Does Justice Need to be in the Eyes of Both Beholders? Examining Face-to-Face and Virtual Negotiators’ Interactional Justice Congruence

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Abstract
We build from justice and negotiation scholars’ historical interest in interpersonal interactions and reciprocity to develop the notion of interactional justice congruence, which refers to the degree of reciprocity in negotiation dyad members’ respectful and truthful treatment of one another. Yet, media richness theory holds that communication media differ in their provision of social cues and ability to interpret subjective information such as justice perceptions. Integrating social exchange theory tenets with media richness theory, we examine how communication medium influences the effects of negotiators’ interactional justice congruence on their dyadic economic and social-psychological outcomes. Moderated polynomial regression and response surface analyses of data from 199 face-to-face and virtual negotiation dyads revealed that face-to-face dyads’ relationship conflict and outcome inequality were minimized when negotiators’ interpersonal and informational justice perceptions were congruent—even if both negotiators perceived one another be disrespectful or deceptive. Virtual negotiation dyads did not experience this benefit. This suggests justice functions differently at the dyadic level in negotiations, such that justice needs to be similarly perceived by both face-to-face negotiators in order to produce dyadic benefits.

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Negotiation is an interpersonal process between two or more interdependent individuals who conduct exchanges and make decisions (Jang et al., 2018; Lewicki et al., 2020; Thompson et al., 2010). Because negotiation outcomes can be consequential (e.g., for individual and joint gain, Thompson, 1990; Thompson et al., 2010), concerns about fairness are well-documented in the popular press, textbooks, and lay books on negotiation (e.g., Fisher et al., 2011; Lewicki et al., 2020; Voss, 2016). Yet, the negotiation and organizational justice literatures have rarely substantively referenced each other and largely evolved independently (Conlon, 2012). Despite their different origins, a persistent commonality between them is that both have been studied using theories of social interaction and reciprocity (Rubin & Brown, 1975; Rupp et al., 2017; Thompson et al., 2010). In recent decades, their shared interest in interpersonal exchanges has manifested as research on communication medium (i.e., channel of social interaction, such as computer-mediated or virtual and face-to-face; Purdy et al., 2000; Thompson et al., 2010). Given the overlapping interests between the negotiation and justice literatures, it is surprising that integration between them has remained limited, despite recent calls that “negotiation analyses need to take justice...into account” (Druckman & Wagner, 2017, p. 16).

Integrating these two literatures is important because conclusions regarding the effects of justice may differ in dyadic negotiation contexts and when justice is perceived from a counterpart versus an authority (Rupp et al., 2017). For example, Bies and Moag (1986) suggested that “it may be relatively ‘fair’ to bluff or ‘shade the truth’ in a negotiation setting,” p. 52). This stands in contrast to the justice literature, which has concluded a lack of justice is unilaterally harmful and has almost exclusively focused on perceptions of authorities (vs. peers or counterparts) (Colquitt et al., 2013). Prior studies have overlooked the possibility that in some social contexts, high justice might not necessarily be beneficial and low justice might not be detrimental. Indeed, research has suggested that information is processed differently by dyads than by individuals (Daft & Lengel, 1986; Emerson, 1976). Both negotiation and communication have been characterized as “fundamentally dyadic” phenomena (Krasikova & LeBreton, 2012, p. 740). Together, these ideas call into question whether prior conclusions about the effects of justice generalize to negotiation dyads.

Justice perceptions have been considered to be subjective and “in the eye of the beholder” (Colquitt et al., 2018, p. 159). We examine whether justice needs to be in the eyes of both beholders—that is, whether two negotiators’ perceptions need to be reciprocated (i.e., similarly perceived) by both negotiators. To investigate justice in negotiations at the dyadic level, we first build from theory on reciprocity (e.g., Gouldner, 1960) to develop the notion of justice congruence, defined as the degree of reciprocity in dyad members' perceptions of each other’s justice (i.e., when negotiator A’s perceptions of B are equivalent to negotiator B's perceptions of A). We focus on congruence in justice perceptions corresponding to respect and truthfulness (i.e., interpersonal and informational justice dimensions; Bies & Moag, 1986; Colquitt, 2001; Greenberg, 1993) given their relevance to “dyadic communication” (Scott et al., 2014, p. 1515) that occurs during the negotiation process. Overall, we theorize that relationship conflict and outcome inequality will be minimized in dyads with interactional justice congruence.

We then integrate theory on reciprocity and media richness to argue that the beneficial effects of justice congruence will be stronger in face-to-face than in virtual negotiations. This is because it is easier for the two negotiators, or “beholders,” to process justice cues from each other using more information-rich media. According to media richness theory (Daft & Lengel, 1986), communication media differ in their capability to transmit information and support mutual understanding. Face-to-face communication has been proposed to be the richest medium because it offers numerous forms of social information, including cues via vocal tone and body language (Daft & Lengel, 1986). As such, the theory has suggested that face-to-face communicators can process subjective and complex
Does Justice Need to be in the Eyes of Both Beholders?

Examining Face-to-Face and Virtual Negotiators’ Interactional Justice Congruence

Kleshinski, Wilson, DeRue, & Conlon

information—such as each other's justice—more easily (Daft & Lengel, 1986). Accordingly, the theory has indicated that leaner media, such as instant messaging, dulls communicators’ ability to process such information. Given that subjective and complex information is more easily interpreted by face-to-face than virtual communicators, we theorize that face-to-face negotiators are more likely than virtual negotiators to benefit from interactional justice congruence. We test our hypotheses with data from face-to-face and virtual negotiation dyads using moderated polynomial regression and response surface methodology (Edwards, 1996, 2002; see also Vogel et al., 2016).

Our work makes several contributions. First, we contribute to social exchange theory by extending Gouldner's (1960) work on reciprocity to consider negotiators’ dyadic congruence in interactional justice. While prior research on social exchange has largely focused on perceived reciprocity in exchanges from the perspective of one member of the dyad, we operationalize reciprocity as the degree of congruence in justice perceptions from both members. In doing so, our study reveals novel findings about the social and economic implications of two individuals' treatment of each other that would not be evident from individual perceptual operationalizations of reciprocity. Second, we offer contributions to the justice literature by challenging prevailing assumptions that the greater respect and truthfulness an individual perceives, the better their outcomes (e.g., Colquitt et al., 2013). We theorize that negotiation dyads’ relationship conflict and outcome inequality are minimized when their interpersonal and informational justice perceptions are congruent (i.e., reciprocated), even when both perceive one another to show low justice. We also theorize that relationship conflict and outcome inequality are maximized in dyads in which negotiators demonstrate incongruent justice toward one another (i.e., one negotiator perceives low justice, and the other negotiator perceives high justice). Together, this theorizing suggests that low justice is not always harmful, and that high justice is not always beneficial. Our findings broaden the understanding of justice sources beyond authorities (Rupp et al., 2017) such as counterpart peers (e.g., Bendersky & Brockner, 2020). Third, we contribute to the communication medium literature. We integrate reciprocity arguments with media richness theory to argue that the effects of justice congruence will be stronger in face-to-face negotiation dyads and weaker in virtual dyads, due to differences in cues transmitted by face-to-face and virtual mediums. Focusing on the dyadic level in both our theorizing and methodology using moderated polynomial regression and response surface methodology (Edwards, 2002; see also Vogel et al., 2016), we pinpoint which communication medium (face-to-face or virtual) is most likely to generate joint benefits of the congruence between two negotiators’ justice perceptions.

Theoretical Background

Dyadic Justice Congruence as a Form of Reciprocity

Social exchange theory has revolved around the idea that two interdependent actors, or dyad members, provide and receive resources from each other (Cropanzano & Mitchell, 2005; Emerson, 1976; Gouldner, 1960). Resources refer to “anything transacted in an interpersonal context” (Colquitt et al., 2013, p. 200) that allow dyad members to “reward (or punish)” one other (Emerson, 1976, p. 347). Justice has been characterized as a “valuable resource” (Zapata et al., 2013, p. 5) and as such, can be exchanged between dyad members. Gouldner (1960) argued that “the degree of mutuality or...symmetry of reciprocity” varies, such that dyadic reciprocity in exchange may be low (i.e., unequal) or high (i.e., equal) (emphasis in original) (p. 168).

