

Multi-issue offers strategy and joint gains in negotiations: How low-trust negotiators get things done

Jingjing Yao^a, Jeanne M. Brett^b, Zhi-Xue Zhang^{c,*}, Jimena Ramirez-Marin^a

^a IESEG School of Management, France

^b Kellogg School of Management, Northwestern University, United States

^c Guanghua School of Management, Peking University, China

ARTICLE INFO

Keywords:

Negotiation
Trust
Multi-issue offer
Meta-analysis
Joint gains
Holistic mindset

ABSTRACT

In three studies, we investigate a new low-trust path to negotiate joint gains. Study 1 used meta-analytical evidence to establish that frequent use of multi-issue offers (MIOs) predicts joint gains, even after controlling for use of information sharing. Study 2 used a senior manager sample and showed that low-trust negotiators used MIOs more frequently than high-trust negotiators, and negotiators who use MIOs and also processed information with a holistic rather than analytic mindset generated more accurate insight and higher joint gains. Study 3 used an experimental design and examined the full path through which low-trust negotiators rely on MIOs to develop insight and reach joint gains. By proposing and testing a new low-trust path to joint gains, this research increases our understanding of trust in negotiations and provides practical advice for negotiators who are themselves low-trust or who face low-trust counterparts.

1. Introduction

Achieving high joint gains is the ultimate goal for many negotiators, because doing so takes maximum advantage of available resources and builds long-term relationships (Raiffa, 1982). Trust, the intention to accept vulnerability (Rousseau et al., 1998), is a key facilitator of joint gains in negotiation (Kong et al., 2014), because it motivates negotiators to share and reciprocate information about interests and priorities (Butler, 1995; Gunia et al., 2014; Kimmel et al., 1980). With such information, negotiators develop insight, “understanding of mutually beneficial tradeoffs” (Gunia et al., 2011, p. 774), propose trade-offs, and reach high joint gains (Pruitt, 1981). This is the well-documented high-trust path to joint gains.

However, for cultural, situational, and dispositional reasons, low trust is very common in negotiations (e.g., Gunia et al., 2014; Johnson & Mislin, 2011), and it is also unrealistic to expect negotiators always to be able to build trust at the table (Lewicki et al., 2006). Thus, it is natural to wonder whether low-trust negotiators are fated to achieve low joint gains. Even though low-trust negotiators are reluctant to share information directly due to the fear of being exploited (Pruitt, 1981), it is natural that they want to reach an agreement and they may be interested in joint gains (Pruitt & Lewis, 1975; Sinaceur, 2010). The question

motivating this research is whether low-trust negotiators can achieve high joint gains by using an alternative strategy to information sharing. The empirical research does not address this question, perhaps because most of the trust and negotiation studies used Western culture samples, whose interpersonal trust is relatively high (Fukuyama, 1995; Brett et al., 2017).

Drawing on the classic but rather overlooked theory on multi-issue offers (MIOs) (Kelley, 1966; Pruitt, 1981; Pruitt & Lewis, 1975; Walton & McKersie, 1965), we propose a low-trust path to joint gains that relies on use of MIOs coupled with holistic information processing. The MIOs strategy is goal-oriented behavior (Weingart et al., 1999) that frequently propose offers which include more than one issue in the negotiation. Holistic information processing is an approach to reasoning that searches for complementarity in contradictions and considers both focal objects and the context in which they are embedded (Nisbett et al., 2001). The literature has documented that making trade-offs between two integrative issues facilitates joint gains (Thompson et al., 2010). However, before negotiators know what trade-offs to propose, they usually need to sharing information to gain insight into their own versus the counterpart's relative priorities. In this research, we do not focus on trade-offs, but rather focus on negotiators' use of any MIOs. We propose that negotiators spontaneously exchanging a series of MIOs can

* Corresponding author.

E-mail addresses: j.yao@ieseg.fr (J. Yao), jmbrett@kellogg.northwestern.edu (J.M. Brett), zxzhang@gsm.pku.edu.cn (Z.-X. Zhang), j.ramirez@ieseg.fr (J. Ramirez-Marin).

<https://doi.org/10.1016/j.obhdp.2020.10.012>

Received 18 December 2018; Received in revised form 24 August 2020; Accepted 19 October 2020

Available online 5 November 2020

0749-5978/© 2020 Elsevier Inc. All rights reserved.

negotiate higher joint gains by developing insight indirectly from the exchange of MIOs, especially if they process information holistically.

We report three studies testing hypotheses concerning the use of MIOs and joint gains in the negotiation. The first study uses a meta-analysis to assess whether the MIOs strategy is a viable alternative to information sharing for generating joint gains. The second study builds on this foundation and examines who tends to use MIOs (low-trust negotiators), why relying on this strategy increases joint gains (insight), and when this strategy helps negotiators develop insight (process information holistically). The third study uses an experimental design to establish the causal link between trust and the use of MIOs. It replicates all the findings of Study 2 and tests the full path from low trust to joint gains.

This research makes three contributions to negotiation theory. First, multi-issue offers (MIOs), single-issue offers (SIOs), and mixed offers (comprising both MIOs and SIOs) have different effects on joint gains. We conclude that negotiation researchers should not combine MIOs and SIOs theoretically or methodologically. Second, low-trust negotiators can use MIOs as a strategic alternative to information sharing for negotiating joint gains. This research integrates the well-known high-trust path to joint gains with a new low-trust path to joint gains into one comprehensive model that explains the complex relationship between trust and joint gains in negotiation. Third, negotiators using MIOs and who process information from MIOs holistically generate insight and hence joint gains. In addition, this research also has theoretical implications for the trust and mindset literatures. By showing low trust prompts negotiators to use alternative strategies to reach their goals, it acknowledges the common existence and illuminates the special nature of low trust. By showing that a holistic mindset shapes people's information processing in negotiation, this research extends the mindset literature from its focus on perception and decision making to social interaction.

2. Hypothesis development

2.1. Theoretical background of MIOs

Walton and McKersie (1965) proposed two different processes to facilitate high joint gains in negotiations: accurate exchange of information about utility structures (i.e., information sharing) and simultaneous consideration of issues (i.e., MIOs). Pruitt and Lewis (1975) studied both strategies and concluded: “some degree of trust is likely to be a prerequisite to such an exchange of information” (p. 622) and a “certain minimum amount of information must be received before the typical bargainer can gain enough insight into his opponents' profit structure to devise an integrative option” (p. 628). Pruitt and Lewis (1975) appear to have provided the first full description of the high-trust path to joint gains: trust leading to information sharing leading to insight into the counterpart's profit structure to joint gains. A meta-analysis documents this high-trust path to joint gains (Kong et al., 2014).

Regarding simultaneous consideration of issues, Pruitt and Lewis (1975) observed negotiators seeking each other's reactions to a variety of MIOs. They also noted that negotiators taking “this approach also tend to concede systematically, exploring a variety of options at one profit level before moving to a lower level” (p. 632). They named this approach heuristic trial and error, linking it closely to Kelley's (1966) systematic concession model: concede slowly on low priority issues while hold firm on high priority issues. Pruitt (1981) found negotiators using this strategy reached joint gains without insight, implying that this was a mechanical process.

Some subsequent studies manipulated use of MIOs by requiring negotiators to either negotiate one issue at a time or only make MIOs. These studies find that negotiators making MIOs out-perform those negotiating one issue at a time (Mannix et al., 1989; Yukl et al., 1976). Researchers attributed this result to the structural difference between the two conditions: agreeing on one issue prior to moving to discuss the

next issue inhibits making trade-offs, while being required only to make MIOs facilitates mechanical trade-offs (Weingart et al., 1993). Leonardelli et al. (2019) manipulated the first offer, in conditions of either a single or multiple MIOs. They found that the first offer in the multiple MIOs condition had a stronger anchoring effect than the first offer single MIO condition, but the effects on joint gains were largely mixed across studies.

Other studies that measure negotiators' spontaneous use of MIOs report inconsistent relationships between the use of MIOs and joint gains. For example, the relationship was negative in Weingart et al. (1990), positive in Liu and Wilson (2011), and not significant in Cai et al. (2000). Perhaps because of the variable evidence on the efficacy of use of MIOs in the face of evidence that high trust facilitates information sharing, insight, and joint gains (e.g., Butler, 1995; Gunia et al., 2011; Kimmel et al., 1980), research on MIOs waned.

2.2. MIOs and joint gains

Drawing on the classic yet mostly overlooked theory of MIOs, we propose that negotiators can use MIOs to facilitate joint gains in two ways. One is the mechanical heuristic trial and error process (Pruitt & Lewis, 1975) that follows Kelley's (1966) concession model. For example, Pruitt (1981) reported that some negotiators in his lab studies used heuristic trial and error processing mechanically to reach joint gains. The other is the insightful inference from indirect information embedded in MIOs. For example, Pruitt (1981) also pointed out, “the nature of the proposal itself is bound to provide some information about motives, in terms of what is demanded in contrast to what might have been asked” (p.173). In other words, a negotiator could draw inferences about the counterpart's priorities by comparing what the counterpart proposed in the MIO to what the counterpart could have proposed in the MIO. By drawing such inferences, the negotiator would be gaining insight into the counterpart's priorities and identify trade-offs.

In contrast, SIOs have neither the mechanical nor the informational characteristics. A comparison of positions within one SIO or concessions across a series of SIOs only reveals preferences among options for one particular issue (Henderson et al., 2006; Hyder et al., 2000), but comparing positions within and across MIOs reveals trade-offs. Also, using SIOs to negotiate one issue at a time can lead to a spiral of defensive arguments, substantiations (Weingart et al., 2007) and even impasse (Weingart et al., 1993), which may distract the negotiator from the cognitive work of using information embedded in offers to infer priorities and identify trade-offs. For example, negotiators who made only SIOs generated more impasses or poorer joint gains than those who made only MIOs (Yukl et al., 1976). Thus, we propose that negotiators who frequently use MIOs will reach higher joint gains.

H1: Negotiators' use of MIOs will increase joint gains.

We also propose that using of MIOs to negotiate joint gains is a strategic process independent of information sharing and competitive behavior. The central feature of the MIOs strategy is an exchange of indirect and implicit information about priorities that leads to insight and joint gains. On the contrary, the central feature of information sharing is a direct and explicit exchange of information about interests and priorities that leads to insight into potential trade-offs (Pruitt, 1981; Thompson & Hastie, 1990). Negotiators who rely on direct information sharing may use MIOs to consolidate information, but those who do not use direct information sharing can still rely on MIOs to identify trade-offs indirectly. Thus, negotiators may use both strategies, but how they obtain information, directly/explicitly versus indirectly/implicitly, are fundamentally different.

Competitive behavior in negotiation refers to attempts to influence the counterpart to make concessions (Gunia et al., 2011). In theory, competitive behavior may provide indirect information about a negotiator's priorities. Pruitt (1981:173) observed, “the substance of the arguments employed to defend one's position almost necessarily reveal (s) something about the nature of the motives underlying this position”.

This implies that negotiators do not defend positions on issues that are unimportant to them. However, competitive behavior focuses negotiators on defending their own priorities and influencing their counterparts to make concessions (Tinsley et al., 2002), not on seeking to understand the counterpart's priorities. Even if there is indirect information about priorities embedded in competitive behavior, research suggests that negotiators who engage in competitive behavior generate low joint gains (Kong et al., 2014). In sum, we propose that use of MIOs can facilitate joint gains after controlling for both information sharing and competitive behavior.

H2: Negotiators' use of MIOs will increase joint gains after controlling for the effects of information sharing and competitive behavior.

2.3. MIOs and joint gains through insight

Insight is the key to joint gains, because it captures negotiators' correct understanding of "how to integrate these utility structures" (Pruitt & Lewis, 1975, p. 626) and of "priority judgments in negotiation" (Thompson & Hastie, 1990, p. 101). Insight is the mechanism underlying the relationship between direct information sharing and joint gains (Olekals & Smith, 2003a, 2003b; Pruitt & Lewis, 1975; Thompson & Hastie, 1990). We propose that insight is also one important mechanism by which negotiators using MIOs will generate joint gains.

Negotiators do not always recognize their own priorities (Ury, 2016), but using a series of MIOs can help negotiators to do so. For example, to make concessions from a self-interested MIO that is favorable to the negotiator on every issue, the negotiator needs to focus on own priorities and identify the less important issue to concede. In doing so, the negotiator is using normal perceptual processes by which people confirm or disconfirm their perceptions by drawing inferences from their own behaviors (Olson & Stone, 2005; Stukas & Snyder, 2002). This process of using MIOs to identify concessions should help negotiators better understand their own priorities (Ritov & Moran, 2008).

