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How does power affect emotion regulation?
Power roles, social norm concerns, and the regulation of anger and sadness

By

Jordan A. Tharp

A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in

Psychology

in the

Graduate Division

of the

University of California, Berkeley

Committee in charge:

Professor Serena Chen, Chair

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Professor Cameron Anderson

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Abstract

How does power affect emotion regulation?
Power roles, social norm concerns, and the regulation of anger and sadness

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Asymmetries in power, or the control over valued resources and outcomes, exist in social relations across a broad range of contexts. Power influences motivation, behavior, and emotional expression, and in turn can impact social interactions both positively and negatively. However, little is known about how power specifically influences emotion regulation. The present research examined whether experimentally manipulated power roles (e.g., being a boss versus an employee) affect regulation of anger and sadness, and how social norm concerns – beliefs about appropriateness, closeness, and power concerns – might explain these effects. Using a within-subjects design, one exploratory study (Study 1, $N = 207$) varied hypothetical power roles (i.e., high, equal, and low power vis-à-vis another person) and assessed their impact on emotion regulation (suppression, acceptance, and reappraisal). Participants reported more suppression, less acceptance, and more reappraisal in the high- and low-power roles compared to the equal-power role. These effects were consistent across anger and sadness scenarios and male and female gender. A pre-registered study (Study 2, $N = 447$) replicated Study 1 while also exploring social norm concerns as a potential mechanism driving the effects of power roles on emotion regulation. Study 2 replicated Study 1's effects and also suggested that social norm concerns partially statistically mediated the power-role effects on suppression, acceptance, and reappraisal. A pre-registered study (Study 3, $N = 291$) replicated and confirmed Study 1 and Study 2's main effects and Study 2's mediation. A pre-registered study (Study 4, $N = 471$) then assessed a boundary condition (i.e., the other person in the power role scenario as the source of the to-be-regulated emotion vs. a bystander), and replicated main and mediation effects from Studies 1-3 in the low-power (but not high-power) compared to equal-power role, supporting the idea that the source of the to-be-regulated emotion matters when individuals possessing different power roles regulate negative emotions. A final between-subjects study (Study 5, $N = 116$) expanded previous study designs by experimentally manipulating power roles vis-à-vis an interaction partner who, in the course of the interaction, was the source of the to-be-regulated negative emotion. Power roles did not directly affect emotion regulation, but indirect effects via social norm concerns on suppression and acceptance seen in Study 4 were replicated. Overall, the findings suggest that different power roles differentially influence the regulation of anger and sadness and that social norm concerns partially explain these effects. The effects of social norm concerns depend in part on the source of the to-be-regulated emotion. This research provides

novel insights and explanations for how and why individuals occupying different power roles manage their negative emotions.

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Dedication

To Kevin and Nolan, my heart and soul.

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Introduction

Imagine you work for a large company. You leave your residence for a meeting, only to find that someone has damaged your car and left no note. You realize you are now late for your meeting and feel angry. You rush to the office and the person you are meeting with asks if you are ok. How would you respond if this person were your boss? Your coworker? A person you supervise? Your concerns about social norms – power-related beliefs about appropriateness, closeness, and appearing weak – associated with your power role vis-à-vis the other person may influence your response. For example, you may consider the appropriateness of revealing your emotions to someone you hold power over or who holds power over you, concerns you may not take into consideration with someone of similar power. We propose that power roles – an individual's position relative to others – crucially shape one's social norm concerns and, in turn, how one regulates one's emotions.

Power influences many aspects of an individual's behaviors, motivations, perceptions, and emotional expression, including how they relate and respond to others of varying power. Despite how ubiquitous power asymmetries are in everyday social interactions surprisingly little research has examined how power shapes emotion regulation. The current research aimed to address this knowledge gap. To do so, across five studies I manipulated power roles (high, equal, and low power), measured three types of emotion regulation (suppression, acceptance, and reappraisal), and examined social norm concerns – beliefs about appropriateness, relationship closeness, and attaining/maintaining power – as a potential explanation to account for the proposed links between power roles and emotion regulation. In the following sections, I review, first, conceptual considerations that led to my model regarding the effects of power on social norm concerns and emotion regulation and, second, I summarize the relevant empirical evidence.

Power and Emotion Regulation: Conceptual Considerations

Broadly speaking, power entails being in control of valued resources and outcomes (Anderson, John, & Keltner, 2012; Blader & Chen, 2014). Power can come in various forms, such as in the form of an individual's personal sense of power, or in the form of the control that comes with occupying a particular social role (e.g., a boss). A body of research shows a divergence in characteristics between these different forms of power, including how salient power-related norms are likely to be.

A power role inherently involves one's direct position in relation to another person or people. These roles often come with salient expectations, responsibilities, and norms about appropriate behavior, which can both enhance and limit the scope of an individual's actions (van Dijke & Poppe, 2006). High-power roles have been associated with less stereotyping due to greater individuation (Overbeck & Park, 2001), greater interpersonal sensitivity (Schmid Mast, Jonas, & Hall 2009; Tost, 2015), and more sharing of information when working towards a group goal (Scholl, Landkammer, & Sassenberg 2019), while also leading to more constraint, including emotional control (Keltner et al., 2008; Lawler & Thye, 1999). This last finding is important as emotional expressions can be used to inform and influence others, and depending on the interaction counterpart, appropriateness, for one, may dictate the degree to which emotions are expressed (van Kleef, van Doorn, et al., 2011), and this in turn can have crucial implications for how an individual regulates their emotions. However, across the literature, little research has directly examined how different forms power might relate to emotion regulation.

Emotion regulation is the process of managing emotional experiences and expression (Gross & John, 2003). Three widely-researched and frequently-used emotion-regulation strategies include suppression (reducing behavioral displays of an emotion; Gross, 1998), acceptance

(experiencing emotions without judgment; Baer et al., 2008), and reappraisal (cognitively reframing the meaning of an emotional event; Gross, 1998). So how might power affect the use of these emotion regulation strategies?

When it comes to power roles and emotion regulation, individuals likely hold power-related social norm concerns (i.e., appropriateness, relationship closeness, and appearing weak) in power roles, particularly about how one's emotions should be regulated. Revisiting the car example from the beginning, being in the presence of a boss or a person you supervise, compared to a person of equal power, disclosure of true emotions such as anger, is less likely because it would be inappropriate to do so. Power roles may have a direct effect on emotion regulation and social norm concerns could be an explanation for this link. It may be that when power roles are salient, such as in a workplace, individuals in high- and low-power roles choose to be more constrained in their emotion expression because of social norm concerns. These social norm concerns specific to power roles and emotion regulation may not be at play in the same way when one is simply experiencing a higher or lower sense of power, or when two individuals of equal power are interacting. Research supports the idea that high- and low-power roles do not always entail different psychological states or behaviors and thus could share similar social norm concerns, particularly when compared to equal-power roles (Schaerer, du Plessis, Yap, & Thau, 2018). In other words, real-world settings that add nuanced social layers to power roles in turn create a set of expectations and social norms that may lead to a different set of outcomes than a general sense of power. This distinction highlights the importance of understanding how power roles operate separately from a sense of power.

Key social norm concerns associated with power roles include constructs pertaining to appropriateness, relationship closeness, and attaining/maintaining power. While superficially these constructs appear to be distinct, they may be interconnected in the context of power dynamics. In general, self-disclosure, or the revealing of personal information, to non-close others or those with differing levels of power (i.e., a boss and employee) can be seen as inappropriate (Chaikin & Derlega, 1974; Derlega & Chaikin, 1977; Gallois, 1994). Indeed, the expression of emotions such as anger or sadness is deemed inappropriate specifically in the workplace across all positions of power (e.g., CEO or trainee; Brescoll & Uhlmann, 2008; Diefendorff & Greguras, 2009; Domagalski & Steelman, 2007). Further, research has shown that the experience of power increases disengagement and social distance, or the degree to which an individual feels less close to others (Lammers, Galinsky et al., 2012; Magee & Smith, 2013; Foulk, et al., 2020). In other words, when individuals have positions of high power, they experience decreased relationship closeness, which in turn decreases disclosure. Finally, disclosure of emotions in interpersonal relationships may be related to maximization of both comfort and personal power (Guthrie & Snyder, 1988), and different rules appear to apply depending on the position of power the communicator is in. For instance, disclosure of weakness (or emotions associated with weakness) was considered inappropriate for individuals in high-power positions but not equal- or low-power positions (Bryan & Gallois, 1992). Thus, individuals in high- and low-power roles (e.g., a boss and an employee), relative to an equal-power role, are likely to feel it is inappropriate and in violation of norms about maintenance of distance from one's opposite-power counterpart, and in turn, exposing too much vulnerability to disclose or express, particularly, negative emotions may impact one's ability to attain or maintain their power. These increased social norm concerns thus may lead to more suppression and reappraisal and less acceptance of emotions, and it might do so via power roles' effects on social norm concerns (see Figure 1 for proposed conceptual model). In

sum, while individuals occupying high- and low-power roles are hierarchically opposing to each other, they may hold similar concerns about norms pertaining to power-related roles.

Taken together, social norm concerns may be critical to emotion regulation. For instance, suppression appears to be tied to social contexts and is used especially in the presence of non-close others (English et al., 2018). Further, suppression, specifically of negative emotions, for a high-power individual may be beneficial for the relationship overall, even if it is less beneficial for the individual (Le & Impett, 2013). Therefore, suppression of negative emotions may be most appropriate in situations with salient power roles, particularly in the workplace, because it both masks the inappropriate expression of emotions and be adaptive for the interaction. Because of social norms related to power roles, simply allowing the experience and expression of emotions (i.e., acceptance) may in fact violate these norms. Given this, it would be expected that individuals in high- and low-power roles suppress their emotions more and accept their emotions less in order to comply with social norms such as appropriateness or relationship closeness. Individuals in high- and low-power roles may also reappraise their emotions more to reframe or justify their concerns about power role-related social norms.

Power and Emotion Regulation: Empirical Evidence

Some empirical evidence has examined links between power and emotion regulation. The existing research has focused on a sense of power. To date, only six studies have examined power with suppression, one study with acceptance, and two studies with reappraisal. Overall, across the small body of research, findings suggest that high-power compared to low-power individuals were less likely to use suppression, and more likely to use acceptance and reappraisal (Catterson et al., 2017; English, John, Srivastava, & Gross, 2012; Leach & Weick, 2019; Petkanopoulou, Willis, & Rodríguez-Bailón, 2012; Pilch et al., 2018; Zerwas et al., under review). Because these studies focused on a sense of power, which is relatively general, cutting across various domains, contexts, and relationships, power-related social norms and constraints on behavior are often not particularly salient (Galinsky et al, 2008; Guinote, 2017; Lammers et al, 2009; Lammers et al., 2012), thus provides some understanding for why individuals high in power suppressed less and accepted and reappraised more.

To the best of our knowledge, the relationships between power roles and suppression, acceptance, and reappraisal have not yet been examined. Unlike previous research, which has focused on sense of power, as a state or trait measure, our goal was to design a study with high- and low-power roles for direct comparison to each other and to a context where power is not present (e.g., equal power). The latter is a particularly important aspect of the present research because there is a dearth of research on the characteristics of equal-power roles and how they compare to unequal-power roles (i.e., high and low power; Anicich & Hirsch, 2017). Based on existing research linking social norm concerns to power (Brescoll & Uhlmann, 2008; Diefendorff & Greguras, 2009; Lammers, Galinsky et al., 2012), and social norm concerns to emotion expression and thus indirectly to emotion regulation (English et al., 2018), the present research was designed to take a comprehensive assessment of the effects of power roles on various emotion-regulation strategies and understand how power-role-related social norms influence these relationships.

The Present Research

The present research aimed to address two main questions: (1) Do power roles affect emotion regulation? and (2) Do social norm concerns associated with these roles explain the effects of power roles on emotion regulation? To address the first question, we experimentally manipulated power and assessed emotion regulation in negative emotion scenarios (anger and

sadness) across five studies. In Studies 1-4, using within-subjects study designs, individuals completed high-, equal-, and low-power roles in an imagined workplace scenario, using equal-power (i.e., no power difference) as a control condition. In Study 5, using a between-subjects design, we randomly assigned individuals to a high-, equal-, or low-power role in an online interaction, again using equal-power as a comparison condition. Importantly, in Studies 1-3 the source of the to-be-regulated emotion was elicited by an event unrelated to the power dynamic (i.e., a car accident before a meeting, such as the scene describe in the introduction), whereas in Studies 4 and 5 the source was directly related to the power dynamic (i.e., a disruptive coworker during a meeting). Assessing this possible boundary condition of the source of the negative emotion (i.e., what caused the emotional experience) was a critical step in determining if the emotion regulation patterns seen in Studies 1-3 (i.e., more suppression, less acceptance, and more reappraisal) always occur in the presence of power role asymmetries compared to equal power roles, or if certain conditions or circumstances alter these emotion regulation patterns in power role asymmetries.

Based on our reasoning about social norm concerns in situations where power roles are salient, we predicted that participants in a high- or low-power role would suppress their emotions more, accept their emotions less, and reappraise their emotions more relative to an equal-power role. We also predicted that participants in high- and low-power roles would not differ from one another because individuals occupying both power roles hold similar social norm concerns. However, we also predicted that when the source of the to-be-regulated emotion is elicited from the power dynamic, an alternate pattern could arise such that relative to individuals in the low-power role, individuals in the corresponding high-power role would suppress less, accept more, and reappraise more.

We anticipated that the above findings would hold in both anger and sadness scenarios. We focused on these two negative emotions for several reasons: anger and sadness are typically associated with high- and low-power, respectively (Tiedens et al., 2000; Tiedens, 2001), and they are emotions that are regulated frequently, particularly in a workplace setting (Brescoll & Uhlmann, 2008; Diefendorff & Greguras, 2009; Rivers et al., 2007). Finally, using multiple emotions of the same valence enabled us to speak to whether our findings are specific or not to just one emotion. In testing our first hypothesis, analyses for Study 1 were exploratory, whereas analyses for Studies 2 through 5 were pre-registered and confirmatory.

To understand how social norm concerns affect the power role—emotion regulation relationship, we assessed social norm concerns in terms of individuals' beliefs about emotion appropriateness, relationship closeness, and attaining or maintaining power. We predicted that social norm concerns would at least partially mediate the effects of power roles (high/low power versus equal power) on suppression, acceptance, and reappraisal. To test our second hypothesis, analyses were exploratory for Study 2 and pre-registered confirmatory for Studies 3 and 4; Study 1 did not address this hypothesis.

Study 1

In Study 1, using a within-subjects design, we examined whether manipulated power roles (high, equal, and low power) in anger and sadness scenarios affect emotion regulation (suppression, acceptance, and reappraisal). Analyses for Study 1 were exploratory.

Method

Procedures were approved by the university ethics board prior to data collection.

Participants. Participants ($N = 267$) were recruited through the research participation pool for undergraduate students at a large public North American university. Participants received partial course credit in their undergraduate psychology courses as compensation for completing online procedures. The final sample ($N = 207$) was after excluding 67 participants for failure to complete procedures beyond consent or failure to respond correctly to 2 or more power role comprehension checks (described below). Due to the exploratory nature of the study design, a post-hoc power analysis was conducted, and suggested that the final sample was 77% powered to detect medium (Cohen's $f = 0.25$) effects. Sample characteristics for each study are summarized in Table 1.

Measures. All measures were completed online.

Emotion scenarios. As noted, participants were randomly assigned to read one of two possible negative emotion scenarios. Those in the anger group read a scenario about their car being damaged and those in the sadness group read a scenario about a friend being diagnosed with cancer (see Appendix A for full vignettes). After reading the scenario, participants were asked to write one to two sentences about their thoughts and feelings about the scenario.

Power-role manipulation. Regardless of their assignment to the anger or sadness condition, each participant read and responded to three different versions of the negative emotion scenario, varying in the power role they were asked to imagine themselves in. Specifically, after reading the negative emotion scenario about their car (anger) or friend (sadness), they were asked to imagine (separately) the meeting they are late for is with a person they supervise, a coworker, and a boss. After each power-role manipulation, participants were asked to write three to five sentences about how they would respond to that person, including their thoughts and behaviors during the conversation.

Manipulation and comprehension checks. After reading the emotion scenario (but before the power manipulations), participants were asked to rate six emotions (e.g., anger, annoyed, anxious, content, excited, and sadness) on a 7-point scale, ranging from 1 (none at all) to 7 (extremely) to assess whether the scenario produced the target emotion (anger or sadness) more than other emotions. As described above, seeing if the anger scenario produced more anger than the sadness scenario and vice versa was not assessed as the current hypotheses were more concerned with the target emotion being highest within each emotion scenario.

Immediately following the power-role manipulation within each condition, participants were asked to select from a list of four possible responses (*a person they supervise, coworker, boss, or a friend*) with whom they had just imagined their conversation to assess whether participants paid attention to the manipulation itself.

Participants were also asked to rate the extent they felt eight power-related emotions (e.g., ashamed (reverse-key), assertive, confident, decisive, firm, in-charge, timid (reverse-key), and uncertain (reverse-key)) on a 7-point scale, ranging from 1 (none at all) to 7 (extremely). We created a composite by averaging the eight items to assess the validity of our power role manipulation ($\alpha = .77$, averaged across conditions and emotion scenarios), such that the high-power role should elicit the greatest feelings of power emotions, whereas the low-power role should elicit the lowest feelings of power emotions, and the equal-power role should elicit feelings between high- and low-power roles.

Emotion regulation. We adapted two items each for suppression (e.g., "Hide what you were feeling." and "Not express your feelings.") and reappraisal (e.g., "Change the way you thought about the situation." and "Reinterpret the situation to feel differently.") from the Emotion Regulation Questionnaire (ERQ; Gross & John, 2003), and two items for acceptance (e.g., "Accept

your feelings as a natural response to the situation,” and “Just let your feelings happen.”) from the Nonjudgement subscale of the Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2008). The items used the question stem “*In the conversation you imagined with [a person you supervise, coworker, boss], to what extent did you....*” Participants answered each item using a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). We took the average of items for each strategy within each condition, such that higher scores indicated greater use of that emotion-regulation strategy (across conditions and emotion scenarios, average $r_{\text{suppression}} = .69$; average $r_{\text{acceptance}} = .46$; average $r_{\text{reappraisal}} = .65$). Emotion regulation strategies were generally correlated across emotion scenarios and conditions (correlations by condition within each emotion scenario for each study are summarized in Table 2).

