one participant's data at the onset task were not recorded due to computer failure, and two participants' data at the offset task were excluded because they produced extreme values (i.e., outliers) in all of the trials (see below).

*Materials and procedure.* In Part 1, we first measured participants' trait power with the Personal Sense of Power Scale (Anderson, John, & Keltner, 2012). A sample item is "In my relationships with others I think I have a great deal of power" ($\alpha$ = .77). After some filler tasks, we manipulated participants' power role by randomly assigning participants to the leader or the subordinate role. In Part 2, participants performed two

anger detection tests after which we measured felt powerfulness to check the manipulation of power role.

*Anger detection tests.* Participants first watched 100-frame movies depicting individuals whose emotional expression was gradually changing from neutral to full-blown anger, and they had to indicate the onset of the anger expression by pressing a button. They then watched movies depicting individuals whose emotional expression was gradually changing from a full-blown anger expression to a neutral one and they had to indicate the offset of the anger expression (see Appendix A, bottom array). For each test, there were three practice trials followed by 16 test trials. For the onset trials, we used all stimuli from Study 1, and we further constructed twice as many anew to improve the reliability of the anger detection tests. For the offset trials, we simply played the onset movies backward (Niedenthal et al., 2000). The measurement of reaction time was made in movie frames. We estimated participants' scores by averaging the selected movie frames across the 16 test trials.

*Treatment of anger detection latency scores.* The distribution of the individual latency scores was negatively skewed for the offset task. To normalize the negatively skewed distribution of the offset task, we excluded trials whose response latency was more than 2 standard deviations below the median (Ratcliff, 1993). This resulted in the exclusion of 3.3% of the offset trials. This treatment resulted in normalized distributions.

*Manipulation check.* We measured experienced powerfulness using a six-item scale ($\alpha$ = .80). Sample item is "I feel powerful."

## Results and Discussion

*Manipulation check.* To test whether the manipulation of power role was successful, we regressed felt powerfulness on participants' assigned power role. The analysis showed a main effect of power role on felt powerfulness, $\beta$ = .39, $t(197)$ = 5.88, $p$ < .001, 95% CI = [0.26, 0.52], with leaders feeling more powerful ($M$ = 4.71, $SD$ = 0.96) than subordinates ($M$ = 3.94, $SD$ = 0.90).

*Hypotheses testing.* Participants' detection time scores were submitted to a 2 (power role: subordinate vs. leader) × 2 (anger detection test: onset and offset) repeated-measures ANOVA with trait power as a covariate. Power role was a between-subjects variable, and anger detection test was a repeated-measures variable. The anticipated three-way interaction of participant's power role, trait power, and anger detection test emerged, $F(1, 192)$ = 9.17, $p$ = .003, $\eta_p^2$ = .05, indicating that power role and trait power affected reaction times of the onset and offset tests differently. To break down the three-way interaction effect, we separately regressed
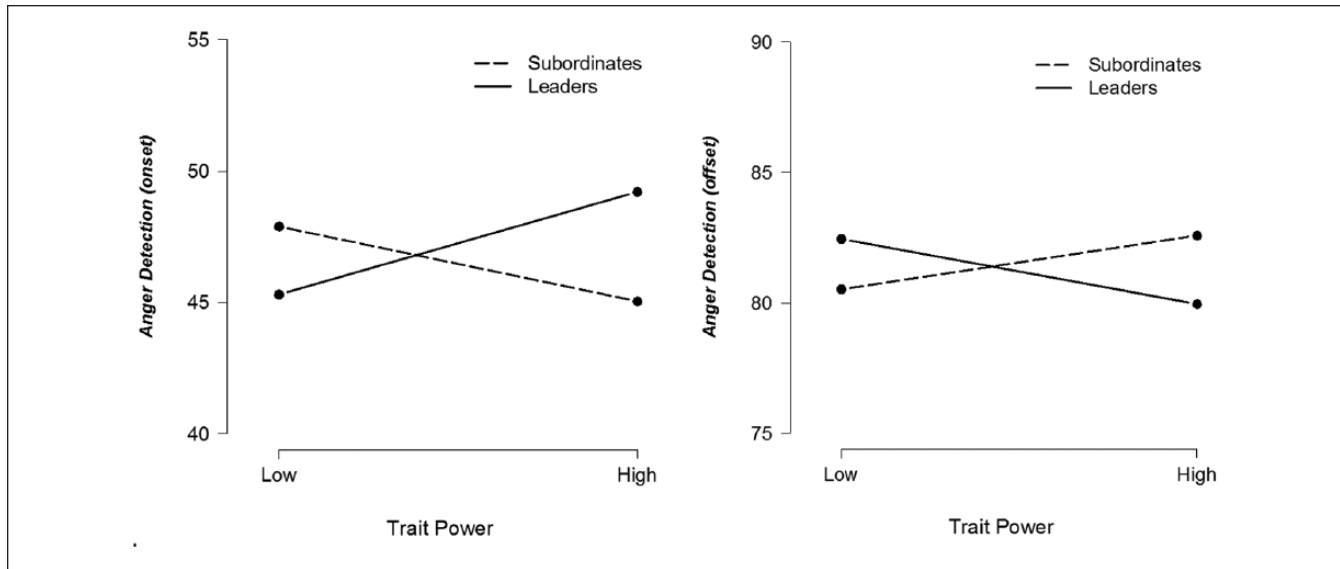
**Figure 2.** Mean detection time of the appearance (left panel) and disappearance (right panel) of anger expressions as a function of trait power and power role in Study 2.
*Note.* Means represent the selected movie frame and are plotted at 1 standard deviation below and above the mean of trait power. Values represent unstandardized scores. Lower values indicate a lower threshold for detecting the appearance of anger in the left panel (higher attention) and the disappearance of anger in the right panel (lower attention). Lower state power in the leader role and higher state power in the subordinate role indicate a greater "mismatch" and thereby higher hierarchical concerns.

detection time of the onset of anger expressions and detection time of the offset of anger expressions on power role, trait power, and their interaction.

These regression analyses showed no significant main effects of power role or trait power on the detection time of the onset of anger expressions or the detection time of the offset of anger expressions. There were, however, significant interaction effects of power role and trait power on both measures (see Table 1). Probing of the interaction effects showed that the lower the leaders' trait power was, the faster they tended to be in detecting the onset of anger, $\beta = .23$, $t(96) = 1.55$, $p = .125$, 95% CI = $[-0.06, 0.52]$, and the slower they were in judging the offset of anger, $\beta = -.26$, $t(95) = -2.10$, $p = .038$, 95% CI = $[-0.51, -0.02]$. Subordinates' detection time of the onset and offset of anger did not significantly vary as a function of trait power, onset: $\beta = -.16$, $t(98) = -1.23$, $p = .222$, 95% CI = $[-0.43, 0.10]$; offset: $\beta = .22$, $t(98) = 1.43$, $p = .156$, 95% CI = $[-0.09, 0.52]$. The interaction effects are depicted in Figure 2.

