Setting up Shop: An Experimental Analysis of Bargain Shopping

Vanessa A. Lefler
University of Iowa
vanessa-lefler@uiowa.edu

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Introduction

Prescriptions for the management of international conflict encompass a wide array of factors, some general, some specific, that are predicted to improve the probability that a management effort will successfully resolve the dispute and will foster long-term peace. In directed efforts, third-party intermediaries may simply provide information about an adversary's resolve or improve commitment mechanisms to obtain compliance with settlement agreements (Kydd 2003, 2006; Mitchell and Hensel 2007; Savun 2008; Schelling 1967). A mediator may also need to have a sense of humor and diplomatic savvy to coax conflicting states to back down – using interpersonal communication skills in addition to strategic targeting to reach agreement (Bercovitch 2007). While purporting to present different views of conflict management approaches, each of these strategies for conflict management address central features of the bargaining process that, when implemented into settlement negotiations, lead states toward peaceful resolutions. A streamlined approach to studying interstate conflict management, that focuses on the ways in which states incorporate forum transparency, decision control, and expectations about third-party decisions into their choices to pursue third-party management offers two advantages to the extant approaches. First, it brings together research from several fields of conflict management to create a unified explanation for dispute resolution outcomes Second, it suggests a parsimonious model that focuses on a few, causal variables that explain how disputants bargain shop for settlement solutions – a phenomenon that is central in understanding when management efforts will be implemented and when they will be successful.

This project briefly reviews the implications of a conflict bargaining model that includes the options for states to resolve their conflict peacefully through a third party forum or violently through war. The central prediction of the model is that disputants use their information about alternatives to bilateral negotiations to influence agreement. When mutually-acceptable, third-party fora are available, states create settlements that reflect their anticipated gains from outside management, guarding against non-compliance and saving potential costs of delegation. Yet, other dispute characteristics influence whether a third party will be able to alter the course of a dispute. As a forum increases in transparency and is able to impose larger costs for non-compliance, disputants are only willing to submit to risk management failure if they expect the third party make a decision that divides the issue evenly. Second, disputants can leverage stronger capabilities to make larger demands of an adversary. The consequence of this, however, is prolonged disagreement, rather than settlement – a counter-intuitive result observed from the analysis. One solution to this problem is for an impartial intermediary to intervene and convert a potentially violent situation into a peaceful one. In sum, comparing disputants' settlement strategies across transparent, issue-dividing fora and coercive tactics, states tend to "bargain shop" by pursuing strategies that result in functionally the same outcome, avoid the inherent risks of outside management, but are less well enforced.

Conflict management tactics, including forum selection and war, are tested against different dispute characteristics in a laboratory bargaining experiment structured with a 3 x 2 x 3 factorial design. The experiment tests the influence of dispute and forum characteristics on subjects' decisions and actions. Using process tracing methods and statistical analyses, I evaluate

the influence of different dispute variables on bargaining strategies. The experimental research design provides a direct test of the theory's implications and solves the analytic problem of certain types of states selecting themselves into disputes in the first place. Results from the preliminary analysis show that these outside options do, indeed, alter subject's range of accepted offers, and settlement agreements.

The experimental analysis demonstrates the "bargain shopping" logic: As actors are cautious about delegating authority to third parties and making commitments, it becomes more likely that they will select fora that are *less effective* at encouraging long-term peace – in particular, bilateral negotiations. When states decide to not use outside dispute resolution venues to settle conflicts, the decision does not necessarily indicate that there is a lack of acceptable alternatives to war or bilateral negotiations. Rather, when states can anticipate how a third-party forum might decide an issue, they can use that information to model bilateral agreements after the features of the third-party intermediary. Further, results from the model and analysis suggest interesting ramifications for extant conflict management literature that disagrees about the effectiveness of biased intermediaries in dispute resolution. When the purpose of a third-party solution is to craft a settlement and divide the issue at stake, third-parties that would decide in favor of one party over another are unlikely to be favorable to both disputants. This is especially felt when third-party solutions require both disputants' consent: fora that would result in an unbalanced division of the issue are unacceptable and do not influence outcomes of the bargaining process.