Procedure. The entire study was conducted online. Participants first completed basic demographic items. Then, participants were randomly assigned (via computer-generated random assignment) to complete one negative emotion scenario, anger or sadness, as a between-subjects’ manipulation. They then were asked to read the negative emotion scenario (anger or sadness) and write one to two sentences about their thoughts and feelings as they relate to the scenario. They completed baseline emotion ratings (e.g., anger, annoyed, anxious, content, excited, and sadness) after reading the scenario, but before any power-role manipulation. The order of power conditions (high, equal, and low power) presented within each scenario was semi-randomized in a Latin Square (i.e., each condition equally appeared as the first, second, and third condition across participants). For each condition, participants imagined having conversations and interacting with a person they supervise (high power), a coworker (equal power), and a boss (low power). They answered questions about power-related emotions (e.g., assertive) and emotion regulation (acceptance, reappraisal, and suppression) following each manipulation.

Results

Data were cleaned and analyzed using R statistical computing platform (version 3.6.0, RStudio version 1.2.1335-1). See Figure 2 for means of key study variables.

Manipulation checks. To assess whether the negative emotion scenarios produced the target emotion (anger or sadness) more than other emotions, we computed two repeated-measures ANOVAs, one for each scenario, with emotion rating as the outcome variable and emotion (e.g., anger, annoyed, anxious, content, excited, and sadness) as the predictor variable to compare the mean of the target emotion to the mean of other emotions. Anger and annoyance were highly correlated ($r = .62$), thus anger was assessed as a composite of the two. The anger composite mean was higher than the mean of other emotions ($M_{\text{anger composite}} (SD) = 6.09 (0.97)$; $M_{\text{anxious}} (SD) = 4.86 (1.82)$; $M_{\text{content}} (SD) = 1.39 (0.85)$; $M_{\text{excited}} (SD) = 1.32 (0.80)$; $M_{\text{sadness}} (SD) = 4.58 (1.80)$) within the anger scenario ($F(5,1108.7) = 546.67, p < .001$). Sadness mean was higher than the mean of other emotions ($M_{\text{anger composite}} (SD) = 2.45 (1.44)$; $M_{\text{anxious}} (SD) = 5.25 (1.72)$; $M_{\text{content}} (SD) = 1.36 (0.71)$; $M_{\text{excited}} (SD) = 1.13 (0.54)$; $M_{\text{sadness}} (SD) = 6.43 (0.90)$) within the sadness scenario ($F(5,1098.3) = 693.88, p < .001$).

We next assessed the validity of our power role manipulation by testing whether assignment to the high-power role elicited the greatest feelings of power emotions and assignment to the low-power role elicited the lowest feelings of power emotions, and feelings of power emotions in the equal-power role falling in between high- and low-power roles. For each emotion regulation strategy (suppression, acceptance, reappraisal) within each emotion scenario, repeated-measures ANOVAs was conducted with power condition (high, equal, low) as a within-subject predictor and power emotion composite as the outcome variable. In both emotion scenarios, the high-power role elicited the greatest level of power emotions, whereas the low-power role elicited

the lowest power emotions, with the equal-power role falling in between high and low (Anger: $F(2,200) = 38.78, p < .001$; Sadness: $F(2,200) = 45.71, p < .001$). Three paired samples t-tests were used to make comparisons between conditions, and there was a significant difference between all conditions in both anger and sadness scenarios ($|ts| > 2.75, ps < .001$; see Figure 2 for means). These results suggest that within each emotion scenario, the power-role manipulations were effective.

Hypothesis testing. To test our main hypotheses, we conducted three repeated-measures ANOVAs for each emotion scenario with power condition (high, equal, low) as the predictor variable and each emotion-regulation strategy (suppression, acceptance, reappraisal) as an outcome variable (see Figure 2 for means). To reduce researcher degrees of freedom, the Holm-Bonferroni method was used to account for multiple comparisons.

Overall, we found that participants suppressed more, accepted less, and reappraised more in the high- and low-power roles compared to the equal-power role.

The first test examined whether power condition predicted suppression. Participants were more likely to suppress their emotions in high- or low-power roles compared to the equal-power role (Anger: $F(2,202) = 30.09, p < .001$, partial $\eta^2 = 0.20$, Cohen's $f = 0.50$; Sadness: $F(2,206.5) = 33.06, p < .001$, partial $\eta^2 = 0.22$, Cohen's $f = 0.53$). Paired samples t-tests revealed a significant difference between the equal- and high-power roles ($t = -6.44, p < .001$) and equal- and low-power roles ($t = -6.97, p < .001$) in the anger scenario, and between all three conditions in the sadness scenario ($t_{equal-high} = -8.06$; $t_{equal-low} = -4.98$; $t_{low-high} = -3.07$; $ps < .005$); though there was a statistically significant difference between the high- and low-power roles in the sadness scenario, suppression was higher in both conditions than in the equal-power role.

The second test examined whether power condition predicted acceptance. Participants were less likely to accept their emotions in the high- or low-power roles compared to the equal-power role (Anger: $F(2,202) = 33.48, p < .001$, partial $\eta^2 = 0.22$, Cohen's $f = 0.54$; Sadness: $F(2,208) = 28.59, p < .001$, partial $\eta^2 = 0.19$, Cohen's $f = 0.49$). Paired samples t-tests revealed a significant difference between equal- and high-power roles (Anger: $t = 5.80, p < .001$; Sadness: $t = 7.48, p < .001$) and equal- and low-power roles (Anger: $t = 7.90, p < .001$; Sadness: $t = 4.70, p < .001$) in both emotion scenarios, and the high- and low-power roles in the sadness scenario ($t = 2.78, p = .006$). The high- and low-power roles did not statistically differ in the anger scenario when using the more stringent p -value.

The third test examined whether power condition predicted reappraisal. Participants were more likely to reappraise their emotions in high- or low-power roles compared to the equal-power role (Anger: $F(2,202) = 9.06, p < .001$, partial $\eta^2 = 0.08$, Cohen's $f = 0.29$; Sadness: $F(2,207) = 2.21, p = .11$, partial $\eta^2 = 0.02$, Cohen's $f = 0.14$). Paired samples t-tests revealed a significant difference between the equal- and high-power role ($t = -3.37, p = .002$) and equal- and low-power roles ($t = -4.11, p < .001$) in the anger scenario only; the overall model for the sadness scenario was non-significant but the means patterned in the same direction as anger.

Secondary analyses. To examine whether condition order influenced results, we ran three additional repeated-measures ANOVAs in each emotion scenario assessing power condition and condition order main and interaction effects in each test. Some order effects did appear in both the anger and sadness scenarios, but these effects were inconsistent across suppression and acceptance, and did not emerge at all for reappraisal.

For suppression, the anger and sadness scenarios had slight differences. When low power was presented first, the equal-power role differed from the low-power role, but not high-power role, and the low- and high-power roles differed from each other in the anger scenario ($t_{equal-low} =$

4.82, $t_{\text{low} - \text{high}} = -3.31$); in the sadness scenario, the equal-power role differed from both low- and high-power roles, which did not differ from each other ($t_{\text{equal} - \text{low}} = 2.35$; $t_{\text{equal} - \text{high}} = -2.90$). In both emotion scenarios, when the equal-power role was presented first, all conditions significantly differed from each other ($t_s > 2.30$). When the high-power role was present first, all conditions significantly differed from each other ($t_s > 2.20$) with the exception of the non-significant difference between the low- and high-power roles in the sadness scenario.

For acceptance, the equal-power role differed significantly from low- and high-power roles regardless of which condition was presented first, with two exceptions. In the anger scenario when the high-power role was presented first, equal- and high-power roles did not significantly differ, but low- and high-power roles significantly differed ($t_{\text{equal} - \text{low}} = -5.92$; $t_{\text{low} - \text{high}} = -4.20$). In the sadness scenario, when the equal-power role was presented first, equal- and low-power roles did not differ, but low- and high-power roles did ($t_{\text{equal} - \text{high}} = 5.90$; $t_{\text{low} - \text{high}} = 4.18$).

The order in which conditions were presented did not reverse the direction of the main effects for suppression and acceptance. Even when high- and low-power roles significantly differed from each other, they were always higher or lower than the equal-power role in the predicted direction.

Gender. To examine whether male vs. female gender moderated effects of power role on emotion regulation, we ran three repeated-measures ANOVAs, assessing power condition and gender main and interaction effects in each test. There were no significant main or interaction effects involving gender for suppression, acceptance, or reappraisal in either the anger or sadness scenarios.

Discussion

Results for Study 1 indicated that participants suppressed more, accepted less, and reappraised more when in the high- and low-power role compared to the equal-power role. With the exception of reappraisal of sadness, these effects were consistent across anger and sadness scenarios and genders.

Study 2

For Study 2, we pre-registered hypotheses reflecting Study 1's key power and emotion regulation findings (aspredicted ID: 9624). Specifically, we predicted that across anger and sadness scenarios participants in the high- and low-power roles would suppress their emotions more, accept their emotions less, and reappraise their emotions more relative to the equal-power role; and that participants in the high- and low-power roles would not statistically differ from one another in emotion regulation.

Additionally, expanding upon Study 1, we conducted exploratory analyses to examine whether social norm concerns statistically mediated the link between power roles and emotion regulation. Specifically, using open-ended responses from Study 1, we created a novel measure of social norm concerns as a possible explanatory construct of the observed Study 1 effects.

Method

Participants. Participants ($N = 546$) were recruited through the research participation pool for undergraduate students at a large public North American university. From initial recruitment, 99 were excluded for failure to complete procedures beyond consent or failure to respond correctly to 2 or more of comprehension checks, failure to respond correctly to at least 50% of attention checks (e.g., 'Please answer "Strongly agree" for this question. '), giving us a final sample $N = 447$. After completing a power analysis, we pre-registered a minimum sample size of 402 participants

($N = 201$ per emotion scenario) to detect main effects of power role on emotion regulation; the final sample size was 96% powered to detect medium (Cohen's $f = 0.20$) effects.

Measures. All measures and procedures for Study 2 were the same as in Study 1, except for the addition of items measuring social norm concerns. These items were included after the emotion regulation items within each of the conditions.

Social norm concerns. After reviewing open-ended responses participants completed after reading the emotion scenarios in Study 1, we created eight items to capture three facets of social norm concerns: appropriateness (“Showing my emotions would be wrong.” (reverse-keyed); “Showing my emotions would be appropriate.”), closeness (“Showing my emotions would be too intimate.” (reverse-keyed); “Showing my emotions would not be too personal.”) and power concerns (e.g., maintaining power (“Showing my emotions would be a sign of weakness.” (reverse-keyed); “Showing my emotions would make me appear in control.”) and attaining power (“Showing my emotions would make me lose power.” (reverse-keyed); “Showing my emotions would help me gain power.”). After each power role manipulation, participants were asked to indicate their level of agreement using a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) about their concerns regarding showing their emotions (e.g., “*Showing your emotions is the way you talk, gesture, or behave on the outside*”) in their imagined conversation(s). It should be noted that the eight social norm concern items themselves conceptually could be broken down into two subscales, namely, norms (which included appropriateness and closeness) and power concerns (maintaining and attaining power). However, we measure them as a single factor for two reasons: (1) the intercorrelations between these two subscales was high across power-role conditions (average $r = .77$); (2) in six out of six mediation tests, while subscales differed in partial versus full mediation for three of the tests, the subscales mediated in the same direction. Thus, the eight items were averaged to create a single score, such that higher scores indicated greater social norm concern ($\alpha = .90$, averaged across conditions and emotion scenarios).

Results

Data were cleaned and analyzed using R statistical computing platform (version 3.6.0, RStudio version 1.3.959). The *mediation* package (version 4.5.0) was used for mediation analyses (Tingly, Yamamoto, Hirose, Keele, & Imai, 2014). For means of key variables, see Figure 2.

Manipulation checks. As in Study 1, the mean anger composite ($r_{\text{anger \& annoyance}} = .59$) was higher than the mean of other emotions ($M_{\text{anger composite}} (SD) = 5.70 (1.24)$; $M_{\text{anxious}} (SD) = 4.67 (1.89)$; $M_{\text{content}} (SD) = 1.54 (0.98)$; $M_{\text{excited}} (SD) = 1.25 (0.71)$; $M_{\text{sadness}} (SD) = 4.28 (1.80)$) within the anger scenario ($F(4,886.1) = 528.76, p < .001$). Sadness mean was higher than the mean of other emotions ($M_{\text{anger composite}} (SD) = 2.45 (1.37)$; $M_{\text{anxious}} (SD) = 5.35 (1.63)$; $M_{\text{content}} (SD) = 1.50 (0.91)$; $M_{\text{excited}} (SD) = 1.16 (0.59)$; $M_{\text{sadness}} (SD) = 6.29 (1.00)$) within the sadness scenario ($F(5,1098.3) = 693.88, p < .001$).

As in Study 1, within the anger and sadness scenarios, the high-power role elicited the greatest level of power emotions (e.g., assertive, timid (reverse-keyed)), the low-power role elicited the lowest power emotions, and the equal-power role fell in between (Anger: $F(2,437.15) = 126.41, p < .001$; Sadness: $F(2,431.70) = 66.08, p < .001$). There was a significant difference between all three conditions in both anger and sadness scenarios ($|ts| > 4.00, ps < .001$; see Figure 2 for means). Replicating Study 1, the power-role manipulations were effective.

Hypothesis testing. As in Study 1, we conducted three repeated-measures ANOVAs in each emotion scenario with power condition (high, equal, low) as the predictor variable and each emotion-regulation strategy (suppression, acceptance, reappraisal) as an outcome variable. To reduce researcher degrees of freedom, the Holm-Bonferroni method was used to account for

multiple comparisons. Findings from Study 1 were generally replicated with the exception of reappraisal, which had a significant overall model in both emotion scenarios for Study 2.

The first test examined whether power condition predicted suppression. Participants were more likely to suppress their emotions in both the high- or low-power roles compared to equal-power role (Anger: $F(2,202) = 64.77, p < .001$, partial $\eta^2 = 0.49$, Cohen's $f = 0.19$; Sadness: $F(2,206.5) = 28.24, p < .001$, partial $\eta^2 = 0.10$, Cohen's $f = 0.33$). Paired samples t-tests revealed a significant difference between the equal- and high- power condition ($t = -8.75, p < .001$) and equal- and low-power roles ($t = -10.67, p < .001$) in the anger scenario and between all conditions ($t_{equal-high} = -7.51; t_{equal-low} = -4.01; t_{low-high} = -3.51; ps < .001$) in the sadness scenario; though the difference between the high- and low-power roles was statistically significant, suppression was higher than the equal-power role in anger and sadness scenarios.

The second test examined whether power condition predicted acceptance. Specifically, participants were less likely to accept their emotions in high- and low-power roles compared to the equal-power role (Anger: $F(2,442.37) = 58.96, p < .001$, partial $\eta^2 = 0.19$, Cohen's $f = 0.48$; Sadness: $F(2,442) = 16.25, p < .001$, partial $\eta^2 = 0.06$, Cohen's $f = 0.26$). In both emotion scenarios, paired samples t-tests revealed a significant difference between equal- and high-power roles (Anger: $t = 8.44, p < .001$; Sadness: $t = 5.52, p < .001$) and equal- and low-power roles (Anger: $t = 10.13, p < .001$; Sadness: $t = 3.97, p = .001$). There was no significant difference in acceptance between high- and low-power roles in either anger or sadness scenarios.

The third test examined whether power condition predicted reappraisal. Participants were more likely to reappraise their emotions in high- and low-power roles compared to the equal-power role (Anger: $F(2,444.02) = 4.49, p < .001$, partial $\eta^2 = 0.02$, Cohen's $f = 0.14$; Sadness: $F(2,438.65) = 12.82, p < .001$, partial $\eta^2 = 0.05$, Cohen's $f = 0.23$). Paired samples t-tests revealed a significant difference between the equal- and low-power roles ($t = -3.00, p = .008$) in the anger scenario, and between the equal- and high-power roles ($t = -4.92, p < .001$) and equal- and low-power roles ($t = -3.45, p = .001$) in the sadness scenario. There was no significant difference in reappraisal between the equal- and high-power roles within the anger scenario, and the high- and low-power roles in either anger or sadness scenarios.

Replicating Study 1, we found that participants suppressed more, accepted less, and reappraised more in the high- and low-power roles compared to the equal-power role, and the high- and low-power roles were more similar to each other than either was to the equal-power role.

Secondary analyses. We ran three additional repeated-measures ANOVAs in each emotion scenario to assess main and moderation effects of condition order. As with Study 1, some order effects did appear.

For suppression, in the anger scenario, the equal-power and low-power roles significantly differed regardless of which condition was presented first ($ts < -4.40$). The equal-power and high-power roles also significantly differed ($ts < -4.50$) except when the low-power role was presented first. The low- and high-power roles only differed significantly when the high-power role was presented first ($t = 4.35$). In the sadness scenario, there were no significant differences between conditions when equal- and low-power were presented first with the exception of a low-power and high-power when the equal-power role was presented first ($t = -5.54$). When the high-power role was presented first, the low-power role differed significantly from both equal- and high-power roles, which did not differ from each other ($t_{equal-low} = -4.04; t_{low-high} = -4.10$).

For acceptance, the all three conditions differed significantly each other regardless of which condition was presented first in the anger scenario ($|ts| > 2.10$). In the sadness scenario, all three conditions did not differ from each other regardless of which condition was presented first,

with two exceptions. When the low-power role was presented first, equal-power and low-power roles significantly differed ($t = 3.88$) and when the equal-power role was presented first, the low- and high-power roles significantly differed ($t = 5.47$).

For reappraisal, there were no significant differences between conditions when low-power and equal-power roles were presented first within the anger scenario. When the high-power role was presented first, there were significant differences between equal-power and high- and low-power roles ($t_{\text{equal} - \text{low}} = -3.85$; $t_{\text{equal} - \text{high}} = -3.41$). In the sadness scenario, there were also no significant differences between all three conditions with one exception. When the high-power role was presented first, there was a single significant difference between the equal-power and high-power roles ($t = -4.36$). reappraisal.

Order effects were inconsistent across suppression, acceptance, and reappraisal within both anger and sadness scenarios. Even when high- and low-power roles significantly differed from each other, they were always higher or lower than the equal-power role in the predicted direction.

Gender. As with Study 1, we examined whether gender moderated the effects of power role on emotion regulation. We ran three repeated-measures ANOVAs in each emotion scenario, assessing power condition and gender main and interaction effects. In the anger scenario, but not the sadness scenario, there was main effect of gender with suppression ($F(1,220.82) = 9.16$, $t = 3.11$, $p = .002$), and a significant gender x condition interaction effect with suppression. In looking at the simple effects of the interaction, there was a significant effect of gender for the low-power and high-power (but not equal-power) conditions ($F(2,440.87) = 4.90$, $p = .007$, $t_{\text{low-power}} = -3.11$, $t_{\text{high-power}} = -3.43$). There was also a main effect of gender ($F(1,221.03) = 5.12$, $t = -2.69$, $p = .007$) but a non-significant interaction effect with acceptance in the sadness scenario. Because there was no consistent pattern of gender effects across emotion scenarios, gender was not considered in analyses.