In conclusion, Study 2 suggests that when leadership is thrust on individuals with lower trait power, they are faster to detect others' anger, and they perceive others' angry expressions to persist longer, presumably because their precarious power position makes them more vigilant to possible signals of impending threat. The finding that low trait power individuals in leadership roles were slower in judging the disappearance of anger rules out the alternative explanation that their faster detection of anger is due to their need to justify their position by making a faster judgment.

## Study 3

In Study 3, we aimed to generalize our effects to a different measure of attention to emotion, rule out an alternative account of the previous findings, and shed some light on potential underlying processes.

First, we measured attention to emotions by means of an emotion recognition test that included eight different emotions. This test assessed the accuracy of participants' attention to specific emotions, which allowed us to examine whether our effects generalize to the accuracy aspect of emotional attending or whether they are only limited to the speed aspect. Furthermore, this test allowed us to examine whether high-power individuals' attention is anger-specific and low-power individuals' attention is fear-specific.

Second, we examined an alternative explanation to the findings of Studies 1 and 2. Namely, research shows that high-power people are more goal-oriented, which may lead to better compliance with task instructions and thus better performance (Guinote, 2007). One could therefore argue that illegitimate high-power participants wanted to justify their position by showing higher task compliance, which could have resulted in better performance in Studies 1 and 2.[3] If this account is valid, then leaders who are concerned about their hierarchical position should show better performance not only in recognizing anger but also in their recognition of other emotions.

Third, we aimed to shed some light on potential mechanisms that could explain the effects of hierarchical concerns on attention to specific emotions. Power holders who are

concerned that they do not deserve their power should defend their precarious position to maintain it, and subordinates who consider their low power unsuitable should move against the power holders to restore injustice and advance their position. Considering, however, that these behaviors are neither socially desirable nor viable responses in a lab setting, we tried to tap into these processes by assessing individuals' experienced emotions, because the emotions people experience often reveal their mental states and action tendencies (Frijda & Mesquita, 1994). For example, happiness may reveal a propensity to affiliate and anger a propensity to attack. We therefore assessed emotional states that were relevant when individuals are concerned about their hierarchical position, such as uneasiness for leaders and irritation for subordinates (Feather & Sherman, 2002; Smith et al., 2008).

## Method

*Participants and design.* Given that Study 3 had a similar design to Study 1, we again aimed for 20 to 25 participants per condition. Our final sample consisted of 104 students (73 women; $M_{age}$ = 22.34 years, $SD$ = 5.09 years) who were randomly assigned to a 2 (power role: subordinate vs. leader) × 2 (legitimacy: legitimate vs. illegitimate) between-subjects design. Three participants were excluded for disbelieving the cover story. In the context of an expected face-to-face interaction with their partner in the complementary power role, participants were asked to identify several discrete emotional expressions, which included the focal expressions of anger and fear.

*Materials and procedure.* The manipulations of power and legitimacy in Part 1 were similar to the ones used in Study 1. In Part 2, participants learned that they would watch pictures of former participants in their partner's role taken by a web camera during the joint task of the experiment and that their task would be to label those participants' emotional states.[4] Actually, participants were not presented with pictures of other participants, but of a random group of models from a standardized stimulus set, displaying several emotions. After this emotion recognition test, we assessed participants' affective states. We also measured felt powerfulness and perceptions of fairness to check the manipulation of power and legitimacy, respectively.

*Emotion recognition test.* Although our focus was on anger and fear, we included additional expressions to increase the ecological validity of the study and to prevent participants from using simplistic categorization rules (Russell, 1994). We included four emotions commonly used in past studies (i.e., anger, fear, happiness, and sadness) and four additional emotions that are typically confused with them, namely, disgust, surprise, pride, and embarrassment. Specifically, morphological similarities occur between anger and disgust, fear and surprise, happiness and pride, and sadness and

embarrassment (Hawk, van Kleef, Fischer, & van der Schalk, 2009; Rosenberg & Ekman, 1995).

We used 40 pictures of low expressivity from the Amsterdam Dynamic Facial Expressions Set (ADFES; Van der Schalk, Hawk, Fischer, & Doosje, 2011; see Appendix B). The first eight pictures (one for each emotion) were used in the practice trials and the remaining 32 pictures (4 actors × 8 emotions) were used in the test trials. The pictures were sized to 800 × 800 pixels and projected at the centre of the screen for 4 s. Participants were then prompted to give their answer by clicking on one of the eight emotion labels appearing at the bottom of the screen and at an equal distance from an obliterated circle. To avoid speeded responses, we explicitly told participants that we were not interested in how fast they responded but in how accurate their responses were. We also fixed the duration of the response window so that participants realized that speed of responding was inconsequential.

*Estimation of emotion recognition accuracy.* Research on emotion recognition often relies on the estimation of "raw hit rates." Raw hit rates, however, are problematic for comparing recognition of different emotions, as perceivers might differentially favor the use of certain emotion labels. These biased responses might inflate the recognition score of the preferred emotion category. For this reason, an alternative measure has been developed—the "unbiased hit rate" (Wagner, 1993), which was used in the current study.[5]

Furthermore, given that our stimulus set included pairs of morphologically similar emotions, we anticipated that each emotion would be more frequently confused with its morphologically similar counterpart than with the remaining emotions—a nuance that is not adequately captured by unbiased hit rates. Indeed, a confusion matrix revealed that there were both response biases and significant confusions in participants' responses (see Table S1 of the online supplementary material). To account for both biased responses and significant confusions within each emotion pair, we implemented a transformation of Wagner's formula to estimate each participant's recognition accuracy scores for each of the eight emotion categories.

Specifically, instead of the basic 2-point scoring system used in Wagner's formula (in which a 1 is awarded for every correct answer and a 0 otherwise), we implemented a 3-point scoring system in which participants received a 2 when they chose the correct emotion, a 1 when they chose the morphologically similar emotion, and a 0 otherwise. To illustrate, a person who perceives anger as disgust (1 point) is less accurate than a person who perceives anger as anger (2 points) but more accurate than a person who perceives anger as embarrassment (0 points; see, also, Bänziger, Grandjean, & Scherer, 2009, for a distinction between coarse and fine-grained emotion differentiation). For example, if an individual correctly decodes two of four anger stimuli (a raw hit rate of .50), confuses the third with disgust and the fourth with

embarrassment, and labels a total of five stimuli as "anger," her unbiased hit rate for anger according to a 2-point scoring system is $(2 \times 1 + 2 \times 0)^2 / (4 \times 5) = .20$, but according to a 3-point scoring system, it is $([2 \times 2 + 1 \times 1 + 1 \times 0] / 2)^2 / (4 \times 5) = .31$.

The unbiased hit rates range from 0 to 1 (perfect score). Because these values are proportional, we arcsine transformed the scores prior to analyses (Wagner, 1993). The maximum score was thus 1.57, the arcsine of 1.