The theory has argued that dyadic reciprocity in exchange can vary according to “the return
Does Justice Need to be in the Eyes of Both Beholders?
Examining Face-to-Face and Virtual Negotiators’ Interactional Justice Congruence

Kleshinski, Wilson, DeRue, & Conlon

of benefits,” which reflects positive reciprocity, or “the return of injuries,” which reflects negative reciprocity or retaliation (Gouldner, 1960, p. 172; see also Cropanzano et al., 2017; Greco et al., 2019). We apply these seminal theoretical tenets to dyadic negotiations, which are interdependent, as settlements reached depend on both negotiators’ actions. The negotiation literature has operationalized positive reciprocity as the dyadic exchange of cooperative actions and negative reciprocity as the dyadic exchange of punitive actions (e.g., Fehr & Gächter, 2000). Research has shown that although it may appear harmful, negative reciprocity can often help protect negotiators from being exploited by their counterpart (Murnighan, 1991; Olekalns & Smith, 2009; Putnam & Jones, 1982).

Integrating these tenets of reciprocity (Gouldner, 1960) with the exchange of justice in negotiation dyads, we define interactional justice (in)congruence as the degree of dyadic reciprocity in interpersonal or informational justice perceptions. Figure 1 shows illustrative scenarios as follows. Congruence on high interpersonal or informational justice (i.e., positive reciprocity) occurs when Negotiators A and B perceive one another to be respectful or truthful (Quadrant 1 of Figure 1), which reflects an equal exchange of benefits. Congruence on low interpersonal or informational justice (i.e., negative reciprocity) occurs when both A and B perceive the other to be disrespectful or deceptive (Quadrant 2), which reflects an equal exchange of burdens. In both congruence scenarios, negotiators’ perceptions of each other are reciprocated. Justice incongruence (i.e., lack of reciprocity), occurs if A perceives B to be respectful or truthful and B perceives A to be disrespectful or deceptive (Quadrant 3) or vice versa (Quadrant 4). Using a continuous measure of justice, we examine the degree of congruence at every level of interactional justice (low to high). Our operationalization of dyadic congruence stands in contrast to prior operationalizations that examine perceptions of reciprocity from only one member of the negotiation dyad.

Gouldner (1960) argued that “reciprocity...is a mutually gratifying pattern” (p. 170) whereas a lack of reciprocity is “socially disruptive” (p. 167) and fosters inequality in benefits between exchange dyad members. Given these consequences of reciprocity and their emphasis on mutual outcomes, we examine the effects of negotiators’ interactional justice congruence on their dyadic relationship conflict and outcome inequality. Investigating dyadic outcomes is consistent with how early social exchange theory and media richness theory focused on exchange dyads or communication dyads (Daft & Lengel, 1986; Emerson, 1976). Our focus on these outcomes also aligns with the emphasis on and importance of social-psychological and economic effects in the negotiation literature (e.g., Druckman & Wagner, 2016; Thompson et al., 2010) and social and behavioral outcomes in the justice literature (e.g., Colquitt et al., 2013).

First, relationship conflict refers to interpersonal “tension” that arises due to “real or perceived differences” (De Dreu & Weingart, 2003, p. 741). Relationship conflict is generally considered to be harmful for groups, as meta-analytic research has shown a negative association with group performance, organizational citizenship behavior, group cohesion, and trust (De Dreu & Weingart, 2003; de Wit et al., 2012). At the dyadic level, justice incongruence constitutes a difference in interpersonal behaviors that is expected to generate interpersonal tension (i.e., relationship conflict). This is consistent with the finding that reciprocity between negotiators staved off conflict (Axelrod, 1984; Sheldon, 1999) and with the notion that “conflict emerges to the extent that one party feels deprived... and attributes this state of deprivation to the actions or inactions by the interdependent other” (De Dreu, 2010, p. 984).
Figure 1  
*Illustrative Scenarios of Dyadic Interactional Justice Congruence in Negotiations*

<table>
<thead>
<tr>
<th>Negotiator B's Perception of Negotiator A's Interactional Justice Toward B:</th>
<th>Negotiator A's Perception of Negotiator B's Interactional Justice Toward A:</th>
<th></th>
</tr>
</thead>
</table>
| Negotiator B perceives that Negotiator A's interactional justice is **high** | **Quadrant 4**  
*Lack of reciprocity*  
For justice incongruence scenarios (including this one), relationship conflict and outcome inequality are expected to be *maximized*, compared to justice congruence scenarios (i.e., Quadrants 1 and 2). We expect this effect to be stronger in face-to-face (vs. virtual) negotiations. | **Quadrant 1**  
*Positive reciprocity: Equal exchange of benefits*  
For justice congruence scenarios (including this one), relationship conflict and outcome inequality are expected to be *minimized*, compared to justice incongruence scenarios (i.e., Quadrants 3 and 4). We expect this effect to be stronger in face-to-face (vs. virtual) negotiations. |
| Negotiator B perceives that Negotiator A's interactional justice is **low** | **Quadrant 2**  
*Negative reciprocity: Equal exchange of burdens/harms*  
For justice congruence scenarios (including this one), relationship conflict and outcome inequality are expected to be *minimized*, compared to justice incongruence scenarios (i.e., Quadrants 3 and 4). We expect this effect to be stronger in face-to-face (vs. virtual) negotiations. | **Quadrant 3**  
*Lack of reciprocity*  
For justice incongruence scenarios (including this one), relationship conflict and outcome inequality are expected to be *maximized*, compared to justice congruence scenarios (i.e., Quadrants 1 and 2). We expect this effect to be stronger in face-to-face (vs. virtual) negotiations. |

*Notes.* For parsimony, the term “interactional justice” is used; however, we examine interpersonal and informational justice separately using continuous measures.

Second, outcome equality reflects a highly salient norm and facilitates settlements because it represents a prominent solution and is likely to enhance parties’ expectations for positive future interaction (e.g., “share and share alike”, c.f., McLean Parks et al., 1996). Outcome inequality is also typically viewed as harmful, such that last impressions by one negotiator that they were ‘beaten’ or that they ‘lost’ the negotiation to the other side may set up ‘conflict residues’ (Pondy, 1967) that can make future negotiations more challenging than they should be. In regard to justice congruence vis-à-vis outcome inequality, if negotiators A and B treat each other with congruent levels of respect and
truthfulness, their individual payoffs are also likely to be similar. Whereas if A is respectful and truthful, and B is disrespectful and deceptive, “opportunistic behaviors may arise” (Luo, 2005, p. 695) such that A will be exploited and earn a smaller payoff than B. We operationalize outcome inequality as the absolute difference between negotiators’ outcomes (Thompson et al., 1996).

The Moderating Role of Communication Medium

Justice perceptions are considered to be subjective (e.g., Colquitt et al., 2018) or in the eye of the perceiver. In our context of dyadic negotiations, interactional justice perceivers include two negotiators and the targets of their perceptions are each other. Negotiators are often tasked with reconciling their distinct perspectives in order to achieve an agreement or settlement (Jang et al., 2018). According to media richness theory, subjective information and divergent frames of reference are more efficiently processed with rich media, such as face-to-face communication, which has a greater capacity to transmit a larger range of cues, such as body language or vocal tone (Daft & Lengel, 1986). These cues “enable mutual understanding” between communicators (Treviño et al., 1987, p. 555). Because leaner media transmit fewer cues, communicators are less likely to develop a mutual understanding (Daft & Lengel, 1986). This suggests that face-to-face negotiators would be more likely to recognize whether interactional justice congruence occurs (i.e., whether their perceptions are reciprocated).

Although reciprocity facilitates social stability (Gouldner, 1960), it may not be effective in situations where misinterpretation of the counterpart’s actions could occur (e.g., Van Lange et al., 2002), such as in virtual negotiations. Integrating reciprocity tenets with media richness theory would suggest that communication medium will moderate the effects of interactional justice congruence on dyadic relationship conflict and outcome inequality. When such treatment is congruent, face-to-face negotiators are expected to experience less relationship conflict, such that the greater the congruence in their interactional justice, the lower their relationship conflict.

In contrast, negotiators in virtual dyads experience less information richness (e.g., fewer social cues). Given this, we would expect virtual negotiators to have a reduced ability to perceive and accurately interpret their counterpart’s behavior. That is, virtual negotiators may find it difficult to comprehend their counterpart’s level of respect and truthfulness (i.e., interpersonal and informational justice, respectively, Greenberg, 1993), which impedes their ability to recognize whether interactional justice congruence occurs and respond in ways that minimize relationship conflict and outcome inequality. As such, we propose that the effects of interactional justice congruence will be weaker in virtual negotiation dyads. We specifically propose:

**H1.** The effect of the interplay of negotiators’ interpersonal justice perceptions on relationship conflict (i.e., the greater the congruence in their perceptions, the lower their relationship conflict) will be stronger in face-to-face dyads than in virtual dyads.