Mediation. Causal mediation analyses were computed using 1000 resamples on a quasi-Bayesian Monte Carlo method based on normal approximation (see Tingley, et al., 2014) with a fixed seed set at 321. Because the independent variable (power role) had three levels and mediation predictions were based on differences in emotion regulation between the high- and low-power roles compared to the equal-power role, two separate mediation models were conducted for each emotion regulation strategy within each emotion scenario to look at specific contrasts between equal-low power and equal-high power. See Table 3 for average causal mediation effects (ACME), average direct effects (ADE), total effects, proportion mediated, and 95% confidence intervals, and Figures 3a/b for path coefficients and standard errors.

In the anger scenario, social norm concerns partially mediated the positive effects between equal-low and equal-high and suppression, and partially mediated the negative effects between equal-low and equal-high and acceptance. Social norm concerns fully mediated the positive effects of equal-low and reappraisal. While the direct and total effects were not significant, social norm concerns fully mediated the positive effects of equal-high and reappraisal.

In the sadness scenario, social norm concerns fully mediated the positive effects between equal-low and suppression, and partially mediated the positive effects between equal-high and suppression. Social norm concerns fully mediated the negative effects between equal-low and equal-high and acceptance. Social norm concerns partially mediated the positive effects between equal-low and equal-high and reappraisal.

Across emotion scenarios, this means when in low-power *and* high-power roles, social norms concerns were greater compared to the equal-power role and this accounted for more suppression, less acceptance, and more reappraisal.

Discussion

The goal of Study 2 was a replication of the main effects of Study 1 and exploratory, statistical mediation effects of social norm concerns on the link between power roles and emotion regulation. Main effects (i.e., more suppression, less acceptance, and more reappraisal in high- and low-power roles compared to equal-power role) were fully supported in Study 2, consistent across anger and sadness scenarios and genders. Exploratory mediation analyses revealed that social norm concerns at least partially mediated the link between equal-high and equal-low power comparisons for suppression, acceptance, and reappraisal across emotion scenarios.

Study 3

For Study 3, we pre-registered the same hypotheses as Study 2 (aspredicted ID: 37333). Specifically, we predicted that in anger and sadness scenarios participants in the high- and low-power roles would suppress their emotions more, accept their emotions less, and reappraise their emotions more relative to the equal-power role; and that participants in the high- and low-power roles would not statistically differ from one another in their emotion regulation.

In addition, we pre-registered the hypothesis that social norm concerns would have at least a partial statistical mediating effect across conditions for suppression, acceptance, and reappraisal of anger and sadness.

Method

All measures and procedures for Study 3 are described in Studies 1 and 2. Beyond pre-registering mediation hypotheses, we expanded on Studies 1 and 2 by adapting a reverse-keyed third item from the Nonjudgment subscale (“Tell yourself you shouldn’t be feeling the way you were feeling”) to the acceptance measure.

Participants. Participants ($N = 461$) were recruited through the research participation pool for undergraduate students at a large public North American university. From this initial recruitment, 75 were excluded for failure to complete procedures beyond consent or failure to respond correctly to 2 or more of comprehension checks, failure to respond correctly to at least 50% of attention checks (e.g., ‘Please answer “Strongly agree” for this question.’). Based on a power analysis, we pre-registered a minimum sample size of 428 participants ($N = 214$ per emotion scenario) to detect a small main effect of power role on emotion regulation and a small mediation effect. Post-hoc power analyses on the final sample size ($N = 368$) revealed that the sample was 90% powered to detect a medium (Cohen’s $f = 0.20$) effect.

Results

Data were cleaned and analyzed using R statistical computing platform (version 3.6.0, RStudio version 1.2.1335-1). The *mediation* package (version 4.5.0) was used to run mediation analyses (Tingley, et al., 2014). See Figure 2 for means of key variables.

Manipulation checks. As with Studies 1 and 2, we found that the mean anger composite ($r_{\text{anger \& annoyance}} = .57$) was higher than the mean of other emotions ($M_{\text{anger composite}} (SD) = 5.68 (1.29)$; $M_{\text{anxious}} (SD) = 4.41 (1.87)$; $M_{\text{content}} (SD) = 1.59 (1.13)$; $M_{\text{excited}} (SD) = 1.33 (0.88)$; $M_{\text{sadness}} (SD) = 4.18 (1.98)$) within the anger scenario ($F(4, 740.9) = 376.62, p < .001$). Sadness mean was higher than the mean of other emotions ($M_{\text{anger composite}} (SD) = 2.51 (1.55)$; $M_{\text{anxious}} (SD) = 5.28 (1.74)$; $M_{\text{content}} (SD) = 1.43 (0.92)$; $M_{\text{excited}} (SD) = 1.16 (0.64)$; $M_{\text{sadness}} (SD) = 6.27 (1.15)$) within the sadness scenario ($F(5, 888.89) = 481.48, p < .001$).

As in Studies 1 and 2, within the anger and sadness scenarios, the high-power role elicited the greatest level of power emotions, the low-power role elicited the lowest power emotions, and the equal-power role fell in between (Anger: $F(2, 363.43) = 76.87, p < .001$; Sadness: $F(2, 348.78)$

= 73.32, $p < .001$). There was a significant difference between conditions for both anger and sadness ($|ts| > 3.50$, $ps < .01$; see Figure 2 for means). Replicating Studies 1 and 2, the power-role manipulations were effective.

Hypothesis testing. As in Studies 1 and 2, we conducted three repeated-measures ANOVAs in each emotion scenario with power condition (high, equal, low) as the predictor variable and each emotion-regulation strategy (suppression, acceptance, reappraisal) as an outcome variable. To reduce researcher degrees of freedom, the Holm-Bonferroni method was used to account for multiple comparisons. Findings from Study 1 and 2 were replicated.

The first test examined whether power condition predicted suppression. Participants were more likely to suppress their emotions in high- and low-power roles compared to the equal-power role (Anger: $F(2,370.83) = 54.69$, $p < .001$, partial $\eta^2 = 0.20$, Cohen's $f = 0.50$; Sadness: $F(2,354.44) = 21.75$, $p < .001$, partial $\eta^2 = 0.10$, Cohen's $f = 0.33$). Paired samples t-tests revealed a significant difference between all conditions in the anger scenario ($t_{equal-high} = -6.89$; $t_{equal-low} = -10.26$; $t_{low-high} = 3.36$; $ps < .001$) and between equal- and high-power roles ($t = -6.16$, $p < .001$) and equal- and low-power roles ($t = -5.14$, $p < .001$) in the sadness scenario. In the anger scenario, though the difference between the high- and low-power roles was statistically significant, suppression was higher than the equal-power role.

The second test examined whether power condition predicted acceptance. Specifically, participants were less likely to accept their emotions in high- and low-power roles compared to the equal-power role (Anger: $F(2,367.29) = 33.81$, $p < .001$, partial $\eta^2 = 0.14$, Cohen's $f = 0.40$; Sadness: $F(2, 356.43) = 13.60$, $p < .001$, partial $\eta^2 = 0.06$, Cohen's $f = 0.26$). In the anger scenarios, paired samples t-tests revealed a significant difference between all conditions ($t_{equal-high} = 5.12$, $p < .001$; $t_{equal-low} = 8.13$, $p < .001$; $t_{low-high} = 3.03$; $p = .003$). In the sadness scenario, paired samples t-tests revealed a significant difference between equal- and high-power roles ($t = 5.08$, $p < .001$) and equal- and low-power roles ($t = 3.56$, $p < .001$). There was no significant difference in acceptance between high- and low-power roles in the sadness scenario.

The third test examined whether power condition predicted reappraisal. Participants were more likely to reappraise their emotions in high- and low-power roles compared to the equal-power role (Anger: $F(2,368.61) = 16.12$, $p < .001$, partial $\eta^2 = 0.07$, Cohen's $f = 0.28$; Sadness: $F(2,353.97) = 10.36$, $p < .001$, partial $\eta^2 = 0.05$, Cohen's $f = 0.23$). In both the anger and sadness scenarios, paired samples t-tests revealed a significant difference between the equal- and high-power roles (Anger: $t = -4.32$, $p < .001$; Sadness: $t = -4.34$, $p < .001$) and the equal- and low-power roles (Anger: $t = -5.35$, $p < .001$; Sadness: $t = -3.36$, $p = .001$). There was no significant difference in reappraisal between the high- and low-power roles in either anger or sadness scenarios.

As in Studies 1 and 2, we found that participants suppressed more, accepted less, and reappraised more in the high- and low-power roles compared to equal-power role, and the high- and low-power roles were more similar to each other than either was to the equal-power role.

Secondary analyses. We ran three additional repeated-measures ANOVAs in each emotion scenario to assess main and moderation effects of condition order. As with Studies 1 and 2, some order effects did appear.

For suppression, in the anger scenario, the equal-power and low-power roles significantly differed regardless which condition was presented first ($ts = 4.27-7.18$). The equal- and high-power roles also significantly differed when the low-power role was presented first ($t = 4.42$). The low- and high-power roles only differed significantly only when the high-power role was presented first ($t = 4.35$). In the sadness scenario, there were no significant differences between conditions when low-power role was presented first. The equal-power role differed significantly from the high-

power role when the equal-power and high-power roles were presented first ($t_s = -5.09$ and -4.06 , respectively).

For acceptance, in the anger scenario, the equal- and low-power roles significantly differed when the low- and high-power roles were presented first ($t_s > 5.48$). The low- and high-power roles only differed significantly when the high-power role was presented first ($t = -3.31$). In the sadness scenario, equal-power role significantly differed from the low- and high-power roles when low-power role was presented first ($t = 4.26$ and 3.74). The low- and equal-power roles significantly differed from the high-power role when the equal-power role was presented first ($t = 5.66$ and 5.18). There were no significant differences between conditions when the high-power role was presented first.

For reappraisal, in the anger scenario, the equal-power and low-power roles marginally significantly differed when the low- and high-power roles were presented first ($t_s = -3.18$ and -3.72 , respectively). The equal- and high-power roles marginally significantly differed only when the high-power role was presented first ($t = -3.17$). In the sadness scenario, equal- and low-power roles significantly differed when the low-power role was presented first ($t = -3.33$). The low- and equal-power roles significantly differed from high-power role when the equal-power role was presented first ($t = -3.60$ and -4.23).

Order effects were inconsistent across suppression, acceptance, and reappraisal within both anger and sadness scenarios. Even when high- and low-power roles significantly differed from each other, they were always higher or lower than the equal-power role in the predicted directions.

Gender. As with Studies 1 and 2, we examined whether gender moderated effects of power role on emotion regulation. We ran three repeated-measures ANOVAs in each emotion scenario, assessing power condition and gender main and interaction effects in each model. Similar to Studies 1 and 2, there were no significant main or interaction effects involving gender for suppression, acceptance, or reappraisal in either the anger or sadness scenarios with one exception. There was a single significant gender \times equal-power role interaction effect for suppression in the sadness scenario ($F(2,365.40) = 10.00$, $t = -3.45$, $p = .001$), but no main gender effect. Given this single anomalous finding, that did not replicate Study 2, gender was not considered further.

Mediation. Causal mediation analyses were computed using 1000 resamples on a quasi-Bayesian Monte Carlo method based on normal approximation (see Tingley, et al., 2014) with a fixed seed set at 321. As in Study 2, two separate mediation models were conducted for each emotion regulation strategy within each emotion scenario to look at specific contrasts between equal-low power and equal-high power. See Table 3 for average causal mediation effects (ACME), average direct effects (ADE), total effects, proportion mediated, and 95% confidence intervals, and Figures 3c/d for path coefficients and standard errors.

In Study 3, partial and full mediations of social norm concerns on suppression, acceptance, and reappraisal replicated patterns seen in Study 2, with the exception of four differences: suppression of sadness for equal-low power was partially mediated by social norm concerns (versus full mediation in Study 2); acceptance of anger for equal-high power was fully mediated by social norm concerns (versus partial mediation in Study 2); and reappraisal of anger for both equal-low power and equal-high power were partially mediated by social norm concerns (versus full mediation in Study 2).

In sum, across negative emotion scenarios, when in low-power *and* high-power roles, social norms concerns were higher compared to the equal-power role and this accounted for more suppression, less acceptance, and more reappraisal, thus replicating Study 2.

Discussion

Study 3 was intended to be a replication of the main effects from Study 1 and 2, and a replication of the mediation effects from Study 2. Indeed, Study 3 confirmed main effects (i.e., more suppression, less acceptance, and more reappraisal in high- and low-power roles compared to equal-power role across anger and sadness scenarios and gender), as well as mediation effects—namely, social norm concerns at least partially mediated the link between equal-high power and equal-low power contrasts for suppression, acceptance, and reappraisal of anger and sadness.

Study 4

The goal of Study 4 was to assess a possible boundary condition of the power role effects on emotion regulation documented in the prior studies. In Studies 1-3, the source of the to-be-regulated emotion (i.e., anger or sadness) was not related to the other person in the power-role scenario that participants were asked to imagine. Would the same power-role effects on emotion regulation emerge when the source of the to-be-regulated emotion came directly from the other person in a power? To test this, individuals completed imagined vignettes (similar to Studies 1-3) but we changed the source of a negative emotion (i.e., anger or sadness) so that it was directly related to the power dynamic. We pre-registered similar hypotheses as Studies 2 and 3 for manipulation checks, and main and mediating hypotheses. Specifically, we predicted that in anger and sadness scenarios participants in the high- and low-power roles would suppress their emotions more, accept their emotions less, and reappraise their emotions more relative to the equal-power role; and that participants in the high- and low-power roles would not statistically differ from one another in their emotion regulation. We further predicted that social norm concerns would have at least a partial mediating effect across conditions for suppression, acceptance, and reappraisal of anger and sadness.

To expand upon Studies 2 and 3, we pre-registered a competing main hypothesis that participants in the high-power roles would suppress their emotions *less*, accept their emotions *more*, and reappraise their emotions more, relative to equal and low power conditions; equal- and low-power roles would differ significantly in the expected direction. We proposed this competing hypothesis based on previous findings of high power and emotion expression (c.f., Gan, et al., 2018; Keltner, et al., 2003; Kraus, Chen, & Keltner, 2011), which highlight that individuals in high power more freely express their emotions. Thus, when the source of a negative emotion comes directly from their subordinate, greater emotional expression (and less regulation of emotion) may be aligned with their high-power role, and more appropriate, or even reinforcing of their power.

Method

Participants. Participants ($N = 584$) were recruited through the research participation pool for undergraduate students at a large public North American university. From this initial recruitment, 113 were excluded for failure to complete procedures beyond consent, failure to respond correctly to 2 or more of comprehension checks, or failure to respond correctly to at least 50% of attention checks (e.g., ‘Please answer “Strongly agree” for this question.’). Based on a power analysis, we pre-registered a minimum sample size of 442 participants ($N = 221$ per emotion scenario) to detect a small main effect of power on emotion regulation and a small mediation effect. Post-hoc power analyses on the final sample size ($N = 471$) revealed that the sample was 96% powered to detect a medium (Cohen’s $f = 0.20$) effect.

Measures. Measures for Study 4 were similar to those described in Studies 1-3, with the exception of new emotion scenarios. Because the power manipulations were embedded directly in

the emotion scenarios, there were also no baseline emotion ratings for Study 4. Post-manipulation emotion ratings, including power emotion ratings were the same, with the inclusion of an additional emotion: “distressed;” these emotion ratings were made after each imagined interaction.

Emotion scenarios and power-role manipulation. As in Studies 1-3, participants were randomly assigned to read one of two possible negative emotion scenarios. However, unlike Studies 1-3, participants did not read the scenario prior to the power manipulations because in Study 4, the negative emotion was coming directly from the imagined interactions. It has been shown that anger in particular may be elicited by slightly different events depending on power role (c.f., Fitness, 2000). However, we chose an event category (i.e., immoral behavior) for the anger vignettes that elicited varying degrees of anger across roles (e.g., an individual is chronically late and disruptive during a meeting) for the anger scenario. For a power-dynamic related sadness eliciting event, we chose a social rejection scenario (e.g., an individual requested not be paired with you), which has been shown to be associated with, and used to induce, sadness (Leary, Haupt, Strausser, & Chokel, 1998; Wood, Heimpel, Manwell, & Whittington, 2009). Each participant read and responded to three different versions of the negative emotion scenario, varying in the power role they were asked to imagine themselves in. Specifically, after reading the negative emotion scenario they were asked to imagine (separately) the interaction is with an intern, a coworker, and a boss (see Appendix B for vignettes). After reading each power-role manipulation emotion scenario, participants were asked to write three to five sentences about how they would respond to that person.

Results

Data were cleaned and analyzed using R statistical computing platform (version 4.0.4, RStudio version 1.3.959). The *mediation* package (version 4.5.0) was used to run mediation analyses (Tingley et al., 2014). See Figure 2 for means of key variables.

Manipulation checks. As with Studies 1-3, we found that the mean anger composite ($r_{\text{anger}} \& \text{annoyance} = .72$) was higher across conditions than the mean of other emotions ($M_{\text{anger composite}} (SD) = 4.42 (1.55)$; $M_{\text{anxious}} (SD) = 3.40 (1.87)$; $M_{\text{content}} (SD) = 2.08 (1.41)$; $M_{\text{distress}} (SD) = 3.18 (1.84)$; $M_{\text{excited}} (SD) = 1.53 (1.00)$; $M_{\text{sadness}} (SD) = 1.86 (1.31)$) within the anger scenario ($F(5,3797.6) = 458.91, p < .001$). Pairwise t-tests revealed that the equal-power role had a marginally significantly higher anger composite than the low- and high-power roles ($t_{\text{equal-high}} = -2.52, p = .02$; $t_{\text{equal-low}} = 2.71, p = .02$). In the sadness scenario, sadness, anxious, and distress were highly correlated ($r_s = .63-.69$), thus a composite was created using the average mean of the three emotions. The mean sadness composite was higher than the mean of other emotions ($M_{\text{sadness composite}} (SD) = 4.15 (1.67)$; $M_{\text{anger}} (SD) = 3.12 (1.81)$; $M_{\text{annoy}} (SD) = 3.40 (1.88)$; $M_{\text{content}} (SD) = 1.89 (1.26)$; $M_{\text{excited}} (SD) = 1.45 (0.90)$) within the sadness scenario ($F(3,2670.6) = 690.41, p < .001$). Pairwise t-tests revealed a significant difference among all conditions in the sadness composite, such that high-power role had the lowest mean level ($M_{\text{high-power}} (SD) = 3.54 (1.62)$) and the low-power role had the highest mean level ($M_{\text{low-power}} (SD) = 4.90 (1.50)$); $t_{\text{equal-high}} = 5.29, p < .001$; $t_{\text{equal-low}} = -10.15, p < .001$; $t_{\text{low-high}} = 15.51, p < .001$). Thus, replicating Studies 1-3, the emotion manipulations were generally effective at inducing the target emotions.