*Experienced emotions.* Participants rated their feelings of uneasiness and irritation by rating three adjectives for each state on a scale from 1 (*not at all*) to 7 (*very much*). Sample items are "I feel ashamed" for uneasiness (α = .71) and "I feel disturbed" for irritation (α = .79). These adjectives were presented in random order and were included among other emotion adjectives assessing negative affect (α = .88), positive affect (α = .78), and self-satisfaction (α = .72). The negative affect adjectives were included as control variables because the low-power role in itself could have increased the experience of negative affect (Berdahl & Martorana, 2006), which in turn can decrease accuracy (Ambady & Gray, 2002; Chepenik, Cornew, & Farah, 2007). The positive affect and self-satisfaction adjectives were included to balance the content of the questionnaire.

*Manipulation check.* We measured experienced powerfulness with the adjectives "strong," "powerful," "in control," and the reverse coded "compliant," "dependent," and "powerless" (α = .89), and perceived legitimacy of the role distribution with the adjectives "fair," "right," "appropriate," "just," "unacceptable," and "illegitimate," with the last two adjectives being reverse coded (α = .84). These adjectives were rated on a 7-point scale (1 = *not at all* to 7 = *very much*).

## Results

*Manipulation checks.* To test whether the manipulations of power role and legitimacy were successful, we regressed felt powerfulness and perceived legitimacy of the role distribution on participants' power role, legitimacy condition, and the interaction between the two.

The first regression analysis showed a main effect of power role on felt powerfulness, β = .84, $t(97) = 8.91$, $p < .001$, 95% CI = [0.65, 1.03], with leaders feeling more powerful (*M* = 4.99, *SD* = 0.87) than subordinates (*M* = 3.31, *SD* = 1.02). There was no main effect of legitimacy and no interaction effect between power role and legitimacy on felt powerfulness.

The second regression analysis showed a main effect of legitimacy on perceived legitimacy, β = −.29, $t(97) = −3.30$, $p = .001$, 95% CI = [−0.46, −0.12], such that participants in the legitimate condition perceived the role distribution as fairer (*M* = 4.34, *SD* = 0.79) than participants in the illegitimate condition (*M* = 3.77, *SD* = 1.02). There was also a main

effect of power role on perceived legitimacy, β = .26, $t(97) = 2.94$, $p = .004$, 95% CI = [0.08, 0.43], which revealed that leaders perceived the role distribution as fairer (*M* = 4.30, *SD* = 0.69) than subordinates (*M* = 3.80, *SD* = 1.12). This latter effect is consistent with evidence that authorities perceive power hierarchies as more justified than lower ranked individuals (Smith et al., 2008). There was no significant interaction between power role and legitimacy.

*Hypotheses testing.* Participants' unbiased recognition scores for anger and fear expressions were submitted to a 2 (power role: subordinate vs. leader) × 2 (legitimacy: legitimate vs. illegitimate) × 2 (emotion: anger and fear) repeated-measures ANOVA with the first two factors as between-subjects variables and the third factor as repeated-measures variable. First, a main effect of emotion expression emerged, $F(1, 97) = 29.16$, $p < .001$, $\eta_p^2 = .23$, with anger expressions being recognized more accurately (*M* = 0.93, *SD* = 0.47) than fear expressions (*M* = 0.61, *SD* = 0.41).

Second, the anticipated three-way interaction of participant's power, legitimacy, and partner's emotional expression emerged, $F(1, 97) = 6.70$, $p = .01$, $\eta_p^2 = .07$, indicating that power and legitimacy affected recognition of anger and fear expressions differently. To break down the three-way interaction effect, we separately regressed anger recognition scores and fear recognition scores on power role, legitimacy, and their interaction. These multiple regression analyses showed no main effects of power role or legitimacy on anger or fear recognition scores. They did show a marginal interaction effect of power role and legitimacy on anger recognition and a significant interaction effect on fear recognition (see Table 1). Probing of the two-way interaction effects showed that leaders were more accurate in recognizing their partners' anger expressions when the role assignment was illegitimate (*M* = 1.05, *SD* = 0.47) rather than legitimate (*M* = 0.78, *SD* = 0.42), β = .28, $t(50) = 2.12$, $p = .039$, 95% CI = [0.02, 0.55], whereas subordinates did not differ in their anger recognition (legitimacy: *M* = 0.97, *SD* = 0.47 vs. illegitimacy: *M* = 0.93, *SD* = 0.51), β = −.04, $t(47) = −0.25$, $p = .802$, 95% CI = [−0.33, 0.25]. Subordinates, however, were more accurate in recognizing their partners' fear expressions when the role assignment was illegitimate (*M* = 0.73, *SD* = 0.39) rather than legitimate (*M* = 0.52, *SD* = 0.38), β = .25, $t(47) = 1.90$, $p = .064$, 95% CI = [−0.02, 0.52], whereas leaders did not differ in their fear recognition (legitimacy: *M* = 0.65, *SD* = 0.39 vs. illegitimacy: *M* = 0.53, *SD* = 0.47), β = −.14, $t(50) = −0.99$, $p = .329$, 95% CI = [−0.44, 0.15]. The interaction effects are displayed in Figure 3. These results support Hypotheses 3a and 3b.

Exploratory analyses revealed no interaction effect of power and legitimacy on participants' recognition scores of the non-focal emotions or on overall emotion recognition scores (i.e., the average of the eight emotion recognition scores). Furthermore, after including disgust recognition scores as a covariate in the analysis, illegitimate leaders were still better at

**Table 2.** Main and Interaction Effects of Power and Legitimacy on Experienced Emotions in Study 3.

| Experienced emotion | Power | | | | Legitimacy | | | | Power × Legitimacy | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | β | t | p | 95% CI | β | t | p | 95% CI | β | t | p | 95% CI |
| Positive Affect | .02 | 0.17 | .863 | [−0.18, 0.22] | .07 | 0.68 | .500 | [−0.13, 0.27] | <.01 | 0.02 | .983 | [−0.20, 0.20] |
| Negative Affect | −.08 | −0.84 | .402 | [−0.28, 0.11] | −.03 | −0.30 | .762 | [−0.23, 0.17] | −.15 | −1.48 | .143 | [−0.35, 0.05] |
| Self-satisfaction | −.10 | −0.99 | .327 | [−0.30, 0.10] | .06 | 0.59 | .557 | [−0.14, 0.26] | .02 | 0.16 | .872 | [−0.18, 0.22] |
| Uneasiness | .11 | 1.09 | .279 | [−0.09, 0.30] | .11 | 1.16 | .247 | [−0.08, 0.31] | .20 | 2.00 | .048 | [0.01, 0.39] |
| Irritation | −.01 | −0.13 | .901 | [−0.13, 0.27] | .09 | 0.90 | .371 | [−0.11, 0.28] | −.22 | −2.20 | .031 | [−0.41, −0.02] |