Proposing and counter-proposing MIOs can help negotiators understand their counterparts' priorities. If counterparts are conceding rationally on low priority issues and holding firm on high priority issues, there is implicit information about the counterparts' priorities embedded in the pattern of their concessions across a series of MIOs. Negotiators can build insight into their counterparts' priorities by deliberately comparing the concessions the counterpart has and has not made across a series of MIOs. Negotiators can test their insight into the counterpart's priorities by proposing MIOs that reflect that insight or by proposing multiple differentially configured MIOs. Understanding the differences among multiple MIOs, whether negotiators make them sequentially or simultaneously provides negotiators with insight into optimal trade-offs (Bazerman, 1990; Leonardelli et al., 2019). Drawing on insight, negotiators can propose trade-offs that give both parties' favorable terms on their highest priority issues, thereby creating value for both parties.

H3: Negotiators' use of MIOs will increase joint gains through insight.

2.4. Holistic mindset as a moderator

We propose that negotiators who process information holistically will be particularly adept at generating insight from MIOs. Pruitt (1981) suggested that extracting implicit information from offers and competitive behavior requires significantly more cognitive effort than acquiring information by asking and answering explicit questions. Whether negotiators develop insight from their use of MIOs may depend not only on how frequently they exchange MIOs, but also on their ability to infer the counterpart's priorities from implicit information embedded in MIOs. The relationship between use of MIOs and insight may depend on whether the negotiator can process implicit information effectively.

A mindset is a system of thought that directs attention and structures reasoning while processing information (Nisbett et al., 2001). Holistic and analytic mindsets represent fundamentally different cognitive

processes. A holistic mindset is an approach to reasoning that searches for complementarity in contradictions and considers both focal objects and the contexts in which they are embedded (Nisbett et al., 2001). An analytic mindset is an approach to reasoning that is linear, focusing on independent objects and their attributes. People with a holistic mindset attend to the relationships between focal objects and their contexts using associative and dialectical reasoning to understand situations (Miyamoto et al., 2006). People with an analytic mindset assign objects to categories based on the object's attributes and use formal logic and rules to understand situations. When confronted with different perspectives, people who are processing holistically are likely to search for a means of transcending the contradictions, but people processing analytically may prefer to choose one perspective to another (Nisbett et al., 2001).

Given that the issues in negotiations with integrative potential are interdependent rather than independent, negotiators who process information holistically should have an advantage in generating insight. Ritov and Moran (2008, p. 340) point out, "making integrative offers in multi-issue negotiations requires negotiators to consider the value of the agreement as a whole, rather than each issue separately." Holistic mindset encourages negotiators to emphasize the whole package over negotiation details separately (Graham & Lam, 2003). Negotiators with a holistic mindset should be cognitively suited to examine the associations within, between, and among MIOs and identify their similarities and importantly their differences (Moran & Ritov, 2002). In contrast, processing information analytically requires people to separate different objects according to their attributes and features (Ji et al., 2000; Nisbett et al., 2001), and this may encourage negotiators to treat issues independently of each other and to address issues sequentially, thereby using more SIOs rather than MIOs (Adair et al., 2007; Weingart et al., 1993). Even when receiving an MIO, analytic mindset negotiators may focus on the separate offers embedded in the MIO, distracting them from drawing inferences about relative priorities, and hindering insight development (Gelfand & Dyer, 2000). Thus, we predict that processing information holistically will facilitate the relationship between use of the MIOs and insight.

H4: Negotiators' holistic mindset will facilitate the relationship between their use of MIOs and insight.

2.5. The Low-trust path to joint gains

High-trust negotiators usually engage in information sharing about interests and priorities, which in turn, generates insight and joint gains (Kong et al., 2014). Information sharing is an efficient and effective strategy for high-trust negotiators who are not overly concerned about their counterparts exploiting the shared information. Thus, high-trust negotiators' preference for direct information sharing should lower their reliance on the MIOs strategy. However, low-trust negotiators are generally suspicious about the counterparts' goodwill (Yao et al., 2017) and reluctant to share information that may be exploited (Gunia et al., 2011; Olekals & Smith, 2009). Since reciprocity is a major mechanism underlying information sharing in negotiation (Weingart et al., 1990; Adair & Brett, 2005), if one low-trust negotiator refuses to share information, the counterpart is unlikely to do so. This means that low-trust negotiators who withhold information can avoid exploitation, but their behavior reduces the likelihood of learning about their counterparts' priorities directly (Gunia et al., 2011; Kimmel et al., 1980).

The MIOs strategy should be ideal for low-trust negotiators who need a strategy to gather information about the counterparts' priorities other than direct information sharing. Using MIOs avoids divulging too much explicit information (Murnighan et al., 1999) but also provides implicit information to negotiators who choose to engage in second-level information processing to infer priorities from the patterns of MIOs (Adair et al., 2001). Using MIOs protects low-trust negotiators because a negotiator's position on one issue depends on the negotiator's position on the other issues (Ritov & Moran, 2008). Negotiators can also use MIOs to make concessions on low priority issues while holding firm on high

priority issues (Kelley, 1966). In sum, because using MIOs provides low-trust negotiators with an approach to making concessions that reduces their risk of exploitation, we propose that low-trust negotiators will use MIOs relatively more than high-trust negotiators.

H5: Low-trust negotiators will use more MIOs than high-trust negotiators.

Fig. 1 displays our theoretical model proposing how and when low-trust negotiators can generate insight and reach high joint gains. It proposes that use of MIOs will generate insight (H3); mindset will moderate the relationship between use of MIOs and insight, such that a holistic mindset will facilitate insight from use of MIOs (H4); and trust will have a negative relationship with use of MIOs (H5).

3. Overview of studies

We conducted three studies with different methods to deepen our understanding of the MIOs strategy. Study 1 is a meta-analysis that tests H1 and H2 to establish the foundation of the relationship between use of MIOs and joint gains, independent of the effects of information sharing and competitive behavior. Study 2 is a correlational study that measures trust and tests H3 to H5. It mainly relies on individual-level analyses to test the relationships among trust, use of MIOs, holistic mindset, and insight. Study 3 is an experiment that manipulates trust, thereby establishing a causal relationship between trust and use of MIOs. Study 3 mainly relies on dyad-level analyses to test the full low-trust path to joint gains. The data and materials of this research are all available in publicly accessible online repositories at <http://bit.ly/LowTrustJG>.

4. Study 1

Study 1 is a meta-analysis of the effects of use of MIOs, SIOs, mixed offers (when researchers do not distinguish between MIOs and SIOs), information sharing, and competitive behavior on joint gains.

4.1. Methods

4.1.1. Literature search and inclusion criteria

Fig. 2 summarizes the search process used to identify 25 published and unpublished papers reporting correlations between type of offers (MIOs, SIOs, or Mixed) and joint gains or Pareto efficiency from negotiation simulations with integrative potential. It lists the databases we searched, the keyword strings we used, our inclusion and exclusion criteria, and why and how many papers we excluded. Two authors independently reviewed the papers identified in the keyword string search. Their inclusion agreement was 100%. When a paper fit the search criteria but did not report the appropriate correlations, we contacted the authors for their data.

The data set has 42 independent samples ($N = 1,728$ dyads) from 25 papers. These samples represent a range of publication status (7 unpublished; 35 published), cultural types (35 intra-cultural; 6 inter-cultural; 1 multi-cultural), participant populations (13 undergraduate; 11 MBA; 14 executive; 4 mixed populations), and study settings (13 experiments; 29 field studies).

4.1.2. Variable coding

4.1.2.1. *Independent variables.* Two authors working separately identified correlations between joint gains or Pareto efficiency and the following set of independent variables: mixed offers (SIOs and MIOs combined), single-issue offers (SIOs), multi-issue offers (MIOs), information sharing (or integrative, value creating strategy), and competitive behavior (or distributive, value claiming strategy). Information sharing included variables coded as asking and answering questions about interests and priorities (Weingart et al., 1990). Competitive behavior included variables coded as emotional tactics, appeals to logic, influence tactics (putdowns, demands, threats) (Weingart et al., 1990). Authors consulted on coding that required selecting an indicator from among several options or combining indicators (e.g., Pruitt & Lewis, 1975). The studies in the data set used behavioral coding to measure strategies and operationalized strategies as the frequency of use of strategy to the total number of speaking turns.

We recorded when a study reported the reliability of its coding of each independent variable, usually a Cohen's κ assessing the interrater agreement. We followed Hunter and Schmidt's (2004) approach to correct correlations between joint gains and strategy for attenuation by dividing all effect sizes by the square root of the reliability estimates of the correlated variables. As some studies provided no reliability coefficients, we followed Hunter and Schmidt's (2004) recommendation to replace missing reliability data with the average reliability of that variable in the data set. We replaced 1/20 missing reliability coefficients for mixed offers ($\alpha = 0.74$), 3/14 for SIOs ($\alpha = 0.82$), 6/22 for MIOs ($\alpha = 0.83$), 4/39 for information sharing ($\alpha = 0.77$), and 3/31 for competitive behavior ($\alpha = 0.75$). We assigned joint gains a reliability of one (De Wit et al., 2012; Greer et al., 2018).

4.1.2.2. *Moderators.* Methodological moderators included: publication status (published or unpublished), setting (experiment or field study), participant population (undergraduate, MBA, executive, or mixed), negotiation form (one on one, team on team, or multi-party), percent of male participants, and average age of participants. Theoretical moderators included cultural type (intracultural, intercultural, or multiple cultures), Western or non-Western when samples were intracultural, cultural levels of trust and tightness-looseness (measures from Brett et al., 2017).

4.1.3. Meta-analytic procedures

We conducted all meta- and moderator analyses using the Metafor package (Viechtbauer, 2010) in R (R Core Team, 2016) with mixed-effects models to meet the assumption of effect size statistical independence (Hunter & Schmidt, 2004). These models account for variability between effect sizes attributable to sampling error. To control for dependency when there were multiple independent samples from the same paper, we modeled paper effects, sample effects, and pair (whether the sample reported effects of both SIOs and MIOs) as random effects, and MIOs, SIOs, mixed offers, information sharing, competitive behavior, and moderators as fixed effects. This approach allowed us to capture variance due to identifiable factors as fixed effects) and unidentifiable sources as random (Lipsey & Wilson, 2001).

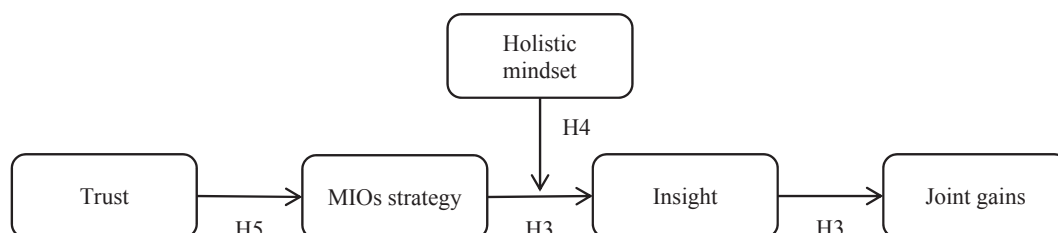


Fig. 1. Theoretical model of the low-trust path to joint gains.

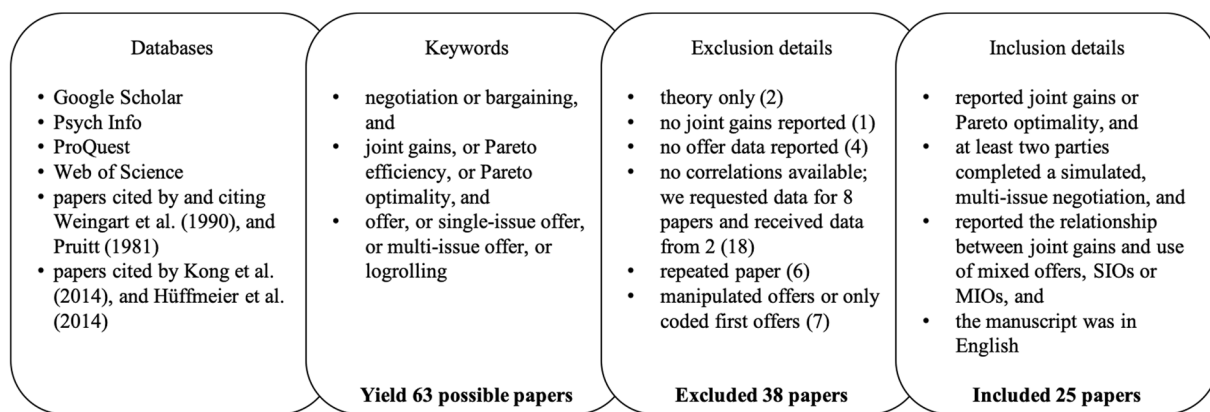


Fig. 2. Study 1: Databases, keywords, inclusion details, and exclusion details. (See above-mentioned reference for further information.)