Bargain Shopping: Implications from a Theoretical Model

States engaged in negotiations to resolve dispute face a large number of choices, yet many of their options can be reduced to a handful of influential variables. First, bargaining breakdowns have a substantial risk of violent conflict where a disputant attempts to use its preponderant power to gain the entire issue at stake. Second, third-party intermediaries provide a wide range of peaceful alternatives to bilateral negotiations and war, but when disputants submit to third-party mediation or legal dispute resolution they accept potential risks that result from the structure and influence on distributional outcomes of third-party fora. Last, peace talks may occur at an intermission in the violence and the longer that belligerents delay agreement, the value of peace diminishes. Conflict bargaining is, therefore, characterized by a tension between the need to make expedient decisions in order to avoid exogenous breakdowns and lost value of the issue at stake and the desire to bargain hard to coerce an adversary to capitulate. Together, these factors bear directly on the decisions that states make in dispute resolution and the types of tactics employed to reach agreement. In particular, four general propositions can be derived from this scenario of interstate conflict:

1. If states have complete information about the value for war and potential peaceful alternatives, there exist opportunities for disputants to reach immediate, bilateral agreements that efficiently divide the issue at stake.

2. When disputants do not have a credible threat to use violence to coerce an adversary to capitulate or to bring in third-party intermediaries to solve bargaining problems,

they reach an agreement that reflects their desire to avoid impasse and exogenous breakdowns.

3. When credible, third-party options are available, a third-party indirectly influences peaceful settlement as disputants design agreements to reflect anticipated decisions from third-party management.

4. If either party has a unilateral advantage to use military force, it uses that advantage to coerce its adversary to concede to a less favorable division of the issue.

To understand the logic of these propositions, consider a hypothetical conflict between two states, a *Challenger* and a *Target*, over the demarcation of a territorial boundary. Territorial disputes constitute some of the most intense conflicts because their consequences are much more directly tied to sovereignty and power than disputes over other types of issues (e.g., maritime boundaries or river claims [Goertz and Diehl 1992; Hensel 2001; Vasquez 1993]). Disputants are more likely to encounter bargaining problems, such as perceived issue indivisibilities, because nationalist sentiments or fear of public reprisal may alter assessments of the bargaining space (Ramirez 2010, Thies 2001, Wiegand 2005). If bargaining problems (issue indivisibilities, information asymmetries, commitment problems) remain unresolved, then war may occur with both parties attempting to violent force to capture the entire disputed boundary, with stronger parties having a greater likelihood of winning the claim (Fearon 1995). However, war is costly to disputants as they incur casualties and other costs associated with militarization. Applied to the hypothetical scenario, these costs open the possibility for disputants to find peaceful agreements that would divide the issue and save the costs of violence. Absent complete information about

disputants' value for war, third-party management provides one set of tools for overcoming the barriers to bargained settlements that lead to war.

Demand for peaceful conflict management options results from two conclusions about the bargaining approach to studying conflict. First, the use of military force to resolve a dispute is *ex post* inefficient (Fearon 1995; Schelling 1960). While negotiating bears some cost (Powell 2002), the costs are likely not as large as engaging in militarized conflict. Therefore, disputing states should attempt to resolve their conflicts peacefully, rather than using force. The second conclusion is that disputants may, due to bargaining problems, find no feasible outside option to fighting. One solution to this problem is that a stronger state will be able to use the threat of its preponderant force to compel an adversary to capitulate. Indeed, Hensel (2001) shows that disputes characterized by an imbalance of power between the adversaries were more likely to employ bilateral negotiation than conflicts in which disputants were relatively balanced in power. Instead, disagreements in the distribution of relative power and incentives to misrepresent information about resolve are more likely to lead to direct violence (Blainey 1988; Fearon 1995), while situations characterized by imbalances of power are *indirectly* influenced by the *threat* of violence.

Conflict management scholars and practitioners respond to this dilemma by recommending third-party intervention (Bercovitch 1985; Fisher 1969). States can more efficiently resolve conflict through negotiations assisted by international institutions because third parties alleviate security dilemmas, create common expectations, centralize cooperation, reduce transaction costs, lengthen the shadow of the future, and increase information (Abbott and

Snidal 1998; Axelrod and Keohane 1985; Keohane 1984; Keohane and Martin 2003; Shannon 2009). In sum, the presence of peaceful dispute resolution fora gives states efficient options to war (Crescenzi, Kadera, Mitchell and Thyne 2011; Mitchell, Kadera, and Crescenzi 2009).

However, these options must be implemented in order for them to be directly effective in facilitating peace. As Bercovitch (2007) notes, the presence of multilateral fora equipped to successfully manage disputes does not necessarily lead to their selection in conflict management. "Mediation … is not prescribed by international law. It is unpredictable and ever-changing, but it is not a random process. Its precise form and characteristics are negotiated and renegotiated with each passing phase" (Bercovitch 2007, 182). At minimum, disputants must expect to do at least as well or better from third-party conflict management than bilateral negotiations or war. As Simmons (2002) argues, delegation to international organizations in arbitration of territorial disputes makes sense, despite realist skepticism, because the tactic is "associated with conditions in which its expected value exceeds the value of political settlement" (838). "After all," she continues, "the argument concedes that political solutions are preferred to arbitrated ones if they offer an expected higher payoff" (838). In this same vein, third-party management will be generally preferred to war or bilateral talks when disputants anticipate that an intermediary will facilitate negotiations more favorably. Important for the theory's propositions is that disputants' expectations about distributional outcomes from third-party management will be significant in understanding the influence of third-party management alternatives in peaceful settlement.