**H2.** The effect of the interplay of negotiators’ informational justice perceptions on relationship conflict (i.e., the greater the congruence in their perceptions, the lower their relationship conflict) will be stronger in face-to-face dyads than in virtual dyads.

Social exchange theory has argued that in addition to interpersonal stability, reciprocity encourages equality in benefits between exchange dyad members (Gouldner, 1960). Thus, we posit that communication medium will moderate the effects of interactional justice congruence on the inequality of outcomes between members of the negotiation dyad. Findings from negotiation and
justice literatures have suggested that individuals' shared perceptions affect their economic outcomes. For example, dissimilar justice perceptions between parties hindered resource sharing among dyadic alliances (Luo, 2005). In addition, research on dyadic similarity on Machiavellian (Mach) traits (i.e., distrustful of others, manipulative, and likely to behave amorally, Christie & Geis, 1970; Dahling et al., 2009) found that high Machs paired with low Machs in a face-to-face negotiation were less likely to reach a mutually beneficial outcome (Fry, 1985). This also connects with the finding that negotiators were more likely to exploit a “soft” opponent (Pruitt & Syna, 1985). These studies would suggest that negotiation dyads with justice incongruence experience higher outcome inequality. Turning to situations characterized by congruence, “when members agree on the quality of social interaction, even if they agree on a negative assessment, they produce higher-quality group work” (Jehn et al., 2010, p. 599; see also Mason & Griffin, 2003). Moreover, Kramer et al. (1993) found that negotiators' outcomes were more equal when “they feel more accountable to the person with whom they negotiate” (p. 637). Such accountability is expected to be present when dyadic congruence occurs. Together, this body of work has indicated that outcome inequality is minimized in dyadic negotiations that have justice congruence.

However, other research has shown that the effects of accountability by others depend on the social context (Tetlock, 1992). According to media richness theory, communication medium represents an important social context. For example, the theory has suggested that virtual communicators are less likely than face-to-face communicators to reach a mutual understanding (Daft & Lengel, 1986) and are more likely to miscommunicate and develop inaccurate social perceptions (Byron, 2008; Nadler & Shestowsky, 2006), because of less information richness inherent in the virtual medium (Fiol & O’Connor, 2005). Negotiators were less likely to be egocentric when communication between them encourages a “shared understanding of the situation” (Bazerman et al., 2000, p. 285), which may be more easily achieved in face-to-face contexts. In light of tenets from media richness theory, and similar to our predictions for relationship conflict, we posit that the effects of interactional justice congruence on outcome inequality will not be uniform across face-to-face and virtual negotiations.

We argue that face-to-face negotiators are able to more easily discern whether interactional justice congruence occurs (i.e., whether the respect and propriety exchanged between them is reciprocated). Whereas negotiation dyads with congruent perceptions would experience less outcome inequality, those with incongruent perceptions would be more inclined to experience a wider difference in their individual payoffs. Because of reduced information richness in virtual contexts, interactional justice may be difficult for virtual negotiators to ascertain. This should dull the benefits of reciprocity in perceptions of interactional justice on outcome inequality. We expect that for dyads negotiating face-to-face, the greater the congruence in their interactional justice perceptions, the less their outcome inequality. For dyads negotiating virtually, we would expect this effect to be weakened. We thus propose:

**H3.** The effect of the interplay of negotiators’ interpersonal justice perceptions on outcome inequality (i.e., the greater the congruence in their perceptions, the lower their outcome inequality) will be stronger in face-to-face dyads than in virtual dyads.

**H4.** The effect of the interplay of negotiators’ informational justice perceptions on outcome inequality (i.e., the greater the congruence in their perceptions, the lower their outcome inequality) will be stronger in face-to-face dyads than in virtual dyads.
Method

Samples and Procedure

Samples

After obtaining IRB approval, the data for this study were collected as part of a larger data collection effort that included two samples, findings from which have been previously published (DeRue et al., 2009; Wilson et al., 2016). Our current conceptual focus on dyadic interpersonal and informational justice congruence between negotiators and communication medium (face-to-face and virtual), as well as our theoretical foundation and analytic technique, differ considerably from both published articles and thus our findings have distinct implications for theory and practice.

Participants were comprised of two samples of undergraduate students in an upper-level management course at a large public university in the Midwestern United States. Students were invited to voluntarily participate to earn course credit. In total, 398 students participated; 51% were male, 80% were citizens of the United States, and their average age was 21.84 (SD = 1.73).

Procedure

Once they arrived at the lab, participants were given an orientation to the study and were randomly assigned to their negotiation role: Mountain or Pinnacle. Participants negotiated the “Mountain-Pinnacle” simulation, adapted from the “new recruit” negotiation (Conlon et al., 2002). The premise of the simulation was a merger or acquisition negotiation scenario in which participants represented one of two companies, Mountain or Pinnacle. Half of the participants were assigned to each company. Negotiators were asked to reach a settlement for seven human resource management issues for new hires, such as vacation time, salary, and start date. A 2 [integrative potential: low (distributive) or high (integrative)] x 2 [power: equal (merger) or unequal (takeover)] factorial design was used. Because these variables were not essential for the current theory and hypotheses, they were included as control variables.

To encourage their motivation to negotiate, all participants were told the top 50% of negotiating dyads with the highest joint value (their combined scores) would receive $25, and of those dyads, the top 20% individual negotiators would earn $25 each. Participants were given between 30 and 40 minutes to prepare for the negotiation and read through the materials, and were then asked to confirm their understanding of the simulation and the point structures. Negotiation dyads were created by randomly assigning negotiators from the Mountain and Pinnacle roles. The face-to-face negotiation sample was comprised of 98 dyads and the virtual negotiation sample (who communicated via instant messaging from computers in separate rooms) consisted of 101 dyads. These two samples were combined in order to test the hypothesized moderating effects of communication medium. According to the theory, media richness is a function of four characteristics, including the variety of cues, potential for immediate feedback (i.e., degree of synchronicity), ability to

1 Integrative potential was manipulated by varying the payoff structure, such that each party’s points associated with the negotiation issues included either potential for tradeoffs (integrative) or were zero-sum and opposed to each other (distributive). Power was also manipulated using structural features of the negotiation, such that dyads were told they shared decision-making authority in the merger of their two companies (equal power) or that Mountain held ultimate decision-making authority as it was acquiring Pinnacle (unequal power).
transmit natural language, and personalization (Daft & Lengel, 1986). Of these four characteristics, the number of cues is the primary way in which face-to-face and instant messaging differ. Instant messaging lacks cues communicated face-to-face, such as vocal tone, facial expressions, and other body language. Emotional cues can be communicated through instant messaging to some extent, such as through words (Wilson et al., 2016) and, depending on the messaging software, emojis, which can act as a proxy for non-verbal cues in instant messaging (e.g., facial expressions) and therefore make instant messaging richer in this regard (Boutet et al., 2021; Erle et al., 2021). In our case, the instant messaging software was relatively lean in that emojis were not available, although it was possible for participants to use punctuation marks to express emotions (e.g., “:)” for a smile).

Regarding synchronicity, the theory has suggested that instant messages are received and processed more slowly than face-to-face communication, although instant messaging has higher synchronicity than other text-based communication such as email (Dennis & Valacich, 1999). Both face-to-face and instant messaging had high personalization, given that negotiators were directly communicating with their counterpart and customized their communications to them, and both were similarly high in the capability to transmit natural language (Dennis & Kinney, 1998).

After achieving agreement on the seven issues in the simulation, participants in both samples individually completed a form recording their settlement outcomes and then completed a questionnaire measuring perceptions of their counterpart during the negotiation. In this survey, items assessing perceptions of the counterpart’s interpersonal and informational justice and relationship conflict were embedded around other perceptual scales so that participants would be unable to deduce our research questions about justice and relationship conflict. A check of participant responses on our model variables revealed no unusual response patterns in the data, such as straight-line responses (Meade & Craig, 2012).

**Measures**

**Interpersonal and Informational Justice**

Negotiators rated their counterpart’s justice using Colquitt’s (2001) organizational justice measure (1 = strongly disagree and 7 = strongly agree), adapted to negotiations. This measure contained four items for interpersonal justice and five items for informational justice. An example interpersonal justice item was “The other negotiator treated me with respect” (α = .92) and an example informational justice item was “The other negotiator was candid in communications with me” (α = .85).

