Organizational Behavior

Conflict Strength: Measuring the Tension Between Cooperative and Competitive Incentives in Experimental Negotiation Tasks

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Conflict management scholars study mixed-motive negotiation situations with cooperative and competitive incentives predominantly through multi-issue negotiation tasks in experimental studies. Intriguingly, experimenters currently lack an objective, generalizable, and continuous measure that precisely quantifies the incentives underlying these negotiation tasks. We present the conflict strength coefficient, which enables scholars to systematically quantify the incentive structures in these multi-issue negotiation tasks. By making the incentive structures accessible and numerically comparable, the conflict strength coefficient provides new insights into the central element of the experimental study of negotiation and conflict management, unmasks differences across existing tasks, facilitates research transparency, knowledge sharing, and open science practices. We demonstrate the coefficient's benefits by providing a hands-on example from past research, by reviewing and quantitatively assessing the current literature, and by mapping conflict strength coefficients for the negotiation and conflict management research landscape and its subareas. Our analysis suggests that the conflict strength coefficient can enrich the understanding of cooperative and competitive incentives in the established tasks and directly guide and support an individual scholar's process of knowledge creation. The conflict strength coefficient provides a methodological contribution to the experimental study of conflict management and negotiation with immediate benefits for the production of scientific knowledge, the experimental study of real-world phenomena, and theory development.

Conflict is an integral part of all social relationships, forcing people to both cooperate and compete with others to achieve joint and individual goals (Kelley & Thibaut, 1978; Raiffa, 1982; Schelling, 1980). Conflict management and negotiation scholars use the scientific method ensuring empirical rigor to better understand when and why people cooperate and compete (Deutsch, 1973; Pruitt, 2012).

Scholars study conflict by creating representations of real-life conflict (Camerer, 2003) through experimental co-ordination games (Deutsch, 1980) or experimental multi-is-sue negotiation tasks (Pruitt & Lewis, 1975). These tasks provide exceptionally high levels of control, including very precise incentive structures "[...] *in which each option has a numerical value (representing points or money) to each party which is determined ahead of time by the experimenter*" (Pruitt, 2012). Multi-issue negotiation tasks offer high levels of internal validity (Shadish, 2002), confidence in causal inferences (De Dreu & Carnevale, 2005), and are the pre-dominant method in conflict management and negotiation research, used in 30% of empirical studies (Bendersky &

McGinn, 2010; Jang et al., 2018). These tasks therefore are the building blocks that many of the field's key insights are built upon (e.g., Adair & Brett, 2005; De Dreu et al., 2006; Henderson et al., 2006; Imai & Gelfand, 2010; Kray et al., 2004; Moore et al., 1999; Pinkley et al., 1995; van Kleef et al., 2004).

The conflict structure is fundamentally important to un-derstand how negotiators perceive the interactions, how they behave, and which kinds of outcomes they obtain (De Dreu & Carnevale, 2003; Kelley & Thibaut, 1978; Murnighan et al., 1999). Understanding how exactly con-flicts are structured within these experimental tasks is therefore crucial to assess the empirical building blocks of the negotiation literature. Cooperative and competitive in-centives provided by a task determine the nature of the con-flict and are therefore the central structural element of the negotiation (De Dreu & Carnevale, 2003). We present a sim-ple way to analyze and quantify these cooperative and com-petitive incentives to better understand the methodological foundations of the field of negotiations.

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Although these tasks provide high levels of methodological control, they lack control in one aspect fundamentally important to the area of experimental conflict research: it is unclear precisely how strong the cooperative and competitive incentives are in each negotiation task. De Dreu and colleagues (2007, p. 609) observed that "*in some negotiations the cooperative incentive is relatively weak, [...] in other negotiations the cooperative incentive is relatively strong.*" Unfortunately, since this observation, the varying dynamics of cooperative and competitive incentives in these experimental tasks have not received much further systematic attention although they are fundamentally important for the nature of the conflict.

Given the lack of a systematic measure of the conflict structure, negotiation tasks are often described simplistically as a dichotomy of either distributive or integrative negotiations. Our inability to quantify and compare the conflict structures underlying these tasks mask potentially important differences across studies: it is conceivable that entire literatures hinge on negotiation tasks with strong cooperative and weak competitive incentives or, vice versa, relatively weak cooperative and strong competitive incentives. Experimental negotiation tasks with either strong cooperative or competitive incentives are sensible if these structures accurately capture the real-world phenomena they seek to represent. However, the selective use of experimental tasks may be highly problematic when conclusions about a phenomenon are incorrectly generalized across the entire range of the cooperative-competitive incentive continuum, making these inferences unwarranted. In addition, the range of incentive structures could be a hidden but meaningful contextual moderator variable: phenomena may emerge differently at different subsets of the range, or even only emerge at very narrow ranges. Thus, some of our broad inferences may hinge on subsets of the entire range of the cooperative-competitive incentive continuum or on ranges that are unrepresentative of the real-world phenomenon they claim to represent.

This lack of transparency promotes closed science practices and increases the uncertainty about the quality of the research (Vazire, 2017). In addition, the lack of transparency disadvantages young scholars, penalizes those who are not embedded in well-connected networks of negotiation scholars, and obstructs the progress of the entire field (Vazire, 2018). Experienced experimentalists have developed their own tacit knowledge, intuitions, and implicit phenomenological assumptions (Aronson et al., 1998; Bendersky & McGinn, 2010) about which tasks are "*competitive*" and "*tough*" and which are "*cooperative,*" and "*easy.*" Experienced scholars have developed this tacit knowledge over time through trial-and-error, and observed which task "just doesn't work" for a particular experimental research ques-

tion or a particular lecture. These often imprecise, dichotomous, and subjective conceptualizations of the tasks' incentive structures lack rigor, mask differences across experimental tasks, obfuscate transparency, create barriers to knowledge sharing, and keep this tacit knowledge exclusive to the selected few who know.

Previous research on coordination games (e.g., the prisoners' dilemma) has already developed different indices to quantify and measure the underlying incentives and respective payoff structures, such as the cooperation index (Rapoport, 1967), the greed and fear index (Ahn et al., 2001), dilemma strength (Wang et al., 2015), or the social efficiency deficit (Arefin et al., 2020). Intriguingly, none of these existing measures to quantify the incentive structures has successfully entered research on agreement games (e.g., experimental multi-issue negotiation tasks). This lack of proliferation into experimental negotiation research is caused by substantial differences between research on coordination games versus agreement games (De Dreu & Carnevale, 2003). Typical differences between research traditions are the availability of information (i.e., coordination games provide full information on own and the counterpart's payoffs vs. agreements games provide incomplete information only on one's own payoffs), the incentivization of behavior (i.e., coordination games incentivize defection vs. agreement games incentivize the behavioral act of agreement), and the focus of analysis (i.e., coordination games focus on individuals' behavior vs. agreement games focus mainly on the joint level). We believe that these differences in research traditions and practices have hindered negotiation scholars from systematically translating and applying previous measures to quantify their negotiation tasks. Therefore, we seek to build upon existing measures and introduce a new, freely accessible, and practical tool into negotiation research to quantify the central element of the study of negotiation—their incentive structures.