Expectations about divisions of the issue at stake through third-party management are not only important for conceptualizing disputants' preferences for settlement alternatives to war, they

are important in understanding the strategic bargaining process that underlays conflict management. Recalling Bercovitch (2007), the implementation of third-party strategies is an issue negotiated by the disputants; a forum must be acceptable to all parties. Because a disputant is unlikely to accept a forum that would decide against it, only fora in which the disputants' expectations about the division of goods at stake is even will be mutually-acceptable. Therefore, third parties that would favor one disputant over another are unlikely to be selected in cases where potential costs of non-compliance are especially high – as in legal dispute resolution (Gent and Shannon 2010).

This argument is slightly different from the debate in the literature regarding third-party bias and conflict management. Kydd (2003, 2006) notably presents the argument that only biased third parties will gain disputants' trust because they are more believable in situations where they can reveal information about the capabilities and resolve of an ally. This situation, though, is separate from disputants' expectations about distributional outcomes from third-party management. In the case Kydd describes, the disfavored belligerent may be willing to communicate with the third party mediator because it expects that – with the revelation of its higher resolve – that it will receive a settlement on balance with its bargaining power. Indeed, Kydd demonstrates that the distributional outcome of third-party mediation in this scenario matches disputants' value for war, rather than the third-party's most-preferred division of the issue. To give another example, the separation between bias and distributional outcomes can also be observed in fora that are traditionally thought to be impartial. Morgan (2002) explains that the proliferation of international courts creates opportunities for forum shopping. Though "overtly

conflicting results may prove rare" (584) the fragmentation and lack of institutionalization with

respect to precedent and application of international law opens the possibility that disputants may

receive different rulings from different courts. Morgan highlights the example of the dispute

between Australia and New Zealand against Japan over southern bluefin tuna fishing quotas in

the 1990s where Australia and New Zealand received a more expedient injunction against Japan

by pursuing their case through ITLOS, rather than UNCLOS. Though both fora were impartial to

the disputants, one provided a more satisfying solution to one side of the dispute, which resulted

in its implementation. Given that substantive efforts to resolve interstate conflict focus on the

creation of agreements that divide the issue at stake, I argue that disputants estimate a forum's

distributional bias, rather than its *political* bias, to help determine its acceptability. Both

politically biased and impartial third parties may be effective in resolving interstate conflict when

they promise to deliver decisions that satisfy belligerents' expectations.

Individually, disputants will prefer fora that are likely to decide in their favor, however, if

both disputants' consent is required for a forum to be implemented, then only distributionally

impartial third parties will be accepted. Nonetheless, parties' expectations about settlement

outcomes are important for determining other bargaining tactics and produce opportunities for

trade-offs along other forum and dispute dimensions. Much like militarized conflict, though,

third-party management introduces costs and potential risks in the settlement of interstate

conflicts. At minimum, states give up some direct control over the outcome of settlement

negotiations when they delegate to third-parties, but other features of peaceful settlement fora

have the potential to impose costs. Additionally, if the parties agree to third-party conflict

management, they do so in a setting that may reveal information about the negotiation process and the nature of the settlement to outside observers, depending the forum's transparency, which is defined as openness of a forum to external audiences. (Prat 2005). The degree to which any of this information is revealed depends upon the type of forum that disputants elect to use, as third-party fora vary in transparency from highly transparent international organizations like the International Court of Justice to extremely private fora. For example, the *existence* of the 2010 settlement agreement between Eritrea and Djibouti, mediated by Qatar, was only made public after the UN Security Council increased pressure on the two states to resolve the conflict. None of the parties, the disputants or the mediator, informed the international community that they had already negotiated a peace agreement! Even then, the contents of the settlement agreement were largely kept secret until independent sources were able to leak to agreement document to the public ("Eritrea Djibouti Mediation Agreement" 2010).