**Relationship Conflict**

Relationship conflict was measured using Jehn’s (1995) 3-item scale, which was modified for negotiation contexts (1 = not at all and 7 = to a very large extent). An example item was “Was there relationship tension in your negotiation?” (α = .85). Following recommendations to justify aggregation of lower-level data (Klein & Kozlowski, 2000; Woehr et al., 2015; LeBreton & Senter, 2008) (i.e., aggregating individual negotiators’ responses to the dyadic level), the ICC(1) was significant, ICC(1) = .47, F = 2.78, p < .001, ICC(2) = .64, and rwg = .63, which indicated moderate agreement. Thus, scores were aggregated to the dyadic level to represent the total relationship conflict in each dyad. This aggregation is consistent with our focus on the dyadic interplay of negotiators' justice toward each other as well as with research on dyadic negotiations (e.g., Wilson et al., 2016) and relationship conflict (Ren & Gray, 2009).
Outcome Inequality
Each of the seven issues in the negotiation simulation, reflected in the final settlement, represented a chance for negotiators to earn points. Outcome inequality was computed as the absolute difference in total points earned by members of the negotiating dyad.

Negotiation Medium
We coded negotiation medium using a dummy variable, such that 0 = face-to-face negotiating dyads and 1 = virtual negotiating dyads.

Control Variables
In addition to controlling for integrative potential and power as noted above, we controlled for gender (0 = male and 1 = female) given meta-analytic evidence showing gender differences in negotiation behaviors (Kugler et al., 2018; Mazei et al., 2015; Stuhlmacher & Walters, 1999). We also controlled for whether participants were U.S. citizens (0 = U.S. citizen and 1 = non-U.S. citizen) because this may be a proxy for national culture, which may influence how the negotiation unfolds (Gelfand et al., 2007).

Analysis
We tested our hypotheses using Edwards’s (1996) procedures for moderated polynomial regression and response surface methodology. This approach simultaneously models both negotiators’ justice perceptions of each other and allows us to examine the effects of congruence between their perceptions. Polynomial regression and response surface methodology is an increasingly common technique for examining the effects of dyadic congruence between two individuals’ ratings on the same construct (e.g., Graham et al., 2018; Wilson et al., 2016). Hypotheses 1-4 were tested using Equations 1-4, respectively, which are presented below. These equations comprised the association between negotiators’ ratings of one another’s interpersonal or informational justice and their relationship conflict or outcome inequality, with communication medium as a moderator (for parsimony, control variables are not shown):

\[
RC = b_0 + b_1N_m + b_2N_p + b_3N_m^2 + b_4N_mN_p + b_5N_p^2 + b_6V + b_7VN_m + b_8VN_p + b_9VN_m^2 + b_{10}VN_mN_p + b_{11}VN_p^2 + e
\]  
(1)

\[
RC = b_0 + b_1F_m + b_2F_p + b_3F_m^2 + b_4F_mF_p + b_5F_p^2 + b_6V + b_7VF_m + b_8VF_p + b_9VF_m^2 + b_{10}VF_mF_p + b_{11}VF_p^2 + e
\]  
(2)

\[
OI = b_0 + b_1N_m + b_2N_p + b_3N_m^2 + b_4N_mN_p + b_5N_p^2 + b_6V + b_7VN_m + b_8VN_p + b_9VN_m^2 + b_{10}VN_mN_p + b_{11}VN_p^2 + e
\]  
(3)

\[
OI = b_0 + b_1F_m + b_2F_p + b_3F_m^2 + b_4F_mF_p + b_5F_p^2 + b_6V + b_7VF_m + b_8VF_p + b_9VF_m^2 + b_{10}VF_mF_p + b_{11}VF_p^2 + e
\]  
(4)

where RC represented dyadic relationship conflict; OI represented outcome inequality; \(N_m\) and \(N_p\) represented Mountain and Pinnacle ratings of their counterpart’s interpersonal justice, respectively; \(F_m\) and \(F_p\) referred to Mountain and Pinnacle ratings of their counterpart’s informational justice, respectively; and V represented negotiation medium (0 = face-to-face and 1 = virtual). Negotiators’ ratings of their counterpart’s interpersonal and informational justice were mean-centered prior to
Does Justice Need to be in the Eyes of Both Beholders?
Examining Face-to-Face and Virtual Negotiators’ Interactional Justice Congruence

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To test whether the form of the moderating effect was consistent with our hypotheses, we examined the response surfaces for face-to-face and virtual negotiations, comparing their curvatures of the incongruence lines. Consistent with recent research utilizing moderated polynomial regression (e.g., Graham et al., 2018; Vogel et al., 2016), we constructed a three-dimensional response surface plot, with each negotiator’s ratings of their counterpart’s interpersonal and informational justice ($N_m$ and $N_p$ or $F_m$ or $F_p$) along the perpendicular horizontal (X and Y) axes and their dyadic relationship conflict (RC) or outcome inequality (OI) along the vertical axis (Z), to assist interpretation. Our hypotheses implied that the shape of the response surface along the incongruence line, which was used to test congruence effects (Edwards, 2002; Edwards & Parry, 1993), differed between face-to-face and virtual negotiation dyads (Edwards, 1996). Hypotheses 1-4 are supported if face-to-face dyads have a positive and significant curvature along the incongruence line (i.e., U-shape); that is, relationship conflict or outcome inequality are minimized along the congruence line (i.e., when both negotiators’ ratings of their counterpart’s interpersonal or informational justice are similar). For virtual dyads, we expect the shape of the response surface to be flatter, such that relationship conflict or outcome inequality are not minimized along the congruence line. The curvature along the incongruence line ($N_m = -N_p$ or $F_m = -F_p$) is calculated as ($b_3 - b_4 + b_5$) for face-to-face negotiating dyads and as ($b_3 - b_4 + b_5 + [b_9 - b_{10} + b_{11}]V$) for virtual dyads (Edwards, 1996; see also Vogel et al., 2016). We followed Vogel et al.’s (2016) approach for moderated polynomial regression by testing the significance of the curvature along the incongruence line using bootstrapping with 20,000 resamples and 90% bias-corrected confidence intervals, consistent with studies of directional hypotheses (De Jong & Dirks, 2012; Sumanth & Cable, 2011) and dyadic methods (e.g., Jones & Shah, 2016).

Results

Table 1 presents means, standard deviations, and correlations between study variables. An initial inspection of the correlations indicated that virtual negotiations were related to higher levels of relationship conflict, compared to face-to-face negotiations. Non-U.S. citizenship for negotiators assigned to the Pinnacle role had a marginally significant correlation ($p < .10$) with their counterpart’s informational justice perceptions and negotiation medium (see Table 1).

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2 As a supplemental analysis, to test the assumption from media richness theory that face-to-face communication offers greater mutual understanding than virtual communication, we used two items to measure participants’ mutual understanding ($\alpha = .86$). These items were “I understand the priorities of the other party well” and “I have good knowledge of what issues are important to the other party” ($1 = \text{strongly disagree}$ and $7 = \text{strongly agree}$). To assess dyadic mutual understanding, Mountain and Pinnacle ratings on these two items were aggregated to the dyadic level, as the ICC(1) was significant and supported aggregation, ICC(1) = .17, $F = 1.41$, $p = .008$, ICC(2) = .29, and $r_{wg} = .61$, which indicated moderate agreement (Woehr et al., 2015; see also LeBreton & Senter, 2008). Consistent with our assumptions from media richness theory, virtual negotiation dyads reported less mutual understanding ($M = 5.21$) than face-to-face negotiation dyads ($M = 5.63$), $t(198) = 3.10$, $p = .002$.
Results of confirmatory factor analysis (CFA) revealed that the measurement model of our perceptual variables fit the data well, each negotiator’s interpersonal and informational justice, and their dyadic relationship conflict, \(\chi^2(240) = 474.29, p < .001, \text{CFI} = .94, \text{RMSEA} = .070, \text{SRMR} = .086\), and all indicators significantly loaded onto their assigned factor. We tested our proposed model against all 15 possible constrained models in which any two factors were combined, which added significant misfit, 158.81 ≤ \(\Delta \chi^2\) ≤ 958.34. Polynomial regression results are presented in Tables 2 and 4 for relationship conflict and outcome inequality, respectively. Results of response surface tests are presented in Table 4 and corresponding response surface plots are shown in Figures 2 and 3 for relationship conflict and outcome inequality, respectively.

