

How perceived power influences the consequences of dominance expressions in negotiations[☆]

Scott S. Wiltermuth^{a,*}, Medha Raj^a, Adam Wood^b

^a University of Southern California, United States

^b Woodbury University, United States

ARTICLE INFO

Keywords:

Negotiation
Power
Dominance
Status
Nonverbal behavior

ABSTRACT

Recent research (Wiltermuth, Tiedens, & Neale, 2015) has indicated that negotiators may use expressions of dominance and submissiveness to discover mutually-beneficial solutions and thereby create more joint value. We examined how the perceived relative power of negotiators who express dominance influences value claiming and value creation in negotiations. Negotiators with relatively little power benefitted by expressing dominance, as expressing dominance increased relatively low-power negotiators' abilities to claim value. In contrast, relatively powerful negotiators' expressions of dominance fueled value creation.

Dyads in which only the relatively powerful negotiator expressed dominance created more value than did dyads in which neither, both, or only the relatively powerless negotiator expressed dominance. The coordination benefits attributable to dominance complementarity were therefore best achieved when there was congruence between a negotiator's perceived power and the power/status cues the negotiator sent through expressions of dominance.

1. How power influences the consequences of dominance expressions in negotiations

People have long employed the expansive body postures, gestures, and verbal approaches associated with dominance to improve their own outcomes in social interactions (e.g., Berger, 1994). Although these dominance expressions do not appear to have robust embodied effects on the people expressing the dominance (e.g., Ranehill et al., 2015), they are functional in interpersonal contexts in which dominance can serve as a social signal. In line with conflict-based accounts of hierarchy differentiation (e.g., Buss & Duntley, 2006; Mazur, 1973), numerous studies have demonstrated that dominance behaviors can enable people to: become more socially attractive (Vacharkulksemsuk et al., 2016), attain power and establish status (Cheng, Tracy, Foulsham, Kingstone, & Henrich, 2013; Jolly, 1972), and procure concessions in negotiations (Bacharach & Lawler, 1980; Camras, 1984; Komorita & Brenner, 1968; Pruitt, 1981; Rosa & Mazur, 1979; Sinaceur & Tiedens, 2006). Moreover, recent studies have shown that people who express relatively non-antagonistic forms of dominance in negotiations facilitate the process of discovering mutually-beneficial solutions when their dominance elicits submissiveness from their counterparts (Wiltermuth, Tiedens, & Neale, 2015).

Expressing dominance, however, may not yield the same benefits for people who lack power as it does for people who possess power. To date, little work has examined this issue as researchers have largely examined the effects of dominance in contexts in which there are no competing cues about people's power (e.g., Wiltermuth et al., 2015). The one set of studies that has examined how powerful postures interact with role-based power to influence behavior indicates that enacting powerful postures generates outcomes associated with having power, regardless of whether the person enacting the powerful posture occupies a low-power or high-power role (Huang, Galinsky, Gruenfeld, & Guillory, 2010). Yet, there are multiple reasons to expect that dominance from powerholders would create different consequences than would dominance from relatively powerless people. For example, high-power negotiators' expressions of dominance are legitimated by the existing social hierarchy (Burke, 1967, 1971; Ridgeway & Berger, 1986; Van Kleef & Côté, 2007; van Knippenberg, van Knippenberg, & De Cremer, 2007), are more commonplace within organizations (e.g., Brass & Burkhardt, 1993; Kipnis & Schmidt, 1988), and are backed by more credible threats of impasse (Polzer, Mannix, & Neale, 1998; Wang, Zhang, & Han, 2008).

We investigate here how displays of dominance interact with other cues about power to predict outcomes in contexts in which both parties

[☆] The authors would like to thank Macy Gunawan, Nicholas Fong, Arham Suleman, Shaheen Khimani, Iris Kim, Christine Compania, Vivian Wantong Ruan, Nathanael Fast, and Peter Kim for their invaluable help with this paper.

* Corresponding author.

E-mail address: wiltermu@usc.edu (S.S. Wiltermuth).

perceive a power imbalance. Specifically, we examine how the perceived relative power of the negotiator expressing dominance behaviors, such as adopting an expansive body posture and speaking in a loud voice (see Hall, Coats, & LeBeau, 2005, for a review of dominance behaviors), affects negotiators' abilities to claim value and find mutually-beneficial agreements. We posit that expressions of dominance from negotiators who are perceived to be relatively powerful are likely to be more effective than such expressions from relatively low-power negotiators in enabling the negotiating dyad to discover mutually-beneficial solutions. Furthermore, we speculate that relatively powerless negotiators will be able to use dominance expressions to claim a greater share of the value available in the negotiation. While we recognize that balance of power is not clear in many negotiations, we focus our analyses on the effects of dominance in contexts in which both sides perceive a power imbalance.

The notion that the perception of a negotiator's relative power affects the consequences of dominance expressions presents a novel insight for those interested in the links between power, interpersonal dynamics, and social decision-making. To our knowledge, no research has examined how acting dominantly affects social decision-making when explicit differences in perceived power exist between people. By examining this issue, we aim to make several contributions to theory. Chiefly, we integrate theories of power in negotiation (e.g., Kim, Pinkley, & Fragale, 2005) with Interpersonal Theory (e.g., Wiggins, 1979) to examine whether dominance expressions and role-based power have independent or interdependent effects on the outcomes of social interactions. We also investigate the possibility that dominance need not be backed by other forms of power to give negotiators an advantage on some metrics of negotiation success (i.e., value claiming). Given the importance of negotiation as a coordination mechanism for work processes, conflict resolution, and career advancement (Barley, 1991; Bowles & Flynn, 2010; Mannix, 1993; Pfeffer, 1981), and the difficulty that power imbalances can create in reaching negotiated agreements (Casciaro & Piskorski, 2005), we believe it is critical that managers understand how perceptions of relative power affect the utility of dominance expressions within negotiations.

2. Power and dominance in negotiations

Many people associate dominance behavior with power (Carney, Hall, & LeBeau, 2005), which is defined as the ability to control resources and administer rewards and punishments (French & Raven, 1959; Galinsky, Gruenfeld, & Magee, 2003; Keltner, Gruenfeld, & Anderson, 2003). Indeed, many of the power tactics that negotiators employ to maintain or change the power relationship within the dyad are dominance behaviors (Kim et al., 2005; Schmid Mast & Hall, 2003). Supporting this view, negotiators who act dominantly are generally viewed as more powerful (Bacharach & Lawler, 1980; Burgoon & Dunbar, 2006; Dunbar, 2004; Pruitt, 1981), and consequently, claim a larger share of the value available in a negotiation than do their counterparts (Camras, 1984; Pruitt, 1981; Sinaceur & Tiedens, 2006; Sinaceur, Van Kleef, Neale, Adam, & Haag, 2011). Moreover, those who possess power often display dominance to dissuade others from challenging their power or status (Darwin, 1872/2009; de Waal, 1982/1998; Eibl-Eibesfeldt, 1975). Thus, behaving dominantly can increase how powerful negotiators are perceived to be.

Although negotiators who possess power are more likely to display dominance than are negotiators who lack power (Dunbar & Burgoon, 2005), both relatively powerless and relatively powerful negotiators may exhibit behavioral dominance cues (Burgoon, Johnson, & Koch, 1998). Similarly, negotiators in equal-power dyads may express dominance if doing so allows them to accumulate power, progress the conversation, or create a more comfortable dynamic within the interaction.

Researchers' operationalizations of dominance expressions have varied. However, these operationalizations have generally followed the

biological conception of dominance expressions as postures and behaviors typically associated with fighting and the threat of force (Chapais, 1991; Packer & Pusey, 1985; Vervaecke, de Vries, & van Elsacker, 1999). For example, staring (Lewis & Fry, 1977), being verbally aggressive (Komorita & Brenner, 1968), and expressing anger (Sinaceur & Tiedens, 2006) have all been shown to allow negotiators to claim a greater share of the attainable value.

Although dominance expressions are sometimes portrayed as combative value-claiming techniques that are best used in competitive negotiations between strangers (Neale & Bazerman, 1991), dominance may also be communicated in more subtle ways. In short, expressing dominance need not equate to being *domineering*, which is defined as making "excessive attempts to control the behavior of others" and being "overbearing, oppressive, bossy, dictatorial, arrogant, and high-handed" (Sadalla, Kendrick, & Vershure, 1987, pp. 735-736). Instead, dominance behaviors, as defined by Interpersonal Theorists, can be much more subtle, and much less antagonistic.¹ For instance, when people expand their posture and take up more space, they are perceived to be more dominant (Argyle, 1988; Aries, Gold, & Weigel, 1983; Eibl-Eibesfeldt, 1975; Gifford, 1991; Mehrabian, 1972; Spiegel & Machotka, 1974; Tiedens & Fragale, 2003; Weisfeld & Beresford, 1982). Similarly, when people raise their voices, interrupt their counterparts, or simply move themselves closer to their interaction partners, they are also perceived to be more dominant (Hall et al., 2005). People who exhibit dominance tend to express their preferences more often and more clearly, are more assertive in trying to influence their interaction partners, and are also more likely to take the lead in conversations (Burgoon et al., 1998). Additionally, they are less likely to use subjunctive language and are more self-confident and certain in the language that they use (Weisfeld & Linkey, 1985; Zhou, Burgoon, Zhang, & Nunamaker, 2004). They also speak more than do other people (Schmid Mast, 2002).

When people exhibit dominance by expressing their preferences clearly, removing subjunctive language, and expanding their posture in the absence of other salient forms of social hierarchy, dominance behavior becomes more likely to elicit submissiveness than dominance. By creating this dynamic of dominance complementarity, which exists when people contrast each other's behavior along the control dimension of interpersonal behavior (Bales, 1950; de Waal, 1982/1998; Dryer & Horowitz, 1997; Goodall, 1986; Lonner, 1980; Michels, 1915; Murdock, 1945), negotiators may change their negotiation outcomes. As Interpersonal Theorists have repeatedly shown, people generally contrast with others on the control dimension by behaving dominantly toward others who behave submissively and behaving submissively toward others who behave dominantly (Horowitz et al., 2006; Kiesler, 1983; Tiedens & Jimenez, 2003; but also see Strong et al., 1988, for counter examples). The reasons for this complementarity are at least twofold. First, the dynamic of dominance complementarity leads to elevated levels of rapport between interaction partners (Dryer & Horowitz, 1997; Horowitz et al., 1991; Sadler & Woody, 2003; Tiedens & Fragale, 2003). Second, and importantly for negotiators, dominance complementarity can lead to improved social coordination (Estroff & Nowicki, 1992).

In fact, dominance complementarity has been shown to help negotiators coordinate the exchange of information when there are no other salient cues about negotiator power. Wiltermuth et al. (2015) found that negotiating dyads created more joint value when one negotiator in

¹ Some sociologists (e.g., Berger, Webster, Ridgeway, and Rosenholtz (1986) and Ridgeway (1984, 1987)) have subdivided the behaviors associated with the control dimension of behavior into two categories: dominance cues and task cues. Dominance cues are classified as those that attempt to control through threat, while task cues "make claims or permit inference about how well the actor will do or is doing at the task" (Ridgeway, 1987). We have opted to stay true to conception of dominance held by Interpersonal Theorists (e.g., Horowitz et al., 2006; Tiedens, Unzueta, & Young, 2007), and therefore, do not make this distinction in our work.

a dyad behaved dominantly and the other negotiator behaved submissively than they did when such dynamics did not occur. They found that the negotiator acting dominantly states his/her interests more assertively, while the negotiator acting submissively/deferentially uses a more polite tone and engages in questioning behavior. Furthermore, they found that negotiators shared information more effectively when this dynamic of dominance complementarity occurred, and it was this improved exchange of information that mediated the improvements in value creation.

3. Power as a potential moderator of dominance's effects on negotiation outcomes

Although negotiators who are perceived as lacking or having power may each display dominance, these dominance displays may not yield the same consequences. When relatively powerless negotiators express dominance rather than deference toward their counterparts, they may break out of their low-power mindset, which is associated with social constraint and inhibition-related tendencies (Keltner et al., 2003). They may consequently feel more powerful and therefore emboldened to fight for and claim value within the negotiation. In contrast, relatively powerful negotiators are likely to adopt an approach-related mindset even when they do not exhibit dominance behavior, as elevated power leads to increased attention to rewards and decreased inhibition-related tendencies (Keltner et al., 2003).

As such, dominance expressions may not change the perceived power balance within a dyad to the same extent when the relatively powerful negotiator expresses dominance. Dominance expressions from a relatively powerful negotiator may not communicate that the negotiator has any power beyond what is already perceived by both negotiators. Dominance expressions from a relatively powerless negotiator, by contrast, would be more likely to lead negotiators to question the power balance. Acting dominantly may therefore be less likely to affect the high-power negotiators' senses of power within the negotiation than it is to affect low-power negotiators' senses of power. We offer:

Hypothesis 1. Only relatively powerless negotiators will come to feel more powerful after receiving instructions to act dominantly.

Consistent with theory proposing that perceived negotiator power can influence value claiming by altering negotiator and counterpart behavior (Kim et al., 2005), negotiators who are perceived as having greater power than their counterparts typically claim a larger share of the value than do their counterparts (Komorita & Leung, 1985; Magee, Galinsky, & Gruenfeld, 2007; Pinkley, Neale, & Bennett, 1994; Schaerer, Loschelder, & Swaab, 2016). If expressing dominance improves relatively powerless negotiators' senses of power and perceived power increases value claiming, expressing dominance should be particularly likely to improve relatively powerless negotiators' abilities to claim value. If high-power negotiators' dominance expressions do not change the perceived power balance in the dyad, it is unclear whether those expressions would have yielded more or larger concessions than the high-power negotiator would have been able to extract by virtue of having a superior bargaining position. We therefore hypothesize:

Hypothesis 2. When facing counterparts not receiving instructions to act dominantly, only relatively powerless negotiators claim more value as a result of receiving instructions to act dominantly.

We further hypothesize that low-power negotiators' expressions of dominance enhance value claiming because dominance alters how powerful low-power negotiators perceive themselves to be. We propose:

Hypothesis 3. Low-power negotiators' perceptions of the power balance in the dyad mediate the relationship between the low-power negotiator alone receiving dominance instructions and heightened value claiming by the low-power negotiator.