Conflict Strength

We present the conflict strength coefficient as a construct and quantitative measure to objectively assess a task's cooperative incentives relative to the task's competitive incentives. A task's cooperative incentive is defined as the potential for individual gain from cooperation and a task's competitive incentive is defined as the potential for individual gain from competition (Murnighan et al., 1999). The conflict strength coefficient we propose precisely and objectively quantifies the proportion of cooperative to competitive incentives in the multi-issue negotiation tasks that are the building blocks of the conflict management literature (Kelley, 1966; Pruitt & Lewis, 1975; Siegel & Fouraker, 1960).[1] By quantifying the negotiator's cooperative and

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1 Please note that negotiators' subjective perceptions of the objective incentive structure of the negotiation task may be affected by external features. For instance, providing negotiators with good alternatives to a negotiated agreement (BATNA; e.g., Pinkley et al., 1995) and making exit options with other parties available may alter parties' subjective perceptions of the objective incentive structure (Giebels et al., 2000). According to our literature review, BATNAs are used in a quantifiable way only in 2.94% of cases (2 out of 68 studies). Therefore, we argue that these external features are rarely used and are not an essential element of the objective incentive structure. We focus explicitly on measuring the objective incentive structure provided by the given experimental negotiation task. Future work may assess how subjective perceptions of the incentive structure vary depending on such external features. Noteworthy, this future research ques-

competitive incentives, conflict strength captures the degree of interpersonal conflict between parties. The conflict strength coefficient applies to dyadic negotiations with multiple issues and symmetric incentive structures for the two parties because these are representative of most experimental studies in the conflict management and negotiation literature. The conflict strength coefficient does currently not yet apply to more complex intergroup settings (Halevy & Cohen, 2019), multi-party constellations (van Beest et al., 2008), or asymmetric conflict structures across parties (De Dreu et al., 2021). However, future work can surely extend it to these settings.

Benefits of Measuring Conflict Strength

Conflict strength offers several advantages to both the broad area of experimental conflict and negotiation research and to the individual negotiation scholars conducting research. On the level of the negotiations research area, conflict strength offers a systematic measure of how cooperative and competitive incentive structures are distributed across negotiation tasks and studies, making them objectively comparable. Second, we present conflict strength coefficients for a representative sample of negotiation tasks from empirical studies we identified through our literature review. Our literature search replicates and extends Bendersky and McGinn's (2010) literature review, but with a focus on articles from the past 15 years (2006-2021) to create a current overview of the distribution of conflict strength coefficients across the experimental studies in our research area. This provides a map of the current research landscape, allowing for fine-grained conclusions about the incentive structure of the conflicts in negotiation tasks across studies and subareas. This systematic, area-level assessment helps evaluate the most widely-used tasks, compare findings across subareas, and can improve the validity of our research area's findings to other research fields. Strengthening the link between experimental tasks and the phenomena under study may also help scholars to disseminate insights from our research area to other literatures and the wider public. Third, the conflict strength coefficient opens up a critical part of the production process of scientific knowledge and makes it transparent: the process of selecting a negotiation task with a specific incentive structure to examine the experimenter's research question. Finally, the conflict strength coefficient helps researchers identify incentive structures that are particularly suitable to examine certain real-world phenomena in controlled experimental settings.

The conflict strength coefficient also directly helps the individual scholars conduct their research: First, by allowing them to clearly communicate conflict strength in the task they use in research and teaching. To support this, we report conflict strength coefficients for some of the most frequently used negotiation tasks on OSF (https://osf.io/a5v3k/?view_only=4762bf5b7e8f420d9110f7f9101e1eec)

and on a dedicated website here: https://www.conflict-strength.com. Scholars can now communicate precisely which objective incentive structure they intend to use in their experimental studies and why this structure is representative of the specific real-world conflict situation they seek to investigate with their experimental task. This allows readers, reviewers, and editors to accurately understand the conditions under which an effect has been studied. Data collections with a new task in which an effect no longer emerges may have previously been interpreted as "failures", but now allow the scholar to more precisely understand the range of cooperative-competitive incentives for which an effect emerges. Without precisely quantified incentive structures, the central element of the negotiation situation risks remaining an unobserved contextual variable that affects a researcher's findings – with or without their knowledge. The conflict strength coefficient can therefore help experimenters understand when, how, and why people cooperate and compete in negotiations.

Second, the conflict strength coefficient directly opens up previously tacit knowledge of experienced experimentalists to junior scholars and those who do not have access to this research community. Using the conflict strength coefficient makes negotiation research more inclusive by providing one simple number to show which negotiation tasks match specific research questions and teaching purposes. Making this tacit knowledge explicit in just one coefficient democratizes access to scientific knowledge, reduces barriers to knowledge creation, promotes transparency in a key part of scientific knowledge production, increases open science practices in negotiation research, and facilitates progress of the entire field.

Common Categories of Conflict in Negotiation

Negotiators are typically in an interdependent relationship (Walton & McKersie, 1965) and motivated by both cooperative and competitive incentives (e.g., Kelley et al., 2003): cooperation helps them reach an agreement with the other party and avoid a negotiation impasse (Schweinsberg et al., 2022) which can be costly for both parties. At the same time, negotiators compete to maximize their individual interests (De Dreu et al., 2007). Mixed-motive negotiations therefore involve both a high degree of interpersonal conflict between parties and also a high degree of intrapersonal conflict between a negotiator's incentives to cooperate and to compete (Kelley et al., 1970).

The negotiators' incentives therefore determine the degree of interpersonal conflict, the degree of intrapersonal conflict between cooperative and competitive incentives, and ultimately the overall structure of the conflict: "*Researchers often make a distinction between what is referred to as distributive negotiation structure and those that are integrative in nature*" (Gelfand et al., 2011, p. 496). In distributive conflict structures, parties have diverging interests that are diametrically opposed to each other and, one party's

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tion highlights even more the relevance of a precise quantification of the objective incentive structure as a prerequisite to study how external features impact subjective perceptions of the objective task.

gain equates to the other party's loss. From a dyadic negotiation perspective, the joint optimal solution for both parties in distributive negotiations is to share the available profits equally and meet the other party halfway (i.e., compromise; (Trötschel et al., 2011) because this is the only available option that mutually satisfies both parties interests without hurting the counterpart.

The negotiation literature typically defines the compromise solution as "[...] some middle-ground [...]" (Pruitt & Carnevale, 1993, p. 16) that reflects the "[...] (obvious) fifty-fifty compromise [...]" (De Dreu & Carnevale, 2003, p. 255; Fisher & Ury, 1981; Lax & Sebenius, 1986; Pruitt, 1981; Raiffa, 1982; Walton & McKersie, 1965). In experimental negotiation tasks, Tripp and Sondak (1992, p. 286) refer to the compromise as the "[...] agreement of the middle level on each issue." Given that parties in the experimental negotiation literature have only incomplete information about their own payoffs and not about the counterpart's payoffs, the obvious compromise provides the common reference standard to quantify both the individual and the joint optimum (e.g., Pruitt & Carnevale, 1993).

While the joint optimum in distributive negotiations reflects the 50/50 split compromise, each party's individual optimum is to obtain all the available profits. Therefore, the difference between ones' individual optimum (i.e., the maximum individual outcome) and both negotiators' joint optimum (i.e., the compromise) is exactly half of all available profits in distributive negotiations. In other words, the individual optimum is exactly as twice as large as the joint optimum in distributive negotiations. Purely distributive negotiations are therefore on the competitive end of the conflict structure (Raiffa, 1982).