*Note.* Power was coded as −1 for subordinates and 1 for leaders. Legitimacy was coded as −1 for legitimacy and 1 for illegitimacy. The *t* test degrees of freedom were 97. CI = confidence interval.
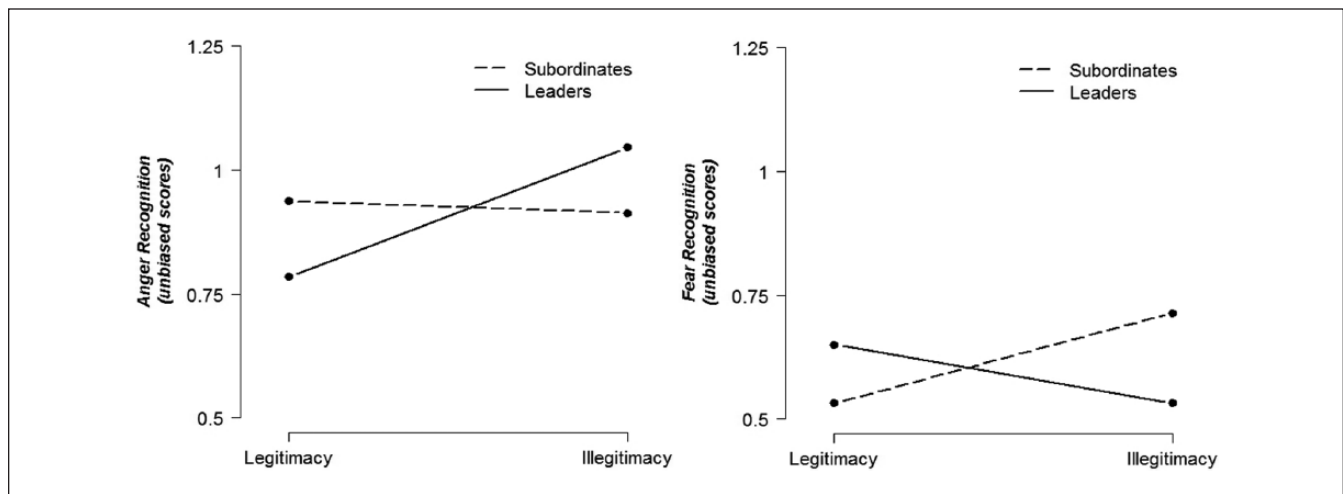


**Figure 3.** Mean unbiased recognition scores of anger (left panel) and fear (right panel) as a function of legitimacy and power role in Study 3.
*Note.* Values represent unstandardized scores. Lower values indicate lower anger or fear recognition (lower attention).

recognizing anger expressions than legitimate leaders, β = .29, $t(49) = 2.41$, $p = .020$, 95% CI = [0.05, 0.53]. Also, after including surprise recognition scores as a covariate, illegitimate subordinates still tended to be better at recognizing fear expressions than legitimate subordinates, β = .25, $t(46) = 1.85$, $p = .070$, 95% CI = [−0.02, 0.51]. These analyses suggest that the interactive effect of power and legitimacy is emotion-specific.

*Experienced emotions.* There were no main or interaction effects of power and legitimacy on participants' self-reported negative affect, positive affect, and self-satisfaction. There were also no main effects of power and legitimacy on uneasiness and irritation, but there was an interaction effect on both measures (see Table 2). Probing of the interaction effects showed that leaders experienced more uneasiness in the illegitimate ($M = 6.41$, $SD = 0.58$) rather than legitimate condition ($M = 5.83$, $SD = 1.10$), β = .31, $t(50) = 2.37$, $p = .022$, 95% CI = [0.05, 0.57], whereas subordinates did not differ in their feelings of uneasiness (legitimacy: $M = 6.00$, $SD = 0.98$ vs. illegitimacy: $M = 5.85$, $SD = 0.93$), β = −.08, $t(47) = −0.56$, $p = .577$, 95% CI = [−0.38, 0.21]. Conversely, leaders reported

no differential irritation (legitimacy: $M = 2.87$, $SD = 1.28$ vs. illegitimacy: $M = 2.55$, $SD = 1.17$), β = −.13, $t(50) = −0.94$, $p = .350$, 95% CI = [−0.40, 0.14], but subordinates reported feeling more irritated in the illegitimate ($M = 3.13$, $SD = 1.40$) rather than legitimate condition ($M = 2.36$, $SD = 1.10$), β = .30, $t(47) = 2.13$, $p = .039$, 95% CI = [0.02, 0.59].

We conducted bootstrapped mediation analyses to explore whether participants' felt uneasiness and irritation could account for the interactive effects of power and legitimacy on emotion recognition. Among leaders, the indirect effect of legitimacy on anger recognition through uneasiness was significant with a point estimate of 0.10 and a 95% bootstrap CI of 0.03 to 0.23. Among subordinates, the indirect effect of legitimacy on fear recognition through irritation did not reach statistical significance (point estimate of 0.08 and 95% bootstrap CI of −0.01 to 0.27).

## Meta-Analysis

Support for our hypotheses relies on the interactive effects of power and hierarchical concerns on attention to emotion in
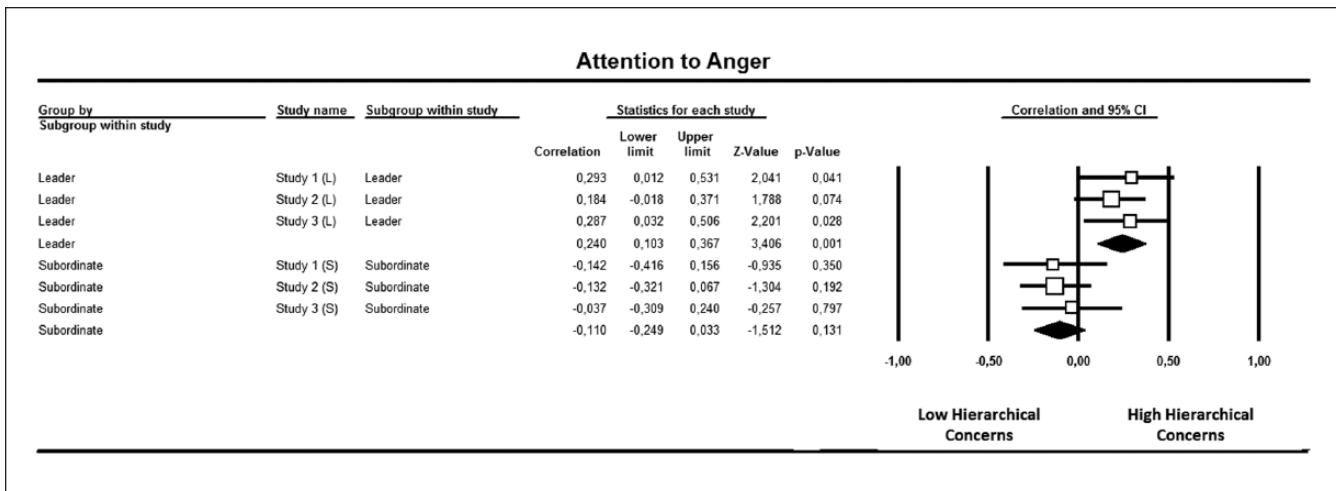
**Figure 4.** Forest plot of attention to anger as a function of hierarchical concerns and power role in Studies 1 to 3.
*Note.* (L) and (S) stand for leaders and subordinates, respectively. Empty squares represent individual study effects and solid diamonds represent overall effects across studies. Study 2 estimates were computed by averaging the estimates obtained from the onset and offset tasks. CI = confidence interval.