Perceived power might also moderate the effects of dominance on

value creation. Functional accounts of status hold that the hierarchies facilitate organization by specifying who controls and directs conversations as well as decision-making processes (Bales, 1950; Berger, Rosenholtz, & Zelditch, 1980). Indeed, de Kwaadsteniet and van Dijk (2010) have demonstrated that differences in formal status (e.g., boss vs. intern) help facilitate coordination when individuals have asymmetric (i.e., conflicting) preferences. Moreover, group research has indicated that hierarchy within groups can facilitate coordination and the effectiveness of a group's efforts (Groysberg, Polzer, & Elfenbein, 2011; Halevy, Chou, Galinsky, & Murnighan, 2012). Given that negotiations have often been described as a "collaborative search of a complex offer space, whereby negotiators simplify and coordinate search via information contained in offer exchanges, isolating sub-regions of the offer space for potential solutions" (Prietula & Weingart, 2011, p. 3), this ability to coordinate directly affects negotiators' abilities to create value. In short, negotiators who can coordinate their search of the array of potential agreements are more likely to identify mutually-beneficial tradeoffs and discover congruent issues, wherein both parties desire the same outcome. Because expressions of dominance from the relatively powerless negotiator may challenge the hierarchy within a dyad, heightened conflict may ensue as the powerful negotiator responds to dominance with dominance, and the negotiating dyad's ability to coordinate may be diminished.

The risk of impasse may also increase with expressions of dominance from the low-power negotiator because the high-power negotiator may believe that the low-power negotiator does not respect the power difference. This perceived lack of respect for the power difference may lead high-power negotiators to see any offers from the low-power negotiator as too extreme, which can heighten the likelihood of impasse (Schweinsberg, Ku, Wang, & Pillutla, 2012).

Dominance expressed by a negotiator viewed as powerful, however, may increase value creation because it prompts relatively powerless counterparts to avoid matching dominance with dominance by competing on each issue. If these visible manifestations of a negotiator's power convince counterparts that responding to dominance with submissiveness is a sage strategy, it should lead counterparts to avoid direct confrontation on specific issues. Indeed, people who have relatively little power in an interaction are unlikely to respond to dominance by using power-based influence strategies. They may instead rely on influence strategies that rely on friendliness, coalition-building, and the avoidance of direct conflict (Fung, 1991; Stahelski & Paynton, 1995). To the extent that a high-power counterpart's dominance gestures reify the power difference between the negotiators, low-power counterparts of high-power negotiators possessing dominance instructions would need to pursue their own interests through alternative techniques, such as logrolling. If so, the negotiation may come to be viewed as more of a problem-solving exercise and less like a competition in which argument is met with argument.

Such a dynamic would parallel the conversational pattern associated with dominance complementarity in equal-power negotiations, in which the dominant negotiator assertively states his/her interests and the submissive negotiator engages in more questioning behavior (Wiltermuth et al., 2015). In this case, negotiators are more likely to discover sources of mutual benefit and are therefore more likely to create value. In short, when there is congruence between perceived power and dominance/submissive behavior within a dyad, negotiators may be able to achieve the coordination benefits associated with dominance complementarity. This may be especially true as negotiators who believe that they possess little power relative to their counterpart might naturally respond to dominance expressions with submissiveness in the hope of placating their more powerful counterparts. We therefore propose:

Hypothesis 4. Increasing expressions of dominance (as a result of receiving instructions) improves value creation within a dyad only when the negotiator portrayed as relatively powerful alone does so.

And,

Hypothesis 5. Negotiations become more like problem-solving exercises when the negotiator viewed as relatively powerful alone acts increasingly dominantly (as a result of receiving instructions).

We believe that negotiations becoming more like problem-solving exercises explains why negotiating dyads create more value when the relatively powerful negotiator alone receives instructions to act dominantly. We therefore propose:

Hypothesis 6. Negotiations becoming more like problem-solving exercises mediates the link between the high-power alone receiving dominance instructions and heightened value creation when the low-power negotiator does not have instructions to act dominantly.

4. Overview of studies

In two experiments we examine how the relative perceived power of negotiators affects the impact of their dominance expressions on both value claiming and value creation in two-party, multiple-issue negotiation exercises. We test our hypotheses in two experiments in which negotiators share an organizational context. In the first negotiation exercise negotiators played the role of representative of a company merging with the other company to form one combined company. In the second negotiation exercise negotiators played the role of either a junior analyst or a senior analyst at a company negotiating with each other over the details of a project launch.

We situate the negotiations in these contexts in large part because we believe that power will interact most meaningfully with dominance if negotiators mutually acknowledge the power hierarchy. Imagine the alternative: if negotiators belonged to organizations in different industries and the hierarchies of their industries did not overlap, the negotiators may not agree on the power hierarchy or may place less importance on such a hierarchy. In this case, perceived power may have less of an effect on the consequences of dominance in negotiations than it would if both negotiators shared an organizational context.

We examine the effects of dominance expressions by instructing some of the participants in our study to exhibit verbal, nonverbal, and paraverbal behaviors that signal dominance in interpersonal interactions (see Hall et al., 2005, for a review). We note that negotiators are likely to engage in some amount of dominance expression regardless of whether they receive instructions to express dominance. In instructing some negotiators to express dominance we are therefore comparing the effects of relatively high levels of dominance vs. relatively low levels of dominance rather than comparing dominance expressions vs. no dominance expressions.

5. Experiment 1

5.1. Method

5.1.1. Participants and experimental design

Three hundred and forty undergraduates (45% female; $M_{age} = 21.1$, $SD = 3.6$) at a large, private university on the West Coast of the United States participated in this study in partial fulfillment of course requirements. We aimed to collect 40 dyads in each of our cells. Forty-six of the dyads were all male, 30 were all female, 86 were mixed gender, and eight dyads included at least one person who did not report gender. The design at the dyadic level of analysis was a 2 (high-power dominance instructions: instructed to act dominantly vs. not instructed to act dominantly) \times 2 (low-power dominance instructions: instructed to act dominantly vs. not instructed to act dominantly) \times 2 (negotiator role: Tolliver company vs. Radeco company) between-groups ANOVA. Within each dyad there was one high-power negotiator and one low-power negotiator. We refer to these dyads as “Mixed” (i.e., mixed-power) dyads. We counterbalanced role assignments across conditions.

We collapsed across role in our analyses because we neither hypothesized nor found that role interacted with dominance instructions to predict any variables of interest. Our design therefore yielded four types of dyads: (1) Mixed No Dominance dyads in which neither the high-power nor the low-power negotiator received dominance instructions, (2) Mixed Low-Power Dominance dyads in which only the low-power negotiator received dominance instructions, (3) Mixed High-Power Dominance dyads in which only the high-power negotiator received dominance instructions, and (4) Mixed Both Dominance dyads in which both the high-power and the low-power negotiator received dominance instructions.

5.1.2. Procedure

Participants completed a six-issue negotiation exercise.

5.1.3. Negotiation exercise

Participants reviewed the preparation documents for a six-issue negotiation exercise in which each of the two negotiators played the role of a representative of a company merging with another company to form one combined company. This “Merging Companies Exercise” (Wiltermuth & Neale, 2011) contains no role-based power or status differentials. Negotiators received instructions that included: the description of the negotiation, the pay-off matrix, and a message stating the number of points the negotiator would receive if the negotiators did not reach an agreement. The value of each point and the maximum achievable points was identical for the two roles. Participants negotiated over six issues that affected the future of the combined company, including: the headquarters location, the factory location, the composition of upper management, the pension plan, the pay basis, and the percentage of layoffs coming from each company. Each issue contained five potential agreement positions, each corresponding to a different point level for each negotiator. Each participant could earn a maximum of 10,800 points, but achieving that number of points would require one’s counterpart to accept a deal that would be worse than their best alternatives to a negotiated agreement. The maximum number of points that negotiators could earn while still allowing their counterpart to accept a deal at least as good as their best alternative to a negotiated agreement was 8400. Dyads could earn a maximum of 10,800 combined points.

We instructed participants that the goal of the negotiation was to maximize their own points. One issue was purely distributive in that a gain for one negotiator represented an equal loss for the other negotiator. One issue was congruent in that both parties desired the same agreement position. The remaining issues were integrative, such that each issue was more important to one negotiator than the other. Negotiators could therefore trade these issues off one another to create value. We instructed negotiators that a neutral third party would decide the terms of the merger if they failed to reach an agreement, and that the stated terms would result in a number of points that would be moderately easy to achieve through negotiation. Negotiators in all conditions would receive the same number of points (i.e., 2200) if they did not reach a negotiated agreement. We made this decision because we did not want to communicate, through high-value experimenter-provided alternatives, that the structure of the negotiation allowed negotiators to create more value than they would attain if they compromised on each issue by choosing the middle-option on each issue. As such, we manipulated perceived power rather than the actual strength of each negotiator’s best alternative to a negotiated agreement.

Participants were given 15 min to negotiate and were told that they could not show their payoff schedule to the other participant. Two minutes before the end of the allotted 15-min session (i.e., after 13 min had passed), a verbal warning was issued reporting how much time was left. At the end of the negotiation session, participants completed a joint form to record their agreements, followed by individual post-questionnaires.

5.1.4. Perceived power manipulation

One negotiator in each dyad was assigned to the low-power role and one negotiator in each dyad was assigned to the high-power role. To manipulate perceived power, we used language found in Overbeck, Neale, and Govan (2010)'s manipulation of power. Negotiators assigned to the low-power role read that most insiders saw the "merger" as the other company acquiring their own company. They read: "You should be aware that **you are in a very weak negotiating position relative to your counterpart** and do not have much leverage to get a good deal." Negotiators assigned to the high-power role, in contrast, read that while the joining of the companies was officially described as a "merger," most insiders saw it as their own company acquiring the other company. They also read: "You should be aware that **you are in a very strong negotiating position relative to your counterpart** and can afford to use your leverage to get a good deal."

5.1.5. Dominance manipulation

Following the technique of Wiltermuth et al. (2015), we instructed half of the negotiators that displaying behaviors signaling dominance can give negotiators the upper hand in negotiation. These participants read that behaviors signaling dominance include: taking charge of the conversation, speaking in a loud voice, making sure your views are understood, interrupting others often, reducing interpersonal distances (i.e., standing or sitting close to the counterpart), and demonstrating bodily openness (i.e., keeping knees apart, stretching out legs, keeping elbows away from the body, preventing hands from touching, keeping legs uncrossed). Negotiators who received these instructions were instructed that it is important that they display these behaviors while negotiating. Half of the negotiators did not receive these behavioral instructions.

5.2. Dependent variables

5.2.1. Total points and own points

The total points created by the dyad and the points claimed by the individual negotiator comprised the primary dependent measures.

5.2.2. Dominance

To measure negotiator dominance and deference, we presented negotiators with the same list of dominant behaviors used in the instructions to act dominantly. We then asked them to rate which set of behaviors more accurately described how both they and their counterpart behaved on a seven-point continuous scale anchored by the dominance behaviors at the low endpoint and the deference behaviors at the high endpoint of seven.² These items were recoded such that higher values represented dominance and lower values represented deference. The dominance ratings were used to measure each negotiator's self-perceived dominance, which was then matched with their counterpart's ratings of the focal negotiator's dominance.

5.2.3. Power

We also asked them to use a seven-point continuous scale (1: My counterpart had more power, 7: I had more power) to respond to the question "Who had more power in this negotiation?"

² We also asked the focal negotiator to use seven-point continuous scales (1: Not at all, 7: Very much) to indicate how dominantly they behaved and how dominantly and how deferential/unassumingly their counterpart behaved. These measures showed low reliability $\alpha < .30$ when paired with the behavior-based measure. We therefore analyzed these measures separately. The effect of our manipulations on the single-item dominance question closely matched the effects on reported use of dominance behaviors and showed the same pattern of significance. For the sake of brevity, we report this secondary manipulation check in the supplemental materials. We do this for both Experiments 1 and 2. Our manipulations did not affect responses in either negotiation to the deferential/unassumingly item. One experimenter reported back that many participants did not understand the meaning of deferential/unassumingly.

5.2.4. Problem-solving versus competition beliefs

We tested whether dominance instructions affected negotiators' perceptions of the negotiation as a problem-solving exercise or a competition. We asked "Did the negotiation feel more like a competition or a problem-solving exercise?" (1: Competition, 7: Problem-solving exercise).

5.2.5. Information sharing

We also tested how dominance instructions could alter the degree to which people shared information about their preferences. We asked, "How much information about your preferences for different outcomes did you reveal to your counterpart?" (1: Not at all, 7: Very much), and "How much information about his/her preferences for different outcomes did your counterpart reveal to you?" (1: Not at all, 7: Very much).

5.2.6. Leading and following the conversation

We also asked participants to indicate how much their counterparts led the conversations within the negotiation and how much their counterparts followed their conversational lead. We speculated that having dominance instructions would increase how much negotiators were perceived to lead the conversation.

5.2.7. Additional measures

We asked additional questions in the questionnaire and report these questions in Supplemental File 1.

5.3. Results

5.3.1. Treatment of data

To account for the potential interdependence of data, we analyzed individual-level data using a series of 2 (power: low vs. high) $\times 2$ (own dominance instructions: not instructed to act dominantly vs. instructed to act dominantly) $\times 2$ (counterpart dominance instructions: not instructed to act dominantly vs. instructed to act dominantly) mixed-models analyses. Contrasts were used to analyze dyadic-level data. Males accumulated significantly more points ($M = 3827$, $SD = 1356$) than did females ($M = 3531$, $SD = 1423$), $F(1, 333.3) = 4.01$, $p = .05$, $d = .21$. Gender, however, did not significantly interact with any of the manipulations to predict negotiation outcomes. We therefore collapsed across gender in subsequent analyses.

5.4. Manipulation checks

5.4.1. Power

We conducted the mixed-models analysis described above on the amount of power negotiators perceived they had. Negotiators in the high-power condition reported having significantly more power ($M = 4.84$, $SD = 1.22$) than did their low-power counterparts ($M = 3.89$, $SD = 1.44$), $F(1, 162.49) = 33.99$, $p < .001$, $d = .71$. Negotiators given dominance instructions believed they had more power ($M = 4.51$, $SD = 1.30$) than did those who did not receive such instructions ($M = 4.21$, $SD = 1.50$), $F(1, 300.51) = 4.23$, $p = .04$, $d = .23$. A Own Power \times Own Dominance Instructions interaction ($F(1, 302.1) = 3.91$, $p = .05$) qualified this effect. Decomposing this interaction revealed that negotiators in the low-power condition felt more powerful as a result of receiving dominance instructions ($M = 4.18$, $SD = 1.41$ vs. $M = 3.60$, $SD = 1.41$), $t(164) = 2.64$, $p = .01$, $d = .41$. In contrast, the dominance instructions did not affect how powerful high-power negotiators perceived themselves to be ($M = 4.85$, $SD = 1.10$ vs. $M = 4.83$, $SD = 1.33$, $t(155) = 0.10$), $p = .92$, $d = .02$. This result is consistent with Hypothesis 1. No other main effects or interactions were significant.