Prior to hypothesis testing, which focused the moderating role of negotiation medium, we examined the main effects of interpersonal and informational justice congruence on relationship conflict and outcome inequality. Accordingly, the polynomial regression models used to test these main effects included only the control variables and the polynomial terms (\(b_1, b_2, b_3, b_4, \text{and } b_5\)); they did not include the dummy variable for communication medium (\(b_6\)) nor the five moderating terms (\(b_7, b_8, b_9, b_{10}, \text{and } b_{11}\)). A positive and significant curvature along the incongruence line (\(b_3 - b_4 + b_5\)) using the coefficients from these models would indicate that relationship conflict and outcome inequality are minimized when congruence on interpersonal and informational justice occurs. For relationship conflict, the curvature along the incongruence line was positive and significant for interpersonal justice, \(0.257, 90\% \text{ CI } [0.059, 0.454]\), and not significant for informational justice, \(0.090, 90\% \text{ CI } [-0.110, 0.289]\). For outcome inequality, the curvature along the incongruence line was not significant for interpersonal justice, \(519.530, 90\% \text{ CI } [-64.576, 1103.636]\), and positive and significant for informational justice, \(672.377, 90\% \text{ CI } [170.757, 1173.998]\). This indicated that prior to accounting for communication medium, relationship conflict was minimized when interpersonal justice congruence occurred, and outcome inequality was minimized when informational justice congruence occurred.

**Hypothesis Tests**

Hypothesis 1 predicted that relationship conflict will be minimized when dyadic interpersonal justice congruence occurs, and that this effect will be stronger in face-to-face dyads, compared to virtual dyads. As shown in Table 2, Step 2 of Model 1, the set of 5 moderator terms for interpersonal justice were significant in incrementally predicting relationship conflict (\(b_7, b_8, b_9, b_{10}, \text{and } b_{11}\)), \(\Delta R^2 = .02, F = 2.10, p = .034\), providing support for the moderating effect of negotiation medium. With respect to the form of this moderating effect, as seen in Table 3, Model 1, for face-to-face negotiating dyads, the curvature along the incongruence line (i.e., dotted line) was positive and significant (i.e., curved upward), calculated as (\(b_3 - b_4 + b_5\)) = .985, 90% CI [.521, 1.451]. Quadrant 1A of Figure 2 shows the response surface of both face-to-face negotiators’ ratings of their counterpart’s interpersonal justice and dyadic relationship conflict. In this quadrant of Figure 2, the surface along the incongruence line (i.e., dotted line) suggested a U-shape (from the back left to the front right corners of the plot); dyadic relationship conflict was minimized when interpersonal justice ratings were congruent (\(N_m = N_p\)). For virtual negotiating dyads, the curvature along the incongruence line was not significant, computed as (\(b_3 - b_4 + b_5 + [b_9 - b_{10} + b_{11}]\)) = \(.171, 90\% \text{ CI } [-.504, .850]\) (see also Table 3, Model 1). In addition, quadrant 1B of Figure 2 did not indicate that relationship conflict was minimized along the congruence line (i.e., solid line) (\(N_m = N_p\)) for virtual dyads. Collectively, these results supported Hypothesis 1.

Hypothesis 2 proposed that relationship conflict will be minimized when dyadic informational justice congruence occurs, and that this effect will be stronger in face-to-face dyads. As shown in Table
# Table 1

*Means, Standard Deviations, and Correlations*

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<th>Variable</th>
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*Note.* Integrative potential coded 0 = distributive; 1 = integrative. Power coded 0 = equal (merger) and 1 = unequal (takeover). Gender coded 0 = male; 1 = female. Citizenship coded 0 = United States (U.S.) citizen; 1 = Not U.S. citizen. Negotiation medium coded 0 = face-to-face; 1 = virtual. INJ = Interpersonal justice. IFJ = Informational justice. Coefficient alpha shown along diagonal. † *p < .10.* * *p < .05.*
Does Justice Need to be in the Eyes of Both Beholders?
Examining Face-to-Face and Virtual Negotiators’ Interactional Justice Congruence
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2, Step 2 of Model 2, the set of 5 moderator terms for informational justice were not significant as a set in predicting relationship conflict \((b_7, b_8, b_{10}, \text{ and } b_{11})\), \(\Delta R^2 = .03, F = 1.70, p = .068\). In addition, the curvature along the incongruence line was not significant for either face-to-face dyads, calculated as \((b_3 - b_4 + b_5) = .262, 90\% \text{ CI } [-.080, .562]\), or virtual dyads, calculated as \((b_3 - b_4 + b_5 + [b_9 - b_{10} + b_{11}])V) = .061, 90\% \text{ CI } [-.397, .523]\) (see Table 3, Model 2). In quadrants 2A and 2B of Figure 2, neither plot indicated a U-shape along the incongruence line. Overall, we did not find support for a moderating effect of negotiation medium on the relationship between informational justice congruence and relationship conflict, nor for our hypothesized form. Thus, Hypothesis 2 was not supported.

Hypothesis 3 predicted that outcome inequality will be minimized when dyadic interpersonal congruence occurs, and that this effect will be stronger in face-to-face dyads. As shown in Table 4, Step 2 of Model 3, the block of 5 moderator terms for interpersonal justice was significant as a set in predicting outcome inequality \((b_7, b_8, b_{10}, \text{ and } b_{11})\), \(\Delta R^2 = .05, F = 2.21, p = .028\), which suggests negotiation medium moderated the effects of negotiators’ interpersonal justice on their outcome inequality. In terms of the form of this moderating effect, in face-to-face dyads, the curvature along the incongruence line was positive and significant (i.e., curved upward), calculated as \((b_3 - b_4 + b_5) = 2693.00, 90\% \text{ CI } [1257.365, 4132.408]\) (see Table 3, Model 3). In Quadrant 3A of Figure 3, the surface along the incongruence line \((N_m = -N_p)\) showed a U-shape (starting from the back left to the front right corners of the plot); outcome inequality was diminished when face-to-face negotiators’ interpersonal justice ratings were congruent \((N_m = N_p)\). For virtual dyads, the curvature along the incongruence line was not significant, computed as \((b_3 - b_4 + b_5 + [b_9 - b_{10} + b_{11}])V) = 332.90, 90\% \text{ CI } [-1722.720, 2396.547]\). Quadrant 3B of Figure 3 did not suggest a U-shape along the line of interpersonal justice congruence for virtual dyads. Taken together, Hypothesis 3 was supported.

Hypothesis 4 predicted that outcome inequality will be minimized when dyadic informational justice congruence occurs and that this effect will be stronger in face-to-face dyads. As shown in Table 4, Step 2 of Model 4, the set of 5 moderator terms for informational justice \((b_7, b_8, b_{10}, \text{ and } b_{11})\) were significant as a set in predicting outcome inequality, \(\Delta R^2 = .06, F = 2.34, p = .022\), supporting the moderating effect of negotiation medium. Turning to the form of the moderation, as displayed in Model 4 of Table 3, the curvature along the incongruence line was positive and significant (i.e., curved upward) in face-to-face dyads, calculated as \((b_3 - b_4 + b_5) = 1553.00, 90\% \text{ CI } [779.492, 2341.385]\). In Quadrant 4A of Figure 3, the surface along the incongruence line \((F_m = -F_p)\) was U-shaped (from the back left to the front right corners of the plot) such that outcome inequality was minimized when face-to-face negotiators’ informational justice ratings were congruent \((F_m = F_p)\). For virtual negotiation dyads, the curvature along the incongruence line was not significant, computed as \((b_3 - b_4 + b_5 + [b_9 - b_{10} + b_{11}])V) = 117.60, 90\% \text{ CI } [-1074.419, 1318.621]\) (see Table 3). Quadrant 4B of Figure 3 suggests that outcome inequality was not reduced when virtual negotiators’ informational justice ratings were congruent \((F_m = F_p)\). In sum, Hypothesis 4 was supported.