We used Pearson’s *r* as the primary effect size measure. Because *r* is not normally distributed, we transformed each corrected *r* into Fisher’s *z*, after correcting for measurement error. A Fisher’s *z* transformation has a variance component of $1/n-3$, which controls for sample size. We used transformed Fisher’s *z* values in all analyses, computed confidence intervals around transformed Fisher’s *z* using the Metafor package, but in the tables, we report Pearson’s *r* correlations that are un-transformed from the Fisher’s *z* values after the analysis.

We calculated the mean effect sizes for the association between offer type and joint gains and used deviance tests based on log likelihoods to compare the fit of the offer type model to the intercept-only model. We did not remove outliers. Then, we added the coefficients for information sharing and competitive behavior and their interactions with SIOs and MIOs on joint gains. We compared the fit of this model to the offer type model. We used multivariate meta-regression to evaluate the effects of moderators. All models controlled for paper-level random effects, study-level random effects, and pair effects.

We used I^2 to compare the variation attributable to heterogeneity between observations rather than chance. Meta-analyses traditionally use I^2 to test whether the samples estimate the same parameter, but these studies tested many different research questions. Because we presumed there would be a high degree of heterogeneity among samples, we were not interested in the absolute values of I^2 , but rather in the differences in I^2 , which allowed us to evaluate model differences (Higgins & Thompson, 2002). Information about our techniques and procedures of power analysis and publication bias testing is available in the supplemental online materials.

4.2. Results

Table 1 summarizes the data available for the meta-analysis. Of the 63 papers identified for review, 25 met inclusion criteria. Of the 25 included papers, six reported data from multiple independent samples, bringing the total number of independent samples to 42 and the total number of negotiation dyads to 1,728.

Table 2 reports the results of type of offers on joint gains. Consistent with H1, the use of MIOs had a positive ($\bar{r} = 0.31$) relationship with joint gains, use of SIOs had a negative ($\bar{r} = -0.23$) relationship with joint gains, and use of mixed offers had no ($\bar{r} = 0.03$) relationship with joint gains. A deviation test (I^2) comparing the log likelihoods of the model fit of the offer type model to the intercept-only model was significant. The offer type model fits the data better than the intercept-only model. These results support H1.

We performed simple contrasts on the estimated coefficients reported in Table 2 to evaluate whether the MIOs and SIOs estimates were significantly different from the estimate for mixed offers. Because we used the pooled standard error calculated off the diagonal of the estimated variance–covariance matrix produced by the model to perform

the contrasts, the contrasts control for the fact that these estimates are non-independent and are part of a larger meta-analysis. The estimate of the MIOs–joint gains relationship was significantly larger than the mixed offers estimate (MIOs = 0.31 vs. mixed offers = 0.03), $t(50) = 3.39, p = .001$. The estimate of the SIOs–joint gains relationship was significantly smaller than the mixed offers estimate (SIOs = -0.23 vs. mixed offers = 0.03), $t(50) = -2.80, p = .005$.

Table 3 reports the results of testing the full strategy model on joint gains. This analysis uses a reduced data set of samples reporting offers and information sharing and/or offers and competitive behavior. It tests main effects and all higher-order interactions between offer type, information sharing, and competitive behavior on joint gains. Table 3 shows that controlling for information sharing, competitive behavior, and all other higher-order interactions, MIOs has a positive effect on joint gains ($\bar{r} = 0.31$). This result supports H2 and our theorizing that the MIOs strategy predicts joint gains after controlling for information sharing and competitive behavior. The model fit, $\Delta G^2(9) = 15.97, p = .068, \Delta I^2 = 7.96\%$, indicates that the full strategy model fits the data no better than the offer type model.

Table 3 also shows an interaction between the effect of MIOs and the effect of information sharing on joint gains ($\bar{r} = 0.71$). This interaction shows that as the relationship between MIOs and joint gains becomes more positive, the relationship between information sharing and joint gains becomes more positive. The interpretation of this interaction is that a positive effect of information sharing on joint gains covaried with a positive effect of the use of MIOs on joint gains. This interaction does not mean that negotiators must use both the information sharing and MIOs to achieve joint gains, as the main effect of use of MIOs on joint gains was significant in this model. It does suggest that some negotiators may use MIOs in conjunction with information sharing as suggested by Adair and Brett (2005).

We tested several cultural moderators of the offer type–joint gains relationship. Table 4 reports that the effect size for the MIOs–joint gains relationship was similar in the non-Western ($\bar{r} = 0.35$) and Western ($\bar{r} = 0.32$) samples. The effect size for the SIOs–joint gains relationship was significant in Western ($\bar{r} = -0.29$) but not in non-Western samples ($\bar{r} = -0.03$).

Table 4 also reports the results for the methodological moderators. The non-significant ΔG^2 of publication status, setting, and negotiation form (experimental, non-experimental) indicate that adding those methodological moderators did not improve the fit of the offer type model. Distinguishing population type did improve model fit: the MIOs effect was non-significant for MBA students and the SIOs effect was non-significant for executives, although there was a limited number of observations in each population type for these types of offers.

In the supplemental online materials, we report two additional results. Table S1 reports an extensive analysis that showed little evidence of publication bias. Table S2 reports the non-significant results of testing

Table 1
Description of samples in the meta-analysis

Paper	N of Study	Published	Author data	Culture type	Nation	Culture	N of dyads	Form	Mixedoffers & JG	SIOs & JG	MIOs & JG	IS & JG	CB & JG	Age	% male	Type	Setting
Aaldering & Ten Velden, 2018	1st	P	No	IA	Netherlands	West	82	One			x	x	x	23.21	0.28	Ugrad	E
Adair & Brett, 2005	1st	P	Yes	IA	Japan	Not	25	One	x			x	x	30.38	1	Exec	F
	1st	P	Yes	IA	US	West	30	One	x			x	x	38.13	0.77	Exec	F
	1st	P	Yes	IA	Hong Kong	Not	18	One	x			x	x	25.53	0.52	Exec	F
	1st	P	Yes	IA	Germany	West	23	One	x			x	x	34.75	0.89	Exec	F
	1st	P	Yes	IA	Sweden	West	24	One	x			x	x	37.67	0.81	Exec	F
	1st	P	Yes	IA	Thailand	Not	26	One	x			x	x	26.27	0.39	Exec	F
	1st	P	Yes	IA	Israel	Not	19	One	x			x	x	40.16	0.86	Exec	F
	1st	P	Yes	IA	Russia	Not	36	One	x			x	x	26.79	0.44	MBA	F
	1st	P	Yes	IR	US/Japan		36	One	x			x	x	36.72	0.98	Exec	F
	1st	P	Yes	IR	US/HK		22	One	x			x	x	37.84	0.77	Exec	F
	1st	P	Yes	IR	US/Israel		30	One	x			x	x	37.94	0.81	Exec	F
	1st	P	Yes	IR	US/ Germany		24	One	x			x	x	34.40	0.81	Exec	F
Cai et al., 2000	1st	P	No	M	M		40	One		x	x	x	x	25.70	0.41	MBA	E
Elfenbein et al., 2010	1st	U	No	IA	US	West	26	Multi	x			x	x	30.10	0.70	MBA	F
Geiger, 2014	1st	P	No	IA	Germany	West	52	Team		x	x	x	x	24.97	0.67	Ugrad	E
Gunia et al., 2011	3rd	P	Yes	IA	US	West	25	One	x			x	x	37.66	0.77	MBA	F
	3rd	P	Yes	IA	India	Not	25	One	x			x	x	46.35	0.92	Exec	F
Henderson et al., 2006	3rd	P	Yes	IA	US	West	23	One		x	x				0.32	Ugrad	E
Hyder et al., 2000	1st	P	No	IA	US	West	61	One		x	x	x	x		0.69	Ugrad	F
Kern et al., 2012	1st	U	Yes	IA	US	West	16	One	x			x		20.48	0.34	Mix	F
	1st	U	Yes	IA	Korea	Not	15	One	x			x		24.50	0.38	Mix	F
	1st	U	Yes	IR	US/Korea		15	One	x			x		21.59	0.57	Mix	F
Liu et al., 2016	1st	P	No	IR	US/China		34	One			x	x	X	25.82	0.29	MBA	F
Liu & Wilson, 2011	1st	P	Yes	IA	China	Not	35	One			x	x	x	26.69	0.34	Exec	F
	1st	P	Yes	IA	US	West	32	One			x	x	x	20.00	0.49	Exec	F
Moore et al., 1999	1st	P	No	IA	US	West	97	One	x			x	x			MBA	E
Nandkeolyar & Brett, 2012	1st	U	Yes	IA	India	Not	66	One		x	x	x	x	24.50	0.59	MBA	F
Olekalns & Smith, 2013	1st	P	Yes	IA	Australia	West	62	One	x			x	x	19.10	0.23	Ugrad	E
Ramirez-Marin et al., 2014	1st	U	Yes	IA	US	West	63	One		x	x	x		20.2	0.32	Ugrad	F
	1st	U	Yes	IA	Qatar	No	68	One		x	x	x		21.2	0.50	Ugrad	F
Ritov & Moran, 2008	1st	P	No	IA	Israel	Not	53	One			x					Mix	F
Schei et al., 2006	1st	P	No	IA	Norway	West	17	One		x	x	x		25.00	0.58	MBA	F
Schei et al., 2011	1st	P	No	IA	Norway	West	48	One		x	x	x	x	25.00	0.63	MBA	E
Ten Velden et al., 2007	1st	P	Yes	IA	Netherlands	West	83	One		x	x	x		20.75	0.56	Ugrad	E
Tinsley et al., 2002	1st	P	No	IA	US	West	60	One		x	x	x	x	28.70	0.65	MBA	E
Weingart et al., 1990	1st	P	Yes	IA	US	West	22	One		x	x	x	x			MBA	F
Weingart et al., 1996	1st	P	No	IA	US	West	90	One		x	x	x	x		0.33	Ugrad	F

Note. P = published, U = unpublished; Yes = data from authors, No = data from published works; IA = intraculture, IR = intercultural, M = multiple cultures; One = one on one, Team = team on team, Multi = multi-party; MIOs = multi-issue offers; SIOs = single-issue offers; IS = information sharing; CB = competitive behavior; Ugrad = undergraduate, MBA = MBA, Exec = executive, Mix = mix; E = experiment, F = Field study.

Table 2
Meta-analytical results of offer type on joint gains

Offer Type	n	\bar{r}	z	95% CI	I^2
Mixed Offers	18	0.03	0.47	[−0.10; 0.17]	62.72%
Multi-issue Offers	24	0.31	6.18***	[0.22; 0.43]	
Single-issue Offers	16	−0.23	−3.56***	[−0.36; −0.10]	
Model Fit: $\Delta G^2(2) = 31.96, p < .001, \Delta I^2 = 16.98\%$					

Note. z computed on corrected and Fisher’s z transformed correlations. Model fit statistics compared against intercept-only models. Heterogeneity analyses (I^2) were conducted on corrected effect sizes; *** $p < .001$.

Table 3
Meta-analytical results of main effects and interaction effect on joint gains

Effect	$\bar{r}(se)$	z	p	I^2
MIOs	0.31 (0.09)	3.39	< 0.001***	52.57%
Mixed Offers	−0.004 (0.06)	−0.06	0.955	
SIOs	−0.10 (0.10)	−1.03	0.301	
IS	−0.06 (0.21)	−0.28	0.780	
CB	0.38 (0.41)	0.94	0.348	
MIOs × IS	0.71 (0.45)	2.07	0.038*	
SIOs × IS	−0.50 (0.43)	−1.22	0.221	
MIOs × CB	0.22 (0.64)	0.36	0.721	
SIOs × CB	−0.49 (0.67)	−0.78	0.433	
IS × CB	0.95 (1.75)	1.03	0.305	
MIOs × IS × CB	−0.71 (2.33)	−0.38	0.704	
SIOs × IS × CB	−0.91 (2.45)	−0.62	0.535	
Model Fit: $\Delta G^2(9) = 15.97, p = .068, \Delta I^2 = 7.96\%$				

Note. MIOs = multi-issue offers; SIOs = single-issue offers; IS = information sharing; CB = competitive behavior; *** $p < .001$, ** $p < .01$, * $p < .05$.

the main effect of cultural levels of trust and tightness–looseness and their interactions with types of offers.