conjunction with simple-slope analyses testing the effect of hierarchical concerns on attention to emotions separately for leaders and subordinates. Whereas the interactions between power and hierarchical concerns across studies were statistically significant in almost all cases (see Table 1), several of the simple-slope analyses were only marginally significant (albeit consistently in the predicted direction). We therefore performed a meta-analysis to obtain a more reliable estimate of the effect of hierarchical concerns on attention to emotion for the different power groups. Specifically, we combined the effects on the detection of anger (onset and offset) in Studies 1 and 2 and the recognition of anger expressions in Study 3. Meta-analysis combines the results of different studies by means of fixed- or random-effects models. We used a fixed-effects approach because of the small number of effect sizes included in the meta-analysis (Raudenbush, 2009). Meta-analysis was performed using the Comprehensive Meta-Analysis software (Borenstein, Hedges, Higgins, & Rothstein, 2009).

Meta-analytic results are commonly presented in a forest plot that depicts both the individual effects observed in each study and the overall effects estimated across studies (see Figure 4). The left part of the figure presents the regression estimates of the simple-slope analyses for each individual study and the overall effects across leaders and subordinates. The right part of the figure graphically presents these effects with their CIs within a range of 1 *SD* and relative to a reference line set at 0. The individual effects are represented with an empty square, and the overall effects are represented with a solid diamond. When the CIs of an effect fell on the right side of the reference line, participants showed greater attention to anger under high- than low-hierarchical concerns; when they fell on the left side, participants showed greater attention to anger under low- than high-hierarchical concerns; and when they fell in

between, there was no significant difference in participants' anger attention between the low- and high-hierarchical concerns.

Before entering the correlation estimates of the simple-slope analyses, we reverse-coded the estimates of the anger detection onset tasks (Studies 1 and 2) where higher scores reflect lower attention to anger (because one takes more time to detect the emotion) to facilitate comparison with the estimates of the anger recognition task (Study 3) and anger detection offset task (Study 2) where higher scores reflect higher attention to anger. Furthermore, in Study 2, trait power reflects lower hierarchical concerns, whereas in Studies 1 and 3, legitimacy was coded as −1 for legitimacy and 1 for illegitimacy, reflecting higher hierarchical concerns, which required another reversal of the estimates of Study 2. Note that, this led to a double reversal for the estimates of the anger detection onset task in Study 2, so that in the end, these estimates remained the same. Furthermore, after converting all correlation coefficients to Fisher *Z* values, we averaged the effect sizes of the onset and offset tasks in Study 2 to obtain a single estimate for this study. This was necessary because participants in Study 2 completed both tasks, and in meta-analysis, each effect size estimate has to be based on a unique sample.

Next, we investigated whether power role had an impact on the main effect of hierarchical concerns on attention to anger by running a fixed-effect analysis with power role as a categorical moderator (subordinate vs. leader). This analysis showed that the effect of hierarchical concerns on attention to anger differed between leaders and subordinates, $Q_{between}(1) = 12.01$, $p = .001$. The pattern of the moderation indicated that leaders were more attentive to anger expressions under conditions of high- rather than low-hierarchical concerns, $r = .24$, 95% CI = [0.10, 0.37], $Z(3) = 3.41$, $p = .001$, whereas subordinates' attention to anger expressions did not vary as a

function of hierarchical concerns, $r = -.11$, 95% CI = [$-0.25$, 0.03], $Z(3) = -1.51$, $p = .131$.

## General Discussion

The current research investigated whether concern over one's power influences one's attention to others' emotions. Across three studies, we demonstrated interactive effects of power and hierarchical concerns on attention to others' emotions using two alternative operationalizations of hierarchical concerns and three different measures of emotional attention. In line with our theorizing, leaders were more attuned to anger expressions when their high-power position was illegitimate or at odds with their trait power. However, subordinates were more attuned to fear expressions when their low-power position was illegitimate. Conclusions pertaining to anger perception are further bolstered by a meta-analytic synthesis of the results across the three studies.

These findings support the approach/inhibition theory of power (Keltner et al., 2003), which suggests that illegitimacy moderates the effects of power, and the reciprocal influence model of social power (Keltner et al., 2008), which posits that the interdependence between high- and low-power individuals regulates the actions of the powerful. In keeping with these theories, we propose that when power allocation is illegitimate or make people feel out of place, leaders may be inclined to defend their position because they do not deserve it. They may therefore look out for cues signaling potential attack, such as anger expressions, which would help them to preempt threats to their position. Subordinates, in contrast, may be inclined to challenge the power hierarchy because it is unfair. They may thus keep their eyes out for signs of weakness, such as fear expressions, which would signal an opportunity to rise against the power holder.

Exploratory analyses on the emotions participants experienced provide some initial suggestive evidence for these proposed processes. In Study 3, we saw that when the hierarchy was illegitimate rather than legitimate, those having power felt more uneasy and those lacking power felt more irritated. Furthermore, feelings of uneasiness significantly mediated the interactive effect of power and legitimacy on leaders' attention to anger, and feelings of irritation marginally significantly mediated the interactive effect of power and legitimacy on subordinates' attention to fear. We suspect that superiors' uneasiness reflects their tendency to defend and maintain their position, and subordinates' irritation reflects their motivation to move against the power holder, but empirical evidence for this account is only suggestive. It is, however, possible that superiors are not consciously aware of their tendency to protect their current status, and subordinates are similarly not aware of their tendencies to claim more status. And even if they were fully aware of these tendencies, they might be reluctant to admit to them because status striving is a stigmatized behavior that people actively conceal (Kim & Pettit, 2014). This suggests that the processes we were trying to capture are likely non-conscious and subject to social desirability bias (Fisher, 1993). We therefore recommend that future research use indirect measures rather than questionnaires to assess these processes.

Another significant contribution of our research is the finding that power and hierarchical concerns shape people's attention to specific emotions (i.e., anger and fear) rather than to emotions in general. In line with emotion theories that stress the social nature of emotions (Fischer & Manstead, 2008; Frijda & Mesquita, 1994; Van Kleef, 2009), we propose that leaders and subordinates with high hierarchical concerns were more susceptible to anger and fear expressions, respectively, because of the threat-signaling quality of anger and the vulnerability-signaling quality of fear. Our focus on specific emotions differentiates the current research from previous studies that investigated the effects of power on emotional attending by averaging participants' scores across emotions (Galinsky et al., 2006; Hall et al., 2006; Schmid Mast et al., 2009). Furthermore, our findings resonate with recent theoretical arguments that perceptual abilities are specialized toward local environmental conditions. Frankenhuis and de Weerth (2013), for instance, showed that children growing up in dangerous environments may exhibit improved detection, learning, and memory on tasks involving danger-related stimuli (e.g., anger expressions) that are ecologically relevant to them, compared with safely nurtured peers.