5.4.2. Dominance

We examined whether the list of submissive behaviors or dominance behaviors most accurately matched participants' self-reported

Table 1
Mean points and levels on key variables across conditions.

Variable		Neither dominant				Low-power dominant				High-power dominant				Both dominant				Total		
		N	M	SD	Sig.	N	M	SD	Sig.	N	M	SD	Sig.	N	M	SD	Sig.	N	M	SD
Points	Total	42	7143	2009	a	42	7281	1756	ab	42	7967	1596	b	44	7114	2174	a	170	7373	1915
	Low power	42	2931	1129	a	42	3571	1173	b	42	3574	1129	b	44	3284	1155	ab	170	3339	1167
	High power	42	4212	1801	ab	42	3710	1290	a	42	4393	1442	b	44	3830	1505	ab	170	4034	1532
Problem solving orientation	Total	82	4.45	1.93		83	4.76	1.90		84	4.90	1.90		82	4.62	1.90		331	4.69	1.91
	Low power	41	4.02	1.90	a	42	4.76	1.87	ab	42	4.90	2.03	b	41	4.56	1.76	ab	166	4.57	1.91
	High power	41	4.88	1.87		41	4.76	1.96		42	4.90	1.78		41	4.68	2.04		165	4.81	1.90
Information sharing	Total	82	5.07	1.43		83	4.86	1.56		84	4.64	1.56		84	4.89	1.47		333	4.86	1.51
	Low power	41	5.10	1.63		42	5.19	1.53		42	5.17	1.36		42	4.71	1.58		167	5.04	1.53
	High power	41	5.05	1.22	a	41	4.51	1.54	ab	42	4.12	1.58	b	42	5.07	1.35	a	166	4.69	1.47
Counterpart led	Total	82	4.11	1.17	a	83	3.90	1.25	ab	84	3.75	1.30	b	84	3.87	1.04	ab	333	3.91	1.19
	Low power	41	4.27	1.14		42	3.95	1.29		42	4.02	1.16		42	3.98	0.92		167	4.05	1.13
	High power	41	3.95	1.18		41	3.85	1.22		42	3.48	1.38		42	3.76	1.14		166	3.76	1.24
Counterpart followed	Total	82	4.54	1.09		82	4.71	1.08		83	4.48	1.02		82	4.48	1.18		329	4.55	1.09
	Low power	41	4.34	1.13	b	41	4.93	1.03	a	41	4.46	1.00	b	41	4.51	1.14	ab	164	4.56	1.09
	High power	41	4.73	1.03		41	4.49	1.10		42	4.50	1.04		41	4.44	1.23		165	4.54	1.10

Means designated by “a” significantly different from “b” at $p < .05$.

Means designated by “ab” do not significantly differ from means designated by “a” or “b”.

behavior. A mixed-models analysis revealed a significant main effect of dominance instructions, such that negotiators who received dominance instructions reported that they behaved significantly more dominantly (and less submissively) ($M = 4.67$, $SD = 1.60$) than did negotiators without such instructions ($M = 4.02$, $SD = 1.67$), $F(1, 323.3) = 12.99$, $p < .001$, $d = .40$. No other main effects or interactions were significant.

Counterpart ratings of dominance behavior paralleled self-ratings of dominance behavior. Negotiators who received dominance instructions were, on a marginally significant basis, rated by their counterparts as behaving more dominantly ($M = 3.74$, $SD = 1.71$) than were negotiators without such instructions ($M = 3.43$, $SD = 1.65$), $F(1, 323.7) = 2.89$, $p = .09$, $d = .18$. Negotiators who received dominance instructions also rated their counterparts as behaving significantly less dominantly ($M = 3.40$, $SD = 1.56$) than did those who did not who receive dominance instructions ($M = 3.77$, $SD = 1.79$), $F(1, 323.7) = 4.20$, $p = .04$, $d = .22$. Furthermore, the Own Power \times Own Dominance Instructions interaction was also marginally significant, $F(1, 324.1) = 3.26$, $p = .07$. Receiving dominance instructions significantly decreased how dominantly the counterpart behaved when the high-power negotiator received those instructions ($M = 3.31$, $SD = 1.54$ vs. $M = 4.01$, $SD = 1.90$, $t(164) = 2.64$, $p = .01$, $d = .40$), but not when the low-power negotiator received those instructions ($M = 3.50$, $SD = 1.59$ vs. $M = 3.54$, $SD = 1.66$), $t(165) = 0.17$, $p = .87$, $d = .02$. No other interactions or main effects were significant.

5.5. Main analyses

5.5.1. Total points

Table 1 displays mean dyadic and individual points by conditions. We conducted a series of planned contrasts to determine if Mixed High-Power Dominance dyads created more value than did dyads in other conditions. As predicted in Hypothesis 4, Mixed High-Power Dominance dyads created more value than did dyads in the other conditions; $t(85.79) = 2.61$, $p = .01$, $d = .44$. Furthermore, Mixed High-Power Dominance dyads created more value than did Mixed No Dominance dyads ($t(78.0) = 2.96$, $p = .04$, $d = .45$) and Mixed Both Dominance dyads; $t(78.9) = 2.08$, $p = .04$, $d = .45$.³ They also created somewhat

more value than did Mixed Low-Power Dominance dyads; $t(81.3) = 2.96$, $p = .06$, $d = .41$. Neither Mixed Low-Power Dominance dyads nor Mixed Both Dominance dyads created significantly different amounts of value, $ps > .60$.

We analyzed whether the effect of dominance instructions on total points depended upon whether the counterpart of the person expressing dominance expressed dominance in return. An ANOVA, however, showed that the effect of dominance instructions was not moderated by the degree to which a counterpart responded with dominance of his/her own, $ps > .60$.

5.5.2. Own points

We then examined the effects of power and dominance on the number of points accumulated by each negotiator. A mixed-models analysis revealed a significant main effect of negotiator power ($F(1, 166) = 22.4$, $p = .001$, $d = .51$) on own points. As shown in Table 1, high-power negotiators accumulated more points than did low-power negotiators. The mixed-models analysis also revealed a significant Own Power \times Counterpart Dominance Instructions interaction ($F(1, 331.9) = 6.36$, $p = .01$), and a marginally significant Own Dominance Instructions \times Counterpart Dominance Instructions interaction, $F(1, 166) = 2.89$, $p = .09$. No other main effects or interactions were significant.

We decomposed the significant Own Power \times Counterpart Dominance Instructions interaction by examining separately how receiving dominance instructions affected the number of points that low-power and high-power negotiators accumulated. Neither low-power negotiators ($t(164) = 1.40$, $p = .16$) nor high-power negotiators ($t(164) = -0.11$, $p = .92$) accumulated significantly more points as a result of receiving dominance instructions. In a separate post hoc test we also found that low-power negotiators actually accumulated significantly more points when the high-power negotiator received dominance instructions than they did when neither party received dominance instructions, $t(166) = 2.57$, $p = .01$, $d = .57$.

We then tested whether low-power negotiators (but not high-power negotiators) would attain more points when they alone received instructions to act dominantly than they would when neither negotiator received instructions to act dominantly. Low-power negotiators who received instructions to behave dominantly and faced counterparts who did not receive such instructions accumulated significantly more points than did low-power negotiators in dyads in which neither party received dominance instructions, $t(166) = 2.56$, $p = .01$, $d = .56$. High-

³ Because Levene's test of homogeneity of variance was marginally significant for both analyses, we used the corrected t -tests. We did so in all instances when Levene's test was at least marginally significant.

power negotiators who received instructions to behave dominantly and faced counterparts who did not receive such instructions did not accumulate more points than did high-power negotiators in dyads in which neither party received dominance instructions, $t(166) = 0.55$, $p = .59$, $d = .11$.

5.5.3. Own percentage of total points

We also examined value claiming as measured by percentage of the points created. In line with Hypothesis 2, in Mixed Low-Power Dominance dyads, relatively powerless negotiators claimed a higher percentage of the points available ($M = 49.1\%$, $SD = .12$) than did relatively powerless negotiators in the other conditions ($M = 44.9\%$, $SD = .12$), $t(71.99) = 16.39$, $p < .001$, $d = .35$. They also claimed a higher percentage of points than did low-power negotiators in Mixed No Dominance dyads ($M = 42.3\%$, $SD = .134$), $t(166) = 3.55$, $p < .001$, $d = .56$. High-power negotiators, in contrast, did not claim a significantly different percentage of the points available in Mixed High-Power Dominance dyads than they did in Mixed No Dominance dyads ($M = 55\%$, $SD = .12$ vs. $M = 58\%$, $SD = .13$), $t(166) = -1.59$, $p = .11$, $d = .32$.

5.5.4. Mediation of low-power value claiming by sense of power

We then tested Hypothesis 3, which stated that increased feelings of power mediate the relationship between receiving dominance instructions and improved value claiming by relatively powerless negotiators. A bootstrap analysis produced a 95% confidence interval for the indirect effect that excluded zero (LL: .001, UL: .030), thereby indicating a significant indirect effect. Specifically, low-power negotiators who received dominance instructions came to feel more powerful ($\beta = 0.50$, $SE = 0.16$, $t(82) = 3.21$, $p = .02$), which correlated with claiming a greater percentage of the value available, $\beta = 0.02$, $SE = 0.01$, $t(82) = 2.31$, $p = .02$. Accounting for the effect of this increased sense of power reduced the previously significant relationship between receiving instructions to act dominantly and improved value claiming for low-power negotiators ($\beta = 0.03$, $SE = 0.01$, $t(81) = 2.41$, $p = .02$) to non-significance, $\beta = 0.02$, $SE = 0.01$, $t(81) = 1.55$, $p = .13$.

5.5.5. Problem-solving versus competition beliefs

We were also interested in whether dominance instructions affected the extent to which negotiators viewed the negotiation as a problem-solving exercise or a competition. Consistent with Hypothesis 5, relatively powerless negotiators in dyads in Mixed High-Power Dominance dyads perceived the negotiation as more of a problem-solving exercise and less of a competition ($M = 4.90$, $SD = 2.03$) than did low-power negotiators in Mixed No Dominance dyads, ($M = 4.02$, $SD = 1.90$), $t(323) = 2.10$, $p = .04$, $d = .45$. High-power negotiators did not show a commensurate change going from the control condition to the condition in which they alone received dominance instructions ($M = 4.90$, $SD = 1.78$ vs. $M = 4.88$, $SD = 1.88$), $t(323) = 0.06$, $p = .95$, $d = .01$.

Because negotiators in Mixed High-Power Dominance dyads also created more total points than did negotiators in Mixed No Dominance dyads ($t(78.0) = 2.96$, $p = .04$, $d = .46$), and total points correlated positively with the degree to which the low-power negotiator perceived the negotiation to feel more like a problem-solving exercise ($r(84) = 0.23$, $p = .04$), we tested for mediation. A bootstrap analysis produced a 95% confidence interval for the indirect effect that included zero (LL: -9.62 , UL: 526.94), thereby indicating that the indirect effect did not reach statistical significance at $p = .05$. However, the 90% confidence interval for the indirect effect excluded zero (LL: 11.85 , UL: 455.92), which indicated that the effect was marginally significant. Nevertheless, we did not find full support for Hypothesis 6.

5.5.6. Information sharing

We then examined the extent to which dominance affected how much negotiators revealed information to their counterparts. Mixed models-analysis indicated that negotiators with low power were rated

by their counterparts as revealing more about their preferences ($M = 5.04$, $SD = 1.53$) than were high-power negotiators ($M = 4.69$, $SD = 1.47$), $F(1, 166) = 6.29$, $p = .01$, $d = .24$. This analysis also revealed a significant Own Power \times Own Dominance Instructions \times Counterpart Dominance Instructions three-way interaction, $F(1, 162.3) = 11.52$, $p = .001$. An analysis of means revealed that there was a particularly wide discrepancy of information shared in Mixed High-Power Dominance dyads, such that the low-power negotiator shared more information ($M = 5.17$, $SD = 1.36$) than did the high-power negotiator ($M = 4.12$, $SD = 1.58$), $t(325) = 3.24$, $p = .001$, $d = .71$. No other main effects or interactions were significant, $ps > .18$. The amount of information-sharing at the dyadic level did not mediate the relationship between high-power dominance and improved joint outcomes.

5.5.7. Leading and following the conversation

We next examined how our manipulations of power and dominance affected how much negotiators led the conversations and how much they followed the conversational lead of their counterparts. A mixed-models analysis revealed a significant main effect of power ($F(1, 163.0) = 4.09$, $p = .05$, $d = .24$), such that high-power negotiators were perceived to have led the conversations more ($M = 4.05$, $SD = 1.13$) than were low-power negotiators ($M = 3.76$, $SD = 1.24$). There was also a marginally significant main effect for dominance instructions ($F(1, 303.1) = 3.09$, $p = .08$, $d = .19$), such that negotiators receiving dominance instructions led the conversations more ($M = 4.02$, $SD = 1.18$) than did negotiators not receiving those instructions ($M = 3.79$, $SD = 1.20$). No other main effects or interactions were significant.

A mixed-models analysis of how much negotiators were perceived by their counterparts to follow the lead of those counterparts revealed only a significant Own Power \times Own Dominance instructions interaction, $F(1, 320.8) = 3.87$, $p = .05$. Negotiators followed the lead of low-power counterparts who received dominance instructions ($M = 4.72$, $SD = 1.10$) more than they did low-power negotiators who did not receive such instructions ($M = 4.40$, $SD = 1.06$), $t(162) = 1.87$, $p = .06$, $d = .30$. Negotiators, in contrast, did not follow the lead of high-power negotiators who received dominance instructions ($M = 4.46$, $SD = 1.10$) more than they followed the lead of high-power negotiators who did not receive such instructions ($M = 4.62$, $SD = 1.06$), $t(163) = -0.90$, $p = .37$, $d = .15$. No other main effects or interactions were significant.