4.3. Discussion

The meta-analytic results support multiple conclusions. First, use of MIOs is a joint gains generating strategy independent of information sharing and competitive behavior. Second, the type of offer that negotiators use has important implications for joint gains: using MIOs facilitates joint gains, using SIOs impairs joint gains, and when researchers mix offer type, the positive effect of MIOs is canceled out by the negative effect of SIOs. Third, researchers should not combine MIOs and SIOs in theory or in methods due to their different effects on joint gains. Fourth, negotiators who use information sharing to generate joint gains may also use MIOs to generate joint gains. This effect may reflect a pattern of use of strategy identified by Adair and Brett (2005) in which Western culture negotiators began information sharing but then increased their use of offers in the second half of the negotiation.

Finally, the positive MIOs–joint gains effect generalized across Western and non-Western cultural samples, indicating that this effect was not culture-bound. However, the negative SIOs–joint gains effect, which was significant in Western culture, was not in the non-Western cultures. This suggests an interesting opportunity for future research on why use of SIOs may not be as damaging to joint gains in non-Western cultures, as it appears to be in Western cultures. There was little evidence that publication bias compromised these results. The MIOs effect was significant in undergraduate, executive, and mixed samples, but not in MBA samples. The power of the MBA test was relatively low with seven observations, and MBA samples may be more competitive than other samples. This anomaly deserves further research.

5. Study 2

Study 2 measures trust as an individual difference and tests whether negotiators who bring low trust to the negotiation table have a natural

Table 4
Meta-analytical results of moderators on the effect of offers type on joint gains

	Mixed Offers				Multi-issue Offers				Single-issue Offers				Overall I^2
	n	\bar{r}	z	95% CI	n	\bar{r}	z	95% CI	n	\bar{r}	z	95% CI	
Culture													63.80%
Western	7	−0.05	−0.51	[−0.25; 0.15]	17	0.32	5.66***	[0.22; 0.45]	12	−0.29	−4.22***	[−0.45; −0.16]	
Non-Western	6	0.04	0.32	[−0.20; 0.27]	5	0.35	3.30**	[0.15; 0.58]	3	−0.03	−0.23	[−0.31; 0.24]	
Model Fit: $\Delta G^2(2) = 6.86, p = .334, \Delta I^2 = +1.08\%$													
Cultural													
Intracultural	13	−0.01	−0.18	[−0.17; 0.14]	22	0.33	6.43***	[0.24; 0.45]	15	−0.24	−3.82***	[−0.38; −0.12]	62.92%
Intercultural	5	0.15	1.19	[−0.10; 0.41]	2	0.14	0.79	[−0.21; 0.50]	1	0.05	0.21	[−0.44; 0.55]	
Model Fit: $\Delta G^2(2) = 3.59, p = .310, \Delta I^2 = +0.20\%$													
Publication													60.16%
Published	14	−0.02	−0.31	[−0.16; 0.12]	21	0.34	6.61***	[0.25; 0.46]	13	−0.28	−4.14***	[−0.42; −0.15]	
Unpublished	4	0.29	1.81	[−0.02; 0.60]	3	0.19	1.45	[−0.07; 0.43]	3	−0.03	−0.22	[−0.29; 0.22]	
Model Fit: $\Delta G^2(3) = 7.44, p = .059, \Delta I^2 = 2.56\%$													
Setting													63.07%
Experiment	2	0.02	0.13	[−0.29; 0.34]	10	0.28	3.69***	[0.14; 0.44]	7	−0.16	−1.73	[−0.35; 0.02]	
Field	16	0.03	0.45	[−0.11; 0.18]	14	0.34	5.17***	[0.22; 0.49]	9	−0.29	−3.32***	[−0.45; −0.12]	
Model Fit: $\Delta G^2(3) = 1.23, p = .746, \Delta I^2 = +0.35\%$													
Form													62.01%
One-on-One	17	0.04	0.65	[−0.09; 0.18]	23	0.33	6.71***	[0.24; 0.45]	15	−0.24	−3.77***	[−0.37; −0.12]	
Team-on-Team	–	–	–	–	1	−0.05	−0.23	[−0.52; 0.41]	1	−0.05	−0.19	[−0.51; 0.42]	
Multi-Party	1	−0.20	−0.72	[−0.75; 0.35]	–	–	–	–	–	–	–	–	
Model Fit: $\Delta G^2(3) = 3.95, p = .268, \Delta I^2 = 0.71\%$													
Population													59.36%
Undergraduate	1	0.05	0.23	[−0.36; 0.45]	12	0.34	6.38***	[0.27; 0.51]	8	−0.23	−3.08**	[−0.38; −0.08]	
MBA	4	−0.05	−0.44	[−0.28; 0.18]	7	0.09	1.01	[−0.08; 0.26]	6	−0.20	−2.08*	[−0.38; −0.01]	
Executive	10	−0.04	−0.43	[−0.20; 0.13]	4	0.46	3.82***	[0.24; 0.76]	2	−0.27	−1.36	[−0.68; 0.12]	
Mixed	3	0.49	2.82**	[0.16; 0.90]	1	0.50	2.60**	[0.14; 0.97]	–	–	–	–	
Model Fit: $\Delta G^2(8) = 17.83, p = .023, \Delta I^2 = 3.36\%$													

Note. z computed on corrected and Fisher’s z transformed correlations. Model fit statistics compared against offers-only models. Heterogeneity analyses (I^2) were conducted on corrected effect sizes; *** $p < .001$, ** $p < .01$, * $p < .05$.

inclination to use MIOs. It also tests whether negotiators who use MIOs and who process information with a holistic, as opposed to analytic mindset, generate insight and realize greater joint gains. The data analysis is mainly at the individual level because trust and mindset in Study 2 are individual differences.

5.1. Methods

5.1.1. Sample

Participants were 100 Chinese senior managers. We chose a Chinese sample rationalizing that there should be more variance in trust (Weber, 1951) and mindset (Morris & Peng, 1994) in a Chinese than a Western culture sample, thereby providing a better research site for hypothesis testing. The meta-analysis also showed that there were no West–non-West cultural differences in the effect sizes for the MIOs–joint gains relationship. All participants completed a pre- and a post-negotiation survey and audio recorded their negotiation. Two dyads' audio recordings were inaudible for transcriptions. The final sample was 96 Chinese senior managers (19 women and 77 men) in 48 dyads with an average age of 40.76 years ($SD = 6.05$).

5.1.2. Procedures

The simulation was the Chinese version of *Cartoon* (negotiationteamresources.com), a multi-issue negotiation used by prior researchers (e.g. Liu et al., 2012). The seller represents a film production company; the buyer, a television station. The four issues are price, a distributive issue; financing and runs, trade-off issues; and a second cartoon, a compatible issue. The pre-negotiation survey measured trust and mindset; the post-negotiation survey measured insight. We randomly assigned participants to the role of buyer or seller and to dyads. Participants had 60 min to prepare and 75 min to negotiate.

5.1.3. Measures

5.1.3.1. Joint gains. Joint gains were the sum of the net value generated by the buyer and the seller in a dyad. The maximum possible joint gains in *Cartoon* was \$5.08 million. All dyads in the study reached agreement. Mean joint gains were \$3.78 ($SD = 0.92$) million, range \$1.46 million to \$5.08 million.

5.1.3.2. Trust. We measured trust in the negotiation context prior to assigning participants to a role or a counterpart. We used seven items adapted from the literature (e.g., Butler, 1991; Gunia et al., 2011). We framed all items negatively to minimize social desirability and to reflect our focus on low trust in negotiations. A sample item was “most people are not honest (R).” The response scale was Likert-type (1 = strongly disagree to 7 = strongly agree). After reverse coding, a high score indicates a high level of trust ($\alpha = 0.71$). We reported all items in the supplementary online materials.

5.1.3.3. Mindset. We measured mindset with a method developed by Norenzayan et al. (2002). Participants viewed four sets of a target image and two reference images (See Figure S1 in the supplementary online materials). We instructed participants to choose the reference image that was most similar to the target image. In each set, one of the reference images fit the analytic rule, while the other reference image fit the holistic rule. We coded mindset by using the number of holistic rule choices plus one for easy interpretation (ranging from 1 to 5). A higher score indicates a more holistic mindset; a lower score indicates a more analytic mindset.

5.1.3.4. Insight. We used a measure of insight that appears widely in the literature (e.g., Gunia et al., 2011; Schulz & Pruitt, 1978; Brett & Okumura, 1998). Immediately after the negotiation, prior to knowing their joint gains or their counterpart's individual gains, participants

completed a post-negotiation survey indicating how important price, runs, financing, and the second cartoon were to themselves and to their counterparts (1 = not important at all to 5 = extremely important). Insight assesses the extent to which negotiators accurately detect the relative importance of the two integrative issues (i.e., runs and financing) to themselves vis-à-vis their counterparts. We coded insight as 2 if the negotiator accurately understood the relative importance of both issues; 1 if the negotiator correctly understood the relative importance of one issue; and 0 if the negotiator misunderstood the relative importance of both issues. A high score indicates more accurate insight into the relative structure of both negotiators' priorities.

5.1.3.5. Coding. Two people who were blind to the study's hypotheses coded transcripts from audio recordings of the negotiations according to the OFFER coding system (Brett et al., 2018). Coders identified the speaker. They coded each offer as an SIO or an MIO, each use of information sharing and of competitive behavior. (See supplementary online materials.) They coded the first five dyads together to familiarize themselves with the coding scheme, resolved their differences in discussion to reach consensus, and then independently coded the remaining dyads ($ICC = 0.98$).

According to the definitions, an MIO is an offer including at least two issues (e.g., “if you agree with the price at \$35 K, I will pay 50 percent as the down payment”), and a SIO is an offer with only one issue (e.g., “I propose a price of \$35 K”). Two coders recorded the following information about each offer: the type of the offer, the proposer of the offer, and the timing of the offer. To create the operationalization of use of MIOs, we followed Henderson et al. (2006) approach of using the ratio of the number of MIOs to the number of total offers (SIOs + MIOs). This measure ranged from 0 to 1, with a higher value indicating more frequent use of MIOs during the negotiation.

To be consistent with Pruitt's (1981) theorizing and our tests in Study 1, we coded information sharing and competitive behavior as control variables. Information sharing included asking or answering questions about the counterpart's interests, preferences, priorities, needs, trade-offs, and the simulation itself. Competitive behavior included cognitive, normative, and emotional influences. If a speaking turn did not include an offer, information sharing, or competitive behavior, coders assigned it the “other” category. Cohen's $\kappa = 0.65$ indicated substantial agreement between coders (Landis & Koch, 1977).

5.1.4. Analytic strategy

We used the Actor-Partner Interdependence Model (APIM) to test H4 and H5. APIM is a dyadic multi-level analysis (Kenny et al., 2006). It treats individuals as nested within dyads to test actor effects (i.e., my characteristics affect my outcome) and partner effects (i.e., my characteristics affect your outcome) simultaneously. As joint gains was a dyad level variable, we aggregated the buyer's and seller's use of MIOs ($r_{wg} = 0.95$) and their insight ($r_{wg} = 0.84$) and analyzed the dyadic data with PROCESS model (Hayes, 2012) to test H3 which predicted the role of insight.

5.2. Results

5.2.1. Hypothesis testing

We report descriptive statistics and correlations in Table 5.

H3 predicted that use of MIOs increases joint gains via insight. The PROCESS model results on the dyad level data showed that after controlling for information sharing and competitive behavior, the indirect effect via dyad level insight was significant ($B = 0.87$, $s.e. = 0.50$, 95% $CI = 0.14$, 2.07). The direct effect of dyad level use MIOs on joint gains was not significant ($B = 0.33$, $s.e. = 0.75$, 95% $CI = -1.18$, 1.84). The post hoc power of the two stages in the mediation based on the F test ($\alpha = 0.05$) was 0.53 and 0.92, respectively. These results support H3.