In integrative conflict structures, negotiators have diverging interests and prioritize the negotiation issues differently than their counterparts. Negotiators can therefore make reciprocal trade-offs on issues they value less for trade-offs on issues they value more. These systematic trade-offs can create integrative, mutually beneficial agreements (i.e., win-win agreements). The joint optimal solution creates additional value and increases individual outcomes above the obvious 50/50 split compromise. How much more value both parties can create beyond the obvious compromise is called the integrative potential (Pruitt & Carnevale, 1993). The size of the integrative potential depends on the conflict structure and therefore varies from one experimental negotiation task to the next. Competition maximizes individual outcomes in distributive negotiations, but cooperation maximizes individual outcomes in integrative negotiations. Therefore, the joint optimum in integrative negotiations is more profitable than in distributive negotiations, where the joint optimum is always the obvious compromise that splits the available profits equally irrespective of parties' priority differences across issues. Purely integrative negotiations are therefore on the cooperative end of the conflict structure (Raiffa, 1982).

Cooperative and Competitive Incentives in Multi-issue Negotiations

Most real-world negotiations (Pruitt, 1981) and experimental negotiation tasks used in academic studies (Jang et al., 2018) are neither purely distributive nor purely integrative and instead lie on a range between these extreme poles (Murnighan et al., 1999). Accordingly, most negotiation tasks contain varying numbers of multiple distributive and integrative negotiation issues and sometimes even compatible issues where negotiators share the same interests resulting in no conflict at all on these compatible issues. Compatible issues are the rarest type of issue and are discussed further below (see Footnote 3). The negotiation issues predefine "[...] *the set of alternatives that people must choose among, and the outcomes that are the possible results of these choices*" (De Dreu & Carnevale, 2003, p. 237). Thus, the constellation of multiple issues defines a task's specific cooperative and competitive incentives, and these determine the structure of a conflict. Given the large variety of multi-issue negotiation tasks with endless possibilities to construct them, we argue that a more precise quantitative assessment of the objective incentive structures helps provide new insights into the experimental tasks beyond the general and broad categories of integrative versus distributive negotiation structures.

Experimental negotiation tasks allow researchers to objectively quantify negotiated agreements through individual and joint outcomes (De Dreu & Carnevale, 2005; Gelfand et al., 2011), and to specify the cooperative and competitive incentives provided to the negotiators. Murnighan and colleagues (1999) offered a very useful and precise definition of cooperative and competitive incentives.

First, cooperative incentives are those that offer potential for individual gain from cooperation (Murnighan et al., 1999) and represent the maximum possible gain an individual negotiator can obtain when she cooperates with her counterpart. In distributive negotiations, cooperation should ideally result in the joint optimum, i.e., the compromise that splits the available profits into two equal halves. The size of the cooperative incentive in distributive negotiations is therefore the mere compromise between the parties. In contrast, in integrative negotiations, cooperation should ideally result in the joint optimum that creates value and maximizes profits for both parties above and beyond the mere compromise. The size of the cooperative incentive in integrative negotiations is therefore the joint optimum that maximizes value for both parties (i.e., the size of the integrative potential). Cooperative incentives are larger in integrative negotiations than in distributive negotiations because cooperation can create more value in integrative negotiations, but in distributive negotiations, only existing value can be claimed. Taken together, the cooperative incentives of a task equal the joint optima across the distributive and integrative issues.

Second, competitive incentives offer potential for individual gain from competition and represent the maximum possible gain when an individual negotiator competes with her counterpart (Murnighan et al., 1999). In distributive negotiations, competing with the counterpart should ideally result in the individual optimum and all of the available profits. The size of the competitive incentive in distributive negotiations is therefore the individual optimum that maximizes a negotiator's outcome. In integrative negotiations, competing with the counterpart should ideally also result

in the individual optimum. The size of the competitive incentive in integrative negotiations is therefore the individual optimum and is conceptually identical to the competitive incentive in distributive negotiations. Taken together, the competitive incentives of a task equal the individual optima across the distributive and integrative issues.

Figure 1 illustrates distributive and integrative negotiation issues, and quantifies the joint optimum and individual optimum, and the compromise solution in a classic multi-issue negotiation task by Pruitt and Lewis (1975).

Computing the Conflict Strength Coefficient

The conflict strength coefficient expresses the proportion of an experimental negotiation task's cooperative incentives relative to the task's competitive incentives in one simple number. The cooperative incentive is represented by the potential individual gain from the joint optimum standardized against the mere compromise. The competitive incentive is represented by the potential individual gain from the individual optimum standardized against the mere compromise. In line with a dyadic negotiation perspective, we use the obvious 50/50 split compromise at the middle level on each issue as the basic reference standard to quantify the size of cooperative and competitive incentives.[2] The conflict strength coefficient puts the cooperative incentive in relation to the competitive incentive to compare them within a given task and measures the interpersonal conflict between parties. Consistent with previous research in the domain of coordination games (Arefin et al., 2020; Axelrod, 1970), variance in the incentive structures between tasks can be primarily explained by the variance in the size of the cooperative incentive (i.e., the size of the integrative potential between the joint optimum and the mere compromise solution). Hence, the cooperative incentive reflects the key component of our measure that can be generalized across experimental tasks.

Figure 2 presents the formula to compute the conflict strength coefficient: conflict strength is defined as the cooperative incentive (i.e., the difference between a negotiator's joint optimum and the negotiator's compromise) divided by the competitive incentive (i.e., the difference between a negotiator's individual optimum and the negotiator's compromise). The resulting proportion of the cooperative to the competitive incentive is subtracted from 1 so that higher values indicate more interpersonal conflict and higher conflict strength.

The conflict strength coefficient indicates the extent to which the negotiator's competitive incentives exceed the cooperative incentives. The conflict strength coefficient can be interpreted as the percentage to which the negotiator's competitive incentives surpass her cooperative incentives. For example, a conflict strength coefficient of .65 indicates that the competitive incentives are 65% larger than the cooperative incentives (i.e., the size of the integrative potential). The conflict strength coefficient ranges between 0 and 1 where 0 indicates that the competitive incentives equal the cooperative incentives, and that there is no interpersonal conflict because both parties' interests are fully compatible. At the other end of the continuous measure, a conflict strength coefficient of 1 indicates that the negotiator's competitive incentives exceed the cooperative incentives by 100%, which indicates that both parties' interests are diametrically opposed in a fully distributive zero-sum negotiation with high levels of interpersonal conflict. Higher conflict coefficient scores indicate more distributive conflict structures, less integrative potential, and more interpersonal conflict.

We suggest the following taxonomy to classify conflict strength coefficients: conflict strength coefficients from 0 - .33 = *low* conflict strength, coefficients between .33 - .66 = *medium* conflict strength, and coefficients between .66 - 1.00 = *high* conflict strength.

Measuring Conflict Strength: An Example

We illustrate the functionality of the conflict strength coefficient with an example: In their experimental task, Murnighan and colleagues (1999) presented a symmetric, multi-issue negotiation between a city planner and a development company over six issues with symmetric payoffs for the two parties: two compatible issues[3] (retail space and inspector choice), two distributive issues (open space and height), and two integrative issues (financing and subcontractors). They created two versions of this experimental multi-issue negotiation task: the first version was primarily integrative, featuring a relatively strong cooperative incentive compared to a small competitive incentive. The authors labeled this particular negotiation situation as follows: "*Primarily integrative negotiations approach the completely cooperative extreme. They provide negotiators with the opportunity to expand their joint outcomes if they work together well*" (Murnighan et al., 1999, p. 316). The second version of the same experimental negotiation task was primarily distributive and only changed the incentive structure, but kept all other elements of the negotiation constant (i.e., same cover story, roles, and number and nature of issues). The incentive structure for this version now included a relatively

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2   When the negotiation task does not include an option for the 50/50 split compromise in the payoff tables, because the number of available options is even, the compromise value can be calculated and imputed in the formula. For instance, if an issue has 6 options 1 to 6 and therefore does not include a predetermined middle level compromise option, this compromise value can be calculated by the midpoint between options 3 and 4 and imputed in the formula as the compromise for this specific issue in order to quantify the cooperative and competitive incentives.