As in Studies 1-3, within the anger and sadness scenarios, the high-power role elicited the greatest level of power emotions, the low-power role elicited the lowest power emotions, and the equal-power role fell in between (Anger: $F(2,444.55) = 217.15, p < .001$; Sadness: $F(2,480.25) = 83.56, p < .001$). There was a significant difference among all conditions for both anger and sadness ($|ts| > 4.60, ps < .01$). Replicating Studies 1-3, the power-role manipulations were effective.

Hypothesis testing. As in Studies 1-3, we conducted three repeated-measures ANOVAs for each emotion scenario with power condition (high, equal, low) as the predictor variable and each emotion-regulation strategy (suppression, acceptance, reappraisal) as an outcome variable. To reduce researcher degrees of freedom, the Holm-Bonferroni method was used to account for multiple comparisons. Overall, findings from Studies 2 and 3 were only partially replicated, and a novel pattern emerged.

The first test examined whether power condition predicted suppression. Unlike the pattern seen in the first three studies, participants were more likely to suppress their emotions in the low-power role compared to the equal- and high-power roles (Anger: $F(2,445.43) = 96.99, p < .001$, partial $\eta^2 = 0.28$, Cohen's $f = 0.62$; Sadness: $F(2,483.54) = 22.67, p < .001$, partial $\eta^2 = 0.08$, Cohen's $f = 0.29$). Paired samples t-tests revealed a significant difference among all conditions in the anger scenario ($t_{equal-high} = 2.12, p = .04$; $t_{equal-low} = -10.87, p < .001$; $t_{low-high} = 13.00; p < .001$) and between equal- and low-power roles ($t = -5.37, p < .001$) and low- and high-power ($t = 6.19, p < .001$) in the sadness scenario. There was no statistical difference between equal- and high-power in the sadness scenario.

The second test examined whether power condition predicted acceptance. In the anger scenario, participants were less likely to accept their emotions in the low-power role compared to both the equal- and high-power roles (Anger: $F(2,445.44) = 199.68, p < .001$, partial $\eta^2 = 0.43$, Cohen's $f = 0.87$). Paired samples t-tests revealed a significant difference between equal- and low-power roles ($t = 17.13, p < .001$) and low- and high-power roles ($t = -17.47; p < .001$). However, similar to Studies 1-3, in the sadness scenario, participants in the low- and high-power roles were less likely to accept their emotions compared to the equal-power role (Sadness: $F(2, 479.45) = 5.59, p = .004$, partial $\eta^2 = 0.02$, Cohen's $f = 0.15$). Paired samples t-tests revealed a significant difference only between equal- and low-power roles ($t = 3.33, p = .003$). There was no significant difference in acceptance between high- and low-power and equal- and high-power roles in the sadness scenario.

The third test examined whether power condition predicted reappraisal. In the anger scenario, participants were more likely to reappraise their emotions in the low-power role compared to the equal- and high-power roles ($F(2,446.51) = 6.24, p = .002$, partial $\eta^2 = 0.02$, Cohen's $f = 0.16$). Paired samples t-tests revealed a significant difference between the equal- and low-power roles ($t = -2.75, p = .01$) and the low- and high-power roles ($t = 3.30, p = .003$). In the sadness scenario, there was no significant difference between conditions in reappraisal ($F(2,481.43) < 1.00, p = .40$, partial $\eta^2 = 0.003$, Cohen's $f = 0.06, |ts| < 1.30$).

Results only partially replicated Studies 1-3 primary hypotheses. Namely, we found that participants suppressed more, accepted less, and reappraised more in the low-power role compared to the equal- and high-power roles in the anger scenario. This differs from Studies 1-3 in that there were no significant differences between the equal- and high-power roles in all emotion regulation strategies across scenarios, and there were significant differences between high- and low-power roles in all emotion regulation strategies in the anger scenario. In the sadness scenario, participants suppressed more in the low-power role compared to the equal- and high-power role, but accepted less only compared to the equal-power role; low- and high-power roles were more similar to each other in acceptance, with equal-power role accepting the most. Unlike Studies 1-3, there was no significant difference between conditions for reappraisal in the sadness scenario. Thus, our pre-registered competing set of hypotheses received some support, in that the high-power role compared to the low-power role suppressed less and accepted more across both negative emotion scenarios, and reappraised more in the anger scenario. Across both negative emotion scenarios,

equal- and high-power roles were more similar to each other than low- and high-power roles, with the high-power role tending to have non-significantly higher means than the equal-power role.

Secondary analyses. We ran three additional repeated-measures ANOVAs in each emotion scenario to assess main and moderation effects of condition order. As with Studies 1-3, some order effects did appear. For suppression, in the anger scenario, the low-power role significantly differed from the equal-power role regardless of which condition was presented first ($t_s = 5.20-6.97$). The low- and high-power roles also significantly differed regardless of which condition was presented first ($t_s = 5.92-9.59$). The equal- and high-power roles did not significantly differ regardless of order. In the sadness scenario, the low-power role only significantly differed from the high-power role when the low-power role was presented first ($t = 4.69$, $p < .001$). There were no other significant differences between conditions regardless if the equal- or high-power roles was presented first. For acceptance and reappraisal, there were no significant main or interaction effects of condition presentation order ($|t_s| < 2.00$). Overall, order effects were inconsistent across suppression, acceptance, and reappraisal within both anger and sadness scenarios, and effects were not flipped (i.e., equal-power suppressing more than low-power).

Gender. As with Studies 1-3, we examined whether gender moderated effects of power role on emotion regulation. We ran three repeated-measures ANOVAs in each emotion scenario, assessing power condition and gender main and interaction effects in each model. There were no significant main or interaction effects involving gender for suppression, acceptance, or reappraisal in either the anger or sadness scenarios.

Mediation. As with mediations in Studies 2 and 3, causal mediation analyses were computed using 1000 resamples on a quasi-Bayesian Monte Carlo method based on normal approximation (see Tingley, et al., 2014) with a fixed seed set at 321. Mediation predictions were conducted to look at specific contrasts between equal-low power and equal-high power. Because of significant differences between low- and high-power roles, an additional low-high power contrast was conducted for each emotion regulation strategy within each emotion scenario. See Table 3 for average causal mediation effects (ACME), average direct effects (ADE), total effects, proportion mediated, and 95% confidence intervals, and Figures 3e/f for path coefficients and standard errors.

Mediation results from Studies 2 and 3 were partially replicated in the equal-low power contrast, but not the equal-high power contrast; there were no mediations of social norm concerns and the effects between equal-high power and suppression, acceptance, or reappraisal. Study 4 introduced novel significant mediations in low-high power contrasts.

Focusing on the equal-low power contrasts, replicating Study 2, social norm concerns partially mediated the suppression of anger and fully mediated the suppression of sadness. Replicating both Studies 2 and 3, social norm concerns partially mediated the acceptance of anger and fully mediated the acceptance of sadness. Replicating Study 2, social norm concerns fully mediated the reappraisal of anger; unlike Studies 2 and 3, there was not a significant mediation of reappraisal of sadness.

Novel to Study 4, social norm concerns partially mediated the suppression of both anger and sadness in the low-high power contrast. Social norm concerns partially mediated the effect between low-high power and acceptance of anger, while fully mediating acceptance of sadness. Finally, social norm concerns fully mediated the effect between low-high power and reappraisal of anger; there was no significant effect of social norm concerns on reappraisal of sadness.

In sum, similar to Studies 2 and 3, in the low-power role *only*, social norms concerns were higher compared to the equal-power role and this accounted for more suppression and less

acceptance of anger and sadness, and more reappraisal of anger. Unlike Studies 2 and 3, social norm concerns in the high-power role were neither higher or lower compared to the equal-power role, and there was no difference in emotion regulation. Unique to Study 4, social norm concerns in the low-power role were also higher compared to the high-power role, leading specifically to more suppression and less acceptance of anger and sadness and more reappraisal of anger.

Discussion

Study 4 tested a possible boundary condition in which the source of the negative emotion came directly from the imagined interaction partner. Study 4 partially confirmed main effects from Studies 1 through 3 (i.e., more suppression, less acceptance, and more reappraisal in the low-power role compared to equal-power role across anger and sadness scenarios and gender), as well as mediation effects from Study 2 – namely, social norm concerns at least partially mediated the link between equal-low power comparisons for suppression, acceptance, and reappraisal of anger and sadness. Unlike Studies 1-3, however, there were no significant difference between equal- and high-power roles in suppression, acceptance, and reappraisal across emotion scenarios, and no significant effect of social norm concerns. Instead, supporting our competing hypothesis, the high-power role significantly differed from the low-power role (i.e., less suppression, more acceptance, and more reappraisal).

Findings from Study 4 highlight an important boundary condition for the effects of high-power roles compared to low-power roles on emotion regulation. Specifically, when it comes to regulation of negative emotions, the source of the emotion (in this case, power-related versus power-irrelevant) appears to influence how social norm concerns pertain to power roles. Individuals in high-power roles appear to be particularly sensitive to source changes. When the negative emotion is related to a power dynamic, as was the case in Study 4, individuals in high-power roles enact their role and respond to such an extent it appears social norms are not pertinent to emotional expression. This is in opposition to the results from Studies 1-3, in which individuals in high-power roles were concerned with power-role-related social norms, and regulated their emotional expression accordingly. Importantly, source changes do not appear to influence individuals in low-power roles as much, in that they regulate their negative emotions regardless due to high social norm concerns.

Study 5

The main goal of Study 5 was to confirm results from Studies 1-4 using experimentally manipulated power roles in real-time negative emotion interactions. More precisely, we randomly assigned individuals to one of three possible roles in an online interaction with another person and intentionally induced a negative emotion (i.e., annoyance/anger). Like Study 4, this negative emotion was directly related to the power dynamic. Because Study 5 was a novel study design, there was a possibility of results mirroring those of Studies 1-3. In one line of hypotheses for Study 5, we predicted that participants in the high- and low-power roles would suppress their annoyance more, accept their annoyance less, and reappraise their annoyance more relative to those in equal-power roles; and that participants in the high- and low-power roles would not statistically differ from one another in their emotion regulation. However, Study 4 results suggest that changing the source of the negative emotion creates somewhat a different profile of emotion regulation for high- and low-power roles. Thus, we also predicted a competing hypothesis that participants in high-power roles would suppress less, accept more, and reappraise more compared to those in low-power roles (i.e., a significant difference between high- and low-power roles in emotion

regulation). We further predicted that social norm concerns would have at least a partial mediating effect for suppression, acceptance, and reappraisal of annoyance.

Method

Procedures were approved by the university ethics board prior to data collection.

Participants. Participants ($N = 518$) were recruited through the research participation pool for undergraduate students at a large, public North American university. Participants received partial course credit in their undergraduate psychology courses as compensation for completing online procedures. Participants indicated their interest in completing a second portion of study procedures (e.g., an online interaction with ostensibly another participant) for additional course credits. The final sample ($N = 116$; $M_{age} = 19.93$, $SD_{age} = 1.81$; $M_{SES} \text{ (out of 9)} = 5.70$, $SD_{SES} = 2.05$) was after 402 participants did not respond to recruitment emails or opted out of the online interaction altogether. Post-hoc power analyses revealed this sample size was 89% powered to detect a medium (Cohen's $f = .15$) effect of power role on emotion regulation.

Measures. Participants completed an online chat interaction followed by emotion ratings described in Study 4 and emotion regulation and social norm concern measures described in Studies 2-4. Emotion ratings, including power emotion ratings, were the same as described in Study 4, with the inclusion of five additional emotions: “rejected,” “compassionate,” “hurt,” “sympathetic,” and “down.”

Procedures. After confirming participation in the second portion of study procedures, a trained team member acting as the experimenter greeted participants at a designated Zoom link and described the upcoming task. They were told they were completing an online text chat interaction with another participant, who in fact was a confederate team member. Participants were informed that their role assignments for the task were made based on responses to the initial set of questionnaires when in actuality, they were at random. The task used during the interaction was adapted from the Art Gallery Task (Chen, Langner, & Mendoza-Denton, 2009; Scholl & Sassenberg, 2014). In this adapted form, the goal of the interaction was for one picture out of the eight presented on the screen (see Appendix C for images and scripted descriptions used by confederates) to be selected to hang in an art gallery. Experimenters always read (and typed out) the participant's role first. Each role assignment held different responsibilities during the task (see Appendix D for experimenter script of role descriptions).

The confederate team members completed training for understanding behaviors associated with high (director), equal (colleague), and low (assistant) power roles (i.e., certain and in charge for the director versus collaborative for colleague versus deferential and uncertain for the assistant). To ensure consistency across team members, the confederates followed a script for each role (see Appendix E for the full script for each role). Further, there were several tactics employed within the confederate role to induce annoyance or anger in participants: confederates 1. acted confused about instructions at both the beginning and the end of the interaction; 2. included numerous typos throughout the interaction; 3. intentionally created long pauses before responding to the participant; and 4. made subtle insults directed towards the participant. The goal of this was to create a strong enough emotion for the participant to subsequently regulate during the interaction while also ensuring the induced emotion lasted the duration of the interaction, rather than at a single time point during the interaction.

During the chat, the experimenter turned their video off and monitored the time, interjecting only to give 4- and 2-minute warnings and when time was up. When 8 minutes was up, the experimenter requested that the director immediately type in their final picture decision, regardless if a mutual decision had been made. Interactions lasted an average of 7 minutes 28

seconds. Participants completed emotion and power ratings, emotion regulation, and social norms measures on their own following the interaction.

Manipulation checks. Participants completed two manipulation checks. First, they were asked to rate their level of state power on a sliding scale (0 = *I had no power over this person* to 100 = *I complete power over this person*). They were also asked to indicate their role in the prior interaction from four possible choices: *assistant, director, colleague, or I don't remember*.

Suspicion probes and debriefing. After the procedures described above, participants were asked questions about the study and study goals. Specifically, participants were asked if they noticed anything unusual about the study and what they thought the study hypotheses were. Open-ended responses from these questions were coded to determine if they suspected the other participant was a confederate and if they accurately guessed study hypotheses. Then, participants were fully debriefed, including the role assignments and the confederate.

Results

Data were cleaned and analyzed using R statistical computing platform (version 4.0.4, RStudio version 1.3.959). The *mediation* package (version 4.5.0) was used to run mediation analyses (Tingley et al., 2014).

Preliminary analyses. To determine the final dataset, we wanted to ensure participants did not suspect the other person was a part of the research team. We created a dummy-code where 2 = explicitly mentioned the other person being a researcher / part of the team / confederate; 1 = had suspicions but backtracked on them (e.g., “maybe they were experimenter but it could have just been how they took on their role”) or suspected the other person was told what to say, not real, or a chat-bot or computer without mentioning them being a part of the research team; 0 = no suspicions at all. Level of suspicion did not differ on key variables (i.e., gender, interaction role, emotions, and emotion regulation; $ps > .10$); further, each test in the final analysis was also conducted with suspicious individuals removed (i.e., those with a dummy code of 2) and results did not change, thus no data was removed for final analyses.

Random assignment was effective in terms of resulting in comparable numbers of participants per condition ($n_{low\ power} = 39$, $n_{equal\ power} = 37$, $n_{high\ power} = 38$) and conditions did not differ on demographic variables ($ps > .50$). Further, there was no significant effect of Experimenter ($ps > .08$) or Confederate ($ps > .10$) on key variables. It should be noted that there were marginally non-significant effects of Confederate on hurt ($F(1,112) = 3.60$, $p = .06$), anxious ($F(1,112) = 3.91$, $p = .05$), and angry composite ($F(1,112) = 2.87$, $p = .09$) emotion ratings, but Confederate was not included in the final analyses.

Manipulation checks. Because angry, frustrated, and annoyed were highly correlated ($rs = .64 - .72$, $\alpha = 0.88$), a composite was created using the three emotion ratings. Across conditions, the mean annoyed composite was not significantly higher ($F(9,104) = 9.00$, $p < .001$) than the means of all other emotions – specifically, content (the highest rated), compassionate, excited, rejected, and anxious ($M_{annoy\ composite} (SD) = 2.47 (1.71)$; $M_{anxious} (SD) = 2.55 (1.78)$; $M_{compassion} (SD) = 2.94 (2.02)$; $M_{content} (SD) = 3.81 (2.02)$; $M_{distress} (SD) = 1.62 (0.98)$; $M_{down} (SD) = 1.45 (0.78)$; $M_{excited} (SD) = 3.09 (2.12)$; $M_{hurt} (SD) = 1.67 (0.96)$; $M_{reject} (SD) = 2.62 (1.89)$; $M_{sadness} (SD) = 1.28 (0.49)$; $M_{sympathy} (SD) = 2.18 (1.66)$).

However, there were significant differences between conditions on several emotions, including the annoyed composite, compassion, content, down, hurt, rejected, sad, and sympathy. The low-power role experienced significantly less compassion ($t(111) = -2.71$, $p = .02$) compared to the high-power role, less contentedness compared to both the high- and equal-power roles ($t_{low-high-power} (111) = -2.64$, $p = .02$; $t_{low-equal-power} (111) = -3.25$, $p = .005$), and less sympathy compared

to the high-power role ($t(111) = -2.41, p = .05$). At the same time, low-power participants reported experiencing significantly more annoyance compared to the equal-power role ($t(111) = 3.47, p = .002$), more feeling down compared to both the high- and equal-power roles ($t_{low-high-power}(111) = 3.96, p < .001$; $t_{low-equal-power}(111) = 4.16, p < .001$), more hurt compared to both the high- and equal-power roles ($t_{low-high-power}(111) = 2.65, p = .03$; $t_{low-equal-power}(111) = 2.47, p = .03$), more rejection compared to both the high- and equal-power roles ($t_{low-high-power}(111) = 5.91, p < .001$; $t_{low-equal-power}(111) = 5.33, p < .001$), and more sadness compared to both the high- and equal-power roles ($t_{low-high-power}(111) = 3.29, p = .003$; $t_{low-equal-power}(111) = 3.77, p < .001$). The equal- and high-power roles did not significantly differ from each other on any emotions. Overall, the emotion manipulation was not effective at inducing anger or annoyance equally across conditions.