Table 6 reports the APIM results for testing H4 and H5. H4 predicted

Table 5
Descriptive statistics and correlation analysis in Study 2

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Trust_A	3.95	0.92												
2. Trust_P	3.95	0.92	0.03											
3. MIOs strategy_A	0.44	0.24	-0.23*	-0.10										
4. MIOs strategy_P	0.44	0.24	-0.10	-0.23*	0.58***									
5. Information sharing_A	0.23	0.10	0.14	0.11	-0.04	-0.13								
6. Information sharing_P	0.23	0.10	0.11	0.14	-0.13	-0.04	0.79***							
7. Competitive behavior_A	0.48	0.13	-0.08	-0.10	0.22*	0.25*	-0.66***	-0.61***						
8. Competitive behavior_P	0.48	0.13	-0.10	-0.08	0.25*	0.22*	-0.61***	-0.66***	0.84***					
9. Insight_A	1.10	0.75	-0.14	-0.00	0.38**	0.38**	-0.04	0.04	0.15	0.07				
10. Insight_P	1.10	0.75	-0.00	-0.14	0.38**	0.38**	0.04	-0.04	0.07	0.15	0.28*			
11. Holistic mindset_A	3.80	1.23	0.01	-0.01	0.04	0.01	-0.03	-0.01	0.04	0.03	0.04	0.06		
12. Holistic mindset_P	3.80	1.23	-0.01	0.01	0.01	0.04	-0.01	-0.03	0.03	0.04	0.06	0.04	-0.15	
13. Joint gains	3.78	0.92	-0.09	-0.09	0.27*	0.27*	0.04	0.04	0.12	0.12	0.32*	0.32*	0.08	0.08

Note. All variables were at the individual level except joint gains; A = actors (every focal negotiator), P = partners (every focal negotiator’s counterpart); *** $p < .001$; ** $p < .01$, * $p < .05$, two-tailed.

Table 6
APIM results of hypotheses testing at the individual level in Study 2

	Model 1: Insight	Model 2: MIOs strategy
Information sharing_A	-0.78 (1.17)	
Information sharing_P	1.32 (1.18)	
Competitive Behavior_A	1.00 (1.02)	
Competitive behavior_P	-0.24 (1.07)	
MIOs strategy_A	-1.41 (0.98)	
MIOs strategy_P	0.75* (0.37)	
Holistic mindset_A	-0.20 (0.37)	
Holistic mindset_A* MIOs strategy_A	0.56* (0.24)	
Trust_A		-0.06* (0.02)
Trust_P		-0.02 (0.02)

Note. All predictors were at the individual level; regression coefficients are unstandardized for predictors with standard errors in parentheses; A = actors (every focal negotiator), P = partners (every focal negotiator’s counterpart); * $p < .05$, two-tailed.

that holistic mindset would moderate the relationship between use of MIOs and insight. Model 1 in Table 6 shows a significant actor interaction effect between use of MIOs and mindset on insight ($B = 0.56$, $s.e.$

$= 0.24$, $p = .017$). The relationship between use of MIOs strategy and insight was significant among negotiators with holistic mindset ($t = 3.04$, $p = .003$), but not among negotiators with analytic mindset ($t = 0.24$, $p = .812$). Fig. 3(a) illustrates this interaction. Model 1 also shows a significant partner effect of information sharing on insight ($B = 0.75$, $s.e. = 0.37$, $p = .043$), suggesting that negotiators whose partners shared more information had more accurate insight. The post hoc power of Model 1 based on the χ^2 test ($\alpha = 0.05$) was 0.99. Overall, results support H4 and suggest that negotiators can develop insight indirectly if they use MIOs, particularly when they process information holistically.

H5 predicted that low-trust negotiators would use more MIOs. Model 2 in Table 6 shows that the actor effect was significant ($B = -0.06$, $s.e. = 0.02$, $p = .021$), but the partner effect was not ($B = -0.02$, $s.e. = 0.02$, $p = .370$). The post hoc power of Model 2 based on the χ^2 test ($\alpha = 0.05$) was 0.55. This result supports H5 and suggests that a negotiator’s own trust, but not the counterpart’s trust, predicts the negotiator’s subsequent use of MIOs. It is worth noting that the three significant effects reported above when testing H4 and H5 remained significant after the Benjamini and Hochberg (1995) adjustment with a false discovery rate of 0.25.

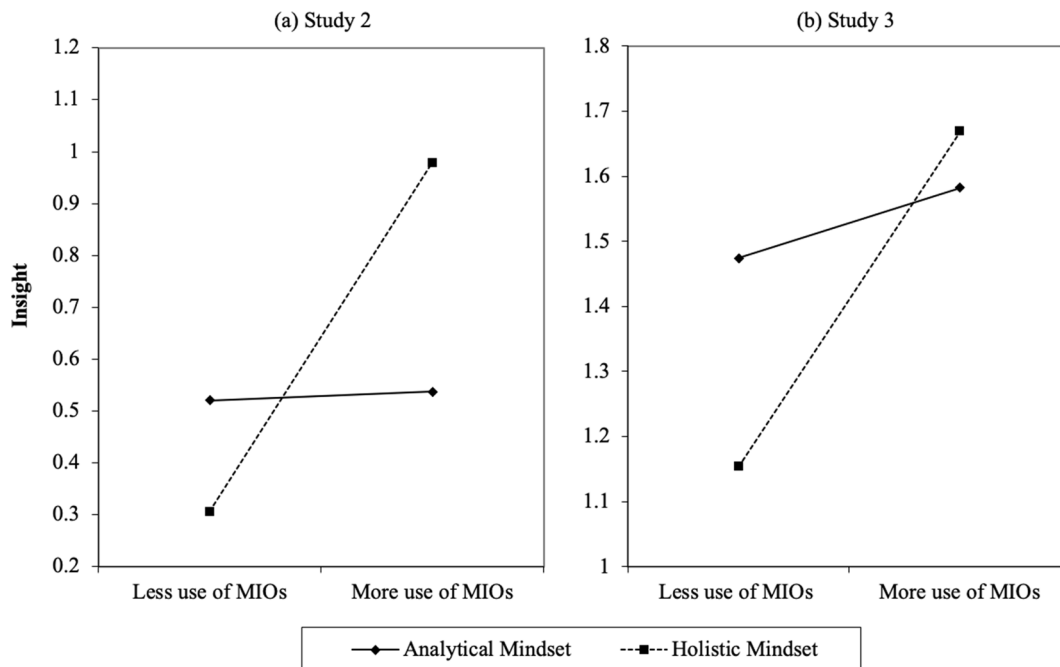


Fig. 3. Studies 2 and 3: Interaction effects of use of MIOs and mindset on insight.

5.2.2. Supplementary analyses

We ran two supplementary analyses to increase our understanding of the relationship between use of MIOs and joint gains. First, we classified MIOs into two categories: logrolling MIOs that traded-off the two integrative issues in the negotiation and non-logrolling MIOs that did not include a trade-off of the two integrative issues. The correlation analysis suggested that joint gains were only correlated with logrolling MIOs ($r = 0.37, p = .009$) but not with non-logrolling MIOs ($r = 0.16, p = .271$), supporting the theory that logrolling of trade-off issues is the key to joint gains. Then we used the length of the negotiation in minutes to separate negotiations into first and second halves. The first half use of non-logrolling MIOs had an indirect effect on joint gains through the second half use of logrolling MIOs ($B = 1.34, s.e. = 0.70, 95\% CI = 0.32, 3.06$). These results show that negotiators' initial MIOs usually did not propose trade-offs, presumably because in the first half of the negotiation, negotiators were proposing self-interested MIOs and were unaware of potential trade-offs. As their initial MIOs were rejected by their counterparts, and their counterparts proposed new MIOs, negotiators began proposing MIOs with trade-offs, presumably because they began to make concessions on their own low priority issues and began to infer their counterparts' high priority issues. Over time, negotiators turned non-logrolling MIOs into logrolling MIOs.

Next, we split use of logrolling and non-logrolling MIOs into four quarters of the negotiation based on the length of each negotiation and used the sample mean to split dyads into high and low joint gains groups. The post hoc results based on multivariate analysis of variance showed that compared to low-joint gains negotiators, the high-joint gains negotiators trended toward using more non-logrolling MIOs in quarter one ($F = 3.22, p = .079$), more non-logrolling MIOs in quarter two ($F = 5.08, p = .029$), and more logrolling MIOs in quarter four ($F = 5.27, p = .026$). Thus, negotiators who reached high joint gains are those who started using MIOs by the second quarter of the negotiation, and who as the negotiation progressed, shifted their use MIOs to MIOs incorporating trade-offs. A PROCESS analysis shows that use of non-logrolling MIOs in quarter two had an indirect effect on joint gains through use of logrolling MIOs in quarter four ($B = 0.95, s.e. = 0.53, 95\% CI = 0.02, 2.09$). These results reveal the timing and dynamics of how use of MIOs facilitated joint gains. We report these patterns in [Figure S2](#) in supplementary online materials.

5.3. Discussion

Study 2 mainly relied on APIM to test a low-trust path to joint gains. It shows that low-trust negotiators can reach high joint gains by using MIOs to generate insight, particularly if they process information holistically. The supplementary analyses reveal the dynamics of use of MIOs throughout the negotiation—high joint gains negotiators started using non-logrolling MIOs in the early stages of the negotiation (particularly in quarter two) and shifted to using logrolling MIOs proposing mutually beneficial trade-offs in the later stage of the negotiation (particularly in quarter four) to facilitate joint gains.

6. Study 3

6.1. Methods¹

6.1.1. Participants

We pre-registered Study 3 (<https://bit.ly/MIO2020>). Applying [Kong et al.'s \(2014\)](#) meta-analytical effect size of trust on negotiation strategies ($r = 0.3$), G*power suggested that we needed at least $N = 134$

participants to test hypotheses to achieve 0.95 power with $\alpha = 0.05$. We invited 138 Chinese undergraduate students enrolled in a course to participate in this study as part of their learning experience. All were freshmen; none had previous classroom negotiation training. There were 68 women and 70 men; average age, 19.37 years ($SD = 1.00$).

6.1.2. Procedure

We conducted Study 3 online to comply with the COVID-19 confinement. Participants spent 15 min on a pre-negotiation survey in which they completed the holistic mindset assessment task, read their negotiation role materials, and received manipulation and manipulation check questions. We randomly assigned participants to condition, role, and dyad with the consideration that dyads be composed of same-gender negotiators. Dyads audio recorded their negotiation. We instructed them not to use video during the negotiation. The exercise was a three-issue deal-making negotiation with one distributive issue and two integrative issues. We adapted its payoff structure from [Pruitt and Lewis \(1975\)](#). Dyads spent 15 min negotiating. When negotiators reached an agreement or when the time was up, they completed a post-negotiation survey that measured their insight and collected their agreement terms. We told participants not to discuss the negotiation until completion of the post-negotiation survey.

6.1.3. Manipulation and measures

6.1.3.1. Manipulation. Two weeks prior to the experiment, participants completed a questionnaire about their self-disciplined activities during the COVID-19 confinement, such as how many hours they spent daily in study, exercise, and recreation. Then in the study itself, prior to negotiating, we reminded participants about the pre-negotiation survey. We said, "in addition to measuring students' attitudes and behaviors during the pandemic, this questionnaire also allowed us to analyze how honestly each student answered the questions." We manipulated trust by disclosing each negotiator's counterpart's overall trustworthiness in answering the questionnaire.

In the high trust condition, participants read, "The questionnaire analysis shows that your counterpart tended to express attitudes directly and honestly, without deliberately concealing or exaggerating facts to create a good image. We can infer that your negotiation counterpart will also exhibit honesty and reliability in communication with you, and therefore we can conclude that she/he has a high level of trustworthiness." In the low trust condition, participants read, "The questionnaire analysis shows that your negotiation counterpart tended to express attitudes directly and honestly when answering some questions, while deliberately concealing or exaggerating facts to create a good image when answering other questions. We cannot accurately infer your negotiation counterpart's honesty and reliability in communication, and therefore we cannot conclude her/his level of trustworthiness." We did not frame the low-trust counterpart as untrustworthy because [Lewicki et al. \(1998\)](#) conceptualized this as distrust rather than low trust. Both members of a dyad received the same trust manipulation. All participants received debriefing of the deception after the study.

6.1.3.2. Measures. Study 3 used all the same operationalizations as Study 2—joint gains (all 69 dyads reached agreement), holistic mindset (ranging from 1 to 5), insight (ranging from 0 to 2), MIOs strategy (ratio of MIOs to total offers for the dyad throughout the negotiation; $ICC = 0.95$), information sharing, and competitive behavior (behavioral coding based on speaking turns; Cohen's $\kappa = 0.75$). In addition, after reading the manipulation, but before negotiating, participants responded to two questions as a manipulation check: in the upcoming negotiation, 1) I plan to trust the counterpart, and 2) I plan not to trust the counterpart (R), with $\alpha = 0.90$.