3   Please note that the joint optimum for compatible issues is also standardized against the benchmark of the obvious compromise solution. In the negotiation literature, parties have only incomplete information about the given payoff structure. Therefore, the obvious compromise is also the objective common reference standard for compatible issues at the outset of the negotiation irrespective of parties' priority difference or compatibility of interests across issues.

a) The Buyer's Payoff

Buyer						
Iron		Coal		Sulfur	
Price	Profit	Price	Profit	Price	Profit
A	$ 2,000	A	$ 800	A	$ 1,200
B	$ 1,750	B	$ 700	B	$ 1,050
C	$ 1,500	C	$ 600	C	$ 900
D	$ 1,250	D	$ 500	D	$ 750
E	$ 1,000	E	$ 400	E	$ 600
F	$ 750	F	$ 300	F	$ 450
G	$ 500	G	$ 200	G	$ 300
H	$ 250	H	$ 100	H	$ 150
I	$ 000	I	$ 000	I	$ 000

Conflict Structure	Integrative Issues				Distributive Issue		
Joint Optimum	A	$ 2,000	I	$ 000	E	$ 600	$ 2,600
Individual Optimum	A	$ 2,000	A	$ 800	A	$ 1,200	$ 4,000
Compromise	E	$ 1,000	E	$ 400	E	$ 600	$ 2,000

b) The Seller's Payoff

Seller						
Iron		Coal		Sulfur	
Price	Profit	Price	Profit	Price	Profit
A	$ 000	A	$ 000	A	$ 000
B	$ 100	B	$ 250	B	$ 150
C	$ 200	C	$ 500	C	$ 300
D	$ 300	D	$ 750	D	$ 450
E	$ 400	E	$ 1,000	E	$ 600
F	$ 500	F	$ 1,250	F	$ 750
G	$ 600	G	$ 1,500	G	$ 900
H	$ 700	H	$ 1,750	H	$ 1,050
I	$ 800	I	$ 2,000	I	$ 1,200

Conflict Structure	Integrative Issues				Distributive Issue		
Joint Optimum	A	$ 000	I	$ 2,000	E	$ 600	$ 2,600
Individual Optimum	I	$ 800	I	$ 2,000	I	$ 1,200	$ 4,000
Compromise	E	$ 400	E	$ 1,000	E	$ 600	$ 2,000

Figure 1. Conflict Structure of an Exemplary Multi-issue Negotiation Task Including the Quantification of the Joint Optimum, the Individual Optimum, and the Compromise.

The task includes two integrative issues (iron and coal) and one distributive issue (sulfur) and illustrates the differences between distributive and integrative issues and the consequences for joint optimum, individual optimum, and compromise for each issue separately and for the overall possible payoffs.
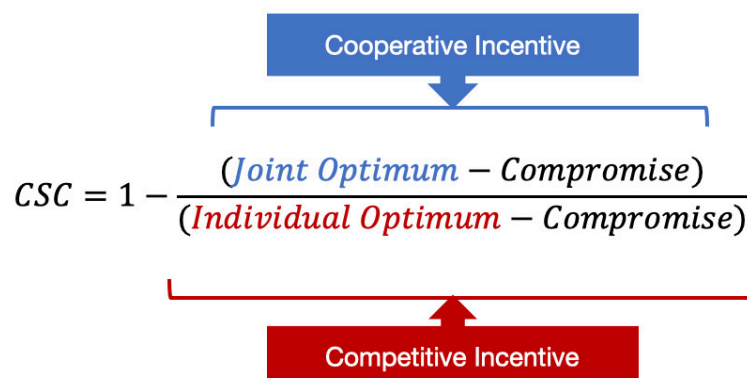
Cooperative Incentive

$$CSC = 1 - \frac{(Joint\ Optimum - Compromise)}{(Individual\ Optimum - Compromise)}$$

Competitive Incentive

Figure 2. The Conflict Strength Coefficient.

weak cooperative incentive and a relatively strong competitive incentive. This negotiation situation was described as: "*Primarily distributive negotiations approach the completely competitive extreme. They offer much less opportunity for expanding the parties' joint outcomes; they reward competitive tactics*" (Murnighan et al., 1999, p. 316).

Example of a Primarily Integrative Task

Figure 3 illustrates the computation of the conflict strength coefficient for the primarily integrative version of the task.

The conflict strength coefficient is .28 for the primarily integrative version of the task (Murnighan et al., 1999), meaning that the competitive incentive exceeds the cooperative incentive only by 28%. We classify this version of the task as *low* in conflict strength because the coefficient .28 falls between .0 - .33, and this version of the task allows both parties to integrate their interests in mutually beneficial ways. We now compute the conflict strength coefficient for the primarily distributive version of this task (Murnighan et al., 1999) to illustrate how it works across tasks.

Example of a Primarily Distributive Task

Figure 4 illustrates computation of the conflict strength coefficient for the primarily distributive version of the task.

A conflict strength coefficient of .65 for the primarily distributive negotiation task (Murnighan et al., 1999) indicates that the negotiator's competitive incentives are 65% bigger than the negotiator's cooperative incentives, leaving little room for integrating both parties' interests because their interests tend to be diametrically opposed.

The conflict strength coefficient allows both versions of the task to be mapped objectively on a continuous measure and across the full range of the conflict strength spectrum. Quantifying the incentive structures in this way shows that the incentive structures are rather arbitrary and that many alternative tasks above and below these "extremes" would have been suitable alternatives to systematically manipulate the fine-grained incentives of the negotiator. The field's common dichotomous distinction between distributive and integrative negotiation masks this precise variation of incentives that is only fully captured by the conflict strength coefficient. Conflict strength enables researchers to precisely utilize the space between the extremes of distributive and integrative tasks with an objectively interpretable and meaningful cooperative-competitive incentive continuum that impacts the perception and the behaviors of conflict parties in the social interaction they are in.

Conflict Strength Coefficients in the Literature

To provide an overview of conflict strength coefficients in current research, we reviewed the past literature and generated conflict strength coefficients for multi-issue negotiation tasks used in publications from 2006 to 2021. We build on previous reviews (Bendersky & McGinn, 2010; Jang et al., 2018) to collect a representative sample of empirical studies and first replicated the literature search conducted by Jang and colleagues (2018), and then expanded the time

frame to include more recent publications, from 2006 to 2021. We therefore considered the following journals in our literature search: (*Academy of Management Journal*, AMJ; *Administrative Science Quarterly*, ASQ; *Organizational Science*, OS; *Organizational Behavior and Human Decision Processes*, OBHDP; *Journal of Applied Psychology*, JAP; *Journal of Experimental Social Psychology*, JESP; *Journal of Personality and Social Psychology*, JPSP; *Personality and Social Psychology Bulletin*, PSPB). Next, we also replicated the literature search by Bendersky and McGinn (2010) and searched within each of these journals on Google Scholar for the terms "negotiat*," "bargain*," or "conflict*".