5.6. Discussion

Experiment 1 provided initial evidence that the effects of dominance in negotiations depend upon whether dominance is expressed by a relatively powerful or relatively powerless negotiator. As predicted, dominance expressed by the relatively powerful negotiator alone improved dyadic value creation, whereas dominance expressed by the relatively powerless negotiator did not. Dominance expressed by the relatively powerless negotiator alone, however, increased the percentage of the total value that low-power negotiators claimed in the negotiation (although it did not affect the total points these negotiators accumulated). In such instances, receiving instructions to act dominantly increased how powerful the relatively powerless negotiator felt in the interaction. By contrast, relatively powerful negotiators did not come to feel more powerful as a result of receiving dominance instructions. Instead of cueing that the high-power negotiator was even more powerful, dominance behaviors may have signaled a difference in power between the negotiators that the negotiators already recognized. High-power negotiators consequently did not claim more value with dominance instructions than they did without such instructions.

We were surprised to find that high-power negotiators perceived the negotiation to be more of a problem-solving exercise than a competition regardless of whether they expressed dominance. We test in Experiment

2 whether this effect is robust and whether high-power individuals are more inclined than low-power individuals to see some negotiations as problem-solving exercises.

6. Experiment 2

In Experiment 2 we use a different negotiation scenario to examine the robustness of the effects observed in Experiment 1. We also altered the design and procedure in a few key ways. First, we added new conditions in which both negotiators in a dyad have the same level of power. Second, we altered our power manipulation to make it clearer to both negotiators in mixed-power dyads that they each see the power-imbalance the same way (i.e., each negotiator was aware of the power difference in the negotiation). Third, we supplemented the single-item measure of relative power that we used in Experiment 1 with [Van Kleef, De Dreu, Pietroni, and Manstead's \(2006\)](#) scale measuring relative power in negotiations. Finally, we increased the risk of impasse by eliminating a congruent issue and replacing it with a distributive issue. This substitution allowed us to examine what combinations of dominance and power in a dyad increase the risk of impasse.

6.1. Method

6.1.1. Participants and experimental design

Six hundred and fifty-eight undergraduates (52.7% female; $M_{age} = 20.6$, $SD = 2.2$) at a large, private university on the West Coast of the United States participated in this study in partial fulfillment of course requirements. We aimed to collect 40 dyads in each of eight cells. One hundred and seven dyads were all female, 87 of the dyads were all male, 129 dyads were mixed, and six dyads included at least one person who did not report gender.

We ran four conditions that we term “mixed-power conditions”. For these mixed-power conditions the design was 2 (own power: low power vs. high power) \times 2 (own dominance instructions: no instructions vs. dominance instructions) between-groups ANOVA. Within each dyad there was one high-power negotiator and one low-power negotiator. As in Experiment 1, we refer to these dyads as “Mixed” (i.e., mixed-power) dyads. Our design yielded four types of mixed-power dyads: (1) Mixed No Dominance dyads in which neither the low-power nor the high-power negotiator received dominance instructions, (2) Mixed Low-Power Dominance dyads in which only the low-power negotiator received dominance instructions, (3) Mixed High-Power Dominance dyads in which only the high-power negotiator received dominance instructions, and (4) Mixed Both Dominance dyads in which both the low-power and the high-power negotiator received dominance instructions.

We also collected four additional dyad types in which either two low-power individuals negotiated with one another or two high-power individuals negotiated with one another. We term these conditions “equal-power conditions.” We refer to these dyads as “Matched” (i.e., equal-power) dyads. These four additional types of equal-power dyads included: (1) Matched Low-Power No Dominance dyads in which neither low-power negotiator received dominance instructions, (2) Matched Low-Power Dominance dyads in which one low-power negotiator received dominance instructions, (3) Matched High-Power No Dominance dyads in which neither high-power negotiator received dominance instructions, and (4) Matched High-Power Dominance dyads in which one high-power negotiator received dominance instructions.

To ensure that we had enough participants per cell we decided against running conditions in which either both low-power or both high-power negotiators received instructions to act dominantly. The decision to omit these conditions meant that pairing the mixed-power conditions and equal-power conditions resulted in an incomplete design. When comparing results across mixed-power and equal-power conditions, following the advice of [Yandell \(1997\)](#) we used planned

contrasts and also analyzed subsets of the data that do form complete designs. In our case, this meant excluding the mixed-power, both-dominant condition from analyses using data from both mixed-power and equal-power dyads.

6.1.2. Procedure

Participants completed a six-issue negotiation exercise.

6.1.3. Negotiation exercise

Participants completed a negotiation exercise in which the two negotiators played the role of representatives, as either a Junior Analyst or a Senior Vice President, at a company named Techicon Corp. that was about to start a new virtual reality project aimed at creating a new virtual reality device. Participants were informed that they would be negotiating the details of the project with another representative at Techicon Corp. (their counterpart in the negotiation). As in Experiment 1, negotiators received instructions that included: the description of the negotiation, the pay-off matrix, and a message stating the number of points the negotiator would receive if negotiators were unable to reach an agreement. The point distribution across the six issues and the maximum achievable points was identical across the roles for the negotiation.

Participants negotiated over six issues about how the virtual reality project would be executed. In particular, they negotiated over: the university that their company would partner with for the project, the launch date for the project, the number of new hires, the target market for the project, the research and development (R&D) funding for the project, as well as which of the company's offices would be in charge of the project. The structure of the exercise paralleled the design of the exercise in Experiment 1 except the congruent issue was replaced with a distributive issue. Each negotiator could earn a maximum of 10,800 points and had a BATNA of 2200 points. The maximum number of points a negotiator could earn while still allowing the counterpart to earn enough points to surpass the BATNA was 7200. Dyads could earn a maximum of 9600 combined points. We instructed negotiators to maximize their own points during the negotiation. However, to avoid the possibility that the instructions to maximize their own points could have affected joint outcomes we also instructed negotiators: “You should genuinely try to reach an agreement with the Junior Analyst/Senior Vice President because it is in the company's best interest. The company has decided to go ahead with the project. Therefore, it is important that you work with the Junior Analyst/Senior Vice President to try to reach an agreement.” Participants had 17 min to negotiate. Each negotiator completed a post-negotiation questionnaire immediately following the negotiation.

6.1.4. Perceived power manipulation

In the mixed-power conditions one negotiator in each dyad was assigned to the low-power role (i.e., Junior Analyst) and one negotiator in each dyad was assigned to the high-power role (i.e., Senior Vice President). In the equal-power conditions we either assigned both negotiators in a dyad to the low-power role or the high-power role. As in the previous study, we used language found in [Overbeck et al.'s \(2010\)](#) power manipulation. Negotiators in the low-power role read that they were a Junior Analyst at the company, that they “have *much less power* in the organization than the Senior Vice President”, and that their counterpart (i.e., the Senior Vice President) was aware of this. They also read: “You should be aware that *you are in a very weak negotiating position* and do not have much leverage at Techicon Corp. to get a good deal”. In contrast, negotiators assigned to the high-power role read that they were a Senior Vice President at the company, that they “have *much more power* in the organization than the Junior Analyst”, and that their counterpart (i.e., the Junior Analyst) was aware of this. They also read: “You should be aware that *you are in a very strong negotiating position* relative to your counterpart and can afford to use your leverage at Techicon Corp. to get a good deal.”

In the equal-power conditions participants in the low-power role read that they were a Junior Analyst at the company that they do not have a lot of power within the organization, and that their counterpart knew this. In contrast, participants in the high-power role read that they were a Senior Vice President at the company that they have a lot of power within the organization, and that their counterpart knew this. As such, we manipulated power in the organization rather than telling both negotiators in a dyad that they either had more (or less) power than their counterpart had. Equal-power condition participants also read that they were either in a very good (or weak) negotiating position and either did (or did not) have much leverage at Techicon Corp. to get a good deal.

6.1.5. Dominance manipulation

Our dominance manipulation matched our Experiment 1 manipulation except for the addition of two dominance behaviors: increased speaking time and direct eye gaze while speaking.

6.2. Dependent variables

6.2.1. Total points and own points

The total points created by the dyad and the points claimed by the individual negotiator comprised the primary dependent measures.

6.2.2. Dominance

In the post-negotiation questionnaire participants were asked to answer the same measures of dominance and submissiveness as in the previous experiment. Higher scores reflected more dominant behaviors whereas lower scores reflected less dominant behaviors. As before, the dominance ratings were used to measure the negotiator's self-perceived dominance, which was then matched with their counterpart's ratings of the focal negotiator's dominance.

6.2.3. Power

We measured perceived power using a nine-item scale (e.g., "Who had that strongest position in the negotiation?") that measures relative power in a negotiation (Van Kleef et al., 2006). Participants responded using seven-point continuous scales (1: My counterpart did, 7: I did). We averaged responses to create a composite measure of relative power, $\alpha = .91$.

6.2.4. Problem-solving vs. competition beliefs

We used the same measure as we did in Experiment 1.

6.2.5. Beliefs about the credibility of counterpart's threats

We also measured threat credibility (e.g., "How credible did your counterpart's threats seem to be during the negotiation?"; 1: Not at all, 7: Very much).

6.2.6. Cognitive effort expended

We also measured the cognitive effort negotiators expended while negotiating (i.e., "How difficult was it to concentrate while negotiating?" and "How distracted did you feel while negotiating?"; $r(652) = .77, p < .001$).

6.2.7. Additional questions

We administered most of the Experiment 1 post-questionnaire items in this experiment's questionnaire. Questions asked in the questionnaire but not reported here are included in [Supplemental File 2](#).

7. Results

7.1. Treatment of data

We analyzed individual-level data using a series of mixed-models analyses. We report separate analyses for the mixed-power and equal-

power conditions to make our results easier to interpret. Where appropriate and informative, we also report analyses that involve both the mixed-power and equal-power sets of conditions. We used contrasts to analyze dyadic-level data. Across the data, gender did not produce a main effect or significantly interact with any of the manipulations to predict negotiation outcomes. We therefore collapsed our analyses across gender.

No dyads agreed to deals that were more than three standard deviations away from the mean value. However, of the 329 dyads, sixteen dyads included a negotiator who accepted a deal producing a value more than three standard deviations above or below the mean value accepted by negotiators. Six of these dyads were Mixed No Dominance dyad, three dyads were Mixed High-Power Dominance dyad, and three dyads were Mixed Both Dominance dyad. In the equal-power conditions, three of these dyads were Matched Low-Power Dominance dyads and one dyad was a Matched High-Power No Dominance dyad. We included the data from these dyads and note any instances in which excluding the data changes key significant results to non-significance.

7.2. Manipulation checks

7.2.1. Power across Mixed-power dyads

We first conducted a 2 (own power instructions: low power vs. high power) \times 2 (own dominance instructions: no instructions vs. dominance instructions) \times 2 (counterpart dominance instructions: no instructions vs. dominance instructions) mixed-models analysis on negotiators' subjective senses of power in the mixed-power conditions. Negotiators in the high-power condition reported having significantly more power ($M = 4.99, SD = 0.86$) than did their low-power counterparts ($M = 3.46, SD = 1.07$), $F(1, 155.4) = 148.2, p < .001, d = 1.58$. Negotiators given dominance instructions also believed they had more power ($M = 4.41, SD = 1.16$) than did those who did not receive such instructions ($M = 4.06, SD = 1.28$), $F(1, 265.2) = 11.70, p = .001, d = .29$. Consistent with Hypothesis 1, this effect was qualified by a significant Own Power \times Own Dominance Instructions interaction, $F(1, 267.1) = 4.21, p = .04$. Negotiators in the low-power condition felt more powerful as a result of receiving dominance instructions ($M = 3.75, SD = 1.06$ vs. $M = 3.18, SD = 1.00$), $t(155) = 3.50, p = .001, d = .55$, whereas high-power negotiators did not ($M = 5.07, SD = 0.85$ vs. $M = 4.92, SD = 0.87$), $t(157) = 1.05, p = .29$.

The main effect of the counterpart's dominance instructions was also significant. Negotiators whose counterparts received dominance instructions perceived themselves to be less powerful than did negotiators whose counterparts did not receive dominance instructions ($M = 4.12, SD = 1.28$ vs. $M = 4.34, SD = 1.18$), $F(1, 265.2) = 5.12, p = .02, d = .18$. No other main effects or interactions were significant.

7.2.2. Power across equal-power dyads

We then conducted similar analysis on the amount of power negotiators experienced in the equal-power conditions. Negotiators who received dominance instructions reported feeling more powerful ($M = 4.62, SD = 0.79$) than did negotiators who did not receive such instructions ($M = 4.22, SD = 0.82$), $F(1, 330.2) = 11.07, p = .001, d = .50$. There was also a significant main effect of other dominance instructions such that negotiators whose counterparts received dominance instructions reported feeling less powerful ($M = 4.08, SD = 0.78$) than did those whose counterparts did not receive such instructions ($M = 4.41, SD = 0.82$), $F(1, 330.0) = 5.05, p = .03, d = .41$. No other main effects or interactions were significant.

7.2.3. Dominance across all dyads

We examined jointly how our manipulation affected whether people reported behaving submissively or dominantly across the mixed-power and equal-power conditions, as we did not theorize differences between these types of dyads. Negotiators who received dominance instructions reported that they behaved significantly more dominantly (and less

Table 2

Means, standard deviations, and number of observations for points accumulated during negotiation by condition.

	Mixed-power conditions											
	Neither dominant			Low-power dominant			High-power dominant			Both dominant		
	N	M	SD	N	M	SD	N	M	SD	N	M	SD
Total	41	5244	2041	40	5300	1296	39	6026	1665	39	5190	1510
Low power	41	1861	2159	40	2408	869	39	2426	1669	39	1885	1292
High power	41	3383	1857	40	2893	1540	39	3600	1626	39	3305	1677
Equal-power conditions												
	Low-power dyads						High-power dyads					
	Neither dominant			One negotiator dominant			Neither dominant			One negotiator dominant		
	N	M	SD	N	M	SD	N	M	SD	N	M	SD
Low power total	41	5459	1527	45	5871	1893	41	5580	1742	43	5833	1842
Dominance instruct.	–	–	–	45	3420	1813	–	–	–	43	3088	1466
No dominance instruct.	82	2729	1108	45	2451	1854	82	2790	1414	43	2744	1362

submissively) ($M = 5.33$, $SD = 1.22$) than did negotiators without such instructions ($M = 4.01$, $SD = 1.62$), $F(1, 618.4) = 121.46$, $p < .001$, $d = .92$. There was also a marginally significant main effect of other dominance instructions ($F(1, 618.4) = 3.14$, $p = .08$) qualified by a marginally significant Own Dominance \times Other Dominance Instructions interaction, $F(1, 319.8) = 2.93$, $p = .09$. Decomposing this interaction revealed that dominant negotiators reported behaving more dominantly when their counterparts also received dominance instructions ($M = 5.64$, $SD = 1.09$) than they did when their counterparts did not receive such instructions ($M = 5.19$, $SD = 1.25$), $t(240) = 2.71$, $p = .01$, $d = .38$. Negotiators who did not receive dominance instructions did not report behaving any more dominantly based on whether their counterparts received dominance instructions ($M = 4.01$, $SD = 1.61$ vs. $M = 4.01$, $SD = 1.63$), $t(410) = 0.02$, $p = .98$. No other main effects or interactions were significant.