¹ We ran a scenario experiment prior to running Study 3. The purpose was to test the causal relationship between manipulated trust and intent to use MIOs. The relationship was significant. Consistent with the journal's transparency policy, we report the details of this study in the supplementary online materials.

6.2. Results

The manipulation was successful. Participants in the high trust condition reported higher trust ($M = 3.36, SD = 0.87$) than those in the low trust condition ($M = 2.92, SD = 0.78$), $F(1,136) = 9.59, p = .002, \eta^2 = 0.07$.

Table 7 presents the correlations among the variables at the dyad level, with insight as the aggregation from individuals to dyads ($r_{wg} = 0.85$). We did not include mindset measures in the correlations as it is an individual difference measure.

To test the full low-trust path to joint gains, we used the dyad-level data set with trust as the independent variable, joint gains as the dependent variable, MIOs and insight as two sequential mediators, and information sharing and competitive behavior as two control variables. We report the PROCESS results in Table 8 and illustrate the full model in Fig. 4.

Consistent with our theorizing that use of MIOs can facilitate joint gains via two processes, the results reveal two negative indirect effects of trust on joint gains. One indirect effect supports the mechanical process. Trust negatively predicts use of MIOs ($B = -0.19, s.e. = 0.05, p < .001, 95\% CI = -0.29, -0.10$), and use of MIOs positively predicts joint gains ($B = 0.94, s.e. = 0.19, p < .001, 95\% CI = 0.57, 1.32$). This indirect effect is via MIOs ($B = -0.18, s.e. = 0.06, 95\% CI = -0.32, -0.07$), suggesting that low trust leads to more frequent use of MIOs and higher joint gains. This result echoes Kelley’s (1966) and Pruitt’s (1981) theorizing that negotiators can use MIOs mechanically to generate joint gains. However, it extends their theorizing by showing that low, but not high-trust negotiators, use MIOs in this way.

The other indirect effect supports our theorizing about insight as the process by which negotiators use MIOs to generate joint gains. Trust negatively predicts use of MIOs ($B = -0.19, s.e. = 0.05, p < .001, 95\% CI = -0.29, -0.10$), use of MIOs positively predicts insight ($B = 1.12, s.e. = 0.28, p < .001, 95\% CI = 0.56, 1.69$), and insight positively predicts joint gains ($B = 0.27, s.e. = 0.07, p < .001, 95\% CI = 0.13, 0.42$). This indirect effect is via MIOs and insight sequentially ($B = -0.06, s.e. = 0.03, 95\% CI = -0.12, -0.02$), suggesting that low-trust negotiators use more MIOs to develop insight and reach high joint gains. This indirect effect supports our proposed low-trust full path to joint gains.

In addition, after controlling for the negotiation strategies (i.e., MIOs, information sharing, and competitive behavior), there is a positive direct effect of trust on joint gains ($B = 0.17, s.e. = 0.07, p = .023, 95\% CI = 0.02, 0.32$). This result indicates that when controlling for use of MIOs, information sharing, and competitive behavior, high trust predicts high joint gains—results that are consistent with Kong et al. (2014) meta-analysis, although they did not control for use of MIOs.

In sum, the negative indirect effects and the positive direct effect cancel out each other, explaining why there is no significant total effect of trust on joint gains. We employed MacKinnon et al. (2000) test of suppression. The results supported the suppression model. The suppression of indirect negative effect canceling out direct positive effects explains why ANOVA results suggest that there were no significant differences in joint gains between high ($M = 4.66, SD = 0.45$) and low ($M = 4.65, SD = 0.44$) trust conditions, $F(1,67) = 0.001, p = .972$. These results support H1, H2, H3, and H5, indicating that low-trust negotiators do not have to forgo joint gains, if they use MIOs.

Table 7
Descriptive statistics and correlation analysis in Study 3

Variables	Mean	SD	1	2	3	4	5
1. Trust (1 = low; 2 = high)	1.52	0.50					
2. MIOs strategy	0.49	0.23	-0.41***				
3. Information sharing	0.06	0.08	0.04	0.13			
4. Competitive behavior	0.19	0.12	-0.08	-0.21	-0.40**		
5. Insight	1.66	0.55	-0.01	0.45***	0.37**	-0.28*	
6. Joint gains	4.66	0.44	0.00	0.59***	0.48***	-0.31**	0.66***

Note. All variables were at the dyad level; *** $p < .001$; ** $p < .01$; * $p < .05$, two-tailed.

H4 predicted that mindset would moderate the relationship between use of MIOs and insight. We used APIM to test H4 because mindset is an individual difference. The hypothesized interaction between the negotiator’s use of MIOs and holistic mindset on insight was significant ($\beta = 0.29, s.e. = 0.14, p = .031$). Simple slope test results show that this effect was significant for holistic mindset negotiators ($t = 3.65, p < .001$) but not for analytical mindset negotiators ($t = 0.07, p = .435$). Thus, only negotiators using MIOs and processing information holistically generated insight. This result supports H4. We plot these results in Fig. 3 (b).

6.2.1. Supplementary analysis

We separated the sample into high and low trust conditions to explore whether they used strategy differently to negotiate joint gains. In the low trust condition, use of MIOs had an effect on joint gains ($B = 1.11, s.e. = 0.22, p < .001, 95\% CI = 0.65, 1.57$), but information sharing did not ($B = 0.95, s.e. = 0.59, p = .120, 95\% CI = -0.26, 2.17$). In the high trust condition, both use of MIOs ($B = 0.75, s.e. = 0.32, p = .023, 95\% CI = 0.11, 1.40$) and information sharing had significant effects on joint gains ($B = 2.23, s.e. = 0.73, p = .004, 95\% CI = 0.75, 3.71$). These results provide further support of our theorizing that low-trust negotiators use MIOs, not information sharing, to generate joint gains. They also support Adair and Brett’s (2005) theorizing that high-trust negotiators use both direct information sharing and MIOs to negotiate joint gains.

6.3. Discussion

The experimental design of Study 3 allowed us to draw a causal conclusion about the relationship between negotiators’ trust, use of MIOs, insight, and joint gains. Study 3 supported our theorizing that there are two different strategic paths to negotiating high joint gains. High-trust negotiators can share information directly to develop insight and generate joint gains. Low-trust negotiators have two potential paths using MIOs. They can use MIOs to reach joint gains indirectly, by processing information holistically to develop insight from information embedded in MIOs. Alternatively, they can follow the mechanical concession process to reach joint gains without insight. Study 3 integrated previous studies’ findings of the direct effects of the high-trust path to joint gains with the indirect effects of our proposed low-trust path to joint gains, integrating the two paths into one comprehensive model.

7. General discussion

In three studies, we developed the role of the MIOs strategy in generating joint gains. In Study 1, meta-analytic results showed that use of MIOs predicted joint gains, even when controlling for information sharing and the interaction between use of MIOs and information sharing. In Study 2, results revealed that low-trust, but not high-trust negotiators used MIOs spontaneously to generate joint gains. In addition, Study 2 showed that if negotiators using MIOs processed information holistically they generated insight into their counterparts’ priorities. Study 3, an experiment, established that high versus low trust inspired different strategic paths to joint gains. High trust negotiators took the path, documented by prior research (Kong et al., 2014) sharing

Table 8
PROCESS results of hypotheses testing at the dyad level in Study 3

Variables	Model 1: MIOs strategy		Model 2: Insight		Model 3: Joint gains	
	B (SE)	95% CI	B (SE)	95% CI	B (SE)	95% CI
Trust (1 = low; 2 = high)	-0.19*** (0.05)	-0.29, -0.10	0.18 (0.12)	-0.07, 0.43	0.17* (0.07)	0.02, 0.32
Information sharing	0.18 (0.33)	-0.49, 0.84	1.91* (0.76)	0.39, 3.43	1.58** (0.47)	0.64, 2.52
Competitive Behavior	-0.42 (0.23)	-0.88, 0.04	-0.26 (0.54)	-1.34, 0.82	0.04 (0.32)	-0.60, 0.68
MIOs strategy			1.12*** (0.28)	0.56, 1.69	0.94*** (0.19)	0.57, 1.32
Insight					0.27*** (0.07)	0.13, 0.42
Direct effect	Trust → joint gains: 0.17 (0.07) 95% CI: 0.02, 0.32					
Indirect effects	Trust → MIOs strategy → insight → joint gains: -0.06 (0.03) 95%CI: -0.12, -0.02					
	Trust → MIOs strategy → joint gains: -0.18 (0.06) 95% CI: -0.32, -0.07					

Note. All predictors were at the dyad level; regression coefficients are unstandardized for predictors with standard errors in parentheses; *** $p < .001$; ** $p < .01$, * $p < .05$, two-tailed.

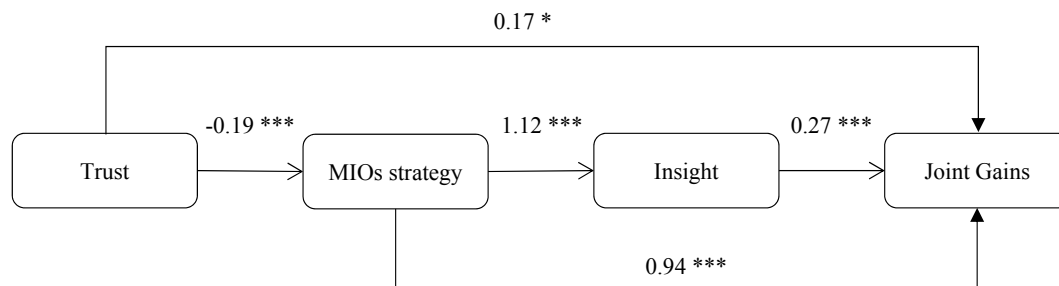


Fig. 4. Study 3: Results of testing the low-trust path to joint gains at the dyad level.

information directly. Low trust negotiators took a different path using MIOs, and when processing information holistically, acquiring information indirectly as they negotiated joint gains.

7.1. Theoretical contributions

This research makes three primary theoretical contributions to the negotiation literature and two additional theoretical contributions to the trust and mindset literatures. First, it documents with meta-analytical evidence the different effects of MIOs, SIOs, and mixed offers on joint gains. Second, it describes a new low-trust path to joint gains that uses a process—MIOs—that is different from the information sharing process underlying the well-documented high-trust path. Third, it explains how negotiators use the newly identified low-trust path successfully. In addition, in theorizing that low-trust negotiators use strategy that renders them less vulnerable to exploitation, the research also contributes to the growing evidence that low trust is not categorically detrimental to social interaction (e.g., Baer et al., 2015; Langfred, 2004), but rather prompts alternative strategic behavior. In theorizing that negotiators who process information gathered in social interaction holistically can generate insight from using MIOs, the research reveals that people holistically process not only perceptual information (Nisbett et al., 2001) but also social information.

First, our meta-analytical study reconciles the conceptual and empirical inconsistencies of studies reporting relationships between different types of offers and joint gains. Prior research has used different approaches to conceptualize and operationalize offers. Some studies combined SIOs and MIOs (e.g., Adair & Brett, 2005) and some combined MIOs and information exchange (e.g., Weingart et al., 2004). Other studies separated SIOs and MIOs (Weingart et al., 1990). Studies documenting relationships between use of MIOs and joint gains report that relationship as significantly negative (e.g., Weingart et al., 1990), significantly positive (e.g., Kern Lee et al., 2012), or a non-significant (e.g., Cai et al., 2000). We find that use of MIOs facilitates joint gains and use of SIOs impedes joint gains in Western cultures, but not in non-Western cultures. These findings reconcile the inconsistent results regarding the effects of types of offers on joint gains, challenge some

previous points of view that used offers generally as a value-claiming strategy without differentiating between MIOs and SIOs (Gunia et al., 2011), and suggest that MIOs and SIOs should not be combined theoretically or methodologically in future negotiation research.

Second, our studies reveal a low-trust path to joint gains that generates insight from information gleaned indirectly from using MIOs. This low-trust path to joint gains is a strategic alternative to the well-documented high-trust path to joint gains that uses direct information sharing to generate insight and joint gains. Our studies show that using MIOs can facilitate joint gains in three ways: 1) consolidating information acquired directly, 2) seeking embedded information indirectly to develop insight, and 3) mechanically. Our conceptualization of the low-trust path to joint gains builds on and extends Walton and McKersie's (1965) observation that two processes—simultaneous consideration of issues (MIOs) and sharing of accurate information about utilities (information sharing)—can facilitate joint gains, and Pruitt's (1981) proposal that there is indirect information about negotiators' priorities embedded in their use of offers and engagement in competitive behavior. Low-trust negotiators engage in more competitive behavior and less information sharing than high-trust negotiators (Kong et al., 2014). However, as our research shows, low-trust negotiators who are reluctant to engage in direct information sharing out of fear of exploitation are still motivated to reach joint gain agreements. Our findings reveal how they can do so. Whereas high-trust negotiators can use information sharing directly and effectively to reach high joint gains, low-trust negotiators can use MIOs to generate information indirectly and reach joint gains equivalent to those of high-trust negotiators. Our research integrates the well-known high-trust path to joint gains with this new low-trust path to joint gains into one comprehensive model that explains the complex relationship between trust and joint gains in negotiation.