Our initial sample consisted of 359 articles. We then first excluded all non-empirical articles (reviews, theory papers), resulting in a sample of 290 articles. Next, we only included articles that used multi-issue negotiation tasks in at least one experimental study, resulting in a sample of 74 articles. Thus, 26% of all empirical articles in our search contained multi-issue negotiation tasks, which is very comparable to the 30% proportion of articles identified by Jang and colleagues (2018). Finally, we excluded tasks with asymmetric payoffs, multi-party tasks, computer-simulated studies without a counterpart, and those tasks for which complete payoffs were unavailable. Our final sample included 68 experimental negotiation tasks from 39 articles. We identified six subareas of the negotiations literature that these articles covered based on keywords, abstracts, and article titles: information processing (n = 26 tasks), emotion (n = 16 tasks), social motives (n = 10 tasks), structural characteristics (n = 8 tasks), culture (n = 5 tasks), and gender (n = 3 tasks). Figure 5 shows first the distribution of these 68 conflict strength coefficients from across the negotiations research area and then the distribution of conflict strength coefficients for each subarea (more information on the literature search, raw data, and the R code for the graph can be found on OSF: https://osf.io/a5v3k/?view_only=4762bf5b7e8f420d9110f7f9101e1eec).

The 68 negotiation tasks we examined included a range of conflict strength coefficients from .42 to 1.00 (M = .70, SD = .13). Scholars mostly used tasks with a medium to high conflict strength coefficient. Tasks with a low conflict strength coefficient, such as the example primarily integrative task by Murnighan and colleagues (CSC = .28; 1999), seem underrepresented in the literature. This is surprising given that researchers are incentivized to use negotiation tasks that facilitate agreement (Schweinsberg et al., 2022) to measure continuous outcomes and maximize the integrative potential to observe a greater variance between experimental conditions.

We also observe substantial variance in the conflict coefficient scores used across the subareas with *high* CSCs (all > .66) in the subareas of emotion (M = .75, SD = .16), culture (M = .74, SD = .17), social motives (M = .74, SD = .08), and information processing (M = .68, SD = .11) and *medium* CSCs (all < .66) in the subareas structural characteristics (M = .65, SD = .17) and gender (M = .62, SD = .02). Subareas also differ in the range of conflict strength coefficients they employ: conflict strength coefficients range from .61 to .81 in the subarea of social motives (M = .74, SD = .08), the coefficients employed in the gender literature (M = .62, SD = .02) appear to be on a much narrower range, from .61 and .64.

a) The City Planner's Payoff

Primarily Integrative Task: City's Planner's Payoff											
Financing		Retail Space		Open Space		Height		Inspector		Subcontractors	
Option	Points	Option	Points	Option	Points	Option	Points	Option	Points	Option	Points
$ 500 K	4,000	12,000 ft	2,400	26 %	1,000	2 stories	800	Mayer	600	8	400
$ 600 K	3,500	10,500 ft	2,100	24 %	875	3 stories	700	Stevens	525	7	350
$ 700 K	3,000	9,000 ft	1,800	22 %	750	4 stories	600	Burrows	450	6	300
$ 800 K	2,500	7,500 ft	1,500	20 %	625	5 stories	500	Young	375	5	250
$ 900 K	2,000	6,000 ft	1,200	18 %	500	6 stories	400	Conibear	300	4	200
$ 1,000 K	1,500	4,500 ft	900	16 %	375	7 stories	300	Hawes	225	3	150
$ 1,100 K	1,000	3,000 ft	600	14 %	250	8 stories	200	Gillespie	150	2	100
$ 1,200 K	500	1,500 ft	300	12 %	125	9 stories	100	DeWitt	75	1	50
$ 1,300 K	0	0 ft	0	10 %	0	10 stories	0	Wottle	0	0	0

Conflict Structure	Integrative Issue		Compatible Issue		Distributive Issues				Compatible Issue		Integrative Issue		
Joint Optimum	$ 500 K	4,000	12,000 ft	2,400	18 %	500	6 stories	400	Mayer	600	0	0	7,900
Individual Optimum	$ 500 K	4,000	12,000 ft	2,400	26 %	1,000	2 stories	800	Mayer	600	8	400	9,200
Compromise	$ 900 K	2,000	6,000 ft	1,200	18 %	500	6 stories	400	Conibear	300	4	200	4,600

b) The Development Company's Payoff

Primarily Integrative Task: Development Company's Payoff											
Financing		Retail Space		Open Space		Height		Inspector		Subcontractors	
Option	Points	Option	Points	Option	Points	Option	Points	Option	Points	Option	Points
$ 500 K	0	12,000 ft	2,400	26 %	0	2 stories	0	Mayer	600	8	0
$ 600 K	50	10,500 ft	2,100	24 %	125	3 stories	100	Stevens	525	7	500
$ 700 K	100	9,000 ft	1,800	22 %	250	4 stories	200	Burrows	450	6	1,000
$ 800 K	150	7,500 ft	1,500	20 %	375	5 stories	300	Young	375	5	1,500
$ 900 K	200	6,000 ft	1,200	18 %	500	6 stories	400	Conibear	300	4	2,000
$ 1,000 K	250	4,500 ft	900	16 %	625	7 stories	500	Hawes	225	3	2,500
$ 1,100 K	300	3,000 ft	600	14 %	750	8 stories	600	Gillespie	150	2	3,000
$ 1,200 K	350	1,500 ft	300	12 %	875	9 stories	700	DeWitt	75	1	3,500
$ 1,300 K	400	0 ft	0	10 %	1,000	10 stories	800	Wottle	0	0	4,000

Conflict Structure	Integrative Issue		Compatible Issue		Distributive Issues				Compatible Issue		Integrative Issue		
Joint Optimum	$ 500 K	0	12,000 ft	2,400	18 %	500	6 stories	400	Mayer	600	0	4,000	7,900
Individual Optimum	$ 1,300 K	400	12,000 ft	2,400	26 %	1,000	2 stories	800	Mayer	600	0	4,000	9,200
Compromise	$ 900 K	200	6,000 ft	1,200	18 %	500	6 stories	400	Conibear	300	4	2,000	4,600

c) The Conflict Strength Coefficient of the Primarily Integrative Task

$$CSC = 1 - \frac{(Joint\ Optimum - Compromise)}{(Individual\ Optimum - Compromise)} = 1 - \frac{(7900 - 4600)}{(9200 - 4600)} = .28$$

Figure 3. Conflict Strength Coefficient for a Primarily Integrative Multi-issue Negotiation Task.

a) The City Planner's Payoff

Primarily Distributive Task: City's Planner's Payoff											
Financing		Retail Space		Open Space		Height		Inspector		Subcontractors	
Option	Points	Option	Points	Option	Points	Option	Points	Option	Points	Option	Points
$ 500 K	1,000	12,000 ft	2,400	26 %	4,000	2 stories	400	Mayer	600	8	800
$ 600 K	875	10,500 ft	2,100	24 %	3,500	3 stories	350	Stevens	525	7	700
$ 700 K	750	9,000 ft	1,800	22 %	3,000	4 stories	300	Burrows	450	6	600
$ 800 K	625	7,500 ft	1,500	20 %	2,500	5 stories	250	Young	375	5	500
$ 900 K	500	6,000 ft	1,200	18 %	2,000	6 stories	200	Conibear	300	4	400
$ 1,000 K	375	4,500 ft	900	16 %	1,500	7 stories	150	Hawes	225	3	300
$ 1,100 K	250	3,000 ft	600	14 %	1,000	8 stories	100	Gillespie	150	2	200
$ 1,200 K	125	1,500 ft	300	12 %	500	9 stories	50	DeWitt	75	1	100
$ 1,300 K	0	0 ft	0	10 %	0	10 stories	0	Wottle	0	0	0