Counterpart ratings of dominance behavior paralleled self-ratings of dominance behavior. Negotiators whose counterparts received dominance instructions rated their counterparts as behaving more dominantly ($M = 4.17$, $SD = 1.75$) than they rated counterparts who did not receive such instructions ($M = 3.62$, $SD = 1.63$), $F(1, 609.4) = 14.28$, $p < .001$, $d = .33$. Low-power negotiators viewed their counterparts as behaving more dominantly ($M = 3.97$, $SD = 1.76$) than did high-power negotiators ($M = 3.69$, $SD = 1.61$), $F(1, 559.8) = 6.04$, $p = .01$, $d = .17$. There was also a marginally significant Own Power \times Other Dominance Instructions interaction, $F(1, 541.2) = 3.81$, $p = .052$. Low-power negotiators whose counterparts received dominance instructions reported that their counterparts behaved more dominantly ($M = 4.47$, $SD = 1.81$) than did low-power negotiators whose counterparts did not receive such instructions ($M = 3.67$, $SD = 1.67$), $t(327) = 4.06$, $p < .001$, $d = .46$. This effect did not reach significance for high-power negotiators ($M = 3.88$, $SD = 1.64$ vs. $M = 3.57$, $SD = 1.59$), $t(324) = 1.65$, $p = .10$. No other main effects or interactions were significant.

7.3. Main analyses

7.3.1. Total points across mixed-power dyads

Table 2 displays mean dyadic and individual points by condition for the mixed-power and equal-power conditions. We first examined how dominance affected value creation in mixed-power dyads. Consistent with Hypothesis 4, Mixed High-Power Dominance dyads created more value than did dyads in the other three mixed-power conditions; $t(321) = 2.48$, $p = .01$, $d = .47$. Mixed High-Power Dominance dyads created more value than did Mixed No Dominance

dyads ($t(321) = 2.04$, $p = .04$, $d = .42$), Mixed Low-Power Dominance dyads ($t(321) = 1.89$, $p = .06$, $d = .49$), and Mixed Both Dominance dyads ($t(321) = 2.16$, $p = .03$, $d = .53$) conditions.⁴ Total points created by Mixed No Dominance dyads, Mixed Low-Power Dominance dyads, and Mixed Both Dominance dyad did not differ significantly, $ps > .77$.

7.3.2. Total points across equal-power dyads

We then examined how dominance affected value creation in equal-power dyads. For the equal-power conditions we conducted a 2 (power: both low-power negotiators vs. both high-power negotiators) \times 2 (dominance: no dominance instructions in dyad vs. dominance instructions in dyad) ANOVA. No effects reached significance, $ps > .19$.

7.3.3. Total points across all dyads

We then looked across mixed-power and equal-power dyads to investigate whether the presence of a power imbalance moderates the effects of dominance on value creation. The increase in value created attributable to a high-power negotiator alone receiving dominance instructions did not significantly depend on whether there was a power imbalance in the dyad, $p > .30$. Comparing across equal-power and mixed-power dyads revealed that dyads in the equal-power condition did not create significantly more value than did dyads in the mixed-power conditions $p > .12$.

7.3.4. Impasse rates across mixed-power dyads

Fig. 1 displays impasse rates across conditions. We used a two-stage binary logistic regression to analyze impasse rates in the mixed-power conditions. The predictors were dummy variables indicating whether the low-power negotiator and the high-power negotiator had dominance instructions. We added the interaction term in the second stage. Negotiators were more likely to reach impasses when the low-power negotiator received instructions to act dominantly ($M = 37.0\%$, $SD = .49$) than when the low-power negotiator did not receive dominance instructions ($M = 19.0\%$, $SD = .39$), $B = .92$, $SE = .37$, Wald = 6.23, Exp(B) = 2.52, $p = .01$, $d = .41$. Neither the main effect of high-power dominance nor the interaction were significant.

⁴ The difference between the total points created by Mixed High-Power Dominance dyads and Mixed No Dominance dyads is no longer significant with the exclusion of the dyads in which a negotiator accepted a deal 3 SDs above or below the mean value ($M = 6105$, $SD = 1610$ vs. $M = 5656$, $SD = 1806$), $t(311) = 1.16$, $p = .25$. All other contrasts that were significant remained significant.

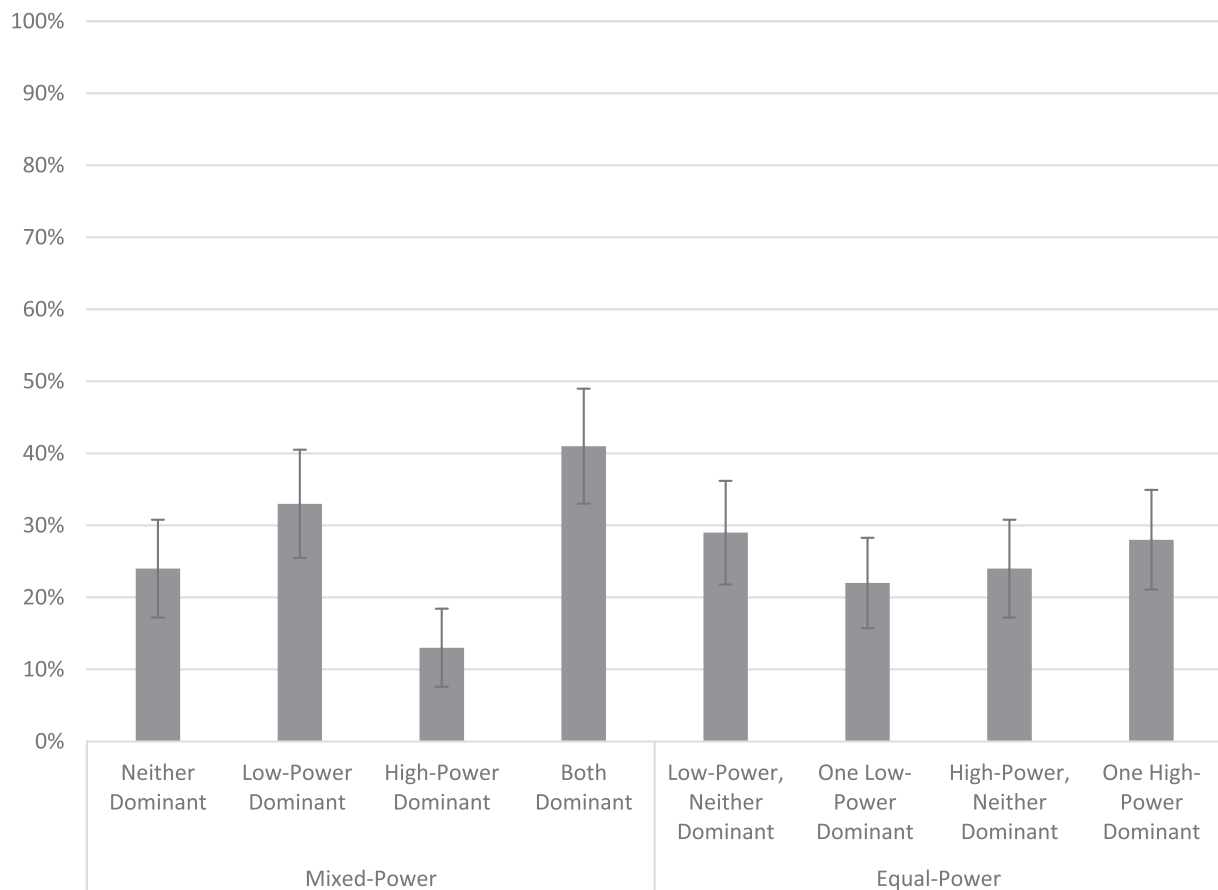


Fig. 1. Impasse rates by condition in study 2 (standard error in parentheses).

7.3.5. Impasse rates across equal-power dyads

We then ran similar analysis across our equal-power dyads. Neither the presence of dominance in a dyad nor the power of the negotiators in a dyad significantly increased impasse rates in the equal-power conditions.

7.3.6. Impasse rates across all dyads

When we analyzed the mixed-power and equal-power conditions together we did not find any significant main effects or interactions.

7.3.7. Own points across mixed-power dyads

We then examined value creation by each negotiator in mixed-power dyads. A mixed-models analysis revealed that high-power negotiators accumulated more points ($M = 3294$, $SD = 1684$) than did low-power negotiators ($M = 2143$, $SD = 1585$), $F(1, 156.0) = 26.60$, $p < .001$, $d = .70$. There was also a marginally significant Own Dominance Instructions \times Counterpart Dominance Instructions interaction, $F(1, 155.0) = 2.89$, $p = .09$. We decomposed this interaction and found that the simple effects of own dominance instructions on own points was not significant either when the counterpart received dominance instructions or when the counterpart did not receive dominance instructions. No other main effects or interactions were significant.

7.3.8. Own points across equal-power dyads

We then ran similar analysis for the equal-power conditions. Negotiators who received dominance instructions accumulated more points ($M = 3258$, $SD = 1652$) than did negotiators who did not receive dominance instructions ($M = 2702$, $SD = 1403$), $F(1, 332.0) = 7.17$, $p = .01$, $d = .36$. No other main effects or interactions were significant.

7.3.9. Own points across all dyads

Conducting a mixed-models analysis across equal-power and mixed-power dyads in which either neither negotiator or one of the negotiators had instructions to act dominantly revealed that high power negotiators accumulated more points ($M = 3036$, $SD = 1548$) than did low-power negotiators ($M = 2586$, $SD = 1632$), $F(1, 537.1) = 8.35$, $p = .004$, $d = .28$. Negotiators who received dominance instructions accumulated more points ($M = 3134$, $SD = 1549$) than did negotiators who did not receive such instructions ($M = 2678$, $SD = 1611$), $F(1, 569.6) = 10.48$, $p = .001$, $d = .29$. Negotiators who negotiated with low-power counterparts accumulated more points ($M = 3000$, $SD = 1579$) than did those who negotiated with high-power counterparts ($M = 2617$, $SD = 1611$), $F(1, 466.7) = 16.52$, $p < .001$, $d = .24$. Finally, there was also a significant Own Power \times Counterpart Power interaction ($F(1, 282.6) = 4.30$, $p = .04$), such that low-power negotiators benefited more from having a low-power counterpart ($M = 2850$, $SD = 1554$ vs. $M = 2157$, $SD = 1670$), $t(290) = 3.59$, $p < .001$, $d = .43$) than did high-power negotiators ($M = 3245$, $SD = 1597$ vs. $M = 2905$, $SD = 1507$), $t(286) = 1.82$, $p = .07$, $d = .22$.

7.3.10. Own percentage of total points across mixed-power dyads

We also examined value claiming by examining the percentage of points created by each negotiator in each of the four mixed-power conditions. In line with Hypothesis 2, in Mixed Low-Power Dominance dyads, relatively low-power negotiators claimed a higher percentage of the points available ($M = 47.5\%$, $SD = .18$) than low-power negotiators did in the other three mixed-power conditions ($M = 32.9\%$, $SD = .46$), $t(130.3) = 2.87$, $p = .01$, $d = .42$. They also claimed a higher percentage of the points available ($M = 47.5\%$, $SD = .18$) than they did in the condition in which neither party received dominance

instructions ($M = 24.7\%$, $SD = .61$), $t(46.9) = 2.28$, $p = .03$, $d = .51$.^{5,6} High-power negotiators, in contrast, did not claim a significantly different percentage of the points available in Mixed High-Power Dominance dyads ($M = 61.9\%$, $SD = .41$) than they did in the other three mixed-power conditions ($M = 63.9\%$, $SD = .42$; $t(62.4) = -0.25$, $p = .80$) or in Mixed Power No Dominance dyads ($M = 75.3\%$, $SD = .61$); $t(70.1) = -1.15$, $p = .26$.

7.3.11. Own percentage of total points across equal-power dyads

We then ran similar analyses with the equal-power conditions. Again, in line with Hypothesis 2, low-power negotiators in Matched Low-Power Dominance dyads claimed a higher percentage of the points available ($M = 58.8\%$, $SD = .30$) than their counterparts did ($M = 41.2\%$, $SD = .30$), $t(44) = 1.95$, $p = .058$, $d = .59$. In these equal-power conditions, dominance did not significantly affect the percentage of the points claimed in Matched High-Power Dominance dyads ($M = 52.8\%$, $SD = .18$ vs. $M = 47.2\%$, $SD = .18$), $t(42) = 1.03$, $p = .31$, $d = .31$.

7.3.12. Mediation of low-power value claiming by sense of power across all dyads

We tested Hypothesis 3, which stated that increased feelings of power mediate the relationship between receiving dominance instructions and improved value claiming by low-power negotiators in both the mixed-power and equal-power dyads. A bootstrap analysis produced a 95% confidence interval for the indirect effect (LL: .0215, UL: .1478), which did not include zero indicating a significant indirect effect. Low-power negotiators who received dominance instructions came to feel more powerful ($\beta = 0.49$, $SE = 0.14$, $t(165) = 3.54$, $p < .001$), and consequently claimed a greater percentage of the value available in the negotiation, $\beta = 0.14$, $SE = 0.03$, $t(165) = 4.54$, $p < .001$. This increased sense of power reduced the previously significant relationship between receiving instructions to behave dominantly and value claiming to marginal significance, $\beta = 0.11$, $SE = 0.06$, $t(165) = 1.88$, $p = .06$.

7.3.13. Problem-solving vs. competition beliefs across mixed-power dyads

We examined how dominance affects negotiators' perceptions of the negotiation as a problem-solving exercise or a competition. Consistent with Hypothesis 5, in mixed-power dyads low-power negotiators in Mixed High-Power Dominance dyads perceived the negotiation to feel more like a problem-solving exercise and less like a competition ($M = 5.21$, $SD = 1.79$) than did low-power negotiators in Mixed No Dominance dyads ($M = 4.32$, $SD = 1.86$), $t(78) = 2.17$, $p = .03$, $d = .49$. Counterpart dominance instructions had no effect on the extent to which high-power negotiators viewed the negotiation as a problem-solving exercise as opposed to a competition ($M = 4.55$, $SD = 1.87$ vs. $M = 4.44$, $SD = 1.80$), $t(79) = 0.27$, $p = .79$.