Supplemental Analyses

We conducted several sets of post-hoc supplemental analyses (detailed results can be obtained from the first author upon request). First, although the hypothesized causal order was grounded in theoretical rationale, concerns may arise regarding the direction of effects. Thus, we tested and found support for the robustness of our hypothesized model compared to the reverse causal order. We used structural equation modeling (SEM) to compare our hypothesized causal order with the reverse causal model, in which relationship conflict and outcome inequality predicted each negotiator’s
<table>
<thead>
<tr>
<th>Variables</th>
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<th>Model 2: Informational Justice</th>
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Note. Unstandardized coefficients and standard errors (in parentheses) are displayed. Coding of dummy variables: 0 = distributive; 1 = integrative potential; 0 = equal power and 1 = unequal power; 0 = male; 1 = female; 0 = U.S. citizen; 1 = Non-U.S. citizen; 0 = face-to-face and 1 = virtual. * p < .05 (one-tailed).
### Table 3
Response Surface Tests for Interpersonal and Informational Justice Congruence in Virtual and Face-To-Face Dyads

<table>
<thead>
<tr>
<th>Response surface parameter</th>
<th>Equation for FTF Dyads</th>
<th>Equation for VIR Dyads</th>
<th>DV: Relationship conflict</th>
<th>Model 1: Interpersonal justice congruence</th>
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*Note.* FTF = Face-to-face negotiating dyads. VIR = virtual negotiating dyads. DV = Dependent variable. M = Mountain’s ratings of Pinnacle’s interpersonal/informational justice. P = Pinnacle’s ratings of Mountain’s interpersonal/informational justice. V = Negotiation medium, coded such that 0 = face-to-face and 1 = virtual negotiating dyads. *p < .05 (one-tailed).
Table 3, Continued

Response Surface Tests for Interpersonal and Informational Justice Congruence in Virtual and Face-To-Face Dyads

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<tr>
<th>Response surface parameter</th>
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<td>Slope</td>
<td></td>
<td>b1 + b2 + (b7 + b8)V</td>
<td>-64.65</td>
</tr>
<tr>
<td></td>
<td>Curvature</td>
<td></td>
<td>b3 + b4 + b5 + (b9 + b10 + b11)V</td>
<td>-107.40</td>
</tr>
</tbody>
</table>

Note. FTF = Face-to-face negotiating dyads. VIR = virtual negotiating dyads. DV = Dependent variable. M = Mountain’s ratings of Pinnacle’s interpersonal/informational justice. P = Pinnacle’s ratings of Mountain’s interpersonal/informational justice. V = Negotiation medium, coded such that 0 = face-to-face and 1 = virtual negotiating dyads. * p < .05 (one-tailed).
Figure 2
Effects of Interpersonal and Informational Justice Congruence on Relationship Conflict Moderated by Negotiation Medium

Notes. X-axis is mean-centered Mountain negotiator ratings of Pinnacle negotiator's justice. Y-axis is mean-centered Pinnacle negotiator ratings of Mountain negotiator’s justice. Z-axis is dyadic relationship conflict.


Table 4

*Moderated Polynomial Regression Results of Interpersonal and Informational Justice Congruence on Outcome Inequality*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 3: Interpersonal Justice</th>
<th>Model 4: Informational Justice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Step 1</td>
<td>Step 2</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>SE</td>
</tr>
<tr>
<td>Constant</td>
<td>2303.71*</td>
<td>(489.62)</td>
</tr>
<tr>
<td>Controls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrative potential</td>
<td>297.38</td>
<td>(364.78)</td>
</tr>
<tr>
<td>Power</td>
<td>821.05*</td>
<td>(366.77)</td>
</tr>
<tr>
<td>Mountain gender</td>
<td>-661.40*</td>
<td>(365.71)</td>
</tr>
<tr>
<td>Pinnacle gender</td>
<td>-27.64</td>
<td>(372.80)</td>
</tr>
<tr>
<td>Mountain citizenship</td>
<td>-177.42</td>
<td>(688.57)</td>
</tr>
<tr>
<td>Pinnacle citizenship</td>
<td>-1155.07</td>
<td>(836.35)</td>
</tr>
<tr>
<td>Model Variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$b_1$ Mountain-rated Pinnacle justice (M)</td>
<td>-27.87</td>
<td>(253.25)</td>
</tr>
<tr>
<td>$b_2$ Pinnacle-rated Mountain justice (P)</td>
<td>-24.52</td>
<td>(276.61)</td>
</tr>
<tr>
<td>$b_3$ M$^2$</td>
<td>-0.54</td>
<td>(116.08)</td>
</tr>
<tr>
<td>$b_4$ M × P</td>
<td>-317.51*</td>
<td>(161.65)</td>
</tr>
<tr>
<td>$b_5$ P$^2$</td>
<td>167.40</td>
<td>(115.96)</td>
</tr>
<tr>
<td>$b_6$ Negotiation Medium (V)</td>
<td>360.42</td>
<td>(402.29)</td>
</tr>
<tr>
<td>Moderator Terms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$b_7$ M × V</td>
<td></td>
<td>1.42</td>
</tr>
<tr>
<td>$b_8$ P × V</td>
<td></td>
<td>538.57</td>
</tr>
<tr>
<td>$b_9$ M$^2$ × V</td>
<td></td>
<td>-283.16</td>
</tr>
<tr>
<td>$b_{10}$ MP × V</td>
<td></td>
<td>1278.02*</td>
</tr>
<tr>
<td>$b_{11}$ M$^3$ × V</td>
<td></td>
<td>-798.63*</td>
</tr>
<tr>
<td>F statistic</td>
<td></td>
<td>2.21*</td>
</tr>
<tr>
<td>$R^2$</td>
<td></td>
<td>.10*</td>
</tr>
<tr>
<td>$ΔR^2$ for model variables ($b_1$-$b_6$)</td>
<td></td>
<td>.04</td>
</tr>
<tr>
<td>$ΔR^2$ for moderator terms ($b_7$-$b_{11}$)</td>
<td></td>
<td>.05*</td>
</tr>
</tbody>
</table>

Note. Unstandardized coefficients and standard errors (in parentheses) are displayed. Coding of dummy variables: 0 = distributive; 1 = integrative potential; 0 = equal power and 1 = unequal power; 0 = male; 1 = female; 0 = U.S. citizen; 1 = Non-U.S. citizen; 0 = face-to-face and 1 = virtual. * $p < .05$ (one-tailed).
Figure 3
Effects of Interpersonal and Informational Justice Congruence on Outcome Inequality
Moderated by Negotiation Medium

Notes. X-axis is mean-centered Mountain negotiator ratings of Pinnacle negotiator’s justice. Y-axis is mean-centered Pinnacle negotiator ratings of Mountain negotiator’s justice. Z-axis is outcome inequality.

ratings of their counterpart’s interpersonal and informational justice. Because the degrees of freedom between the hypothesized and reverse causal order models were the same (i.e., the models were not nested), we followed Kline’s (2011) recommendations and prior research comparing non-nested models (e.g., Matta et al., 2017). Specifically, we compared the fit of the hypothesized and reverse causal models using the Akaike information criterion (AIC) and the Bayesian information criterion (BIC) values; the model with the lower AIC
and BIC values demonstrates better fit to the data (Kline, 2011). Results of SEM analyses supported our hypothesized causal order, as it had smaller AIC and BIC values (AIC = 7486.02, BIC = 7567.847) compared to the reverse causal order (AIC = 7528.02, BIC = 7678.58).

Second, we examined the generalizability of our results to the other two dimensions of justice (distributive and procedural justice congruence) as well as to dyadic task conflict.³ Testing the equivalent of Equations 1-4 with moderated polynomial regression revealed that the incremental variance associated with the set of five terms comprising the moderating effect of negotiation medium was not significant in any of these models. That is, we did not find a significant interaction between communication medium and procedural or distributive justice congruence in predicting relationship conflict or outcome inequality, nor did we find a significant interaction between communication medium and interpersonal, informational, distributive, or procedural justice congruence in predicting task conflict.