Conflict Structure	Integrative Issue		Compatible Issue		Distributive Issues				Compatible Issue		Integrative Issue		
Joint Optimum	$ 500 K	1,000	12,000 ft	2,400	18 %	2,000	6 stories	200	Mayer	600	0	0	6,200
Individual Optimum	$ 500 K	1,000	12,000 ft	2,400	26 %	4,000	2 stories	400	Mayer	600	8	800	9,200
Compromise	$ 900 K	500	6,000 ft	1,200	18 %	2,000	6 stories	200	Conibear	300	4	400	4,600

b) The Development Company's Payoff

Primarily Distributive Task: Development Company's Payoff											
Financing		Retail Space		Open Space		Height		Inspector		Subcontractors	
Option	Points	Option	Points	Option	Points	Option	Points	Option	Points	Option	Points
$ 500 K	0	12,000 ft	2,400	26 %	0	2 stories	0	Mayer	600	8	0
$ 600 K	100	10,500 ft	2,100	24 %	500	3 stories	50	Stevens	525	7	125
$ 700 K	200	9,000 ft	1,800	22 %	1,000	4 stories	100	Burrows	450	6	250
$ 800 K	300	7,500 ft	1,500	20 %	1,500	5 stories	150	Young	375	5	375
$ 900 K	400	6,000 ft	1,200	18 %	2,000	6 stories	200	Conibear	300	4	500
$ 1,000 K	500	4,500 ft	900	16 %	2,500	7 stories	250	Hawes	225	3	625
$ 1,100 K	600	3,000 ft	600	14 %	3,000	8 stories	300	Gillespie	150	2	750
$ 1,200 K	700	1,500 ft	300	12 %	3,500	9 stories	350	DeWitt	75	1	875
$ 1,300 K	800	0 ft	0	10 %	4,000	10 stories	400	Wottle	0	0	1,000

Conflict Structure	Integrative Issue		Compatible Issue		Distributive Issues				Compatible Issue		Integrative Issue		
Joint Optimum	$ 500 K	0	12,000ft	2,400	18 %	2,000	6 stories	200	Mayer	600	0	1,000	6,200
Individual Optimum	$ 1,300 K	800	12,000ft	2,400	26 %	4,000	2 stories	400	Mayer	600	0	1,000	9,200
Compromise	$ 900 K	400	6,000ft	1,200	18 %	2,000	6 stories	200	Conibear	300	4	500	4,600

c) The Conflict Strength Coefficient of the Primarily Distributive Task

$$CSC = 1 - \frac{(Joint\ Optimum - Compromise)}{(Individual\ Optimum - Compromise)} = 1 - \frac{(6200 - 4600)}{(9200 - 4600)} = .65$$

Figure 4. Conflict Strength Coefficient for a Primarily Distributive Multi-issue Negotiation Task.

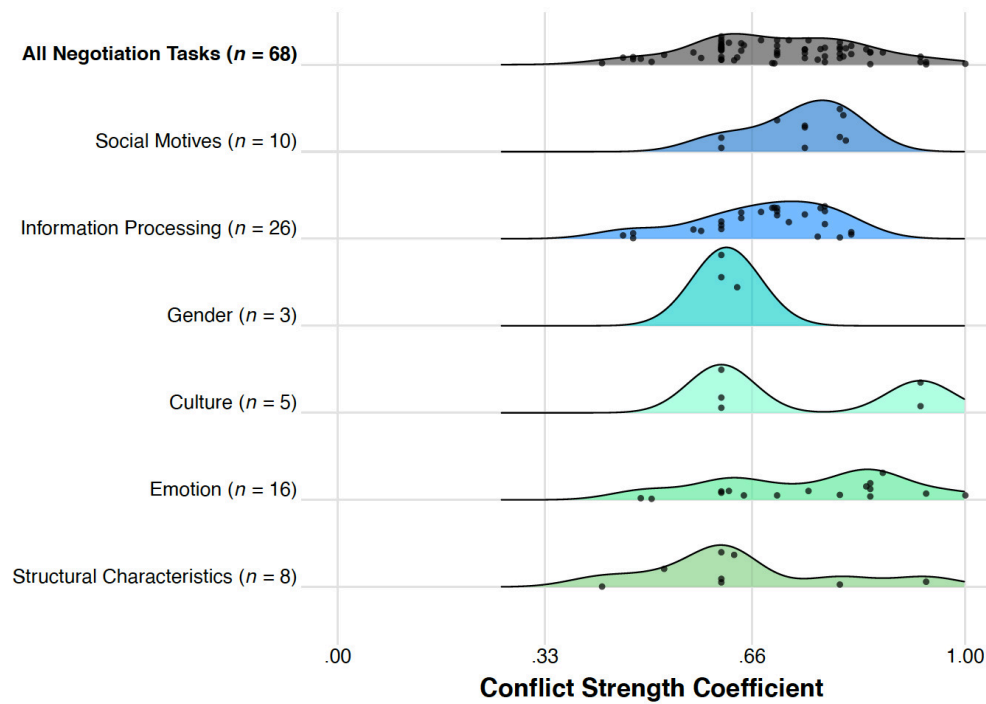**Table 1. Conflict Strength Coefficients (CSC) Computed for Selected Negotiation Tasks.**

#	Negotiation Task	CSC	Sample Publication
1	Class Project Negotiation (ad. from O´Connor et al., 2005)	.48-1.00*	O'Connor et al., 2010
2	Mountain-Pinnacle (Conlon et al., 2002)	.42-.94*	Wilson et al, 2016
3	At Your Service (Brett & Gelfand, 2007)	.93	Gelfand et al., 2013
4	New Business Venture (ad. from Sinaceur, 2010)	.67-.87*	Sinaceur et al., 2015
5	Appliance Shipment (De Dreu & Van Lange, 1995)	.84	Brooks & Schweitzer, 2011
6	Island/Heritage Negotiation	.81	Trötschel & Gollwitzer, 2007
7	Player Contract Negotiation	.81	Leonardelli et al., 2019
8	Bartender Negotiation (De Dreu et al., 2006)	.80	Ten Velden et al., 2010
9	Joint Business Venture (Thompson et al., 1996)	.80	Halevy, 2008
10	Union-Management (De Dreu & Van de Vliert, 1998)	.74-.78*	De Dreu et al., 2009
11	New Recruit (Neale, 1997)	.61-.78*	Gunia et al., 2013
12	Sale of a Café (ad. from Pruitt & Lewis, 1975)	.69-.77*	Loschelder et al., 2016
13	Student Class Presentation	.77	Henderson et al., 2006
14	Company Takeover (ad. from De Dreu et al., 2006)	.74	Ten Velden et al., 2011
15	Job Negotiation (Sinaceur & Tiedens, 2006)	.72	Sinaceur et al., 2010
16	Job-contract Negotiation	.70	Fairfield & Allred, 2007
17	Buyer-Seller Negotiation (Pruitt & Lewis, 1975)	.70	Schei et al., 2011
18	Free Market Negotiation (ad. from Bazerman et al., 1985)	.46-.70*	Moran & Ritov, 2007
19	The New Car (Nadler et al., 2008)	.61-.65*	Schroeder et al., 2019
20	City Development Project (Brodt, 1999)	.28-.65*	Murnighan et al., 1999
21	Acquisition of Food Exporter	.64	Flynn & Ames, 2006
22	New Car Negotiation (ad. from De Dreu et al., 2000)	.64	Harinck & De Dreu, 2008
23	Contract Negotiation (ad. from Brooks & Schweitzer, 2011)	.63	Hart & Schweitzer, 2020
24	Purchase of a Car	.58	Giacomantonio et al., 2010
25	Recruiter-Candidate (ad. from Trötschel & Gollwitzer, 2007)	.57	Giacomantonio et al., 2010
26	Designing Posters	.52	Van Kleef et al., 2013
27	Author-Publisher Negotiation (Lewicki et al., 1999)	.47	Sullivan et al., 2006
28	Video Rental Negotiation (ad. from O`Connor, 1997)	.47	Sullivan et al., 2006

Note. CSC indicates the computed conflict strength coefficients for each negotiation task. CSCs marked with an asterisk indicate that the negotiation task was used with different incentive structures. Therefore, we report the range of conflict strength coefficients for the specific negotiation task realized with multiple incentive structures.