To confirm that the power manipulation was effective, we assessed both power emotion ratings and self-reported state power (on a scale of 0-100). Not surprisingly, the high-power role elicited the greatest level of power emotions, but unexpectedly the equal-power role elicited the lowest power emotions, though not significantly different from the low-power role ($t_{low-equal-power}(111) < 1.00$; $F(2,111) = 4.81, p = .01$; see Figure 2d for means). However, when looking at self-reported state power, the equal-power role ($M(SD) = 39.92 (15.16)$) was significantly different from, and fell between, the high-power ($M(SD) = 65.24 (29.33)$) and low-power roles ($M(SD) = 21.21 (17.38)$) roles ($F(2,103) = 36.31, p < .001$). Lastly, we confirmed that the vast majority of participants accurately remembered their roles during the interaction. Three participants couldn't remember their roles and three participants selected the wrong role; all of these participants had been assigned to the equal-power/colleague role. In reviewing the open-ended responses, one had selected the wrong role on accident (and the survey would not allow them to go back to change). Results did not differ when these six participants were not included so they were left in final analyses. Thus, overall, the power-role manipulation appears to have been generally effective.

Hypothesis testing. We conducted three linear regressions with power role (high, equal, low) as the predictor variable and each emotion-regulation strategy (suppression, acceptance, reappraisal) as an outcome variable.

The first test examined whether power role predicted suppression. There was no significant effect of power role on suppression ($F(2,111) < 1.00, p = .96$). The second test examined whether power role predicted acceptance. The overall model was not significant ($F(2,111) = 2.08, p = .13$), thus there was no effect of power role on acceptance. The final test examined whether power role predicted reappraisal and again there was no significant effect ($F(2,111) < 1.00, p = .51$).

Secondary analyses. We ran three additional linear regressions to assess the moderating role of gender. Each emotion-regulation strategy (suppression, acceptance, reappraisal) was an outcome variable and the main and interaction effects of gender and power role (high, equal, low) included as predictor variables. There was no significant main or interaction effect of gender with power roles on suppression ($F(5,108) = 1.52, p = .08$), acceptance ($F(5,108) = 1.04, p = .32$), or reappraisal ($F(5,108) = 1.42, p = .22$). It should be noted that in the reappraisal model, however, despite the overall model being non-significant, there was a significant main effect of power role (equal- and low-power, $t = 2.12, p = .04$), and a significant power role x gender interaction ($t = -2.35, p = .02$).

Mediation. Because there were no significant direct effects of power roles on suppression, acceptance, and reappraisal, before running mediations, we ran linear regressions testing the *a* and *b* paths. Specifically, we assessed if *a* paths (i.e., power roles - social norm concerns) and *b* paths (i.e., social norm concerns - suppression/acceptance/reappraisal) were significant to determine if a mediation was relevant using indirect-only mediation (Agler & De Boeck, 2017; Zhao, Lynch,

& Chen, 2010). In indirect-only mediation, the mediated effect (i.e., $a \times b$) is assessed with no direct effect, so while the total effect (c) appears to be non-significant, this may simply because either the sample size was small and underpowered, or direct and indirect effects are of opposite signs, cancelling each other out (Hayes, 2009; Preacher & Selig, 2012; Shrout & Bolger, 2002; Zhao et al., 2010). The a path revealed a significant association between power roles and social norms concerns ($F(2,110) = 9.06, p < .001$). There was also a significant b path associations of social norm concerns and suppression ($F(1,111) = 10.15, p = .002$) and acceptance ($F(1,111) = 8.93, p = .003$), but not reappraisal ($F(1,111) = 1.08, p = .30$). Thus, mediation analyses were conducted only on suppression and acceptance.

As with Studies 1-4, causal mediation analyses were computed using 1000 resamples on a quasi-Bayesian Monte Carlo method based on normal approximation (see Tingley, et al., 2014) with a fixed seed set at 321. Similar to Study 4, separate mediation models were conducted for each emotion regulation strategy within each emotion scenario to look at specific contrasts between equal-low power and equal-high power, as well as low-high power contrasts. See Table 3 for average causal mediation effects (ACME), average direct effects (ADE), total effects, proportion mediated, and 95% confidence intervals.

Replicating Study 4 mediations, we found that the ACME point estimates of social norm concerns were positive and significant for both equal-low power and low-high power with suppression. There was not a significant indirect effect of social norm concerns for equal-high power with suppression. Similarly, the ACME point estimates of social norm concerns were negative and significant for both equal-low power and low-high power and acceptance, with no mediation effect for equal-high power and acceptance.

Discussion

The goal of Study 5 was to replicate effects from Study 4 in an experimentally manipulated between-subjects study design. The main effects of power roles on emotion regulation did not replicate, in that there were no significant differences between high-, equal-, and low-power roles for each of the regulation strategies, but indirect effects of social norm concerns with suppression and acceptance were replicated from Study 4.

It is worth noting the limitations of Study 5. First and foremost, the sample size was severely underpowered to the extent that main effects of power roles and emotion regulation were non-existent. Drawing any conclusions for this study is therefore questionable at best. Further, while each of the power roles experienced a range of emotions, the highest rated emotions not only differed between power roles but were also not necessarily the intended ones (e.g., annoyance and anger). Thus, we cannot make the assertion that individuals in respective power roles were even regulating the same emotion and highlights the challenge of emotion induction via chat interaction across power roles. For example, in the low-power role, the highest rated emotion was rejection, likely due to the salience of the hierarchy discrepancy and social behavior enacted by the high-power confederate, whereas in the equal- and high-power roles, contentedness was the highest rated emotion, indicating that the interaction was enjoyable because either they came to a satisfying compromise (equal-power) or they got their way in the interaction (high-power). These emotion rating discrepancies highlight an important point that power roles can vastly change the overall emotional experience in a given situation. This may even come upstream of, and thus influence, concerns about power-role-related social norms. One future direction would be to capture momentary emotion experience during power-related interactions and assess how various emotional experiences influence downstream social norm concerns. Further, it would be important to conduct interactions face-to-face rather than via text chat, as non-verbal behavior is essential in

social communication, particularly related to expression and perceptions of power and emotional support (Aguinis, Simonsen, & Pierce, 1998; Hall, Coats, & LeBeau, 2005; Harper, 1985; Jia & Cheng, 2020).

General Discussion

In this research, we explored two main questions addressing how and why power roles influence emotion regulation within negative emotion scenarios. These questions were addressed by assessing different sources of the negative emotion, including directly from the power interaction and unrelated to the power interaction. Four out of the five studies found that when power differences were not present (i.e., equal power), individuals tended to use less suppression, more acceptance, and less reappraisal for anger and sadness compared to when power asymmetries were salient (i.e., high power or low power). Four of five studies demonstrated that these effects were at least partially driven by social norm concerns in both anger and sadness emotion scenarios. Further, gender differences could not explain the effects. Importantly, there was little difference in emotion regulation in high- versus low-power roles when the source of the negative emotion was unrelated to the power interaction (i.e., a car accident causing you to be late to a meeting), with both power roles being significantly different from equal-power roles but not from one another. However, when the interaction partner became the source of the negative emotion, significant differences in emotion regulation appeared between high- and low-power roles, and equal- and high-power roles had more similar emotion regulation profiles. In other words, there appears to be a clear boundary in which high- and low-power roles have opposing outcomes when it comes to emotion regulation of negative emotions (Schaerer, et al., 2018), and equal-power roles become virtually indistinguishable from high-power in emotion regulation. One major strength of this series of studies is that they are some of the first to not only manipulate power roles within a social emotion regulation context, but also, to the best of our knowledge, *the* first research studies that includes an equal-power role condition as a comparison. This set of findings provides strong evidence of the causal implications that power roles have on emotion regulation strategies, that previous research has only speculated (c.f., Zerwas et al., under revision), as well as provides a mechanism by which power roles affect emotion regulation strategies.

The present research highlights a clear boundary condition in which high-power roles, specifically, change in emotion regulation patterns. Our findings show that when the power interaction is the source of the negative emotion, high-power roles have similar regulation patterns seen when looking at a high sense of power (e.g., less suppression, more acceptance, and more reappraisal) compared to a lower sense of power. However, the current research is not the first to show this variation in emotion regulation profiles in high power. Two studies (Catterson et al., 2017; Pilch et al. 2018) assessed suppression with a state sense of power, as captured in Study 5, and one of these showed findings contradicting previous work (c.f., English et al, 2012; Petkanopoulou et al., 2012; Zerwas et al., under revision) where greater sense of state power was associated with greater (not less) suppression (Pilch et al., 2018). One possible explanation for this difference is that this particular study was conducted on a population of Polish individuals, a culture known to have a mixture of individualistic and collectivist values and, importantly, high power distance (i.e., norms to express emotions while maintaining social order; see Hofstede, 1984). While that study focused on state sense of power rather than power roles, this finding speaks to the use of suppression of emotions unrelated to situations with salient power roles. It also highlights how emotion regulation can have differential effects on individual versus collective well-being. These and other previous studies have shown that sense of power and power roles can have both parallel and opposite effects (c.f., Chen et al., 2009; Lammers et al., 2009) and how

power affects expression of emotions, including positive emotions (Hecht & LaFrance, 1998). The present research highlights the importance of these novel findings showing how power roles, and the context, both diverge and converge from a sense of power when it comes to emotion regulation of negative emotions.

Suppression use may be one strategy to maintain social appropriateness and mask true intentions. Suppression is typically linked with poorer psychological well-being and outcomes (Gross & John, 2003), though can be beneficial, such as in performance situations or highly interdependent relationships (Kalokerinos, Greenaway, Pedder, & Margetts, 2014; Le & Impett, 2013). Acceptance and reappraisal are typically linked to better psychological well-being and positive employee outcomes (Grandey & Sayre, 2019; Troy, Shallcross, & Mauss, 2013). The profile of the present research showing low-power roles with greater sensitivity to role-related norms and greater reappraisal (particularly compared to equal-power roles) may highlight an adaptive mechanism to maintain workplace harmony, given people in lower-power roles have little control in the situation due to their hierarchical position. However, despite a large body of work highlighting the benefits of workplace reappraisal, recent work suggests that it may actually lead to increased use of counterproductive behaviors, such as dragging out work to get overtime, falsifying receipts for reimbursement, or acting rude towards someone (Feinberg, Ford, & Flynn, 2020). This also speaks more generally to the complex nature of emotion regulation strategy use and their outcomes within social contexts. Thus, future work should consider outcomes such as well-being on both the individual and interpersonal level.

The present research is important because it is one of the first to assess a comprehensive variety of emotion regulation strategies with a mechanism at least partially explaining the effects. To the best of our knowledge, only one other set of studies has looked at power and a variety of emotion regulation strategies. Specifically, recently Zerwas et al. found that a high sense of power was associated with less suppression, and more acceptance and reappraisal while also shedding light on mechanisms (e.g., beliefs about ability and need to regulate) underlying these links between sense of power and emotion regulation. In other words, beliefs about whether one should have to and whether one can control one's emotions explained the links between sense of power and emotion regulation. Beliefs about ability and need to control emotions may have overlap with social norm concerns, and assessing beliefs in conjunction with social norm concerns would be an important addition in future studies. Further, it will be important to include other common emotion regulation strategies, such as rumination, distraction, and avoidance (Naragon-Gainey, McMahon, & Chacko, 2017).

It would be remiss not to acknowledge several important limitations to the present set of studies. First, Studies 1-4 used hypothetical situations where power was manipulated through imagined vignette scenarios, rather than having participants experience different levels of power and assess their emotion regulation in an actual interaction setting. We attempted to replicate findings in Study 5 with experimentally manipulated power roles and an interaction partner (i.e., confederate), but the execution fell short due to several constraints, namely small sample and restriction to online-only interaction because of the pandemic. As mentioned in the Study 5 discussion section, it would be beneficial to replicate this paradigm in face-to-face interactions. However, Study 5 may point to the challenge of emotion expression and perception through text-only interactions, a common mode of communication in modern society and highlight an important step in understanding differences between social roles and contexts.

Secondly, the population used for all studies was a convenience undergraduate sample. This presents several limitations. For one, participants may have had little to no workplace

experience. While over 90% reported the hypothetical situations (Studies 1-4) as very easy to imagine, the extent of exposure to a workplace with a salient power hierarchy is unclear. While these samples are not representative of the general population in terms of gender, ethnicity, or socioeconomic status, one strength to the present research is that a variety of ethnicities and both males and females were included. Future research should not only include a more general community population, but also consider replicating findings in an actual workplace scenario, where power roles are obvious and known. This highlights another limitation to this research in that it only considered interactions within a specific context (e.g., workplace). Power roles are present in a variety of contexts (e.g., coach/player, parent/child, romantic relationship) so assessing if these findings are applicable across contexts or if they are only applicable to specific contexts such as the workplace will be an important extension of this work. For example, recent research suggests different experiences of power may have important implications in romantic relationships (Körner & Schütz, 2021). Despite the focus on a single context, the current research does highlight an important boundary condition within that context. Specifically, it shows that the source of an emotion matters depending on the power role. Expanding to different contexts may also highlight other boundary conditions.

Overall, this body of research advances our understanding of how and why people in different power roles manage their negative emotions, adding to a small but growing literature examining links between social power and emotion regulation. These findings also provide insight into abilities to use a variety of emotion regulation strategies and flexibility in strategy use depending on the circumstances. Continued research in this vein could ultimately help shed light on possible interventions for managing and maintaining emotionally supportive, harmonious, and healthy environments in which power asymmetries exist.

Table 1
Sample characteristics for each study

	Study 1 (N = 207)	Study 2 (N = 447)	Study 3 (N = 368)	Study 4 (N = 471)	Study 5 (N = 116)
% Women	72.5	73.2	68.8	76.4	81.6
<i>Ethnicity</i>					
% African American	2.4	1.1	1.4	2.3	<1
% Asian/East Asian American	46.8	60.0	54.4	53.3	37.6
% European American	29.5	20.1	23.1	18.5	33.0
% Latinx	13.5	9.8	13.0	15.5	12.8
% Middle Eastern	4.8	4.0	3.3	4.2	13.8
% Native American	<1	1.1	<1	<1	<1
% Other	1.9	3.4	4.9	5.9	1.8

Table 2

Correlations among emotion regulation strategies by condition and scenario for each study

	Study 1 (N = 207)				Study 2 (N = 447)			
	Anger Scenario		Sadness scenario		Anger Scenario		Sadness scenario	
	Supp.	Accept.	Supp.	Accept.	Supp.	Accept.	Supp.	Accept.
<i>Low power</i>								
Accept.	-0.50 ^{***}		-0.78 ^{***}		-0.56 ^{***}		-0.63 ^{***}	
Reap.	0.32 ^{***}	0.02	0.31 ^{***}	-0.25 [*]	0.11	-0.24 ^{***}	0.38 ^{***}	-0.47 ^{***}
<i>Equal power</i>								
Accept.	-0.58 ^{***}		-0.66 ^{***}		-0.70 ^{***}		-0.73 ^{***}	
Reap.	0.34 ^{***}	-0.16	0.27 ^{**}	-0.13	0.42 ^{***}	-0.42 ^{***}	0.43 ^{***}	-0.37 ^{***}
<i>High power</i>								
Accept.	-0.70 ^{***}		-0.64 ^{***}		-0.73 ^{***}		-0.65 ^{***}	
Reap.	0.19	-0.01	0.24 [*]	-0.15	0.24 ^{***}	-0.25 ^{***}	0.37 ^{***}	-0.33 ^{***}

	Study 3 (N = 368)				Study 4 (N = 471)				Study 5 (N = 116)	
	Anger Scenario		Sadness scenario		Anger Scenario		Sadness scenario		Anger Scenario	
	Supp.	Accept.	Supp.	Accept.	Supp.	Accept.	Supp.	Accept.	Supp.	Accept.
<i>Low power</i>										
Accept.	-0.59 ^{***}		-0.53 ^{***}		-0.06		-0.27 ^{***}		-0.36 [*]	
Reap.	0.26 ^{***}	-0.32 ^{***}	0.34 ^{***}	-0.35 ^{***}	0.18 ^{**}	0.07	-0.03	-0.17 ^{**}	0.37 [*]	-0.41 ^{**}
<i>Equal power</i>										
Accept.	-0.67 ^{***}		-0.60 ^{***}		-0.40 ^{***}		-0.40 ^{***}		-0.43 ^{**}	
Reap.	0.28 ^{***}	-0.27 ^{***}	0.37 ^{***}	-0.45 ^{***}	0.21 ^{**}	-0.16 [*]	0.17 ^{**}	-0.18 ^{**}	0.11	-0.10
<i>High power</i>										
Accept.	-0.55 ^{***}		-0.57 ^{***}		-0.43 ^{***}		-0.50 ^{***}		-0.44 ^{**}	
Reap.	0.4 ^{***}	-0.20 ^{**}	0.29 ^{***}	-0.51 ^{***}	0.24 ^{**}	-0.13 [*]	0.17 ^{**}	-0.21 ^{***}	0.32 [*]	0.00

Note: Accept. = Acceptance, Reap. = Reappraisal, Supp. = Suppression

Study 5 did not include a sadness scenario. Values represent Pearson's r coefficient.