As in Experiment 1, we tested for mediation in order to determine

⁵ A number of negotiators accepted deals that were worth less to them than zero points. To account for this, we also calculated a secondary measure of percentage value captured. This secondary measure calculates each negotiator's points as the number of points accumulated above the number of points the worst performing negotiator accumulated. Thus, an outcome of -500 points would still reflect some value claiming relative to an outcome of -1500 points. We calculate percentage of total value the ratio of each negotiator's points to the sum of points in the dyad. Using this measure results in the percentage earned by negotiators falling closer to 50% than would be the case using a standard measure of percentage value claimed for cases in which negative outcomes are not possible. For example, low-power negotiators claim 48.8% of value in Mixed No Dominance dyads and 45.1% of value in Mixed Low-Power Dominance dyads.

⁶ This difference was non-significant when we excluded dyads in which one negotiator accepted a deal that was three standard deviations above or below the mean. In Mixed Low-Power Dominance dyads, relatively powerless negotiators did not claim a significantly higher percentage of the total points ($M = 47.5\%$, $SD = .18$) than did low-power negotiators in the three other conditions ($M = 43.3\%$, $SD = .19$, $t(311) = 1.28$, $p = .20$) or in Mixed No Dominance dyads ($M = 45.7\%$, $SD = .22$), $t(311) = 0.44$, $p = .66$.

whether we could find support for Hypothesis 6. The bootstrap analysis produced a 95% confidence interval for the indirect effect that included zero (LL: -210.78 , UL: 241.07). The results therefore do not provide support for Hypothesis 6. Contrary to the findings of Experiment 1, we did not find that high-power negotiators viewed negotiations as more related to problem solving than did low-power negotiators, $p > .30$.

7.3.14. Problem-solving vs. competition beliefs across equal-power dyads

We then ran similar analysis for the equal-power conditions. Consistent with Hypothesis 5, in equal-power dyads low-power negotiators in Matched Low-Power Dominance dyads viewed the negotiation as more of a problem-solving exercise ($M = 4.76$, $SD = 1.94$) than did low-power negotiators in Matched No Dominance dyads ($M = 3.93$, $SD = 1.88$), $t(84) = 2.01$, $p = .048$. We also tested for mediation. The bootstrap analysis produced a 95% confidence interval for the indirect effect that included zero (LL: -30.48 , UL: 305.90). We therefore did not find support for mediation.

Additional analysis revealed that high-power negotiators in Matched High-Power Dominance dyads viewed the negotiation as less like a problem-solving exercise and more like a competition ($M = 4.56$, $SD = 2.19$) than they did in Matched High-Power No Dominance dyads ($M = 5.34$, $SD = 1.81$), $t(80.5) = -1.79$, $p = .08$.

7.3.15. Credibility of counterpart's threats across mixed-power dyads

We then examined the perceived credibility of the counterpart's threats during the negotiation in the mixed-power conditions. A mixed-model analysis of the mixed-power conditions revealed that negotiators perceived threats made by high-power negotiators to be more credible ($M = 3.63$, $SD = 1.62$) than those made by low-power negotiators ($M = 3.20$, $SD = 1.44$), $F(1, 152.0) = 7.66$, $p = .01$, $d = .28$. The main effect of counterpart dominance instructions was also significant. Negotiators perceived threats made by one's counterpart to be more credible when their counterparts displayed dominance ($M = 3.66$, $SD = 1.66$ vs. $M = 3.17$, $SD = 1.38$), $F(1, 303.2) = 8.88$, $p = .003$, $d = .32$. There also was a marginally significant Own Dominance Instructions \times Counterpart Dominance Instructions interaction, $F(1, 152.4) = 3.63$, $p = .06$. We decomposed this interaction and found an effect of other dominance instructions on the perceived credibility of the counterpart's threats only when negotiators also received dominance instructions. Dominant negotiators perceived their counterpart's threats as more credible when their counterparts also received dominance instructions ($M = 3.79$, $SD = 1.58$) than they did when their counterparts did not receive dominance instructions ($M = 2.95$, $SD = 1.42$), $t(154) = 3.50$, $p = .001$, $d = .56$. Negotiators who did not receive such instructions, in contrast, did not perceive their counterpart's threats to be any more credible when their counterparts received dominance instructions ($M = 3.54$, $SD = 1.74$) relative to when their counterparts did not receive such instructions ($M = 3.39$, $SD = 1.32$), $t(143.4) = 0.61$, $p = .54$. No other main effects or interactions were significant.

7.3.16. Credibility of counterpart's threats across equal-power dyads

We then ran similar analyses in the equal-power conditions. A mixed-models analysis revealed that negotiators viewed their counterpart's threats as more credible when their counterparts received dominance instructions ($M = 3.77$, $SD = 1.43$) than they did when their counterparts did not receive such instructions ($M = 3.38$, $SD = 1.52$), $F(1, 293.6) = 4.46$, $p = .04$, $d = .26$. No other main effects or interactions were significant.

7.3.17. Cognitive effort expended across mixed-power dyads

We then examined the cognitive effort expended by negotiators in mixed-power dyads. A mixed-models analysis indicated that in mixed-power dyads negotiators who received instructions to act dominantly reported expending more cognitive effort ($M = 3.13$, $SD = 1.71$) than did those who did not receive instructions to act dominantly ($M = 2.48$,

$SD = 1.28$), $F(1, 290.7) = 15.34$, $p < .001$, $d = .43$. Negotiators also reported expending more cognitive effort when their counterparts received dominance instructions ($M = 3.10$, $SD = 1.60$) than they did when their counterparts did not receive dominance instructions ($M = 2.51$, $SD = 1.43$), $F(1, 290.7) = 12.50$, $p < .001$, $d = .39$. No other main effects or interactions were significant.

7.3.18. Cognitive effort expended across equal-power dyads

We examined cognitive effort expended by negotiators in equal-power dyads. In the equal-power conditions negotiators whose counterparts received dominance instructions reported expending more cognitive effort ($M = 2.89$, $SD = 1.42$) than did negotiators whose counterparts did not receive such instructions ($M = 2.52$, $SD = 1.39$), $F(1, 295.5) = 4.65$, $p = .03$, $d = .26$. No other main effects or interactions were significant.

Although cognitive effort was high in those conditions in which value creation was highest, cognitive effort did not significantly predict total points created by the dyad or own points accumulated by the individual, $p > .15$.

7.4. Discussion

Experiment 2 replicates two key effects observed in Experiment 1. First, the results indicate that low-power negotiators can use dominance to increase how powerful they are perceived to be and, consequently, how much value they claim. As in Experiment 1, receiving dominance instructions did not increase high-power negotiators' subjective senses of power. Second, the results indicate that dominance from a high-power negotiator can increase value creation in mixed-power dyads. Although the low-power counterparts of high-power negotiators again came to see the exercise as more of a problem-solving exercise than a competition when the high-power negotiators received dominance instructions, this increase did not mediate the link between high-power dominance and value creation.

Low-power negotiators reported expending higher levels of cognitive effort when facing high-power counterparts who received instructions to behave dominantly, but high-power negotiators showed no such effect when facing low-power counterparts who had instructions to act dominantly. This pattern of results is consistent with our theorizing that dominance from a high-power negotiator can lead the low-power negotiator to invest the cognitive effort it takes to find a solution that satisfies their own desires and the high-power negotiators' desires.

Because Experiment 2 included some conditions in which dyads had equal amounts of power, Experiment 2 provided additional insight into when negotiators can benefit by expressing dominance – specifically that low-power negotiators who prioritize value claiming may do well to express dominance regardless of whether their counterpart has or lacks power. As our results also show, however, such low-power negotiators should also be sensitive to the fact that their dominance may increase the rate that they will reach an impasse, particularly if they face high-power counterparts. While dominance from a high-power negotiator did not significantly increase value creation in equal-power dyads in our sample, the trend in our data suggests that researchers using larger datasets might discover a positive link between dominance and value creation in dyads that are explicitly equal-power. Moreover, the pattern of results is consistent with the idea that dominance can impair value creation when it runs directly against the existing power hierarchy, is most helpful when it is in line with the existing power hierarchy, and falls somewhere in between when negotiators' power is similar.

Looking across mixed-power and equal-power dyads also allowed us to test whether equal-power dyads outperform mixed-power dyads. The pattern of means is consistent with prior work showing that equal-power dyads tend to create more value than do mixed-power dyads (Giebels, de Dreu, & van de Vliert, 1998); however, this effect did not reach significance. We were also able to test Experiment 1's findings

that high-power negotiators view negotiations as more akin to problem-solving exercises than do low-power negotiators. We found no such effect in Experiment 2.

8. General discussion

Our results indicate that both low-power and high-power negotiators can benefit by expressing dominance, but that the benefits they receive from expressing dominance differ depending upon the negotiator's power. Low-power negotiators attained a greater percentage of the value available when they received instructions to act dominantly than they did when they did not receive dominance instructions. An increased sense of power mediated the link between dominance from low-power negotiators and improved value claiming in Experiments 1 and 2. When high-power negotiators received dominance instructions they benefitted both themselves and their counterparts because their actions fostered increased value creation. The results illustrate that such dominance influences how the recipients of dominance expressions view the negotiation. In both experiments, low-power recipients of dominance expressions came to see the negotiation as more of a problem-solving exercise and less of a competition when relatively powerful negotiators behaved dominantly. In Experiment 1, but not Experiment 2, this change in the low-power's view of the negotiation predicted how much value the dyad created.

Prior research has shown that intra-dyadic power differences can impair negotiators' abilities to create joint value (de Dreu & Van Kleef, 2003; Giebels et al., 1998; but see Tenbrunsel & Messick, 2001). Although conventional wisdom might suggest that stripping away the verbal and nonverbal gestures associated with power might be an effective way to improve these dyads' abilities to create value, the present research suggests that dominance expressions from the powerful negotiator can improve a dyad's ability to create value. When powerful negotiators consciously behave dominantly, they can create the dynamic of dominance complementarity within the dyad, which can improve the negotiators' ability to search the offer space for mutually-beneficial solutions.

Our results indicate that powerful negotiators' expressions of dominance influence how the relatively powerless recipients of that dominance view the negotiation. Specifically, low-power negotiators come to see the negotiation as more of a problem-solving exercise and less of a competition when their counterparts had instructions to exhibit dominance than they did when their counterparts did not receive such instructions. Negotiators with such a problem-solving orientation look for opportunities for joint gain and are therefore better able to create value (Pruitt, 1983). It is important to note that high-power negotiators in our study did not conceptualize the negotiation differently when they expressed dominance than when they did not. It was only the low-power negotiators who came to perceive the negotiation as more of a problem-solving exercise. This finding may suggest that it is the low-power negotiator who is exerting the cognitive effort necessary to find mutually beneficial outcomes. Such a process is consistent with Mannix and Neale's (1993) finding that low-power negotiators must perform the cognitive work required for integrative solutions because it is only by doing this work is the negotiator likely to achieve a satisfactory individual outcome. High-power negotiators' expressions of dominance may motivate low-power counterparts to invest the cognitive effort necessary to find an integrative solution because that dominance may signal to the low-power counterpart that he/she will not be able to claim value distributively. Indeed, our Experiment 2 finding that low-power negotiators exert more cognitive effort when facing high-power counterparts express dominance is in line with this possibility.

8.1. Theoretical contributions

By furthering the collective understanding of how perceived resource dependence (e.g., Emerson, 1962; Pfeffer & Salancik, 1978)

interacts with nonverbal and paraverbal behaviors to influence negotiation outcomes, we aim to make several contributions to the literatures on power, negotiations, and conflict. We also provide convergent evidence (c.f., Wiltermuth et al., 2015) that displays of dominance and submissiveness can affect not only the relative distribution of resources (i.e., value claiming) in resource-allocation issues, but also peoples' abilities to allocate resources in a Pareto-efficient manner (i.e., value creation).

First, our work bridges the literature on power in negotiations (e.g., Kim et al., 2005; Pinkley et al., 1994) with work on Interpersonal Theory (e.g., Wiggins, 1979) by suggesting that the behavior and outcomes of social interactions depend upon the consistency between power dynamics and interpersonal behavior along the dominant/submissive dimension. In showing this, we refine the predictions of Interpersonal Theory (Kiesler, 1983; Orford, 1986; Wiggins, 1982) and its principle of complementarity, which holds that people use verbal and nonverbal cues to navigate relationships, such that dominance invites submissiveness and vice versa. Our work shows that the relative power of negotiation partners influences the likelihood that dominance will elicit submissiveness and lead to the improved objective outcomes that stem from heightened coordination (Estroff & Nowicki, 1992; Wiltermuth et al., 2015). This work therefore shows that the relationship between dominance, submissiveness, and gains attributable to increased cooperation are more complicated than previously portrayed.

Second, this research helps resolve the theoretical puzzle of whether dominance behaviors and power derived from role have independent effects on people's behavior. Consistent with Zajonc and Markus' (1984) Hard-Interface Theory, Huang et al. (2010) found a direct link between body postures and behaviors associated with having power – regardless of whether the participant was assigned to a high-power and low-power role. However, these effects occurred on non-social tasks. Our work shows that the effects of bodily expansion and other dominance behaviors do, in fact, depend on the role-based power someone possesses in a social interaction. While behavioral and role-based power may well operate independently in the absence of an interaction partner, they interact to predict different outcomes when the task is social. Resolving these empirical and theoretical puzzles is important because resolving them provides insight on when to act dominantly in negotiations and what benefits and costs individuals can expect from such dominance expressions.

Third, we also provide evidence counter to work suggesting that displays of dominance behavior are ineffectual at achieving influence (c.f., Driskell, Olmstead, & Salas, 1993; Ridgeway, 1987). Our research suggests that relatively powerless negotiators can claim a higher percentage of the total points available by exhibiting dominance during a negotiation. Thus, exhibiting dominance behaviors can improve not just the outcomes for the powerful, but also for the powerless.

Fourth, this research provides preliminary evidence that dominance can change how the recipient of that dominance views the negotiation. Our findings indicate that low-power negotiators tended to view negotiations as problem-solving exercises when they observed their high-power counterparts exhibiting dominance.