The aforementioned theories rest on the idea that social conditions that invalidate the experience of power influence attention to emotions by shaping perceivers' motives. A different, yet related, theoretical account posits that social conditions can influence attention to emotions through their impact on perceivers' expectations regarding the emotional reaction of the target (Hess et al., 2009). For instance, when power roles are illegitimately assigned or do not match individuals' chronic sense of power, superiors would expect subordinates to be angry about their unjust placement in a low-power position, and subordinates would expect superiors to fear a power loss because of their precarious position. These expectations might, in turn, enhance the attention people pay to the respective emotions. Future studies could shed further light on the role of motives and expectations as well as on the interplay between alternative underlying mechanisms.

Contemporary emotion theories suggest that social relations shape how individuals experience, express, regulate, and respond to emotions (e.g., Fischer & Manstead, 2008; Van Kleef, 2009). Building on and enriching these theories, the current study shows that concern over one's power role determines which emotions individuals are most attuned to. The ability to grasp others' emotions is not a stable skill. It is influenced by social processes in hierarchical settings that change the nature of one's power role and the meaning of others' emotional expressions.
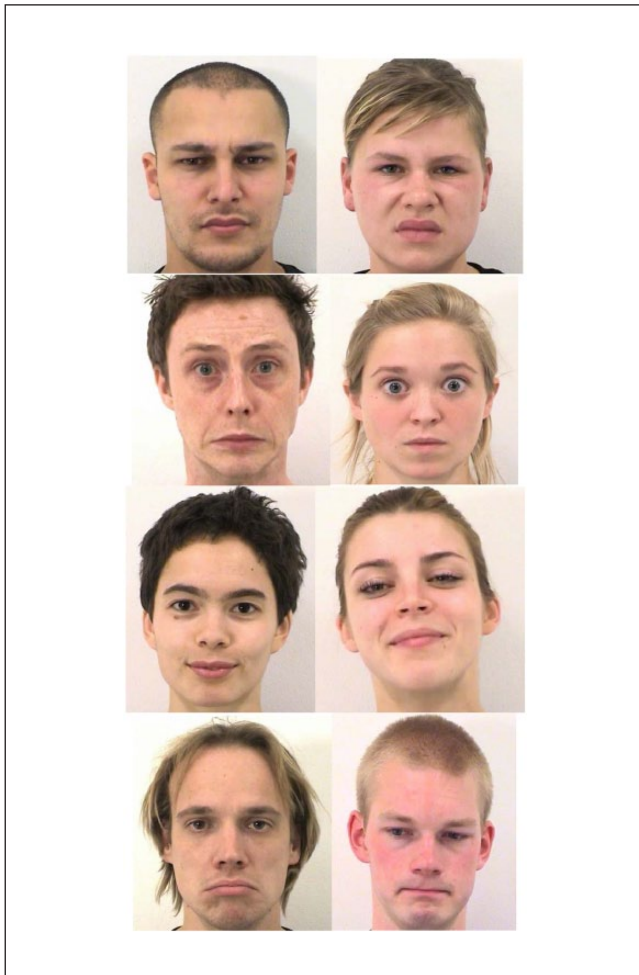
## Appendix A
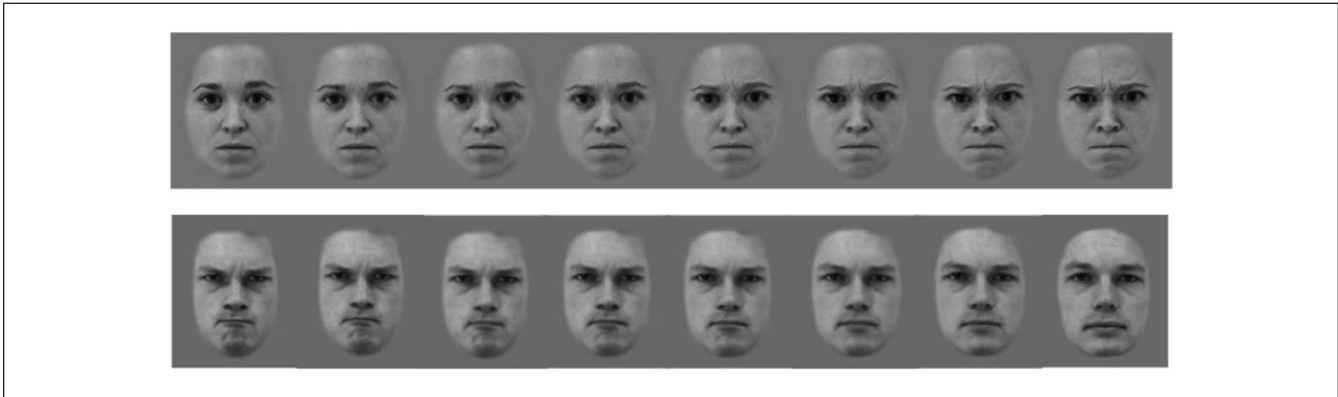


Sample movies used in the emotion detection tests in Studies 1 and 2.
*Note.* The upper array displays sequential stills from a neutral-to-angry video used in the onset test and the bottom array displays sequential stills from an angry-to-neutral video used in the offset test.

## Appendix B



Sample pictures used in the emotion recognition test in Study 3.
*Note.* From left to right and from top to bottom, the emotions expressed are anger, disgust, fear, surprise, happiness, pride, sadness, and embarrassment.

### Notes

1. In each study, the practice trials that preceded the test trials were clearly demarcated and introduced as such. Participants' responses during the practice trials were not included in the analyses because participants were explicitly instructed that the practice trials are meant to familiarize themselves with the task at hand.
2. Before testing our hypothesis, we examined the distribution of anger detection reaction times. Skewness (.14, $SE = 0.26$), kurtosis (.49, $SE = 0.51$), and the Shapiro–Wilk test of normality ($S$-$W = .98$, $df = 86$, $p = .24$) suggested that normality was a reasonable assumption. In addition, the histogram displayed a relatively bell-shaped distribution, and the boxplot did not suggest the presence of outliers. These indices provide evidence that the assumption of normality was met.
3. We are grateful to an anonymous reviewer who proposed this alternative explanation. Although we did not consider the confutation of this explanation a priori, we included it among the methodological remedies of Study 3 because the concerns raised by the alternative explanation can be addressed by the results of this study.

4.  This statement was intended to increase the implicit sociality of the task so that we could study emotion recognition in the context of complementary power roles. To increase credibility, we asked participants' consent to be filmed during the experiment.

5.  For a given stimulus-response pair, the raw hit rate is calculated by the formula (Correct Uses of the Response / Number of Target Stimuli), and the unbiased hit rate by the formula (Correct Uses of the Response$^2$ / [Number of Target Stimuli × Total Uses of the Response]).

## Supplemental Material

The online supplemental material is available at http://pspb.sagepub.com/supplemental.