Third, using MIOs is a strategy that low-trust negotiators can use to reach joint gains via two mechanisms. The first mechanism is insight. This process requires that negotiators engage in higher-order holistic processing to draw inferences about their counterparts' priorities from the pattern of concessions and non-concessions across a series of MIOs. The second mechanism is mechanical. As pointed out by Kelley (1966),

observed by [Pruitt and Lewis \(1975\)](#) and consistent with our Study 3 findings, it is possible to reach joint gains by relying on MIOs without generating insight. This mechanical process may be systematic, as proposed by [Kelley \(1966\)](#), in which negotiators follow the concession rule of holding firm on high priority issues and conceding slowly on low priority issues. Alternatively, it may be more of a trial and error process, as proposed by [Pruitt \(1981\)](#), in which negotiators try out a variety of MIOs until the counterpart accepts one. We show that the insight and mechanical processes coexist.

7.2. Practical implications

What should practitioners take away from this research? The first implication is for low-trust negotiators. We respect that low-trust negotiators are unwilling to engage in asking and answering questions directly due to fear of being exploited. However, our research suggests that low-trust negotiators have an option to generate the information needed to negotiate high joint gains without sharing information directly. By using MIOs and deliberately seeking to understand priorities from information embedded in MIOs and patterns of changes across a series of MIOs, low trust does not restrict negotiators to low joint gains. To negotiate high joint gains when trust is low seems to require three sub-strategies. First, refuse to engage in an exchange of SIOs, unless you can do so without settling individual issues. Instead, propose MIOs and ask for MIOs in return. Second, follow [Kelley's \(1966\)](#) systematic concession model holding firm on high priority issues and slowly conceding on low priority issues. Use this concession model to help make sense out of the counterpart's MIOs. Third, take an intentionally holistic approach in seeking to understand the counterpart's priorities from the pattern of the counterpart's concessions across a set of MIOs. Plotting MIOs may help the more analytically minded negotiators see this pattern ([Brett, 2014](#)).

The second implication of this study is for negotiators who are facing low-trust counterparts. We advise negotiators to embrace the fact that not everyone is willing to trust or even willing to try to build trust at the negotiation table. If negotiators try too hard to develop mutual trust while ignoring their counterparts' cultural, educational, and dispositional backgrounds which have already profoundly shaped them, negotiators may find their efforts counterproductive. Instead, we advise negotiators to prepare a strategic toolkit, including direct information sharing as well as indirect information sharing via MIOs. With this toolkit, negotiators can be strategically flexible with different counterparts. One caveat, trustful negotiators are used to exchanging information early in the negotiation, so early use of MIOs may shock and dismay high-trust counterparts and negatively affect their trust. Thus, view use of MIOs as one alternative strategy in the toolkit. Recall, too, that our research shows that negotiators can use MIOs in conjunction with information sharing to generate joint gains. To be sure, using MIOs to gather information about priorities indirectly by drawing inferences from the patterns of change in a series of MIOs may require holistic processing. Thus, we strongly recommend trying to engage a holistic mindset that interprets information in context when using this strategy.

In proposing the MIOs strategy for negotiations when trust is low, we do not mean to downplay the importance of interpersonal trust or of building trust at the negotiation table. However, we recognize that trusting in negotiations is difficult for many and building trust at the negotiation table is time consuming and may not always be possible. Rather than give up on the prospect of negotiating high joint gains, we recommend using the MIOs strategy.

7.3. Limitations and future directions

Study 1 was limited to the number of studies available in the literature for meta-analysis, meaning that its estimates of effect sizes are accurate to the available data. Of particular interest for future researchers is the non-significant SIOs–joint gains result in non-Western

cultures. One interpretation, open to future research, could be that SIOs are not as damaging to joint gains in non-Western than in Western culture negotiations. Another opportunity for future research is to follow up on the interaction between MIOs and information sharing revealed in the meta-analysis. [Adair and Brett \(2005\)](#), who did not differentiate between SIOs and MIOs, concluded that in Western culture negotiators start with information sharing, introducing offers later in the negotiation to consolidate that information; whereas non-Western culture negotiators start with offers eschewing information sharing. How, when, and why MIOs and information sharing work interdependently versus independently to generate insight and joint gains is an opportunity for future research.

The meta-analysis used diverse samples from Western and non-Western cultures, showing the MIOs strategy–joint gains effect generalized across cultures, but Studies 2 and 3 were from a single non-Western culture. The relationship between use of MIOs, insight, and joint gains may be stronger in our Study 2 and Study 3 samples than in other cultural samples because of Chinese people's affinity for using the holistic mindset ([Graham & Lam, 2003](#)). However, a single culture sample seems unlikely to compromise our major finding that insight mediates the relationship between use of MIOs and joint gains, given the stability of the MIOs–joint gains effect in both Western and non-Western samples reported in Study 1. There is an opportunity for future research testing the low-trust path to joint gains in other cultural samples. Western culture negotiators may use MIOs to consolidate information gathered directly, whereas, non-Western culture negotiators may use MIOs to generate insight, or mechanically.

Another opportunity for future research is to determine whether the mechanical process of using MIOs to negotiate joint gains is limited to the nature of the simulation. Study 2 found negotiators using MIOs to generate insight, but Study 3 found negotiators using MIOs both to generate insight and mechanically. The difference may be due to the different simulations used in the two studies. Study 2, a non-experimental study, used the complex *Cartoon* simulation, in which the trade-off issues were continuous. Study 3, an experimental study, used a variant of the same exercise [Pruitt and Lewis \(1975\)](#) used when they identified negotiators reaching joint gains via the mechanical process of heuristic trial and error. The trade-off issues in the Study 3 simulation had nine specific options. It seems likely that trial and error is more likely to generate joint gains when issue options are discrete and limited.

In Studies 2 and 3, low trust led to more frequent use of MIOs, but another question for future research is whether the exchange of MIOs can affect negotiators' trust. A counterpart could interpret the use of MIOs as a behavioral signal of flexibility and a problem-solving orientation ([Pruitt & Lewis, 1975](#)). It is reasonable to hypothesize that negotiators' trust may evolve via the use of MIOs. Moreover, even though low trust exists widely in the present-day world, negotiators do reach agreements in low-trust cultures. The opportunity for future research is to understand more fully how they do so. In addition, although [Kong et al.'s \(2014\)](#) meta-analysis showed a positive relationship between trust and information sharing, we did not find this relationship in either Study 2 or 3. This may be because both Studies 2 and 3 used Chinese samples. Communications in Chinese culture tends to be highly contextual ([Hall, 1976](#)). High-trust Chinese negotiators may not rely on information exchange as captured by current behavioral coding that focuses solely on low context, direct questions and answers about interests and priorities. Our finding identifies an opportunity for important future research on how high-trust negotiators in non-Western, high-context cultures engage in information sharing.

Finally, we found that having a holistic mindset facilitated generating insight from MIOs. This suggests future research testing whether negotiators can learn to infer counterpart's interests from a pattern of MIOs and counter MIOs. Does the negotiator first have to learn to process information holistically? Will plotting offers facilitate analytic mindset negotiators' insight and make no difference to holistic mindset

negotiators? Those research questions require future studies. In sum, all these questions call for future attention to the dynamic relationship between trust, the MIOs strategy, mindset, insight and joint gains across cultures.

8. Conclusion

This research on the relationship between the MIOs strategy and joint gains extends our understanding of negotiation strategy beyond the integrative versus distributive dichotomy. Although there are many unanswered questions stemming from this research, there are two important conclusions: the MIOs strategy can generate joint gains; low-trust negotiators can use this strategy in lieu of information sharing to do so.

CRedit authorship contribution statement

Jingjing Yao: Conceptualization, Methodology, Formal analysis, Project administration, Writing - original draft. **Jeanne M. Brett:** Conceptualization, Investigation, Supervision, Writing - original draft. **Zhi-Xue Zhang:** Conceptualization, Investigation, Resources, Funding acquisition, Project administration, Writing - review & editing. **Jimena Ramirez-Marin:** Conceptualization, Investigation, Writing - review & editing.

Acknowledgement

This research is supported by a fund from the National Natural Science Foundation of China (# 71632002) awarded to Zhi-Xue Zhang.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.obhdp.2020.10.012>.

References

References marked with an asterisk indicate studies included in the meta-analysis (Study 1).