However, note that the number of negotiation tasks in these subareas differ widely, from *n* = 26 for information processing to *n* = 3 for gender, and this might explain the narrow range of conflict strength coefficients observed here.

That said, conflict strength coefficients likely differ in both mean and range across subareas even when considering a much wider sample, and these differences can make sense: it is perfectly sensible to study the phenomena of gender difference predominantly in negotiation tasks with only medium conflict strength, as these offer sufficient cooperative and competitive incentives to observe gender differences. Based on our limited review, however, it may be advisable to carefully consider whether gender differences observed in these studies also apply to negotiations with low or high conflict strength coefficients. If scholars are specifically interested in studying gender differences in real-world phenomena which are either primarily integrative (= low CSC < .33) or primarily distributive (= high CSC, > .66), they may want to choose negotiation tasks with corresponding incentive structures. Scholars could choose a ne-

gotiation task either by referring to Table 1, or by consulting the collection of negotiation tasks we already quantified on https://conflictstrength.com. Importantly, some scholars also already varied the conflict strength of negotiation tasks used within a study: Dimotakis and colleagues (2012) studied how negotiator personality interacts with the negotiation situation and their negotiation task had a high conflict strength coefficient in one condition (CSC = .94) and a medium conflict strength coefficient (CSC = .42) in the other condition. The conflict strength coefficient allows researchers to systematically control and vary the incentive structures of their tasks and to both identify boundary conditions of certain phenomena and to generalize phenomena across situations. The experimental conflict management and negotiation literature can benefit from a more systematic evaluation of the negotiation tasks used to identify these and other blind spots on the cooperative-competitive incentive continuum.

Figure 5. Density Plots of the Distribution of Conflict Strength Coefficients for the Entire Sample and the Subfields in Negotiation and Conflict Management Research.

Validity Check of the Conflict Strength Coefficient

We conducted a preliminary validity check of our continuous measure of conflict strength and analyzed to what extent a tasks' conflict strength coefficients are associated with a key reported negotiation outcome for these tasks. If a task's incentive structure impacts negotiator's cooperative and competitive negotiation behaviors (e.g., Kelley & Thibaut, 1978), and if our conflict strength coefficient is indeed a valid measure of these incentive structures, we should observe a relationship between a task's conflict strength coefficient and the reported negotiation outcomes for that task. We therefore examined each negotiation task's conflict strength coefficient and correlated it to the average percentage of the integrative potential that negotiators realized in these tasks. Specifically, we calculated the grand mean of negotiators' individual outcomes across conditions for each negotiation task in our sample. We then calculated the difference of the grand mean of negotiators' individual outcomes reached and the compromise and divided it by the difference of the objectively possible joint optimum and the compromise to standardize negotiator's outcomes across experiments (more information on the coding of outcomes can be found on OSF: https://osf.io/a5v3k/?view_only=4762bf5b7e8f420d9110f7f9101e1eec).

Our analysis revealed a significant negative correlation between the conflict strength coefficient and the percentage of integrative potential achieved across the tasks in our sample, $r = -.42$, $t(30) = 2.56$, $p = .016$. Thus, the conflict strength coefficient seems to be a valid measure of a negotiation tasks' incentive structure as it reliably predicts negotiated agreements. Although this correlation should be interpreted with caution and other manipulated and un-observed variables may have impacted negotiated agreements, the conflict strength coefficient seems to be a valid measure of a task's incentive structure. Future research may further test the predictive validity of the conflict strength coefficient while systematically controlling for other features of the task such as the number of issues, the constellation of distributive, integrative, and compatible issues, the priority differences of the issues, outside options to the negotiated agreement, or the externally provided performance-dependent remuneration of the participants.

Discussion

Conflict Strength for the Negotiation Research Area

The conflict strength coefficient has several implications for the area of experimental conflict management and negotiation research. First, the conflict strength coefficient isolates the incentives and provides a precise numeric assessment of the "*central element of negotiation and related situations*" (De Dreu & Carnevale, 2003, p. 237). Providing one easily quantifiable metric opens up this typically unobserved key variable to examination, inspection, analysis, and experimental manipulation, allowing scholars control over a task's incentive structure and to explicitly manipulate this key aspect on a continuous scale across and within studies. This also helps precisely identify boundary conditions for the range of incentives across which an effect is more or less likely to emerge. Experimenters can also better understand an effect by controlling the conflict strength coefficient within studies: an experimenter might observe that manipulating the independent variable causes deviation in the dependent variable and then use theory to

predict that the effect should increase when the conflict strength coefficient is high. Their Study 2 could employ a 2 (independent variable: control/experimental) x 2 (conflict strength coefficient: low/high) design and test her now more precisely formulated hypothesis with the predicted moderation (e.g., O'Connor et al., 2010). The precise numerical nature of the conflict strength coefficient provides exceptional levels of control and the ability to explicitly test theory which makes effects contingent on specific ranges of the conflict strength continuum. Scholars could also identify moderators that are differentially important at different sections of the conflict strength coefficient continuum. For instance, Murnighan and colleagues (1999) found that experienced negotiators outperformed their naïve counterparts, especially when the negotiation was high in conflict strength (i.e., was primarily distributive; CSC = .65) and less so when the negotiation was low in conflict strength (i.e., was primarily integrative; CSC = .28). Importantly, the conflict strength coefficient allows the scholar to precisely isolate and change only the cooperative/competitive elements of the objective incentive structure without changing any other external feature of the negotiation task. This ensures far higher levels of experimental control, precision, and transparency than previously possible when scholars demonstrated an effect first in a presumably cooperative task and in a presumably competitive task, although other factors unrelated to the incentive structure may have also changed (i.e., cover story, roles, issues, situation).

Second, the conflict strength coefficient promotes transparency and open science practices. Identifying and quantitatively assessing the incentive structure of negotiation tasks opens up a key part of the process of scientific knowledge production in the negotiations research area. Transparency here makes previously tacit knowledge of experienced experimentalists accessible to all those scholars who are unaware of the intricacies and idiosyncrasies of commonly used negotiation tasks with two benefits: first, opening up this key part of the production function of scientific knowledge makes it accessible to young scholars or scholars who are geographically distant from traditionally strong research groups. Second, scholars in other research areas will be better able to understand and contextualize the findings from our area since they no longer need to be familiar with negotiation tasks such as *New Recruit*, *The New Car*, or *Mountain-Pinnacle* that are only meaningful to a selective group of scholars and, instead only have to know the tasks' conflict strength coefficient.

Third, the conflict strength coefficient helped us quantitatively assess the conflict strength of the tasks that our empirical findings are mostly built upon. Some subareas may assess effects using conflict strength coefficients that do not fully represent the real-world phenomena these effects occur in: an effect might mostly occur in reality in primarily integratively structured negotiations (low conflict strength), but be studied mostly in primarily distributively structured settings (high conflict strength), and vice versa. Scholars might choose unrepresentative tasks due to legacy effects (previous studies used a particular task), or because an effect is simply easier to show on a particular range of the conflict strength continuum, or for any of the many other reasons that scholars currently do not explicitly ar-

ticulate when writing up their methods sections, leaving a key part of the production function of scientific knowledge obscured. The conflict strength coefficient can help reveal these differences between real-world phenomena and their representations in our empirical studies. We noticed that well-established tasks such as New Recruit (Neale, 1997) are overrepresented (15 times in our sample, accounting for 22% of all conflict strength coefficients we observed). This is not surprising as well-established tasks are more well-known, more easily accessible, and their use makes the resource-intensive experimental process more efficient. However, routinely relying on well-established tasks without considering their appropriateness risks a decoupling of meaningful incentive structures from the actual phenomena under investigation.