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 3

Causal mediation effects of social norm concerns as mediator for power role and emotion regulation

	Study 2 (N = 447)		Study 3 (N = 368)		Study 4 (N = 471)		Study 5 (N = 116)
	Anger Scenario	Sadness Scenario	Anger Scenario	Sadness Scenario	Anger Scenario	Sadness Scenario	Annoyed / Anger
<i>Suppression</i>							
<i>Equal – Low power</i>							
ACME	0.81⁺ [0.64, 0.99]	0.46* [0.29, 0.63]	0.81⁺ [0.63, 0.98]	0.47⁺ [0.63, 0.98]	0.71⁺ [0.56, 0.86]	0.57* [0.41, 0.86]	0.49* [0.18, 0.33]
ADE	0.66 [0.44, 0.88]	0.10 [-0.13, 0.32]	0.65 [0.41, 0.88]	0.33 [0.41, 0.88]	0.58 [0.37, 0.79]	0.11 [-0.07, 0.31]	-0.40 [-1.25, 0.48]
Total effect	1.47 [1.19, 1.75]	0.56 [0.28, 0.84]	1.45 [1.18, 1.72]	0.80 [0.52, 1.07]	1.29 [1.07, 1.52]	0.68 [0.44, 0.93]	0.09 [-0.75, 0.93]
Prop. mediated	0.56 [0.45, 0.66]	0.82 [0.65, 1.47]	0.56 [0.45, 0.68]	0.58 [0.45, 0.68]	0.58 [0.45, 0.68]	0.83 [0.63, 1.15]	0.70 [-22.62, 13.97]
<i>Equal– High power</i>							
ACME	0.67⁺ [0.50, 0.84]	0.72⁺ [0.55, 0.91]	0.50⁺ [0.34, 0.67]	0.60⁺ [0.43, 0.79]	-0.08 [-0.20, 0.08]	0.13 [-0.02, 0.28]	0.05 [-0.19, 0.33]
ADE	0.48 [0.27, 0.70]	0.25 [0.02, 0.46]	0.40 [0.19, 0.62]	0.29 [0.04, 0.53]	-0.16 [-0.36, 0.04]	-0.21 [-0.41, -0.01]	-0.08 [-0.85, 0.72]
Total effect	1.15 [0.88, 1.43]	0.48 [0.27, 0.70]	0.89 [0.64, 1.17]	0.89 [0.52, 1.16]	-0.24 [-0.48, 0.01]	-0.07 [-0.30, 0.17]	-0.02 [-0.87, 0.76]
Prop. mediated	0.58 [0.45, 0.72]	0.74 [0.59, 0.98]	0.56 [0.40, 0.75]	0.67 [0.50, 0.94]	0.31 [-0.66, 1.35]	-0.50 [-15.37, 16.86]	0.06 [-3.37, 6.15]
<i>High– Low power</i>							
ACME	---	---	---	---	0.79⁺ [0.64, 0.94]	0.42⁺ [0.27, 0.59]	0.44* [0.12, 0.82]
ADE	---	---	---	---	0.74 [0.51, 0.96]	0.33 [0.13, 0.52]	-0.33 [-1.10, 0.53]
Total effect	---	---	---	---	1.52 [1.27, 1.78]	0.75 [0.49, 0.99]	0.11 [-0.65, 0.96]
Prop. mediated	---	---	---	---	0.52	0.57	0.76

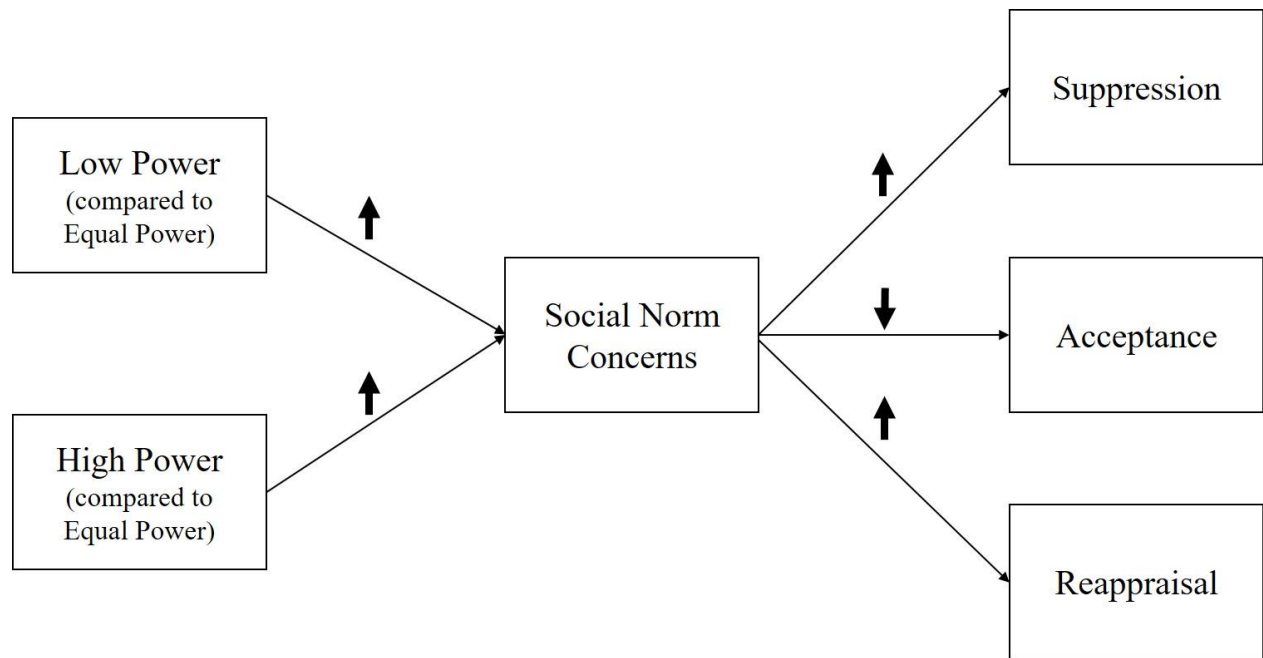
					[0.42, 0.62]	[0.40, 0.78]	[-14.75, 13.91]
<i>Acceptance</i>							
<i>Equal– Low power</i>							
ACME	-0.49⁺ [-0.61, -0.38]	-0.27[*] [-0.35, -0.17]	-0.48⁺ [-0.58, -0.37]	-0.25[*] [-0.34, -0.16]	-0.23⁺ [-0.30, -0.17]	-0.19[*] [-0.25, -0.13]	-0.20[*] [-0.41, -0.04]
ADE	-0.36 [-0.52, -0.21]	-0.10 [-0.22, 0.03]	-0.24 [-0.39, -0.08]	-0.09 [-0.24, 0.07]	-0.96 [-1.09, -0.82]	-0.02 [-0.14, 0.10]	-0.23 [-0.68, 0.19]
Total effect	-0.85 [-1.03, -0.69]	-0.36 [-0.50, -0.20]	-0.72 [-0.89, -0.55]	-0.34 [-0.51, -0.16]	-1.19 [-1.32, -1.05]	-0.20 [-0.33, -0.08]	-0.43 [-0.85, -0.01]
Prop. mediated	0.58 [0.46, 0.72]	0.73 [0.50, 1.14]	0.67 [0.52, 0.86]	0.73 [0.46, 1.39]	0.19 [0.14, 0.25]	0.90 [0.56, 2.06]	0.45 [-0.06, 2.42]
<i>Equal– High power</i>							
ACME	-0.41⁺ [-0.52, -0.30]	-0.39[*] [-0.50, -0.30]	-0.29[*] [-0.40, -0.20]	-0.32[*] [-0.42, -0.23]	0.02 [-0.02, 0.07]	-0.04 [-0.10, 0.00]	-0.02 [-0.13, 0.09]
ADE	-0.31 [-0.45, -0.16]	0.00 [-0.13, 0.33]	-0.13 [-0.26, 0.01]	-0.11 [-0.27, 0.04]	-0.02 [-0.15, 0.12]	-0.04 [-0.16, 0.08]	-0.23 [-0.63, 0.17]
Total effect	-0.71 [-0.89, -0.54]	-0.38 [-0.53, -0.25]	-0.42 [-0.59, -0.25]	-0.44 [-0.61, -0.26]	0.00 [-0.14, 0.14]	-0.08 [-0.21, 0.04]	-0.25 [-0.66, 0.18]
Prop. mediated	0.57 [0.45, 0.73]	1.01 [0.74, 1.94]	0.70 [0.49, 1.06]	0.75 [0.51, 1.16]	0.16 [-5.39, 7.35]	0.46 [-3.08, 4.43]	0.07 [-1.21, 1.25]
<i>High– Low power</i>							
ACME	---	---	---	---	-0.26⁺ [-0.33, -0.19]	-0.15[*] [-0.20, -0.08]	-0.18[*] [-0.36, -0.03]
ADE	---	---	---	---	-0.94 [-1.09, -0.79]	0.02 [-0.10, 0.14]	0.01 [-0.43, 0.43]
Total effect	---	---	---	---	-1.20 [-1.33, -1.05]	-0.12 [-0.25, 0.01]	-0.17 [-0.60, 0.27]
Prop. mediated	---	---	---	---	0.21 [0.16, 0.28]	1.11 [-2.49, 6.28]	0.56 [-9.68, 10.92]
<i>Reappraisal</i>							
<i>Equal– Low power</i>							
ACME	0.19[*] [0.11, 0.29]	0.14⁺ [0.09, 0.21]	0.18⁺ [0.09, 0.30]	0.16⁺ [0.09, 0.25]	0.14[*] [0.05, 0.23]	0.01 [-0.04, 0.07]	-0.12 [-0.41, 0.12]

ADE	0.14 [-0.08, 0.36]	0.17 [-0.00, 0.34]	0.37 [0.14, 0.59]	0.24 [0.03, 0.45]	0.17 [-0.06, 0.41]	-0.03 [-0.25, 0.19]	0.18 [-0.54, 0.89]
Total effect	0.32 [0.13, 0.53]	0.31 [0.13, 0.48]	0.55 [0.34, 0.76]	0.40 [0.19, 0.61]	0.31 [0.10, 0.52]	-0.02 [-0.23, 0.19]	0.05 [-0.65, 0.72]
Prop. mediated	0.58 [0.28, 1.49]	0.46 [0.25, 1.03]	0.34 [0.15, 0.60]	0.40 [0.21, 0.83]	0.44 [0.15, 1.55]	-0.05 [-4.65, 3.12]	-0.03 [-6.32, 7.12]
<i>Equal– High power</i>							
ACME	0.15* [0.08, 0.24]	0.23* [0.15, 0.32]	0.11⁺ [0.05, 0.19]	0.21⁺ [0.13, 0.29]	-0.01 [-0.05, 0.01]	0.00 [-0.01, 0.02]	-0.01 [-0.15, 0.08]
ADE	0.03 [-0.19, 0.23]	0.19 [0.00, 0.37]	0.32 [0.11, 0.53]	0.29 [0.09, 0.48]	0.01 [-0.21, 0.22]	0.09 [-0.11, 0.27]	0.38 [-0.34, 1.07]
Total effect	0.19 [-0.02, 0.38]	0.41 [0.22, 0.58]	0.44 [0.22, 0.64]	0.50 [0.29, 0.69]	-0.00 [-0.22, 0.21]	0.09 [-0.10, 0.28]	0.37 [-0.37, 1.08]
Prop. mediated	0.78 [-3.01, 6.01]	0.55 [0.33, 0.97]	0.25 [0.11, 0.55]	0.41 [0.25, 0.72]	0.01 [-3.21, 1.88]	0.01 [-0.65, 0.69]	-0.00 [-1.44, 0.74]
<i>High– Low power</i>							
ACME	---	---	---	---	0.15* [0.05, 0.26]	0.01 [-0.03, 0.05]	-0.10 [-0.36, 0.12]
ADE	---	---	---	---	0.17 [-0.08, 0.39]	-0.14 [-0.32, 0.05]	-0.22 [-0.91, 0.45]
Total effect	---	---	---	---	0.32 [0.10, 0.52]	-0.12 [-0.31, 0.05]	-0.32 [-1.02, 0.35]
Prop. mediated	---	---	---	---	0.47 [0.15, 1.66]	-0.06 [-1.87, 0.94]	0.17 [-3.01, 3.46]

Note: ACME = average causal mediation effect (indirect effects via *ab* path); ADE = average direct effects (*c'* path). Bolded values indicate significant point estimate effects ($p < .05$) based on 1000 resamples; values within brackets show 95% confidence intervals. Social norm concerns were not measured in Study 1. Study 5 did not include a sadness scenario.
 – mediation not applicable ⁺partial mediation *full mediation

Figure 1

Proposed conceptual model. The “↑” indicates more concern or use and the “↓” indicates less concern or use. Effects of high and low power are compared to equal power.



Figures 2a-e

Means for key variables (all on 1-7 scale) across studies. Error bars indicate mean variable standard deviation. Social norm concerns were not measured in Study 1. Study 5 methods were conducted only using annoyance/anger.

* $p < .05$ ** $p < .01$ from paired t -tests

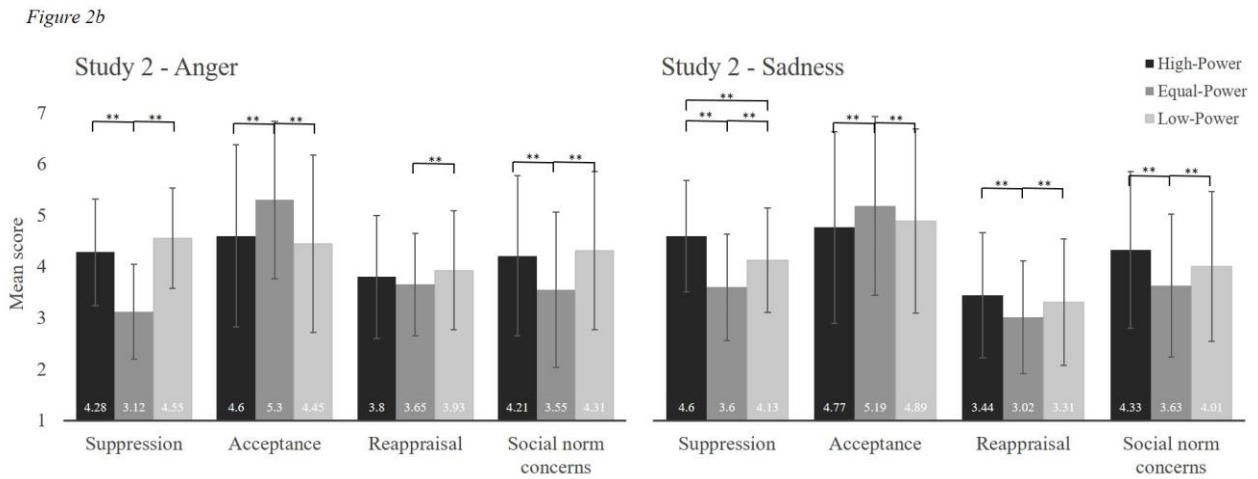
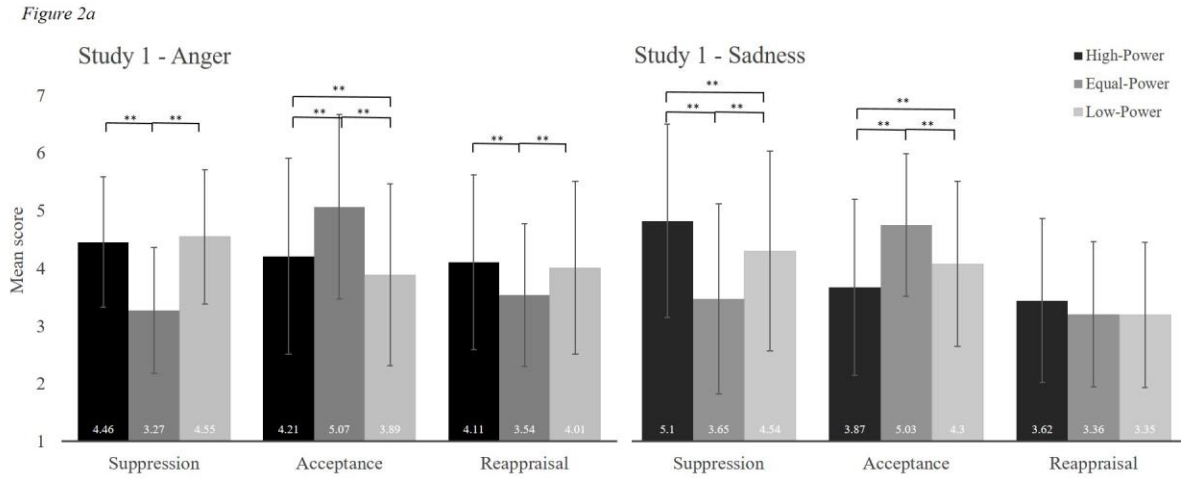


Figure 2c

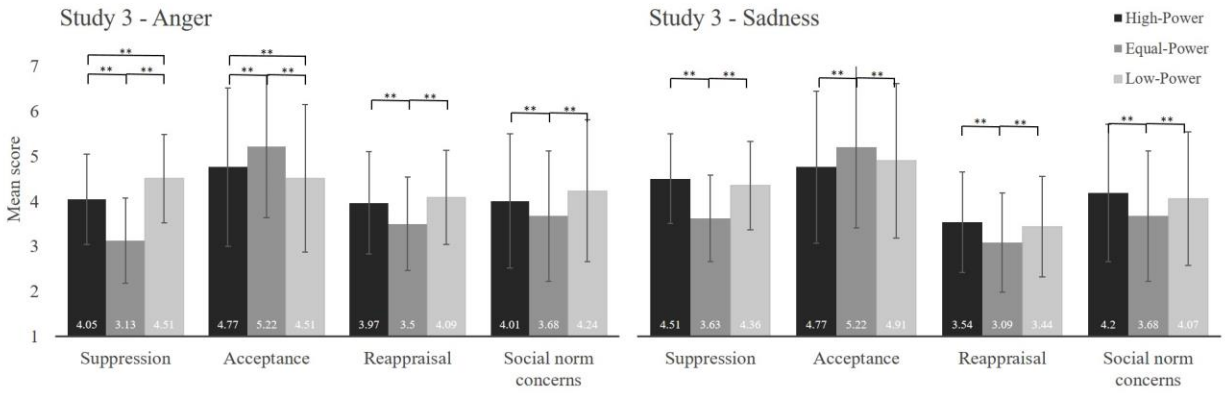


Figure 2d

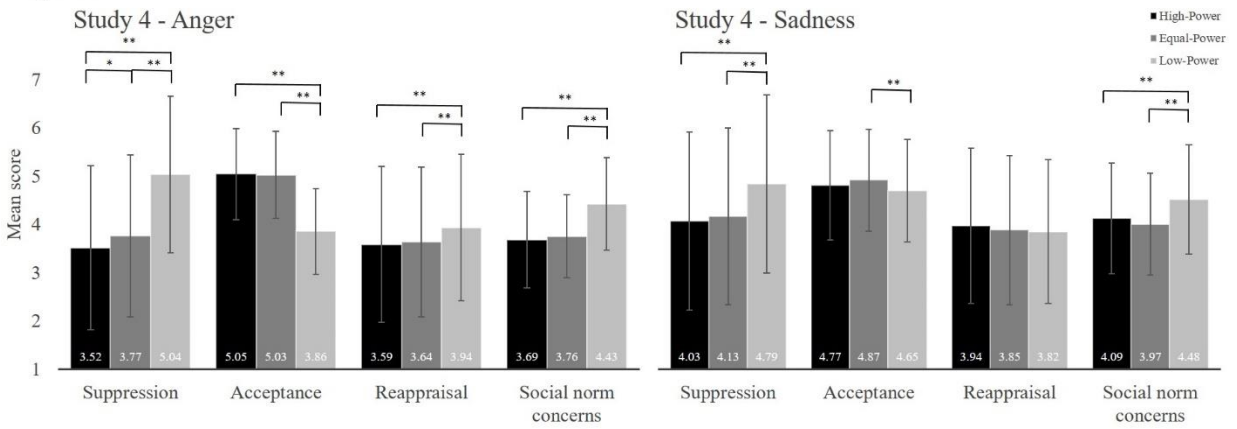
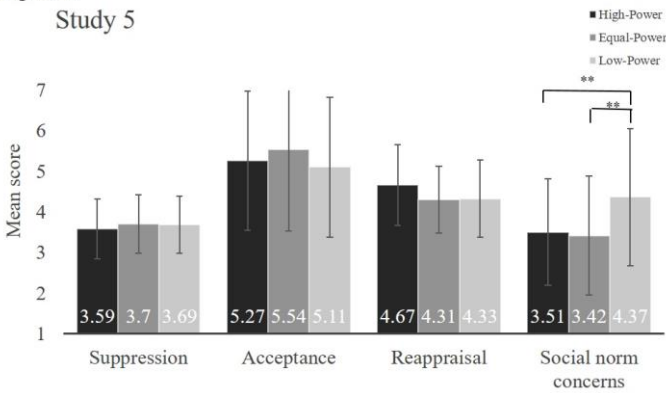