- *Aalders, H., & Ten Velden, F. (2018). How representatives with a dovish constituency reach higher individual and joint outcomes in integrative negotiations. *Group Processes and Interpersonal Relations*, 21, 111–126.
- *Adair, W. L., & Brett, J. M. (2005). The negotiation dance: Time, culture, and behavioral sequences in negotiation. *Organization Science*, 16, 33–51.
- Adair, W. L., Weingart, L., & Brett, J. (2007). The timing and function of offers in US and Japanese negotiations. *Journal of Applied Psychology*, 92, 1056–1068.
- Baer, M. D., Dhensa-Kahlon, R. K., Colquitt, J. A., Rodell, J. B., Outlaw, R., & Long, D. M. (2015). Uneasy lies the head that bears the trust: The effects of feeling trusted on emotional exhaustion. *Academy of Management Journal*, 58, 1637–1657.
- Bazerman, M. H. (1990). *Judgment in Managerial Decision Making*. New York: John Wiley and Sons.
- Benjamini, Y., & Hochberg, Y. (1995). Controlling the false discovery rate: A practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society: Series B*, 57, 289–300.
- Brett, J. M. (2014). *Negotiating globally*. New York, NY: Wiley.
- Brett, J. M., Gunia, B. C., & Teucher, B. M. (2017). Culture and negotiation strategy: A framework for future research. *Academy of Management Perspectives*, 31, 288–308.
- Brett, J. M., & Okumura, T. (1998). Inter- and intracultural negotiation: U.S. and Japanese negotiators. *Academy of Management Journal*, 41, 495–510.
- Brett, J., Yao, J., & Zhang, Z.-X. (2018). OFFER: Behaviorally Coding Indirect and Direct Information Exchange in Negotiations. In E. Brauner, M. Boos, & M. Kolbe (Eds.), *The Cambridge Handbook of Group Interaction Analysis* (pp. 483–490). Cambridge University Press.
- Butler, J. K. (1991). Toward understanding and measuring conditions of trust: Evolution of a trust inventory. *Journal of Management*, 17, 643–663.
- Butler, J. K. (1995). Behaviors, trust, and goal achievement in a win-win negotiating role play. *Group and Organization Management*, 20, 486–501.
- Cai, D. A., *Wilson, S. R., & Drake, L. E. (2000). Culture in the context of intercultural negotiation. *Human Communication Research*, 26, 591–617.
- De Wit, F. R., Greer, L. L., & Jehn, K. A. (2012). The paradox of intragroup conflict: A meta-analysis. *Journal of Applied Psychology*, 97, 360–390.
- *Elfenbein, H. A., Curhan, J. R., Eisenkraft, N., Shirako, A., & Brown, A. (2010). Why are some negotiators better than others? Opening the black box of bargaining behaviors. Paper presented at the 23rd Annual Meeting of the International Association for Conflict Management. Cambridge, Massachusetts.
- Fukuyama, F. (1995). *Trust: The social virtues and the creation of prosperity*. New York: Free Press.
- *Geiger, I. (2014). Media effects on the formation of negotiator satisfaction: The example of face-to-face and text based electronically mediated negotiations. *Group Decision and Negotiation*, 23, 735–763.
- Gelfand, M., & Dyer, N. (2000). A cultural perspective on negotiation: Progress, pitfalls, and prospects. *Applied Psychology*, 49, 62–99.
- Graham, J. L., & Lam, N. M. (2003). The Chinese negotiation. *Harvard Business Review*, 81, 82–91.
- Greer, L. L., de Jong, B. A., Schouten, M. E., & Dannals, J. E. (2018). Why and when hierarchy impacts team effectiveness: A meta-analytic integration. *Journal of Applied Psychology*, 103, 591–613.
- Gunia, B., Brett, J., & Nandkeolyar, A. K. (2014). Trust me, I'm a negotiator: Diagnosing trust to negotiate effectively, globally. *Organizational Dynamics*, 43, 27–36.
- *Gunia, B. C., Brett, J. M., Nandkeolyar, A. K., & Kamdar, D. (2011). Paying a price: Culture, trust, and negotiation consequences. *Journal of Applied Psychology*, 96, 774–789.
- Hall, E. T. (1976). *Beyond culture*. Garden City, NY: Doubleday Anchor Books.
- Hayes, A. F. (2012). PROCESS: A versatile computational tool for observed variable mediation.
- *Henderson, M. D., Trope, Y., & Carnevale, P. J. (2006). Negotiation from a near and distant time perspective. *Journal of Personality and Social Psychology*, 91, 712–729.
- Higgins, J. P., & Thompson, S. G. (2002). Quantifying heterogeneity in a meta-analysis. *Statistics in Medicine*, 21, 1539–1558.
- Hüffmeier, J., Freund, P. A., Zerres, A., Backhaus, K., & Hertel, G. (2014). Being tough or being nice? A meta-analysis on the impact of hard- and softline strategies in distributive negotiations. *Journal of Management*, 40, 866–892.
- Hunter, J. E., & Schmidt, F. L. (2004). *Methods of meta-analysis: Correcting error and bias in research findings*. Newbury Park, CA: SAGE.
- *Hyder, E. B., Prietula, M. J., & Weingart, L. R. (2000). Getting to best: Efficiency versus optimality in negotiation. *Cognitive Science*, 24, 169–204.
- Ji, L. J., Peng, K., & Nisbett, R. E. (2000). Culture, control, and perception of relationships in the environment. *Journal of Personality and Social Psychology*, 78, 943–955.
- Johnson, N. D., & Mislin, A. A. (2011). Trust games: A meta-analysis. *Journal of Economic Psychology*, 32, 865–889.
- Kelley, H. H. (1966). A classroom study of the dilemmas in interpersonal negotiations. In D. Archibald (Ed.), *Strategic interaction and conflict*. Institute of International Studies: Berkeley, CA.
- Kenny, D. A., Kashy, D., & Cook, W. L. (2006). *Dyadic data analysis*. New York, NY: Guilford Press.
- *Kern, M., Lee, S., Aytug, Z., & Brett, J. M. (2012). Bridging social distance in intercultural negotiations: “you” and the bi-cultural negotiator. *International Journal of Conflict Management*, 23, 173–191.
- Kimmel, M. J., Pruitt, D. G., Magenau, J. M., Konar-Goldband, E., & Carnevale, P. J. D. (1980). Effects of trust, aspiration, and gender on negotiation tactics. *Journal of Personality and Social Psychology*, 38, 9–22.
- Kong, D. T., Dirks, K., & Ferrin, D. (2014). Interpersonal trust within negotiations: Meta-analytic evidence, critical contingencies, and direction for future research. *Academy of Management Journal*, 57, 1235–1255.
- Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 33, 159–174.
- Langfred, C. W. (2004). Too much of a good thing? Negative effects of high trust and individual autonomy in self-managing teams. *Academy of Management Journal*, 47, 385–399.
- Leonardelli, G. J., Gu, J., McRuer, G., Medvec, V. H., & Galinsky, A. D. (2019). Multiple equivalent simultaneous offers (MESOs) reduce the negotiator dilemma: How a choice of first offers increases economic and relational outcomes. *Organizational Behavior and Human Decision Processes*, 152, 64–83.
- Lewicki, R. J., McAllister, D. J., & Bies, R. J. (1998). Trust and distrust: New relationships and realities. *Academy of Management Review*, 23, 438–458.
- Lewicki, R. J., Tomlinson, E. C., & Gillespie, N. (2006). Models of interpersonal trust development: Theoretical approaches, empirical evidence, and future directions. *Journal of Management*, 32, 991–1022.
- Liu, L. A., Friedman, R., Barry, B., Gelfand, M., & Zhang, Z. X. (2012). The dynamics of consensus building in intracultural and intercultural negotiations. *Administrative Science Quarterly*, 57, 269–304.
- *Liu, M., Zhu, L., & Cionea, I. A. (2016). What makes some intercultural negotiations more difficult than others? Power distance and culture-role combinations. *Communication Research*, 1–20.
- *Liu, M., & Wilson, S. R. (2011). The effects of interaction goals on negotiation tactics and outcomes: A dyad-level analysis across two cultures. *Communication Research*, 38, 248–277.
- Lipsey, M. W., & Wilson, D. B. (2001). *Practical meta-analysis*. Thousand Oaks, CA: Sage.
- MacKinnon, D. P., Krull, J. L., & Lockwood, C. M. (2000). Equivalence of the mediation, confounding and suppression effect. *Prevention Science*, 1, 173–181.
- Mannix, E. A., Thompson, L. L., & Bazerman, M. H. (1989). Negotiation in small groups. *Journal of Applied Psychology*, 74(3), 508–517.
- Miyamoto, Y., Nisbett, R. E., & Masuda, T. (2006). Culture and the physical environment: Holistic versus analytic perceptual affordances. *Psychological Science*, 17, 113–119.
- *Moore, D., Kurtzberg, T., Thompson, L., & Morris, M. W. (1999). Long and short routes to success in electronically mediated negotiations: Group affiliations and good vibrations. *Organizational Behavior and Human Decision Processes*, 77, 22–43.

- Moran, S., & Ritov, I. (2002). Initial perceptions in negotiations: Evaluation and response to 'logrolling' offers. *Journal of Behavioral Decision Making*, 15(2), 101–124.
- Morris, M. W., & Peng, K. (1994). Culture and cause: American and Chinese attributions for social and physical events. *Journal of Personality and Social Psychology*, 67, 949–971.
- Murnighan, J. K., Babcock, L., Thompson, L., & Pillutla, M. (1999). The information dilemma in negotiations: Effects of experience, incentives, and integrative potential. *International Journal of Conflict Management*, 10, 313–339.
- *Nandkeolyar, A., & Brett, J. M. (2012). Indian Negotiators Dats Set. *Communication from authors 5–18-2018*.
- Nisbett, R. E., Peng, K., Choi, I., & Norenzayan, A. (2001). Culture and systems of thought: Holistic versus analytic cognition. *Psychological Review*, 108, 291–310.
- Norenzayan, A., Smith, E. E., Kim, B. J., & Nisbett, R. E. (2002). Cultural preferences for formal versus intuitive reasoning. *Cognitive Science*, 26, 653–684.
- Olekalns, M., & Smith, P. L. (2003a). Testing the relationships among negotiators' motivational orientations, strategy choices, and outcomes. *Journal of Experimental Social Psychology*, 39, 101–117.
- Olekalns, M., & Smith, P. L. (2003b). Social motives in negotiation: The relationships between dyad composition, negotiation processes and outcomes. *International Journal of Conflict Management*, 14, 233–254.
- Olekalns, M., & Smith, P. L. (2009). Mutually dependent: Power, trust, affect and the use of deception in negotiation. *Journal of Business Ethics*, 85, 347–365.
- *Olekalns, M., & Smith, P. L. (2013). Dyadic power profiles: Power-contingent strategies for value creation in negotiation. *Human Communication Research*, 39, 3–20.
- Olson, J. M., & Stone, J. (2005). The influence of behavior on attitudes. In D. Albarracín, B. T. Johnson, & M. P. Zanna (Eds.), *Handbook of attitudes and attitude change* (pp. 223–271). Mahwah, NJ: Erlbaum.
- Pruitt, D. G. (1981). *Negotiation Behavior*. New York, NY: Academic Press.
- Pruitt, D. G., & Lewis, S. A. (1975). Development of integrative solutions in bilateral negotiation. *Journal of Personality and Social Psychology*, 31, 621–633.
- R Core Team. (2016). *R: A language and environment for statistical computing*. Vienna: R Foundation for Statistical Computing.
- Raiffa, H. (1982). *The Art and Science of Negotiation*. Cambridge, MA: Harvard University Press.
- *Ramirez-Marin, J., Brett, J. M., Aslani, S., Yao, J., & Semnani-Azad, Z. (2014). *Measuring negotiation strategy and predicting outcomes: Self-reports, behavioral codes, and linguistic cues*. Leiden, Netherlands: International Association for Conflict Management.
- *Ritov, I., & Moran, S. (2008). Missed opportunity for creating value in negotiations: Reluctance to making integrative gambit offers. *Journal of Behavioral Decision Making*, 21, 337–351.
- Rousseau, D. M., Sitkin, S. B., Burt, R. S., & Camerer, C. (1998). Not so different after all: A cross-discipline view of trust. *Academy of Management Review*, 23, 393–404.
- *Schei, V., Rognes, J. K., & Mykland, S. (2006). Thinking deeply may sometimes help: Cognitive motivation and role effects in negotiation. *Applied Psychology*, 55, 73–90.
- *Schei, V., Rognes, J. K., & Shapiro, D. L. (2011). Can individualists and cooperators play together? The effect of mixed social motives in negotiations. *Journal of Experimental Social Psychology*, 47, 371–377.
- Schulz, J. W., & Pruitt, D. G. (1978). The effects of mutual concern on joint welfare. *Journal of Experimental Social Psychology*, 14, 480–492.
- Sinaceur, M. (2010). Suspending judgment to create value: Suspicion and trust in negotiation. *Journal of Experimental Social Psychology*, 46, 543–550.
- Stukas, A. A., & Snyder, M. (2002). Targets' awareness of expectations and behavioral confirmation in ongoing interactions. *Journal of Experimental Social Psychology*, 38, 31–40.
- *Ten Velden, F. S., Beersma, B., & De Dreu, C. K. W. (2007). Majority and minority influence in group negotiation: The moderating influence of social motivation and decision rules. *Journal of Applied Psychology*, 92, 259–268.
- Thompson, L., & Hastie, R. (1990). Judgment tasks and biases in negotiation. In B. H. Sheppard, M. H. Bazerman, & R. J. Lewicki (Eds.), *Research on Negotiation in Organizations* (pp. 31–54). Greenwich, CT: JAI Press.
- Thompson, L. L., Wang, J., & Gunia, B. C. (2010). Negotiation. *Annual Review of Psychology*, 61, 491–515.
- *Tinsley, C., O'Connor, K. M., & Sullivan, B. A. (2002). Tough guys finish last: The perils of a distributive reputation. *Organizational Behavior and Human Decision Processes*, 88, 621–642.
- Ury, W. (2016). *Getting to Yes with Yourself: How to Get What You Truly Want*, Harper One. US: San Francisco.
- Viechtbauer, W. (2010). Conducting Meta-Analyses in R with the metafor Package. Retrieved from *Journal of Statistical Software*, 36, 1–48 <http://www.jstatsoft.org/v36/i03/>.
- Walton, R. E., & McKersie, R. B. (1965). *A behavioral theory of labor negotiations*. New York: McGraw-Hill.
- Weber, M. (1951). *The religion of china: Confucianism and taoism*. New York: Free Press.
- Weingart, L. R., Bennett, R. J., & Brett, J. M. (1993). The impact of consideration of issues and motivational orientation on group negotiation process and outcome. *Journal of Applied Psychology*, 78, 504–517.
- Weingart, L. R., Brett, J. M., Olekalns, M., & Smith, P. L. (2007). Conflicting social motives in negotiating groups. *Journal of Personality and Social Psychology*, 93, 994–1010.
- *Weingart, L. R., Hyder, E. B., & Prietula, M. J. (1996). Knowledge matters: The effect of tactical descriptions on negotiation behavior and outcome. *Journal of Personality and Social Psychology*, 70, 1205–1217.
- Weingart, L. R., Olekalns, M., & Smith, P. L. (2004). Quantitative coding of negotiation behavior. *International Negotiation*, 9, 441–456.
- Weingart, L. R., Prietula, M. J., Hyder, E. B., & Genovese, C. R. (1999). Knowledge and the sequential processes of negotiation: A Markov chain analysis of response-in-kind. *Journal of Experimental Social Psychology*, 35, 366–393.
- *Weingart, L. R., Thompson, L. L., Bazerman, M. H., & Carroll, J. S. (1990). Tactical behavior and negotiation outcomes. *International Journal of Conflict Management*, 1, 7–31.
- Yao, J., Zhang, Z. X., & Brett, J. (2017). Understanding trust development in negotiations: An interdependent approach. *Journal of Organization Behavior*, 38, 712–729.
- Yukl, G. A., Malone, M. P., Hayslip, B., & Pamin, T. A. (1976). The effects of time pressure and issue settlement order on integrative bargaining. *Sociometry*, 39, 277–281.