Finally, the research complements existing work on the mismatch effect, which shows that cognitive functioning is impaired and emotional arousal is higher when there is a mismatch between an individual's level of testosterone and the role that individual occupies (Josephs, Newman, Brown, & Beer, 2003; Josephs, Sellers, Newman, & Mehta, 2006; Newman, Sellers, & Josephs, 2005). Such research indicates that people who are high in testosterone have lower cognitive functioning when assigned to roles that do not allow them to satisfy their relatively strong need for status or power. The research also indicates that people with chronically low levels of testosterone become cognitively impaired when placed in high-status roles. Our work shows that a similar mismatch occurs when a conflict arises between the level of dominance people display and their amount of power or status within an interaction. In both our work and existing research on the

mismatch effect, performance on a cognitive task is diminished when people accustomed to using behaviors associated with dominance face status-related constraints to displaying dominance, or when people unaccustomed to using behaviors associated with dominance find themselves in positions of high status. Our work suggests that the mismatch effects found in cognitive performance on individual tasks may extend to affect performance in social tasks, such as negotiations. This work therefore builds on that of Schmid Mast, Hall, and Schmid (2010), which shows that leaders' motivations to hold positions of authority can affect how motivated dyads are to perform well.

8.2. Potential boundary conditions and areas for future research

Our dominance instructions included subtle, non-antagonistic dominance cues. More aggressive forms of dominance may have heightened conflict, even in dyads in which the relatively powerful negotiator behaves dominantly. Such a competitive dynamic could be less conducive to coordination. We therefore caution that all forms of dominance may not increase value creation, even if there is congruence between the power dynamics and the interpersonal dynamics within a dyad. Moreover, even relatively non-antagonistic forms of dominance may evoke status conflict if the negotiator receiving the expressions of dominance has low power within the negotiating dyad, but great power or status outside of the negotiating dyad (c.f., Greer & Van Kleef, 2010).

More aggressive forms of dominance expressions may also fail to improve low-power negotiators' abilities to claim value if those expressions are seen as status grabs by their counterparts. If so, these dominance expressions may backfire, as people who self-enhance their social status tend to be disliked and rejected by others within groups because they are viewed as illegitimately grabbing control and social privileges (Anderson, Srivastava, Beer, Spataro, & Chatman, 2006; Homans, 1951; Whyte, 1943). Indeed, research suggests that one particularly antagonistic display of dominance (i.e., the expression of anger) can have very different effects depending upon whether the person expressing anger is perceived as relatively powerful or relatively powerless. Lelieveld, Van Dijk, Van Beest, and Van Kleef (2012) found, for example, that anger elicits reciprocal anger when the low-power negotiator expresses anger, while anger elicits fear when the high-power negotiator expresses anger.

It is similarly possible that dominance and power would interact differently if the power balance within the dyad were not clear to the negotiators. In our experiments, negotiators were explicitly told whether they were in a relatively powerless or relatively powerful negotiating position relative to their counterparts. If there was an objective power difference but this difference was not known by either or both negotiators within the dyad, the resulting impact of dominance expressions could differ, as the relatively powerful negotiator may not demonstrate approach-related tendencies as strongly and may therefore stand more to gain by exhibiting dominance.

Dominance expressions from a low-power negotiator might also be ineffective if the perceived power gap between negotiators is too great. In such cases, dominance expressed by relatively powerless negotiators may not credibly imply the threat of declaring an impasse because the negotiators would not be perceived to have strong alternatives to a negotiated agreement (e.g., Kim & Fragale, 2005). This lack of credibility could weaken the impact of powerless negotiators' dominance expressions on their ability to claim value. In such cases, low-power negotiators who exhibit dominance may also not feel that their dominance expressions are legitimate and, as a result, may not come to feel more powerful. Thus, it is far from certain that expressing dominance will always improve the value claiming ability of low-power negotiators.

We would also expect that dominance exhibited by the relatively powerful negotiator would be less likely to lead to dominance complementarity in contexts in which people are not concerned about their counterpart's place in the hierarchy. In contexts like car sales, for instance, people may care less about the other negotiators' power and not

to respond to dominance from the high-power negotiator with the complementary response of submissiveness. As such, we would not expect high-power dominance to foster value creation. We ran a supplementary study, which is detailed in the [supplementary materials](#), testing whether dominance interacts with power to predict value creation and value claiming in a car sale. We manipulated dominance as we did in Experiments 1 and 2, and manipulated power by informing negotiators that it was either a buyer's market or a seller's market. Consistent with the idea that dominance complementarity would not be as likely to occur in such contexts, dyads in the high-power dominant condition did not create significantly more value than did dyads in which neither received instructions to act dominantly. Hypothesis 4 therefore was not supported. In contrast, that experiment did show that low-power negotiators can increase the percentage of value they claim by expressing dominance. Future research should test more systematically how negotiators' concerns about power differences influence the effects of dominance in negotiations.

Similarly, it would be useful to examine how much negotiators express dominance amidst changing power dynamics, wherein one negotiator is gaining power and one negotiator is losing power. Schmid Mast and Hall (2003) have shown that wanting to demonstrate dominance while occupying a low-status role (in which such behavior is not normative) can result in frustrations and attempts at re-establishing dominance. In line with Sivanathan, Pillutla, and Murnighan's (2008) findings that people continue to negotiate as if they are powerful when they lose power but quickly update their behavior when they gain power, expressions of dominance in negotiations in which the power dynamics are changing may not reliably produce coordination and thereby value creation.

We also caution that our mechanism questions were administered after the negotiation. Because the measures about problem-solving and negotiators' senses of power followed the negotiation, it is possible that the negotiation outcomes influenced participants' responses to the measures of the mediators. Future research could productively measure how dominance expression affect negotiators' feelings of power throughout the negotiation process.

Another path for future research could examine how dominance interacts with power to predict negotiation outcomes in embedded transactions, as the processes and expectations at work in these negotiations can differ from those that exist in arms-length transactions (e.g., McGinn & Keros, 2002). Similarly, research could productively explore how power interacts with dominance expressions within electronically-mediated negotiations. As a growing number of negotiations are conducted through computer-mediated communication (e.g., Zhou et al., 2004), it is increasingly important to understand how dominant written language influences negotiator effectiveness. It is also important to examine how dominance affects negotiators' behaviors when larger resources are at stake. Because such research would be difficult and impractical to conduct experimentally, field research could be immensely helpful in illuminating the effects of dominance expressions when negotiations involve large dollar amounts.

Finally, future research might productively examine how displays of submissiveness might result in different consequences depending upon whether the negotiator expressing submissiveness possesses or lacks power. Submissiveness from the negotiator possessing power might be more detrimental to value creation than submissiveness from the negotiator lacking power. Instructions to act submissively may actually improve value creation when the negotiator lacking power possesses those instructions because these submissive behaviors could strengthen the likelihood that the negotiators would adopt complementary roles in the value creation process.

9. Conclusion

Researchers have long known that expressions of dominance and submissiveness in negotiations can affect how negotiators distribute

resources. Yet, research has not examined how pre-existing power dynamics affect the utility of such expressions, which has left negotiators uninformed about how acting dominantly from a low-power (or a high-power) position might affect their outcomes. This research offers some guidance – showing that dominance from a high-power negotiator can increase value creation in integrative negotiations, while dominance from a low-power negotiator can increase the negotiator's ability to claim value.

Appendix A. Supplementary material

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.obhdp.2018.02.002>.

References

- Anderson, C., Srivastava, S., Beer, J. S., Spataro, S. E., & Chatman, J. A. (2006). Knowing your place: Self-perceptions of status in face-to-face groups. *Journal of Personality and Social Psychology*, 91, 1094–1110.
- Argyle, M. (1988). *Bodily communication* (2nd ed.). London: Methuen.
- Aries, E., Gold, C., & Weigel, R. (1983). Dispositional and situational influences on dominance behavior in small groups. *Journal of Personality and Social Psychology*, 44, 779–786.
- Bacharach, S. B., & Lawler, E. J. (1980). *Power and politics in organizations: The social psychology of conflict, coalitions, and bargaining*. San Francisco, CA: Jossey-Bass.
- Bales, R. F. (1950). *Interaction process analysis – A method for the study of small groups*. Cambridge, Mass: Addison-Wesley Press.
- Barley, S. R. (1991). Contextualizing conflict: Notes on the anthropology of disputes and negotiations. In M. H. Bazerman, B. H. Sheppard, & R. Lewicki (Vol. Eds.), *Research on negotiation in organizations: Vol. 3*, (pp. 165–199). Greenwich, CT: JAI Press.
- Berger, C. R. (1994). Power, dominance, and social interaction. In M. L. Knapp, & R. Miller (Eds.), *Handbook of interpersonal communication* (pp. 450–507). (2nd ed.). Thousand Oaks, CA: Sage.
- Berger, J., Rosenholtz, S. J., & Zelditch, M. (1980). Status organizing processes. *Annual Review of Sociology*, 6, 479–508.
- Berger, J., Webster, M., Jr., Ridgeway, C. L., & Rosenholtz, S. J. (1986). Status cues, expectations, and behavior. In E. Lawler (Vol. Ed.), *Advances in group processes: Vol. 3*, (pp. 1–22). Greenwich, CT: JAI Press.
- Bowles, H. R., & Flynn, F. (2010). Gender and persistence in negotiation: A dyadic perspective. *Academy of Management Journal*, 53, 769–787.
- Brass, D. J., & Burkhardt, M. E. (1993). Potential power and power use: An investigation of structure and behavior. *Academy of Management Journal*, 36, 441–470.
- Burgoon, J. K., Johnson, M. L., & Koch, P. T. (1998). The nature and measurement of interpersonal dominance. *Communication Monographs*, 65, 308–335.
- Burgoon, J. K., & Dunbar, N. E. (2006). Nonverbal expressions of dominance and power in human relationships. In V. Manusov, & M. Patterson (Eds.), *The sage handbook of nonverbal communication*. Beverly Hills: Sage.
- Burke, P. J. (1967). The development of task and social-emotional role differentiation. *Sociometry*, 30, 379–392.
- Burke, P. J. (1971). Task and socioemotional leadership role performance. *Sociometry*, 34, 22–40.
- Buss, D. M., & Duntley, J. D. (2006). The evolution of aggression. In M. Schaller, J. A. Simpson, & D. T. Kenrick (Eds.), *Evolution and social psychology* (pp. 263–286). New York: Psychology Press.
- Camras, L. A. (1984). Children's verbal and nonverbal communication in a conflict situation. *Ethology and Sociobiology*, 5, 257–268.
- Carney, D. R., Hall, J. A., & LeBeau, L. S. (2005). Beliefs about the nonverbal expression of social power. *Journal of Nonverbal Behavior*, 29, 105–123.
- Casciaro, T., & Piskorski, M. J. (2005). Power imbalance, mutual dependence, and constraint absorption: A closer look at resource dependence theory. *Administrative Science Quarterly*, 50, 167–199.
- Chapais, B. (1991). Primates and the origins of aggression, power, and politics among humans. In J. D. Loy, & C. B. Peters (Eds.), *Understanding behavior: What primate studies tell us about human behavior* (pp. 190–228). Oxford: Oxford University Press.
- Cheng, J. T., Tracy, J. L., Foulsham, T., Kingstone, A., & Henrich, J. (2013). Two ways to the top: Evidence that dominance and prestige are distinct yet viable avenues to social rank and influence. *Journal of Personality and Social Psychology*, 104, 103–125.
- Darwin, C. (1872). *The expression of the emotions in man and animals*. Oxford: New York, NY 1872/2009.
- de Dreu, C., & Van Kleef, G. (2003). The influence of power, on the information search, impression formation, and demands in negotiation. *Journal of Experimental Social Psychology*, 40, 303–319.
- de Kwaadsteniet, E. W., & van Dijk, E. (2010). Social status as a cue for tacit coordination. *Journal of Experimental Social Psychology*, 46, 515–524.
- de Waal, F. (1982). *Chimpanzee politics: Sex and power among apes*. Baltimore: Johns Hopkins University Press 1982/1998.
- Driskell, J. E., Olmstead, B., & Salas, E. (1993). Task cues, dominance cues, and influence in task groups. *Journal of Applied Psychology*, 78, 51–60.
- Dryer, D. C., & Horowitz, L. M. (1997). When do opposites attract? Interpersonal complementarity versus similarity. *Journal of Personality and Social Psychology*, 72, 592–603.