Figure 2e



Figures 3a-f

Social norm concerns as a mediator for power roles and suppression, acceptance, and reappraisal for Study 2 (Figure 3a/b), Study 3 (Figure 3c/d), and Study 4 (Figure 3e/f). Values are path coefficients, with standard errors in parenthesis. The c = total effects and c' = direct effects. Non-significant paths indicated with light text (i.e., representing full mediation when only c' path light). Studies 2 and 3 assessed equal-lower power and equal-high power contrasts, and Study 4 additionally assessed a low-high power contrast. * $p < .05$ ** $p < .01$

Figure 3a

Study 2, anger scenario

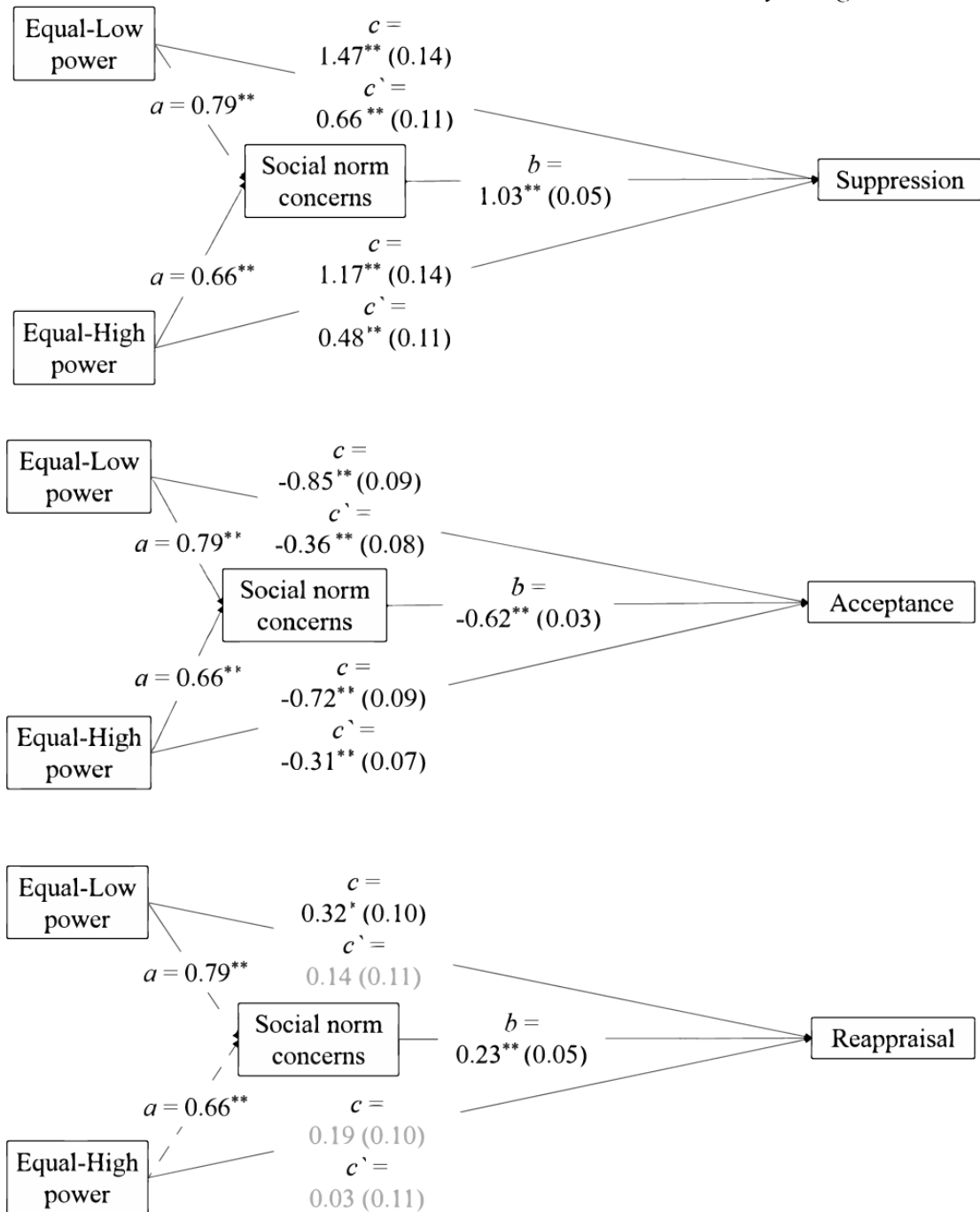


Figure 3b

Study 2, sadness scenario

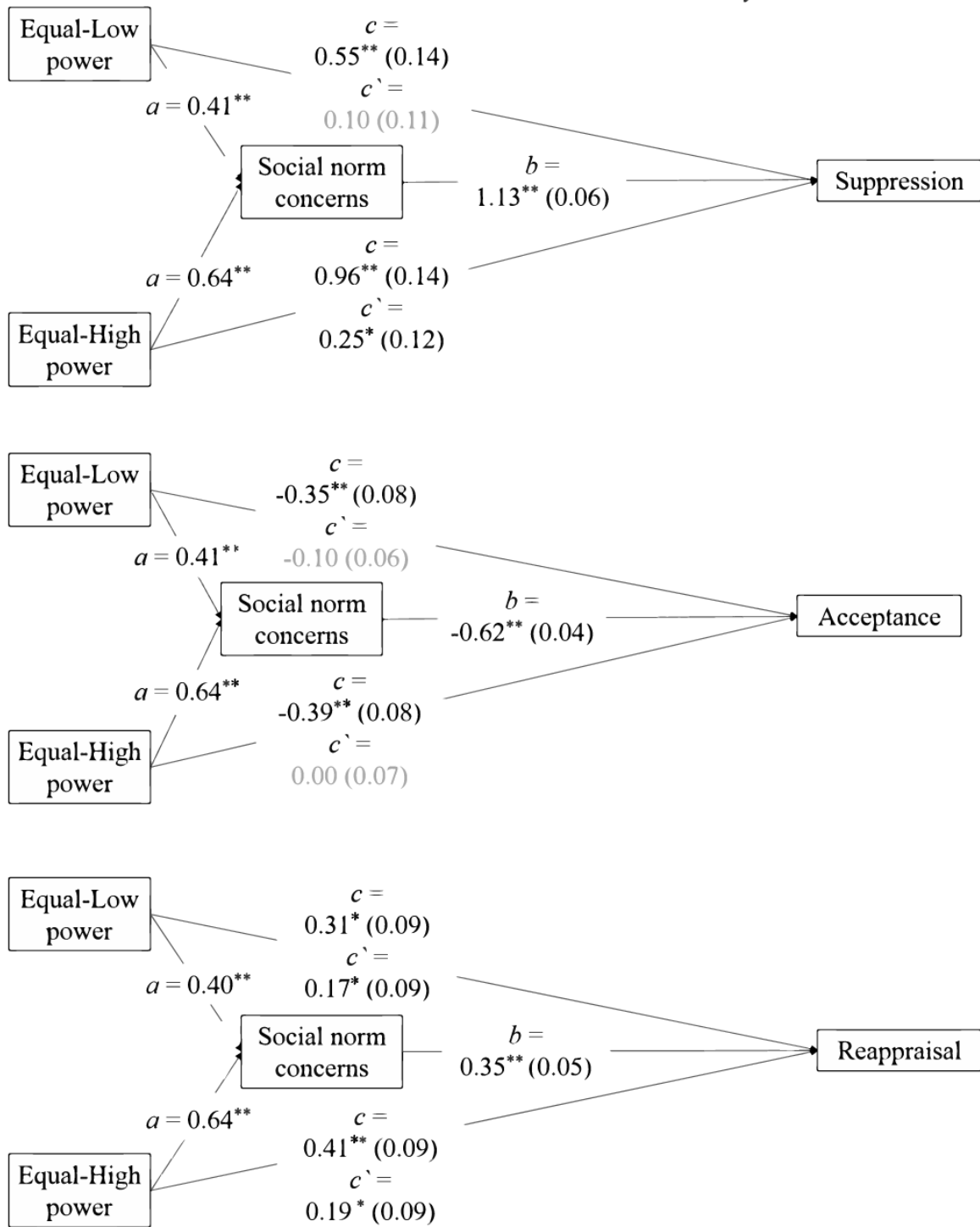


Figure 3c

Study 3, anger scenario

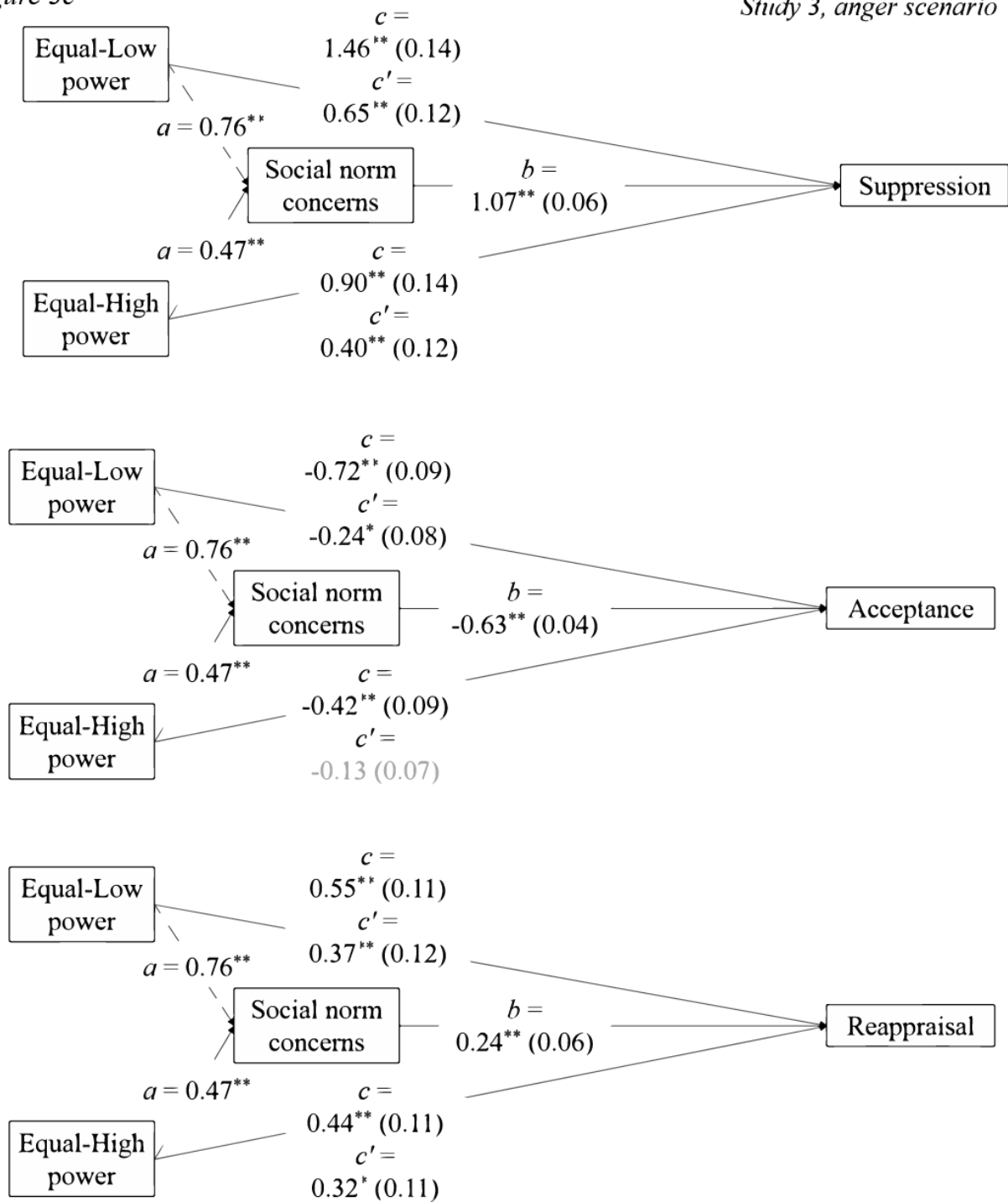


Figure 3d

Study 3, sadness scenario

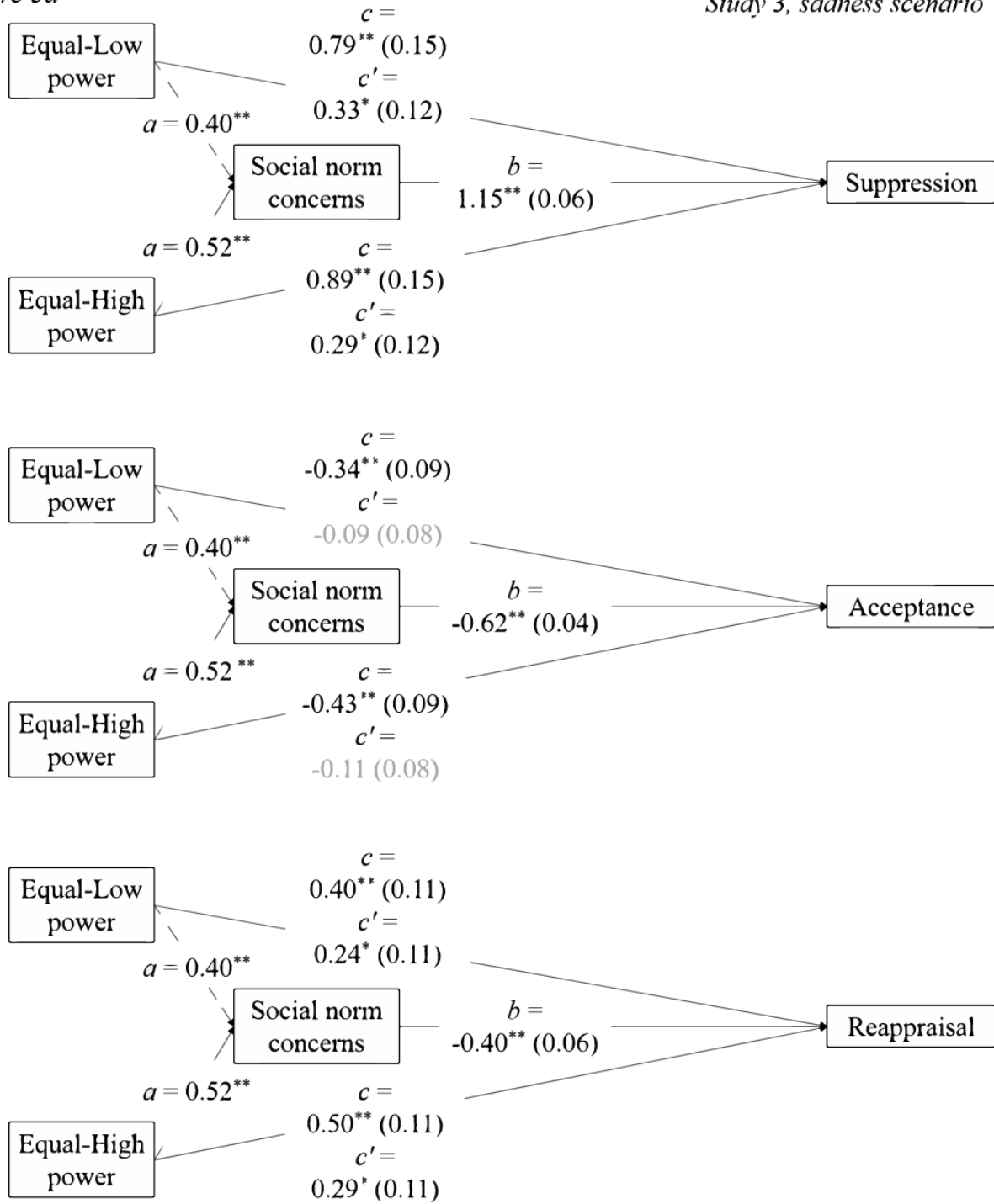


Figure 3e

Study 4, anger scenario

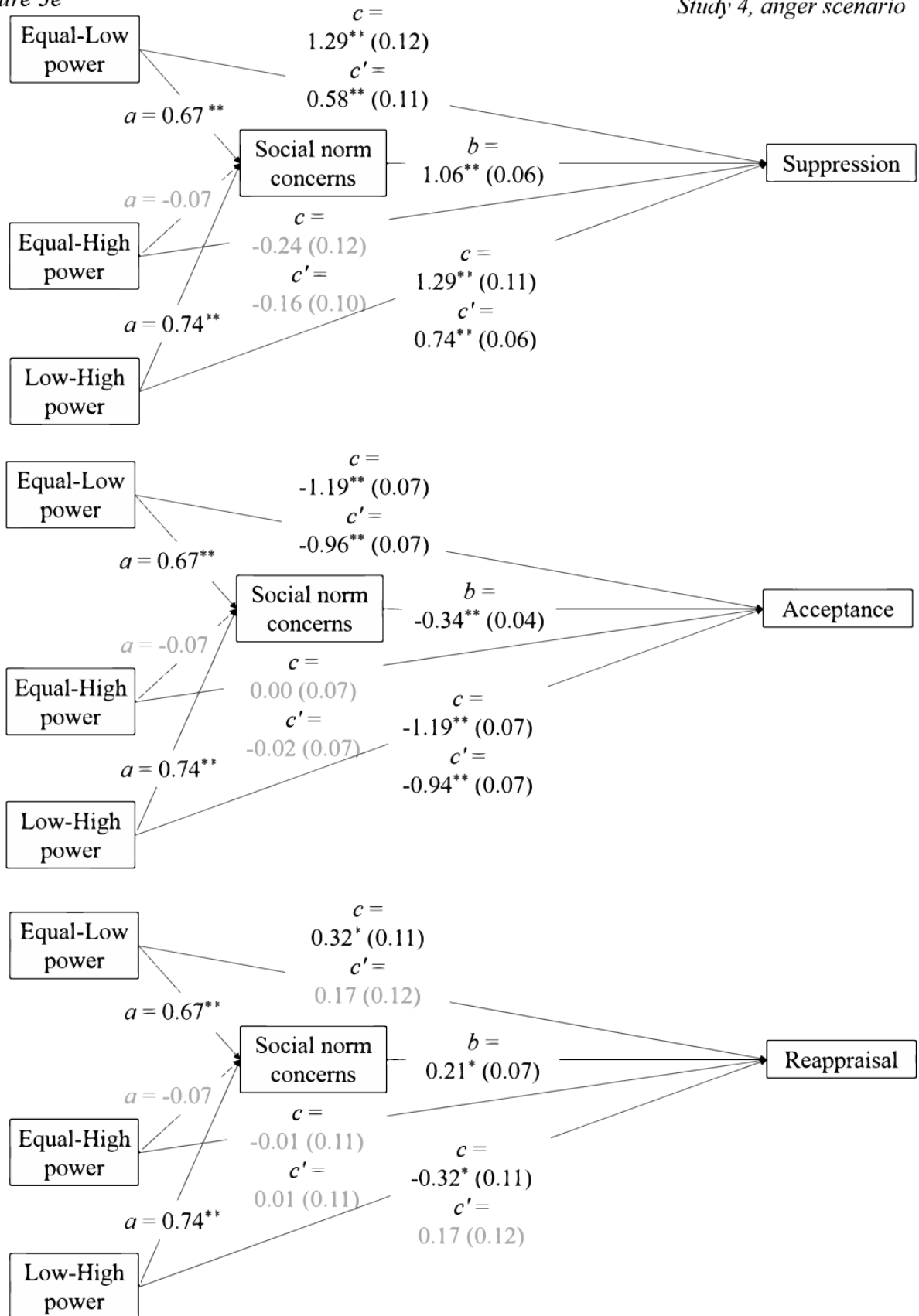
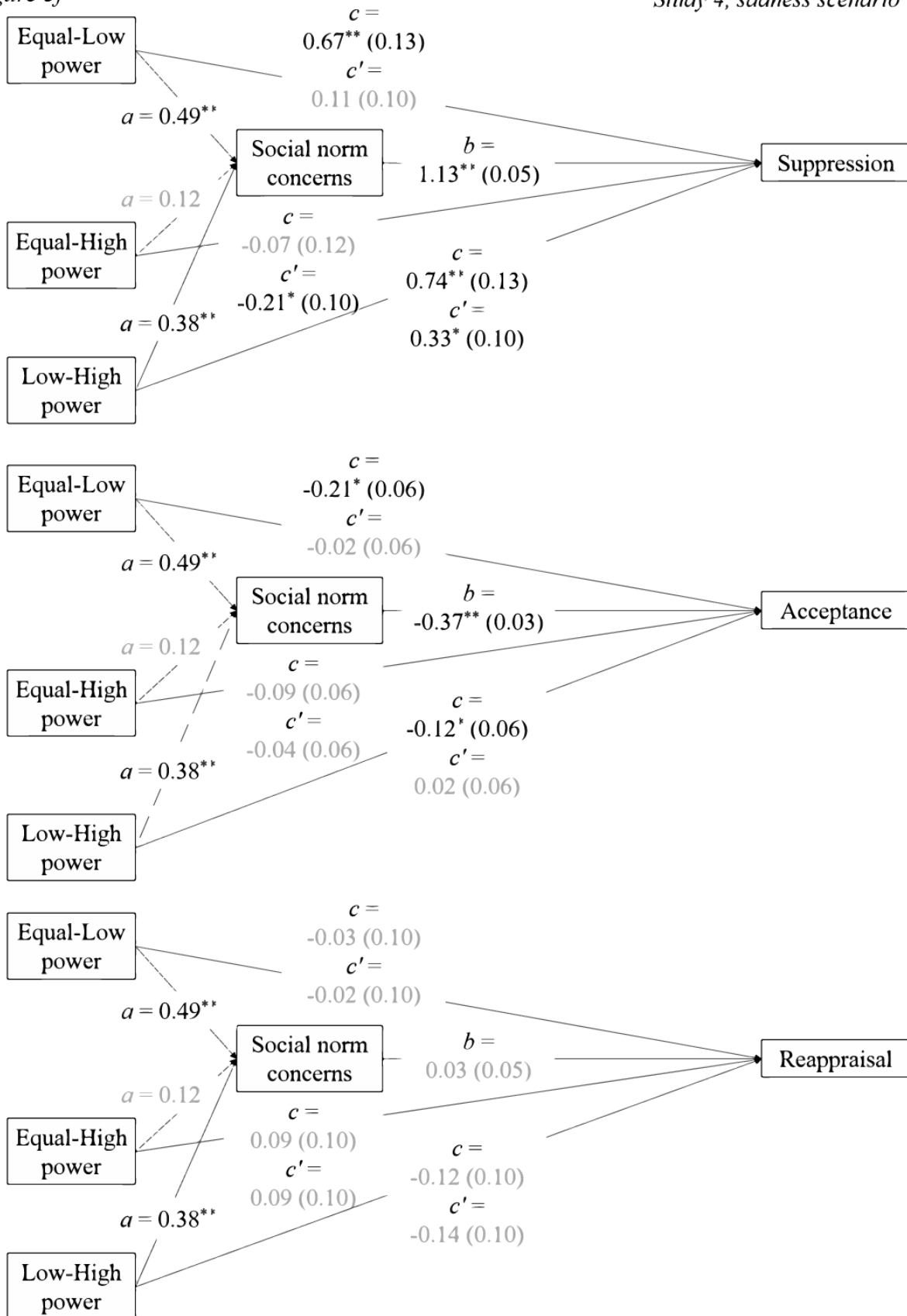


Figure 3f

Study 4, sadness scenario



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Appendix A

Vignettes used for Studies 1-3. Participants were randomly assigned to read and imagine either the anger or sadness scenario. They then completed that negative emotion scenario three times (one for each of the power-role interactions).

Anger Scenario: Imagine that you work for a large company. You're headed to work one morning and go out to your car and see that someone damaged your car. The person didn't leave a note. This means you'll have to spend time and money to get the car repaired. You're concerned your insurance rates will increase. After assessing the damage for a few minutes, you have to head to work, and now you're a little late for a meeting.

After completing baseline emotion ratings:

Please continue imagining the situation with your car. But this time, imagine that the meeting that you're headed to is with [a person you supervise/coworker/boss]. When you arrive at the meeting, [a person you supervise/coworker/boss] notices you seem rushed and asks "Everything ok?"

Sadness Scenario: Imagine that you work for a large company. You're on your way to work one morning when you get a phone call and you learn that your close friend, who you haven't spoken to in a year, was diagnosed with advanced stage cancer. Your friend had been waiting for biopsy results to come in for a week and just received them. After you finish the phone call, you have to head to work, and now you're a little late for a meeting.

After completing baseline emotion ratings:

Please continue imagining the situation with your friend. But this time, imagine that the meeting that you're headed to is with [a person you supervise/coworker/boss]. When you arrive at the meeting, [a person you supervise/coworker/boss] notices you seem rushed and asks "Everything ok?"

Appendix B

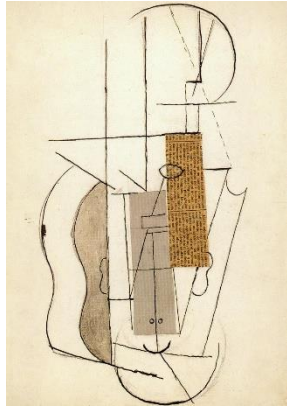
Vignettes used for Study 4. Participants were randomly assigned to read and imagine either the anger or sadness scenario. They then completed that negative emotion scenario three times (one for each of the power-role interactions).

Anger Scenario: Imagine you work for a large company. Every other week, your office holds small group meetings with 4 or 5 individuals to discuss topics such as productivity and workplace dynamics. The timing of these meetings are usually packed, with very little room for off-topic discussion. Because these meetings are very important to the company as a whole, coffee and breakfast are provided. You find these meetings meaningful and valuable on a personal level. The tardiness of [a coworker / a boss / an intern] delays the start of today's meeting by 20 minutes, yet again. They sit down with no apology or explanation, and proceed to take the last of the coffee and pastries. Because of their tardiness, everyone, including yourself, who prioritized being there on time is forced to rush through meeting topics. You know that [the coworker / boss / intern] has not received any repercussions for their chronic tardiness. You think about this unfairness the whole meeting. After the meeting, [the coworker / boss / intern] is in the elevator with you. They notice you seem aggravated and ask 'Everything ok?' Take a few minutes to think about this situation. When you're ready, please describe below in 3-5 sentences how you would respond to [the coworker / boss / intern], including what you would think, and how you would feel and behave.

Sadness Scenario: Imagine you work for a large company. Every other week, your office holds small break-out meetings where you meet with one other individual to discuss various topics, such as productivity and workplace dynamics. The timing of these meetings are usually packed, with very little room for off-topic discussion. Because these meetings are very important to the company as a whole, coffee and breakfast are provided. You find these meetings meaningful and valuable on a personal level. The past few weeks, including this week, you are meeting with [a coworker / a boss / an intern]. After some brief discussion about how your weekends were, you each review project progress reports and incomplete tasks related to an upcoming project. At the end of the meeting, [the coworker / boss / intern] pauses as if hesitating to say something. You ask if they were going to say something further. They proceed to tell you that they will be asking for a partner reassignment because they feel like the dynamic between the two of you is not a great interpersonal fit. You are caught off guard but your impression is that [the coworker / boss / intern] does not like you. After stating this, they collect their things and give a small shrug with a "Sorry." You think about this all day. At the end of the day, [the coworker / boss / intern] is in the elevator with you. They notice you seem upset and ask 'Everything ok?' Take a few minutes to think about this situation. When you're ready, please describe below in 3-5 sentences how you would respond to [the coworker / boss / intern], including what you would think, and how you would feel and behave.

Appendix C

The eight pictures used in the modified Art Gallery Task for Study 5. All pictures were displayed on the screen simultaneously. Text descriptions for each picture were created by the research team with intentional typos. Confederate team members selected a picture of their choice (different from the participant's choice) and used the corresponding text description during the chat interaction, entering one sentence per chat message.



*It's unique compared to the others - I think it is a collage.
I like that it's like another way of looking at a guitar or some instrument.
I prefer the simple style of this pictuer.
picture



*It's very unique. It looks like a 3-D structure but kinda abstract.
I like the pastel and soft colors.
The lines are so perfect.
And this pictuer feels mysterious like I want to know more.
picture



*This pictuer has nice, bright colors.
*picture
It looks older.
I like the geometric way it was painted.
And it has a nostalgic mood.*



*I like how unfinished and weird the building is.
It has a good mix of colors.
I like the digital technique it was made with.
Overall this pictuer very mysterious and dream-like.
picture



*I like the simple round shape.
It looks like an optical illusion or even peace symbol.
I also like the vivid colors and sharpness.
Overall this pictuer is intriguing.
picture



*It has the most vivid colors.
The colors make it look like a forest in fall time.
This pictuer is almost relaxing in my opinion.
picture



*The painting style of this pictuer is different from the rest.
*picture
I like the contrasting colors.
It looks abstract and happy.
It reminds me of a sunset*



*The style of this pictuer is different from the other ones.
*picture
I like the pale colors - they kinda give it a nostalgic feeling.
It looks more vintage than the others.*

Appendix D

Online chat script for the experimenter role in Study 5. Experimenters read all the instructions aloud, and also copy and pasted the italicized text into the chat box.

Experimenter Script – Study 5

For this upcoming task, I'd like you to imagine that you work in one of three possible roles at an art gallery: the director of the art gallery, the assistant to the director of the art gallery, or a colleague in the art gallery.

In any workplace there are different roles people take on. Some people follow instructions and solve tasks, such as assistants, whereas others give instructions and tell others what to do, such as directors. Other people might do many or all of these things, but don't take on either an assistant or director role; they are just a regular worker or colleague.