Third, while our hypotheses were oriented around congruence compared to incongruence, regardless of the level of justice, our data also lets us test congruence at each level of justice—that is, comparing positive and negative reciprocity scenarios from Figure 1 Quadrants 1 and 2. In supplemental analyses, we compared dyadic congruence on high justice with congruence on low justice in terms of their effects on relationship conflict and outcome inequality. This highlights when interactional justice congruence was most beneficial (i.e., when both negotiators’ perceptions were low or high) and was tested by examining whether the slope along the congruence line, computed as \((b_1 + b_2)\) for face-to-face dyads and \([b_1 + b_2 + (b_7 + b_8)]\) for virtual dyads, was negative and significant (Edwards, 1996; see also Edwards, 2002). For relationship conflict, as seen in Table 3 in Models 1 and 2, both face-to-face and virtual dyads had a negative and significant slope along the interpersonal and informational justice congruence lines. This effect can also be seen in all four quadrants of Figure 2, such that relationship conflict was higher in the left front corner of the plots (i.e., reciprocated low justice) compared to the back right corners (i.e., reciprocated high justice), regardless of medium. As such, across both face-to-face and virtual dyads, among dyads with congruent justice perceptions (i.e., negotiators’ interpersonal and informational justice ratings that were low-low and high-high, or anywhere in between), those who were equally low in justice (i.e., low-low) toward each other had greater relationship conflict than those who were equally just (i.e., high-high). For outcome inequality, the results in Table 3 (Models 3 and 4) revealed that neither face-to-face nor virtual dyads had a significant and negative slope along the congruence line. This is also shown in all quadrants of Figure 3, where outcome inequality was not higher in the front left corners (i.e., congruence in low justice) than it was in the back right corners (i.e., congruence in high justice). Thus, dyads in which Mountain and Pinnacle were both disrespectful and deceptive (i.e., congruence on low interpersonal and informational justice) had equally low outcome inequality as dyads in which Mountain and Pinnacle were both respectful and truthful toward each other (i.e., congruence on high interpersonal and informational justice).

While Hypotheses 3 and 4 focused on outcome inequality, it is logical to ask whether joint gain (i.e., outcome quality in terms of mean points earned by the dyad) differed between dyads congruent on high interactional justice and dyads congruent on low interactional justice. Thus, in a fourth set of supplemental analyses, we examined this using polynomial regression and response surface methodology. A positive significant slope along the congruence line would indicate that among dyads with interactional justice congruence, congruent-and-high justice dyads earned more mean points than congruent-and-low justice dyads.

³ We used Colquitt’s (2001) subscales to measure distributive justice (α = .92) and procedural justice (α = .76). Jehn’s (1995) 3-item task conflict scale was used (α = .79) and aggregated to the dyadic level similar to relationship conflict in the main analyses, given that ICC(1) for task conflict was significant, ICC(1) = .34, \(F = 2.05, p < .001\), ICC(2) = .51, and \(r_{wg} = .53\), which indicated moderate agreement (LeBreton & Senter, 2008; Woehr et al., 2015).
dyads. Among face-to-face dyads, the slope along the congruence line was positive and significant for interpersonal justice, \((b_1 + b_2) = 210.60, p = .046\), and informational justice, \((b_1 + b_2) = 177.19, p = .034\). Among virtual dyads, the slope along the congruence line was not significant for interpersonal justice, \([b_1 + b_2 + (b_7 + b_8)\] = 78.34, \(p = .343\), or informational justice, \([b_1 + b_2 + (b_7 + b_8)\] = 67.22, \(p = .641\). Although the results corresponding to Hypothesis 3 showed that outcome inequality was minimized in face-to-face dyads with congruence on interpersonal justice, this set of supplemental analyses shows that of congruent dyads, those high in interpersonal or informational justice had greater joint gain than those low in interpersonal or informational justice—but only in face-to-face dyads; for virtual dyads; joint gain did not differ between congruent-and-low and congruent-and-high dyads for either justice dimension.

**Discussion**

At the outset, we asked whether justice needs to be in the eyes of both beholders and whether this depends on communication medium. We explored these questions by integrating theory on reciprocity (Gouldner, 1960) with media richness theory (Daft & Lengel, 1986) to develop the notion of dyadic justice congruence. Our work illustrates the importance of interactional justice congruence in face-to-face dyadic negotiations. Findings from face-to-face and virtual negotiation samples revealed that face-to-face negotiators’ relationship conflict and outcome inequality were minimized when perceptions of each other’s interactional justice were reciprocated—even if they were both low. Specifically, negotiation medium moderated the effects of interpersonal justice congruence on relationship conflict and outcome inequality as well as the effects of informational justice congruence on outcome inequality, such that congruence effects were significant only in face-to-face negotiations. This highlights the importance of dyadic congruence in interactional justice perceptions for face-to-face negotiations. Results of our supplemental analyses ruled out the possibility of a general “halo” of justice as an explanation, as our effects occurred only with the more encounter-based forms of justice that are salient in communications (i.e., interpersonal and informational; Bies, 2005; Scott et al., 2007) and the “people-related” form of conflict (relationship conflict, Jehn, 1995).

Our consideration of interactional justice congruence and its effects across negotiation media makes several contributions. First, we contribute to the justice and social exchange literatures by using a dyadic approach to investigate reciprocity: examining justice congruence using polynomial regression and response surface methodology. In doing so, we examined how justice operates in dyads at each level of interactional justice, which revealed insights that challenge conclusions in the justice literature. Our approach stands in contrast to prior research that examined only one individual’s perception of the exchange. We found that interactional justice congruence, even on low justice, is preferable for face-to-face negotiators’ dyadic social-psychological and economic outcomes. This finding is novel to the justice literature, which has largely focused on individual-level perceptions and has concluded that high justice is generally preferable.

We also contribute to research on negotiation medium by blending reciprocity arguments with media richness theory (Daft & Lengel, 1986). Based on tenets of information richness theory and the capacity for mutual understanding across communication media, we theorized that face-to-face negotiators would benefit from justice congruence more than virtual negotiators. In other words, in virtual negotiations, even if interactional justice congruence was achieved, it may be less obvious to the negotiators and have little effect on their relational and economic outcomes. Indeed, our dyadic analyses using moderated polynomial regression and response surface methodology offered overall support for the notion that the benefits of reciprocity in justice perceptions were stronger in face-to-face negotiations than in virtual negotiations.

While congruence was usually better than incongruence in face-to-face negotiations, our supplemental analyses pointed to additional noteworthy findings. Specifically, relationship conflict perceptions were higher in dyads in which both negotiators’ interactional justice perceptions were low,
Does Justice Need to be in the Eyes of Both Beholders?

Examining Face-to-Face and Virtual Negotiators’ Interactional Justice Congruence

Kleshinski, Wilson, DeRue, & Conlon

compared to those in which both negotiators’ perceptions were high. This is not surprising and is consistent with extant findings on the positive effects of justice on relationships (Colquitt et al., 2001, 2013; Rupp et al., 2014). Perhaps more surprising is that there was no difference between dyads with congruence on low or high justice in terms of outcome inequality. This finding is interesting and novel because prior justice research would suggest that higher justice is always better (Colquitt et al., 2001, 2013; Rupp et al., 2014). Challenging this assumption, we find that what matters most for negotiators’ outcome inequality is dyadic reciprocity in justice perceptions, regardless of justice level.

Why would this be the case? In terms of relationship conflict, because both negotiators can see, feel, or interpret this information from the process they engaged in, they are likely aware of tension in their negotiation, particularly for face-to-face exchanges, consistent with media richness theory (Daft & Lengel, 1986). On the other hand, how well each party did in terms of outcomes (and whether an inequality exists between them) was more of a mystery to the negotiators. Although negotiators knew each other’s settlement positions, they did not typically know how much value settlement positions provided to their opponent. Thus, the relative level of insight parties had about their relationship conflict, as opposed to settlement values, may explain the different patterns. While outcome inequality may be the same when comparing similarly high justice and similarly low justice dyads, high justice dyads in face-to-face negotiations collectively earned more mean points, suggesting that situations with respect and truthfulness still offered a greater opportunity for joint gain, which may be reassuring.

Practical Implications

Our findings suggest that negotiators should be deliberate in their selection of communication medium based on how likely they are to treat each other with similar levels of interactional justice, particularly if minimizing relationship conflict and outcome inequality are important. For instance, face-to-face negotiations would be preferable if dyad members are similar in ways that shape their respect or truthfulness toward the other party, such as similarity in the personality trait of straightforwardness (DeRue et al., 2009) or cultural background (Gelfand et al., 2002). These attributes could affect whether negotiators are inclined to be similarly truthful or respectful, whereas negotiating virtually may be best when two parties are unable or unlikely to treat each other equally fairly. Of course, learning about one’s personality or culture-based characteristics may only occur over time, so it may be that effectively matching negotiation medium to the situation is difficult to do the first time people negotiate with each other. Once initial learning has occurred, it may be a more optimal strategy. Overall, our findings suggest that virtual negotiators might not experience the dyadic benefits of interactional justice congruence yet are more likely to avoid the costs of incongruence.