Finally, the conflict strength coefficient may also help answer the fundamental research question of *what determines cooperation and competition?* Conflict strength can partially predict a negotiator's tendency to cooperate or compete and the quality of their final agreements. Therefore, the conflict strength coefficient may provide new insights and stimulate research into this prevailing research question.

The conflict strength coefficient complements the literature on the negotiator's dilemma (Lax & Sebenius, 1986; Murnighan et al., 1999; Stuart, 2011). Some scholars have proposed game-theoretic conceptualizations to simplify multi-issue negotiation situations that describe the tension between cooperation and competition (Lax & Sebenius, 1986; Walton & McKersie, 1965). According to this perspective, the strategic choices of both the negotiator and their counterpart must be considered to capture the tension between cooperation and competition. However, the conflict strength coefficient does not require assumptions about the counterpart's behavioral strategy in the negotiation, because it is computed based on the incentives for the individual negotiator provided by a symmetric task. Therefore, the conflict strength coefficient parsimoniously captures multi-issue negotiations and generalizes across tasks, irrespective of the counterpart's strategic behaviors. In addition to this, neither this literature on the negotiator's dilemma nor previous indices to quantify the structure of coordination games have led to the proliferation and wide-spread use of such an index in experimental negotiation research. The conflict strength coefficient, however, takes into account negotiation specific characteristics and builds on constructs familiar to negotiation researchers. Thereby, we seek to overcome the disciplinary gap between coordination games and agreement games and offer an intuitively accessible and practical tool for negotiation scholars that highlights the crucial role of incentives to illustrate the tension between cooperation and competition.

Finally, the conflict strength coefficient may not only help predict the quality of final agreements, but whether a final agreement is reached at all or whether the negotiation ends in an impasse (Schweinsberg et al., 2022). The conflict strength coefficient may help us understand when and why negotiations end without an agreement, and how negotiators can resolve impasses at different segments of the conflict strength continuum.

Conflict Strength as an Applied Tool for Researchers

The conflict strength coefficient also directly benefits individual scholars:

First, scholars can now precisely estimate and quantify "*the central element*" (De Dreu & Carnevale, 2003, p. 237) of negotiation tasks, using either the original formula themselves, or by consulting Table 1 or the website https://conflictstrength.com/. Future developments could even include a tool that suggests potential changes to make an existing payoff table more or less cooperative or competitive. Second, the conflict strength coefficient can help scholars gain a more precise and systematic understanding of their own research findings, including the boundary conditions of an effect. Third, the conflict strength coefficient helps scholars match the real-world phenomenon they are interested in with a structurally equivalent negotiation task, and not choose a task based on surface level similarities such as the written cover story. Furthermore, conflict strength coefficients facilitate logistic and operational aspects for negotiation and conflict management researchers by opening up a wider range of negotiation tasks to scholars they may not yet be familiar with, allowing them to study a phenomenon across a wider range of conflict strength coefficients, or even expand the range of phenomena they can study. Scholars may be more familiar with cooperatively or competitively incentivized tasks for idiosyncratic reasons (their school's culture might predispose them to cooperative/competitive tasks, teachers of long negotiation courses know a wider range of tasks, etc.). The conflict strength coefficient facilitates communication and collaboration between researchers and opens up the entire range of incentive structures to be studied by any scholar, anywhere in the world, with confidence and competence.

Limitations and Future Work

The conflict strength coefficient has some key limitations that we want to acknowledge explicitly. First, we only reviewed a representative but a limited sample of conflict strength coefficients from the negotiation and conflict management literature. Conclusive insights on the subareas we reviewed (i.e., gender with $n = 3$ studies included) may only be warranted with a much larger sample of studies.

Second, our paper is focused specifically on multi-issue negotiation situations with symmetric payoffs and the conflict strength coefficient cannot yet be directly applied to negotiations beyond the scope of our formula. Future work could develop a revised conflict strength coefficient to assess the incentive structure of those tasks currently beyond the scope of the formula. A good starting point for adjusting the formula could be to compute multiple conflict strength coefficients across asymmetric incentive structures (e.g., when incentives differ between parties), across parties (e.g., when multiple parties are involved), or across hierarchical levels of conflict (e.g., when intragroup and intergroup conflicts emerge). The sum of conflict strength coefficients could then be aggregated and transformed into a single overall score that could capture these more complex negotiations.

Third, although the conflict strength coefficient objectively quantifies the "*central element*" of these tasks for the first time (De Dreu & Carnevale, 2003, p. 237), we acknowledge that other components are relevant, but may not always be quantifiable. For example, negotiators might approach the same objective incentive structure very differently depending on additional elements of the negotiation task, such as the cover story, their roles, the negotiation issues, or the social domain in which the negotiation takes place. These labels may have important cueing effects guiding participant behavior (e.g., Rettinger & Hastie, 2001). In the extreme, one could imagine two versions of the same task with the same incentive structure where one cover story increases competition, negative emotions, and distrust and the other one increases cooperation, warmth, and friendliness. Although numeric estimates can easily dominate perception (Peters et al., 2008), we want to emphasize that the conflict strength coefficient can only be understood in the context of other aspects of the negotiation task such as its cover story, roles, or social setting.

Fourth, conflict strength may also prove useful for future research beyond the lab. If conflict strength is a valid measure of incentive structures in experimental tasks, future work might also be able to adjust this measure for how people perceive incentive structures in the field that are not yet as easily quantifiable as experimental negotiation tasks, for instance, through quantitative diary studies. Making measurable how negotiators perceive incentive structures of negotiations at work, in politics, or at home can help us to identify ranges on the cooperative-competitive incentive continuum for which we have not yet created corresponding negotiation tasks.

Concluding Thoughts

Our methodological contribution to the experimental study of conflict and negotiation extends the dichotomous label of distributive and integrative negotiation situations (Sebenius, 2015) that has shaped research and teaching for more than 50 years (Walton & McKersie, 1965) towards a simple, numeric estimate. The whole negotiations research area and the individual scholars in it can benefit from a continuous, fine-grained measure of the incentive structures underlying many of our empirical insights. The conflict strength coefficient can help scholars assess, interpret, compare, and manipulate experimental negotiation tasks that constitute the building blocks of our literature.

Contributions

Contributed to conception and design: JM, MS, HZ, RT
Contributed to acquisition of data: JM, MS
Contributed to analysis and interpretation of data: JM, MS, HZ, RT
Drafted and/or revised the article: JM, MS, HZ, RT
Approved the submitted version for publication: JM, MS, HZ, RT

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Competing interests

On behalf of all authors, JM declares that no competing interests exist.

Data accessibility statement

The following datasets were generated and are available at the OSF website (https://osf.io/a5v3k/?view_only=4762bf5b7e8f420d9110f7f9101e1eec) and on a dedicated website (https://www.conflict-strength.com).

- Overview of conflict strength coefficients (Table 1)
- Literature search and article selection
- Conflict strength coefficient coding scheme including CSC scores, individual negotiation outcomes (percentage of integrative potential reached), BATNAs.
- Descriptive statistics of CSC scores
- R code for Figure 1 and descriptive statistics of CSC scores

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