For the Assistant role: [name], for this interaction you will be taking on the role of assistant to the art gallery director. Your job as the art gallery director's assistant will be to review all the pictures and give your opinion about the best picture to hang. You should provide as many reasons as you can why it is the best based on whatever criteria you choose. ____ [other name] will be evaluating your reasoning and taste in picture choice. As director of the art gallery, they will choose the final picture selection and may use your input as they wish.

For the Director role: [name], for this interaction you will be taking on the role of director of the art gallery. Your job as director of the art gallery is to evaluate and judge ____'s [other name] reasoning and taste in picture choice based on whatever criteria you choose. You may ask them questions if you choose. As director of the art gallery, you have final say on which picture is selected, and may use your assistant's input as much or as little as you wish.

For the Colleague role: [both names], we have randomly assigned you to each complete the task as colleagues in the art gallery. Your job during the interaction is to cooperatively select the best picture with each other. You will each share your reasoning about your picture choice and use each other's input in the final decision you arrive at together."

Appendix E

Online chat script and instructions used by confederate team members during interactions in Study 5. Confederate team members copy and pasted text into the chat box. In the script, *italicized* text indicates the chat, while non-italicized text indicates specific instructions for the confederate to follow (i.e., not included in the chat itself). Scripts were adjusted according to confederate's role (i.e., director, colleague, or assistant). The confederate acts confused about the task and instructions at both the beginning and end of the script in attempt to throw the participant off that the confederate wasn't a real participant.

Confederate Script – Study 5

When the experimenter says to introduce yourself in the chat window, type your actual first name and major (if you have a double major, just select one). This will be your first annoying text as well (it should be 3 separate messages). **Send after the participant sends their intro.**

Hi! I'm _____ and majoring in _____. Nice to met ya!
whoops I meant to say
**meet*

The experimenter will be reading the instructions and role assignments. During this, you will not need to do anything. When the experimenter says "Please indicate that you understand the task up until this point by typing "Yes" in the chat box."

Yes. It doesn't matter if this is before or after the participant.
As quickly as possible: *Oh wait.* (after type, pause 10 seconds)
So we're only doing this on chat?
Wait for the experimenter to say "Any other questions?"
No other questions. Thanks.

The experimenter will finish describing the task. Have the following line typed in the chat box ready to send so that once they turn off their camera and bring the pictures up on the screen, you immediately hit send.

Cool. This is interesting. Which picture do you like best?

Your responses from here will depend on your role. See below for the according text. When you are in the Colleague role, you and the participant are trying to come to a mutual decision, so keep this away from "asserting your opinion."

You will use the predetermined picture description for the picture you choose. (See picture descriptions sheet).

Take several seconds (~5 seconds) between each new chat (to give the illusion that you are typing). REGARDLESS of role and where you are in the conversation, when the experimenter says "You are halfway through" wait at LEAST 40 seconds before picking up where you left off in the script. If the participant asks where you are (i.e., "are you still there?" "hello?" etc.), don't respond to it. Just pick up where you left off on the script (or address a comment from just before the long pause).

If you are in the Assistant role (i.e. participant is director/role assignment 3): act in deference to the director as much as possible. If they mention their pic choice *first*, choose a diff pic to start, but then ultimately agree with them. If they keep asking for your opinions, deflect back to them.

(next 2 lines should be 2 separate chats) *So...I guess if I were choosing a picture for an art gallery it would be picture [enter picture number of your choice here]*

**picture*

I guess I would choose that one for a couple reasons....

[enter corresponding picture description here, one sentence at a time]

But yea Im not really sure...what do you think?

(Once they have sent their response, wait 25 seconds before responding)

Hmm. K.

(wait 25-30 seconds to respond regardless if they respond or not; if they send another message during this 25-30 seconds, do not start the timer over)

I have to let you know, [name]

Idk how to say this...

I feel like we have different taste

(IF THEY DON'T RESPOND after 20-30sec)

I dont have anything more. Im not really sure whats next.

(regardless of what further they say)

Ok so, i guess im not sure which picture we are choosing?

If you are in the Director role (i.e. participant is director/role assignment 1): use your role to guide the interaction. Their choices/opinions help you make your decision. Because ultimately it is your decision, because you are the director (and it's ok to keep emphasizing this point).

You will wait for the participant to enter their description.

If, after ~20-30seconds they have not sent their picture choice:

Since I'm the director, I need your picture choice and the reasoning behind it.

Once they have sent their picture choice and why, wait 10 seconds before responding:

Hmm. K.

(wait 15 seconds).

I have to let you know, [name]

Idk how to say this...

I feel like we have different taste

(wait 20 seconds)

So why are you so drawn to pic [enter their choice here]?

(wait for them to respond)

I'll take your ideas into consideration, pal.

Since I'm the director, I would choose picture [enter a diff picture number of your choice]

**picture*

I choose that one because I like the colors better.

(regardless of what they say/if they even respond, wait 25-30 seconds)

K. So do you have any final things for your picture selection? Its important for me to know your opinions.

(regardless of what further they say, choose your picture selection)

Ok. I've thought about your ideas for picture [enter their choice].

I'm the director so the picture that is my final choice is [enter your choice].

DONE. We chose picture [enter corresponding number here].

If you are in the Colleague role (i.e. participant is colleague/role assignment 2):

(Once they have sent their response, wait 25 seconds before responding)

Hmm. K.

(wait 25-30 seconds to respond regardless if they respond or not; if they send another message during this 25-30 seconds, do not start the timer over)

I have to let you know, [name]

Idk how to say this...

I feel like we have different taste

(next 2 lines should be 2 separate chats)

So...if I were choosing a picture for an art gallery it would be picture [enter picture number of your choice here]

**picture*

I would choose that one for a couple reasons...

[enter corresponding picture description here, one sentence at a time]

what do you think?

(IF THEY DISAGREE WITH YOUR PICTURE CHOICE, wait 30 seconds)

Would you be willing to compromise on a completely diff picture?

(If THEY ask your 2nd choice in response ...)

[Select another pic and insert 1 line from picture description sheet]

(If they say no to compromise...)

Ok, I'd be willing to choose your picture as our final decision.

I do like that [insert 1 line from corresponding one on picture description sheet]

(If they say yes to compromise...)

What is your 2nd choice picture then?

(regardless which picture they choose here, AGREE)

Oh funny thts my sec fav also!

IF THEY AGREE WITH YOUR PICTURE CHOICE, wait 30 seconds)

Cool. We like the same one.

(regardless of what further they say)

Ok so the picture we are choosing is [insert picture selection]

Do you want to type it to the researcher person or should I?

(if they say you can)

DONE. We chose picture [enter corresponding number here].

The experimenter will now have some closing words. After they say "Please indicate for me in the chat box that you have successfully accessed the link".

[experimenters name] *im having trouble accessing the link.*

Wait 10sec after experimenter replies. *My bad its working now thanks!*