## References

Ambady, N., & Gray, H. M. (2002). On being sad and mistaken: Mood effects on the accuracy of thin-slice judgments. *Journal of Personality and Social Psychology*, *83*, 947-961. doi:10.1037//0022-3514.83.4.947

Anderson, C., John, O. P., & Keltner, D. (2012). The personal sense of power. *Journal of Personality*, *80*, 313-344. doi:10.1111/j.1467-6494.2011.00734.x

Anderson, C., Keltner, D., & John, O. P. (2003). Emotional convergence between people over time. *Journal of Personality and Social Psychology*, *84*, 1054-1068. doi:10.1037/0022-3514.84.5.1054

Bänziger, T., Grandjean, D., & Scherer, K. R. (2009). Emotion recognition from expressions in face, voice, and body: The Multimodal Emotion Recognition Test (MERT). *Emotion*, *9*, 691-704. doi:10.1037/a0017088

Berdahl, J. L., & Martorana, P. (2006). Effects of power on emotion and expression during a controversial group discussion. *European Journal of Social Psychology*, *36*, 497-509. doi:10.1002/ejsp.354

Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2009). *Introduction to meta-analysis*. Chichester, UK: John Wiley. doi:10.1002/9780470743386

Brescoll, V. L., & Uhlmann, E. L. (2008). Can an angry woman get ahead? Status conferral, gender, and expression of emotion in the workplace. *Psychological Science*, *19*, 268-275. doi:10.1111/j.1467-9280.2008.02079

Calder, A. J., Young, A. W., Keane, J., & Dean, M. (2000). Configural information in facial expression perception. *Journal of Experimental Psychology: Human Perception and Performance*, *26*, 527-551. doi:10.1037//0096-1523.26.2.527

Chepenik, L. G., Cornew, L. A., & Farah, M. J. (2007). The influence of sad mood on cognition. *Emotion*, *7*, 802-811. doi:10.1037/1528-3542.7.4.802

Côté, S., Kraus, M. W., Cheng, B. H., Oveis, C., van der Löwe, I., Lian, H., & Keltner, D. (2011). Social power facilitates the effect of prosocial orientation on empathic accuracy. *Journal of Personality and Social Psychology*, *101*, 217-232. doi:10.1037/a0023171

Côté, S., & Miners, C. T. H. (2006). Emotional intelligence, cognitive intelligence, and job performance. *Administrative Science Quarterly*, *51*, 1-28.

Davis, F. C., Somerville, L. H., Ruberry, E. J., Berry, A., Shin, L. M., & Whalen, P. J. (2011). A tale of two negatives: Differential memory effects associated with fearful and angry facial expressions. *Emotion*, *11*, 647-655. doi:10.1037/a0021625

De Cremer, D., & Van Dijk, E. (2005). When and why leaders put themselves first: Leader behaviour in resource allocations as a function of feeling entitled. *European Journal of Social Psychology*, *35*, 553-563. doi:10.1002/ejsp.260

Feather, N. T., & Sherman, R. (2002). Envy, resentment, schadenfreude, and sympathy: Reactions to deserved and undeserved achievement and subsequent failure. *Personality and Social Psychology Bulletin*, *28*, 953-961. doi:10.1177/01467202028007008

Fischer, A. H., & Manstead, A. S. R. (2008). Social functions of emotion. In M. Lewis, J. Haviland, & L. Feldman Barrett (Eds.), *Handbook of emotion* (3rd ed., pp. 456-469). New York, NY: Guilford Press.

Fisher, R. J. (1993). Social desirability bias and the validity of indirect questioning. *Journal of Consumer Research*, *20*, 303-315. doi:10.1086/209351

Fiske, S. T. (1993). Controlling other people: The impact of power on stereotyping. *American Psychologist*, *48*, 621-628.

Frankenhuis, W. E., & de Weerth, C. (2013). Does early-life exposure to stress shape or impair cognition? *Current Directions in Psychological Science*, *22*, 407-412. doi:10.1177/0963721413484324

Frijda, N. H., Kuipers, P., & Ter Schure, E. (1989). Relations among emotion, appraisal, and emotional action readiness. *Journal of Personality and Social Psychology*, *57*, 212-228. doi:10.1037//0022-3514.57.2.212

Frijda, N. H., & Mesquita, B. (1994). The social roles and functions of emotions. In S. Kitayama & H. S. Markus (Eds.), *Emotion and culture: Empirical studies of mutual influence* (pp. 51-87). Washington, DC: American Psychological Association.

Galinsky, A. D., Magee, J. C., Inesi, M. E., & Gruenfeld, D. H. (2006). Power and perspectives not taken. *Psychological Science*, *17*, 1068-1074. doi:10.1111/j.1467-9280.2006.01824.x

Gleason, K. A., Jensen-Campbell, L. A., & Ickes, W. (2009). The role of empathic accuracy in adolescents' peer relations and adjustment. *Personality and Social Psychology Bulletin*, *35*, 997-1011. doi:10.1177/0146167209336605

Greer, L. L., & Van Kleef, G. A. (2010). Equality versus differentiation: The effects of power dispersion on group interaction. *Journal of Applied Psychology*, *95*, 1032-1044. doi:10.1037/a0020373

Guinote, A. (2007). Power and goal pursuit. *Personality and Social Psychology Bulletin*, *33*, 1076-1087. doi:10.1177/0146167207301011

Hall, J. A., Rosip, J. C., Smith LeBeau, L., Horgan, T. G., & Carter, J. D. (2006). Attributing the sources of accuracy in unequal-power dyadic communication: Who is better and why? *Journal of Experimental Social Psychology*, *42*, 18-27. doi:10.1016/j.jesp.2005.01.005

Hall, J. A., Schmid Mast, M., & Latu, I. M. (2014). The vertical dimension of social relations and accurate interpersonal perception: A Meta-Analysis. *Journal of Nonverbal Behavior*, *39*, 131-163. doi:10.1007/s10919-014-0205-1

Hawk, S. T., van Kleef, G. A., Fischer, A. H., & van der Schalk, J. (2009). "Worth a thousand words": Absolute and relative decoding of nonlinguistic affect vocalizations. *Emotion*, *9*, 293-305. doi:10.1037/a0015178

Hess, U., Adams, R. B., & Kleck, R. E. (2009). The face is not an empty canvas: How facial expressions interact with facial appearance. *Philosophical Transactions of the Royal Society of London, Series B: Biological Sciences*, *364*, 3497-3504. doi:10.1098/rstb.2009.0165

Josephs, R. A., Newman, M. L., Brown, R. P., & Beer, J. M. (2003). Status, testosterone, and human intellectual performance: Stereotype threat as status concern. *Psychological Science*, *14*, 158-163. doi:10.1111/1467-9280.t01-1-01435

Josephs, R. A., Sellers, J. G., Newman, M. L., & Mehta, P. H. (2006). The mismatch effect: When testosterone and status are at odds. *Journal of Personality and Social Psychology*, *90*, 999-1013. doi:10.1037/0022-3514.90.6.999