Moreover, our findings offer implications for negotiation training. Because we found that congruence in perceptions of respect and transparency in face-to-face dyads is associated with beneficial outcomes, negotiators can be trained to identify and reciprocate their counterpart’s interactional justice, even if it is low. When faced with a counterpart low in justice, the most promising path forward is to adopt that counterpart’s behavior to protect one’s interests. While this may appear counterintuitive, it is consistent with the idea in the popular press that “when someone is arguing in bad faith, you cannot beat them by arguing in good faith” (Douglas, 2019). Likewise, negotiators who are paired with a just and reasonable counterpart would be advised to reciprocate this behavior, or risk experiencing harmful mutual outcomes. Importantly, our findings do not imply that organizations should blindly encourage mutually low justice or other negative behavior between employees, which may fuel a negativity spiral (Greco et al., 2019). Instead, our results add that in dyadic negotiations, it is important to closely monitor one’s counterpart’s behavior and its interplay with one’s own. Virtual negotiators might also be trained to explicitly communicate to improve the clarity of their justice cues, which could also hold an added benefit of reducing deception (Schweitzer & Croson, 1999).
In the absence of a face-to-face option, perhaps a more information-rich virtual negotiation medium (e.g., video call) would be preferable over the leaner virtual communication medium of instant messaging.

**Limitations and Future Research Directions**

While our study offers multiple strengths, including the use of moderated polynomial regression and response surface methodology to examine dyadic justice congruence across negotiation media as well as our use of multiple sources and social-psychological and economic outcomes, it nonetheless presents limitations. First, one might question the generalizability of upper-level undergraduate business student samples. While participants might not have direct experience with the merger/acquisition scenario in the simulation, they were likely familiar with the concepts from their business courses and may have experience with negotiating salary or start date (examples of issues in the simulation) for an entry-level job (Babcock & Bear, 2017). Nevertheless, future research should test whether our findings hold across non-student samples and relational and cultural contexts outside the lab. One approach is to account for indicators of “socially embedded transactions” (Thompson et al., 2010, p. 500; see also McGinn & Keros, 2002), such as task interdependence, relational closeness, and potential future relationships (Hart & Schweitzer, 2020, 2022) that may influence the effects of justice congruence. Future research should examine whether negotiators in such contexts would still benefit from congruence on low justice when face-to-face, or alternatively, benefit from justice congruence in virtual settings. Another approach is to consider how the effects of justice congruence across communication media may unfold differently according to negotiators’ cultural values, particularly collectivism-individualism, and unfold across intracultural (i.e., negotiators share the same cultural values) versus intercultural contexts (i.e., negotiators differ in their cultural values) (e.g., Brett & Thompson, 2016; Gelfand & Christakopoulou, 1999; Liu, 2019; Liu et al., 2012).

Second, justice was measured at the end of the simulation, reflecting negotiators’ overarching justice perceptions from the entire set of deliberations. Given that this may elicit concerns about our hypothesized causal order, following prior research, we compared the hypothesized and reverse causal order using SEM (Kline, 2011; Matta et al., 2017), which supported our proposed ordering. However, future research is needed to further bolster this direction of effects. One fruitful approach is to conduct an experiment manipulating interactional justice congruence and negotiation medium (e.g., a 2x2x2 between-subjects design, where participants are assigned to virtual or face-to-face, instructed to enact low or high interactional justice, and paired with a confederate counterpart who enacts low or high interactional justice, resulting in congruence conditions mirroring the 4 scenarios outlined in Figure 1 across virtual and face to face settings). In addition, it is possible that interactional justice congruence could vary over the course of deliberations, such that congruence in negative perceptions would eventually take a toll. We encourage future research to adopt a dynamic, event-based approach to multi-issue negotiations with experience sampling methodology and dyadic samples by examining justice after each issue is concluded (e.g., Gabriel et al., 2019). Such an investigation could also explore how and why dyadic congruence in justice perceptions emerges. Congruence antecedents could be examined by integrating our findings with work on cognitive and affective justice motives (e.g., Scott et al., 2014) and the strategic use of fairness in bargaining (van Dijk et al., 2004). For instance, perhaps congruence arises from strategically calibrating reciprocity (more motivated by cognition) or from affect contagion (Barsade & Knight, 2015; Butt et al., 2005) between negotiators.

Third, although we compared two communication media (instant messaging and face-to-face) that are toward disparate ends of the information richness spectrum (Daft & Lengel, 1986; Purdy et al., 2000), we did not examine other media such as video and telephone calls, and encourage future research to pinpoint which specific cues (e.g., vocal tone, facial expressions, hand gestures) facilitate the effects we found. In terms of information richness, video-based communication is theorized to lie somewhere between text-based and face-to-face communication (Daft & Lengel, 1986; Rockmann & Northcraft, 2008). Virtual
communication, including instant messaging and other forms of text-based communication (Gajendran et al., 2022) and video-based communication through platforms such as Zoom and Microsoft Teams, have grown in recent years, largely due to the increase in remote work associated with the COVID-19 pandemic (Igielnik, 2022; Parker et al., 2020). However, recent research suggests that although it may be more information-rich, video communication introduces nonverbal cues that are more difficult to interpret, which contributes to the experience of “Zoom fatigue” and increased cognitive demands (Bennett et al., 2021; Shockley et al., 2021), which represent another important feature of negotiation medium to consider. Such increased cognitive demands of video-based communication may counteract benefits of increased information richness, particularly when processing complex social information such as interactional justice cues during negotiations and other relatively high stakes situations. Yet, video-based negotiations remain poorly understood, as so few articles using them have been published in recent years, further underscoring the importance of future research in this area.

Relatedly, we relied on media richness theory to propose how and why face-to-face and instant messaging would differ in their effects of justice congruence; however, we did not measure the four characteristics that determine the richness of these two communication media (synchronicity or velocity of information transmission, number of cues, natural language, and personalization; Daft & Lengel, 1986; Dennis et al., 2008). Recent research building from media theories has also shown that text-based communication, including instant messaging, is more cognitively difficult and has been associated with reduced motivation maintenance after the communication occurs (Gajendran et al., 2022). We encourage future work to explicitly measure these characteristics to more fully explain why dyadic negotiations conducted face-to-face and through instant messaging differ in their effects, and which characteristics are most conducive to the beneficial effects of dyadic interactional justice congruence.

At the outset, we theorized that a dyadic lens of justice would show that low and high justice are less harmful and beneficial, respectively, than currently conceptualized in the justice literature. To make our case, we focused on both relational and economic outcomes that are generally harmful at the dyadic level: relationship conflict and outcome inequality. Although our assumptions about the harmful nature of such outcomes were grounded in social exchange theory and prior research (e.g., de Wit et al., 2012), there exists a small body of research that has pointed to several relational boundary conditions to the harmful effects of relationship conflict on group outcomes (Rispens, 2014). For example, high task interdependence buffered the negative effect of relationship conflict on trust (Rispens et al., 2007) and high relational closeness buffered the negative effect of relationship conflict on helping behavior (Rispens et al., 2011). As another example, the conflict management literature has suggested the way conflict is handled (e.g., high collaboration and low avoidance) can determine whether it is ultimately harmful or beneficial (Kay & Skarlicki, 2020; Tjosvold et al., 2014). Similarly, to the degree that negotiations and the outcomes that result from them also carry important symbolic, processual, or relational outcomes that are not incorporated directly in the issues being discussed, the amount of inequality reflected in the negotiated settlement may be less important than other elements, such as a reaffirmation that the parties share power and make decisions with input from both sides (Hart & Schweitzer, 2022). Accordingly, we acknowledge that situations may exist where relationship conflict and outcome inequality are not as harmful as conceptualized in our model.

In conclusion, our findings show that both high and low justice can be beneficial when they are seen in the eyes of both beholders. We found that outcome inequality was minimized when face-to-face negotiators’ perceptions of each other’s interpersonal and informational justice are congruent, even on low justice. Relationship conflict was also minimized when interpersonal justice perceptions were congruent, with the caveat that dyads with congruence on high justice had lower conflict and greater joint value than those with congruence on low justice. Our dyadic approach identifies circumstances when justice in negotiations is constructive, and when it’s not.
Does Justice Need to be in the Eyes of Both Beholders?
Examining Face-to-Face and Virtual Negotiators' Interactional Justice Congruence

References


Does Justice Need to be in the Eyes of Both Beholders?
Examining Face-to-Face and Virtual Negotiators’ Interactional Justice Congruence


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