- Dunbar, N. E. (2004). Dyadic power theory: Constructing a communication-based theory of relational power. *Journal of Family Communication*, 4, 235–248.
- Dunbar, N. E., & Burgoon, J. K. (2005). Perceptions of power and interactional dominance in interpersonal relationships. *Journal of Social and Personal Relationships*, 22, 207–233.
- Eibl-Eibesfeldt, I. (1975). *Ethology: The biology of human behavior*. New York: Holt, Rinehart & Winston.
- Emerson, R. M. (1962). Power-dependence relations. *American Sociological Review*, 27, 31–40.
- Estroff, S. D., & Nowicki, S. (1992). Interpersonal complementarity, gender of interactants, and performance on word puzzles. *Personality and Social Psychology Bulletin*, 18, 351–356.
- French, J. R. P., & Raven, B. (1959). The bases of social power. In D. Cartwright (Ed.), *Studies in social power* (pp. 150–167). Ann Arbor: Institute for Social Research, University of Michigan.
- Fung, S. (1991). The effects of power, relationship, and purpose in gaining compliance. *Contemporary Social Psychology*, 15, 44–57.
- Galinsky, A. D., Gruenfeld, D. H., & Magee, J. C. (2003). From power to action. *Journal of Personality and Social Psychology*, 85, 453–466.
- Giebels, E., de Dreu, C., & van de Vliert, E. (1998). Social motives and trust in negotiation: The disruptive effects of punitive capability. *Journal of Applied Psychology*, 83, 408–422.
- Gifford, R. (1991). Mapping nonverbal behavior on the interpersonal circle. *Journal of Personality and Social Psychology*, 61, 279–288.
- Goodall, J. (1986). *The chimpanzees of Gombe: patterns of behavior*. Cambridge, MA: Harvard University Press.
- Greer, L. L., & Van Kleef, G. A. (2010). Equality versus differentiation: The effects of power dispersion on social interaction. *Journal of Applied Psychology*, 95, 1032–1044.
- Groysberg, B., Polzer, J. T., & Elfenbein, H. A. (2011). Too many cooks spoil the broth: How high-status individuals decrease group effectiveness. *Organization Science*, 22, 722–737.
- Halevy, N., Chou, E. Y., Galinsky, A. D., & Murnighan, J. K. (2012). When hierarchy wins: Evidence from the national basketball association. *Social Psychological and Personality Science*, 3, 398–406.
- Hall, J. A., Coats, E. J., & LeBeau, L. S. (2005). Nonverbal behavior and the vertical dimension of social relations: A meta-analysis. *Psychological Bulletin*, 131, 898–924.
- Homans, G. C. (1951). *The human group*. London: Routledge & Kegan Paul.
- Horowitz, L. M., Locke, K. D., Morse, M. B., Waikar, S. V., Dryer, D. C., Tarnow, E., et al. (1991). Self-derogations and the interpersonal theory. *Journal of Personality and Social Psychology*, 61, 68–79.
- Horowitz, L. M., Wilson, K. R., Turan, B., Zolotsev, P., Constantino, M. J., & Henderson, L. (2006). How interpersonal motives clarify the meaning of interpersonal behavior: A revised circumplex model. *Personality and Social Psychology Review*, 10, 67–86.
- Huang, L., Galinsky, A. D., Gruenfeld, D. H., & Guillory, L. E. (2010). Powerful postures versus powerful roles which is the proximate correlate of thought and behavior? *Psychological Science*, 22, 95–102.
- Jolly, A. (1972). *The evolution of primate behavior*. New York: MacMillan.
- Josephs, R. A., Newman, M. L., Brown, R. P., & Beer, J. M. (2003). Status, testosterone, and human intellectual performance: Stereotype threat as status concern. *Psychological Science*, 14, 158–163.
- Josephs, R. A., Sellers, J. G., Newman, M. L., & Mehta, P. H. (2006). The mismatch effect: When testosterone and status are at odds. *Journal of Personality and Social Psychology*, 90, 999–1013.
- Keltner, D., Gruenfeld, D. H., & Anderson, C. (2003). Power, approach, and inhibition. *Psychological Review*, 110, 265–284.
- Kiesler, D. J. (1983). The 1982 interpersonal circle: A taxonomy for complementarity in human transactions. *Psychological Review*, 90, 185–214.
- Kim, P. H., & Fragale, A. R. (2005). Choosing the path to bargaining power: An empirical comparison of BATNAs and contributions in negotiation. *Journal of Applied Psychology*, 90, 373–381.
- Kim, P. H., Pinkley, R. L., & Fragale, A. R. (2005). Power dynamics in negotiation. *Academy of Management Review*, 30, 799–822.
- Kipnis, D., & Schmidt, S. M. (1988). Upward-influence styles: Relationship with performance evaluation, salary, and stress. *Administrative Science Quarterly*, 33, 528–542.
- Komorita, S. S., & Brenner, A. R. (1968). Bargaining and concession-making under bilateral monopoly. *Journal of Personality and Social Psychology*, 9, 15–20.
- Komorita, S. S., & Leung, K. (1985). The effects of alternatives on the salience of reward allocation norms. *Journal of Experimental Social Psychology*, 21, 229–246.
- Lelieveld, G.-J., Van Dijk, E., Van Beest, I., & Van Kleef, G. A. (2012). Why anger and disappointment affect bargaining behavior differently: The moderating role of power and the mediating role of reciprocal and complementary emotions. *Personality and Social Psychology Bulletin*, 38, 1209–1221.
- Lewis, S. A., & Fry, W. R. (1977). Effects of visual access and orientation on the discovery of integrative bargaining alternatives. *Organizational Behavior and Human Decision Performance*, 20, 75–92.
- Lonner, W. J. (1980). The search for psychological universals. In H. C. Triandis, & W. W. Lambert (Vol. Eds.), *Handbook of cross-cultural psychology: Vol. 1*, (pp. 143–204). Boston: Allyn & Bacon.
- Magee, J. C., Galinsky, A. D., & Gruenfeld, D. H. (2007). Power, propensity to negotiate, and moving first in competitive interactions. *Personality and Social Psychology Bulletin*, 33, 200–212.
- Mannix, E. A. (1993). Organizations as resource dilemmas: The effects of power balance on group decision making. *Organizational Behavior and Human Decision Processes*, 55, 1–22.
- Mannix, E. A., & Neale, M. A. (1993). Power imbalance and the pattern of exchange in dyadic negotiation. *Group Decision and Negotiation*, 2, 119–133.
- Mazur, A. (1973). A cross-species comparison of status in small established groups. *American Sociological Review*, 38, 513–530.
- McGinn, K., & Keros, A. (2002). Improvisation and the logic of exchange in socially embedded transactions. *Administrative Science Quarterly*, 47, 442–473.
- Mehrabian, A. (1972). *Nonverbal communication*. Chicago: Aldine.
- Michels, R. (1915). *Political parties: A sociological study of the oligarchical tendencies of modern democracies*. New York: Dover.
- Murdock, G. P. (1945). The common denominator of culture. In R. Linton (Ed.), *The science of man in the world crisis* (pp. 51–69). New York: Columbia University Press.
- Neale, M. A., & Bazerman, M. H. (1991). *Rationality and cognition in negotiation*. New York: Free Press.
- Newman, M. L., Sellers, J. G., & Josephs, R. A. (2005). Testosterone, cognition, and social status. *Hormones & Behavior*, 47, 205–211.
- Orford, J. (1986). The rules of interpersonal complementarity: Does hostility beget hostility and dominance, submission? *Psychological Review*, 93, 365–377.
- Overbeck, J. R., Neale, M. A., & Govan, C. L. (2010). I feel, therefore you act: Intrapersonal and interpersonal effects of emotion on negotiation as a function of social power. *Organizational Behavior and Human Decision Processes*, 112, 126–139.
- Packer, C., & Pusey, A. (1985). Asymmetric contests in social mammals: Respect, manipulation and age-specific aspects. In P. J. Greenwood, (Ed.), *Evolution: Essays in honour of John Maynard Smith* (pp. 173–186). Cambridge: Cambridge University Press.
- Pfeffer, J. (1981). *Power in organizations*. Boston: Pitman.
- Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective*. New York: Harper & Row.
- Pinkley, R. L., Neale, M. A., & Bennett, R. J. (1994). The impact of alternatives to settlement in dyadic negotiation. *Organizational Behavior and Human Decision Processes*, 57, 97–116.
- Polzer, J. T., Mannix, E. A., & Neale, M. A. (1998). Interest alignment and coalitions in multi-party negotiations. *Academy of Management Journal*, 41, 42–54.
- Prietula, M. J., & Weingart, L. R. (2011). Negotiation offers and the search for agreement. *Negotiation and Conflict Management Research*, 4, 77–109.
- Pruitt, D. G. (1981). *Negotiation behavior*. New York: Academic Press.
- Pruitt, D. G. (1983). Strategic choice in negotiation. *American Behavioral Scientist*, 27, 167–194.
- Ranehill, E., Dreber, A., Johannesson, M., Leiberg, S., Sul, S., & Weber, R. A. (2015). Assessing the robustness of power posing: No effect on hormones and risk tolerance in a large sample of men and women. *Psychological Science*, 26, 653–656.
- Ridgeway, C. L. (1984). Dominance, performance and status in groups. In E. Lawler (Vol. Ed.), *Advances in group processes: Theory and research: Vol. 1*. Greenwich, CT: JAI Press.
- Ridgeway, C. L. (1987). Nonverbal behavior, dominance, and the basis of status in task groups. *American Sociological Review*, 52, 683–694.
- Ridgeway, C. L., & Berger, J. (1986). Expectations, legitimation, and dominance behavior in task groups. *American Sociological Review*, 51, 603–617.
- Rosa, E., & Mazur, A. (1979). Incipient status in small groups. *Social Forces*, 58, 18–37.
- Sadalla, E. K., Kenrick, D. T., & Vershure, B. (1987). Dominance and heterosexual attraction. *Journal of Personality and Social Psychology*, 52, 730–738.
- Sadler, P., & Woody, E. (2003). Is who you are who you're talking to? Interpersonal style and complementarity in mixed-sex interaction. *Journal of Personality and Social Psychology*, 84, 80–96.
- Schaerer, M., Loschelder, D. D., & Swaab, R. I. (2016). Bargaining zone distortion in negotiations: The elusive power of multiple alternatives. *Organizational Behavior and Human Decision Processes*, 137, 156–171.
- Schmid, Mast M. (2002). Dominance as expressed and inferred through speaking time: A meta-analysis. *Human Communication Research*, 28, 420–450.
- Schmid Mast, M., & Hall, J. A. (2003). Anybody can be a boss but only certain people make good subordinates: Behavioral impacts of striving for dominance and dominance aversion. *Journal of Personality*, 71, 871–892.
- Schmid Mast, M., Hall, J. A., & Schmid, P. C. (2010). Wanting to be boss and wanting to be subordinate: Effects on performance motivation. *Journal of Applied Social Psychology*, 40, 458–472.
- Schweinsberg, M., Ku, G., Wang, C. S., & Pillutla, M. M. (2012). Starting high and ending with nothing: The role of anchors and power in negotiations. *Journal of Experimental Social Psychology*, 48, 226–231.
- Sinaceur, M., & Tiedens, L. Z. (2006). Get mad and get more than even: The benefits of anger expressions in negotiations. *Journal of Experimental Social Psychology*, 42, 314–322.
- Sinaceur, M., Van Kleef, G. A., Neale, M. A., Adam, H., & Haag, C. (2011). Hot or cold: Is communicating anger or communicating threats more effective in negotiation? *Journal of Applied Psychology*, 96, 1018–1032.
- Sivanathan, N., Pillutla, M. M., & Murnighan, J. K. (2008). Power gained, power lost. *Organizational Behavior and Human Decision Processes*, 105, 135–146.
- Spiegel, J., & Machotka, P. (1974). *Messages of the body*. New York: Free Press.
- Stahelski, A. J., & Paynton, C. F. (1995). The effects of status cues on choices of social power and influence strategies. *The Journal of Social Psychology*, 135, 553–560.
- Strong, S. R., Hills, H. I., Kilmartin, C. T., DeVries, H., Lanier, K., Nelson, B. N., et al. (1988). The dynamic relations among interpersonal behaviors: A test of complementarity and anticomplementarity. *Journal of Personality and Social Psychology*, 54, 798–810.
- Tenbrunsel, A. E., & Messick, D. M. (2001). Power asymmetries and ethical behavior in organizations. In J. M. Darley, & D. M. Messick (Eds.), *Social influences on ethical behavior in organizations* (pp. 201–216). Mahwah, NJ: Lawrence Erlbaum.
- Tiedens, L. Z., & Fragale, A. R. (2003). Power moves: Complementarity in dominant and submissive nonverbal behavior. *Journal of Personality and Social Psychology*, 84, 558–568.

- Tiedens, L. Z., & Jimenez, M. C. (2003). Assimilation for affiliation and contrast for control: Complementary relationship schemas and complementary self-construals. *Journal of Personality and Social Psychology*, 85, 1049–1061.
- Tiedens, L. Z., Unzueta, M. M., & Young, M. J. (2007). An unconscious desire for hierarchy? The motivated perception of dominance complementarity in task partners. *Journal of Personality and Social Psychology*, 93, 402–414.
- Vacharkulksemsuk, T., Reit, E., Khambatta, P., Eastwick, P. W., Finkel, E. J., & Carney, D. R. (2016). Dominant, open nonverbal displays are attractive at zero-acquaintance. *Proceedings of the National Academy of Sciences*, 113, 4009–4014.
- Van Kleef, G. A., & Côté, S. (2007). Expressing anger in conflict: When it helps and when it hurts. *Journal of Applied Psychology*, 92, 1557–1569.
- Van Kleef, G. A., De Dreu, C. K., Pietroni, D., & Manstead, A. S. (2006). Power and emotion in negotiation: Power moderates the interpersonal effects of anger and happiness on concession making. *European Journal of Social Psychology*, 36, 557–581.
- van Knippenberg, B., van Knippenberg, D., & De Cremer, D. (2007). Why people resort to coercion: The role of utility and legitimacy. *European Journal of Social Psychology*, 37, 276–287.
- Vervaecke, H., de Vries, H., & van Elsacker, L. (1999). An experimental evaluation of the consistency of competitive ability and agonistic dominance in different social contexts in captive bonobos. *Behaviour*, 136, 423–442.
- Wang, M., Zhang, Z., & Han, Y. (2008). The impact of the first offer on negotiation impasse: Negotiating roles matter. *Acta Psychologica Sinica*, 40, 339–349.
- Weisfeld, G. E., & Beresford, J. M. (1982). Erectness of posture as an indicator of dominance or success in humans. *Motivation and Emotion*, 6, 113–129.
- Weisfeld, G. E., & Linkey, H. E. (1985). Dominance displays as indicators of a social success motive. In S. L. Ellyson, & J. F. Dovidio (Eds.). *Power, dominance, and non-verbal behavior* (pp. 109–128). New York: Springer-Verlag.
- Whyte, W. F. (1943). *Street corner society: The social structure of an Italian slum*. Chicago: Chicago University Press.
- Wiggins, J. S. (1979). A psychological taxonomy of trait-descriptive terms: The interpersonal domain. *Journal of Personality and Social Psychology*, 37, 395–412.
- Wiggins, J. S. (1982). Circumplex models of interpersonal behavior in clinical psychology. In P. S. Kendall, & J. N. Butcher (Eds.). *Handbook of research methods in clinical psychology* (pp. 183–221). New York: Wiley.
- Wiltermuth, S. S., & Neale, M. A. (2011). Too much information: The adverse impact of non-diagnostic information in negotiations. *Journal of Applied Psychology*, 96, 192–201.
- Wiltermuth, S. S., Tiedens, L. Z., & Neale, M. A. (2015). The benefits of dominance complementarity in negotiations. *Negotiation and Conflict Management Research*, 8, 194–205.
- Yandell, B. S. (1997). *Practical data analysis for designed experiments*. London, United Kingdom: Chapman and Hall.
- Zajonc, R. B., & Markus, H. (1984). Affect and cognition: The hard interface. In C. Izard, J. Kagan, & R. B. Zajonc (Eds.). *Emotions, cognition, and behavior* (pp. 73–102). Cambridge, England: Cambridge University Press.
- Zhou, L., Burgoon, J. K., Zhang, D., & Nunamaker, J. F. (2004). Language dominance in interpersonal deception in computer-mediated communication. *Computers in Human Behavior*, 20, 381–402.