Keltner, D., Gruenfeld, D. H., & Anderson, C. (2003). Power, approach, and inhibition. *Psychological Bulletin*, *110*, 265-284. doi:10.1037/0033-295x.110.2.265

Keltner, D., & Kring, A. M. (1998). Emotion, social function, and psychopathology. *Review of General Psychology*, *2*, 320-342. doi:10.1037//1089-2680.2.3.320

Keltner, D., Van Kleef, G. A., Chen, S., & Kraus, M. (2008). A reciprocal influence model of social power: Emerging principles and lines of inquiry. *Advances in Experimental Social Psychology*, *40*, 151-192. doi:10.1016/S0065-2601(07)00003-2

Kemper, T. D. (1990). *Social structure and testosterone: Explorations of the socio-bio-social chain*. New Brunswick, NJ: Rutgers University Press. doi:10.1016/0960-0760(92)90279-r

Kim, H. Y., & Pettit, N. C. (2014). Status is a four-letter word: Self versus other differences and concealment of status-striving. *Social Psychological & Personality Science*, *6*, 267-275. doi:10.1177/1948550614555030

Kraus, M. W., Côté, S., & Keltner, D. (2010). Social class, contextualism, and empathic accuracy. *Psychological Science*, *21*, 1716-1723. doi:10.1177/0956797610387613

Lammers, J., Galinsky, A. D., Gordijn, E. H., & Otten, S. (2008). Illegitimacy moderates the effects of power on approach. *Psychological Science*, *19*, 557-564. doi:10.1111/j.1467-9280.2008.02123.x

Lindquist, K. A., Barrett, L. F., Bliss-Moreau, E., & Russell, J. A. (2006). Language and the perception of emotion. *Emotion*, *6*, 125-138.

Magee, J. C., & Smith, P. K. (2013). Social distance theory of power. *Personality and Social Psychology Review*, *17*, 158-186. doi:10.1177/1088868312472732

Mikolajczak, M., Roy, E., Luminet, O., Fillée, C., & de Timary, P. (2007). The moderating impact of emotional intelligence on free cortisol responses to stress. *Psychoneuroendocrinology*, *32*, 1000-1012. doi:10.1016/j.psyneuen.2007.07.009

Newman, M. L., Sellers, J. G., & Josephs, R. A. (2005). Testosterone, cognition, and social status. *Hormones & Behavior*, *47*, 205-211. doi:10.1016/j.yhbeh.2004.09.008

Niedenthal, P. M., Halberstadt, J. B., Margolin, J., & Innes-Ker, A. H. (2000). Emotional state and the detection of change in facial expression of emotion. *European Journal of Social Psychology*, *30*, 211-222. doi:10.1002/(SICI)1099-0992(200003/04)30:2<211::AID-EJSP988>3.0.CO;2-3

Overbeck, J. R. (2010). Concepts and historical perspectives on power. In A. Guinote & T. K. Vescio (Eds.), *The social psychology of power* (pp. 19-45). New York, NY: The Guilford Press.

Piff, P. K. (2013). Wealth and the inflated self-class, entitlement, and narcissism. *Personality and Social Psychology Bulletin*, *40*, 34-43. doi:10.1177/0146167213501699

Ratcliff, R. (1993). Methods for dealing with reaction time outliers. *Psychological Bulletin*, *114*, 510-532. doi:10.1037/0033-2909.114.3.510

Raudenbush, S. W. (2009). Analyzing effect sizes: Random-effects models. In H. Cooper, L. V. Hedges, & J. C. Valentine (Eds.), *The handbook of research synthesis and meta-analysis* (pp. 295-315). New York, NY: Russell Sage.

Rohwer, S. (1977). Status signaling in Harris sparrows. *Behaviour*, *61*, 107-129. doi:10.1163/156853977X00504

Rosenberg, E. L., & Ekman, P. (1995). Conceptual and methodological issues in the judgment of facial expressions of emotion. *Motivation and Emotion*, *19*, 111-138. doi:10.1007/BF02250566

Russell, J. A. (1994). Is there universal recognition of emotion from facial expression? *Psychological Bulletin*, *115*, 102-141. doi:10.1037//0033-2909.115.1.102

Schmid Mast, M., Jonas, K., & Hall, J. A. (2009). Give a person power and he or she will show interpersonal sensitivity: The phenomenon and its why and when. *Journal of Personality and Social Psychology*, *97*, 835-850. doi:10.1037/a0016234

Smith, P. K., Jost, J. T., & Vijay, R. (2008). Legitimacy crisis? Behavioral approach and inhibition when power differences are left unexplained. *Social Justice Research*, *21*, 358-376. doi:10.1007/s11211-008-0077-9

Smith, P. K., & Trope, Y. (2006). You focus on the forest when you're in charge of the trees: Power priming and abstract information processing. *Journal of Personality and Social Psychology*, *90*, 578-596. doi:10.1037/0022-3514.90.4.578

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33-47). Monterey, CA: Brooks/Cole.

Tetlock, P. E. (1981). Pre- to post-election shifts in presidential rhetoric: Impression management or cognitive adjustment? *Journal of Personality and Social Psychology*, *41*, 207-212.

Tiedens, L. Z. (2001). Anger and advancement versus sadness and subjugation: The effects of negative emotion expressions on status conferral. *Journal of Personality and Social Psychology*, *80*, 86-94. doi:10.1037//0022-3514.80.1.86

van der Schalk, J., Hawk, S. T., Fischer, A. H., & Doosje, B. J. (2011). Moving faces, looking places: Validation of the Amsterdam Dynamic Facial Expression Set (ADFES). *Emotion*, *11*, 907-920. doi:10.1037/a0023853

van der Toorn, J., Tyler, T. R., & Jost, J. T. (2011). More than fair: Outcome dependence, system justification, and the perceived legitimacy of authority figures. *Journal of Experimental Social Psychology*, *47*, 127-138. doi:10.1016/j.jesp.2010.09.003

van Honk, J., Tuiten, A., Verbaten, R., van den Hout, M., Koppeschaar, H., Thijseen, J., & de Haan, E. (1999). Correlations among salivary testosterone, mood, and selective attention to threat in humans. *Hormones & Behavior*, *36*, 17-24. doi:10.1006/hbeh.1999.1521

Van Kleef, G. A. (2009). How emotions regulate social life. *Current Directions in Psychological Science*, *18*, 184-188. doi:10.1111/j.1467-8721.2009.01633.x

Van Kleef, G. A., Oveis, C., Van der Löwe, I., LuoKogan, A., Goetz, J., & Keltner, D. (2008). Power, distress, and compassion: Turning a blind eye to the suffering of others. *Psychological Science*, *19*, 1315-1322. doi:10.1111/j.1467-9280.2008.02241.x

Wagner, H. L. (1993). On measuring performance in category judgment studies of nonverbal behavior. *Journal of Nonverbal Behavior*, *17*, 3-28. doi:10.1007/BF00987006

Yiend, J. (2010). The effects of emotion on attention: A review of attentional processing of emotional information. *Cognition and Emotion*, *24*, 3-47. doi:10.1080/02699930903205698