Forum transparency affects parties' actions in the bargaining game by producing costs for non-compliance with third-party agreements. A forum's decision is binding if it is able to coerce the disputants to comply with the settlement. As suggested above, the ability of a forum to impose non-compliance costs is a function of its transparency: More transparent fora, such as international organizations, will be able to impose larger penalties for non-compliance because they have larger audiences that, presumably, have an interest in preserving the forum's legitimacy and impose punishments individually or through the institution to demonstrate their commitment to institutional rulings (Smith 1985). Alternatively, less transparent fora have fewer members or are less capable of transmitting information about settlement outcomes to forum members and

are, therefore, less capable of imposing penalties for non-compliance. For instance, an international organization, such as the Organization for Security and Cooperation in Europe, may have weak institutions for information-sharing despite a large membership interested in peaceful dispute resolution. Alternatively reduced information transmission capabilities may be an intentional design of the forum. For example, a democratic state acting as a mediator may be able to commit to secret negotiations as the United States did in its mediation of the Cenepa conflict between Ecuador and Peru (Ramirez 2010), which contrasts with scholars' expectation that democratic third parties are more credible because they are transparent (Crescenzi, Kadera, et al. 2011). As a forum's transparency increases, disputants pay larger costs for non-compliance because there is larger number of monitors to punish defections. In a conflict bargaining scenario, disputants are able to anticipate both the costs and the expected distributional outcome of third-party management and negotiate settlements that reflect some of those properties, much like the conclusions reached about the effect of relative power on states' propensity for war.

Setting Up the Bargain Shopping Propositions

Testable implications can be drawn from these propositions about bargain shopping in conflict management. I describe these implications below, grouping them in relation to settlement outcomes influenced by different aspects of the bargain shopping process: disputants' propensity for war, the availability of acceptable third-party alternatives, and the problem of diminishing returns in conflict bargaining. The first set of predictions are drawn from the general narrative about conflict bargaining outcomes when disputants can anticipate the costs of conflict

and the distributional aspects of third-party management. It expects disputants to reach efficient, no-delay, bilateral agreements.

General Predictions

- Disputants will end dispute negotiations in bilateral agreement.

- Disputants will be more likely to end negotiations in an immediate agreement when neither party has a power advantage or credible threat to third-party management.

- Disputants will divide the points efficiently, meaning that distributional outcomes will sum to the total value of the issue at stake.

The second set of predictions are derived from the proposition that disputants' agreements will reflect their desire to avoid impasse and costly delays by settling immediately, consistent with predictions from Rubinstein-type models of conflict bargaining. An important component of this prediction that distributional outcomes will converge on a 50-50 division of the points when neither party has a unilateral bargaining advantage or when third-party alternatives are distributionally biased. This prediction obtains from both theoretical and empirical research that concludes that when discount rates are not too large, the Rubinstein bargaining share is an equal share of the issue at stake (Muthoo 1999).

Rubinstein Predictions

- If neither party has a relative power advantage and third-party options are not impartial, then disputants will agree to an even division of the issue at stake.

The next set of predictions relate to the Rubinstein predictions in that they also predict that disputants will reach an equitable division of the issue through bilateral agreement. However, the theory offers a slightly different explanation for this third set of outcomes. In particular, the Rubinstein outcomes does not predict that expectations about third-party decision bias will have an effect on disputants' agreement to divide the issue evenly. The peaceful concessions outcomes, however, expect that disputants will be sufficiently motivated by distributionally impartial third-party alternatives to reach agreements that reflect their expected payoffs those outside options. In this case, disputants will be more likely to reach agreements that divide the issue evenly. An additional prediction from this set of conclusions implies that impartial third party fora indirectly influence settlement outcomes, converting potentially violent scenarios to peaceful settlement. When the *Challenger* is at a bargaining disadvantage because it is relatively weaker than its counterpart, and the third-party option is impartial, then the *Challenger* will make fewer concessions than if the third-party option is biased. This second prediction results from the bargaining advantage that the *Challenger* has a the plaintiff in the dispute (see Wiegand and Powell 2010). The *Challenger* has the first opportunity to suggest third-party management and can persuade a more powerful *Target* to settle, rather than fight, if it suggests a peaceful solution that is at least as beneficial to the *Target* as fighting at a later time.

Peaceful Concessions Outcomes

- If a third-party option is expected to provide an impartial decision and relative power is balanced between the parties, then disputants will agree to a 50-50 division of the issue.

- If a third-party option is expected to provide an impartial decision and the *Target* has a unilateral bargaining advantage, then the *Challenger* will be able to obtain a larger concession from the *Target* than if the third-party option is not impartial.

The last set of testable implications relate to disputants' propensity to use preponderant power to coerce an adversary to make large concessions. Elsewhere, scholars observe that disputes between imbalanced countries are more likely to pursue bilateral negotiations specifically because the stronger disputant can reject attempts to invite outside parties (Dreu 1995; Hensel 2001). Likewise, it should be expected that a stronger adversary can force a rival to capitulate.

Coerced Concessions Outcomes:

- If either disputant is preponderant in power, the stronger will be able to obtain a larger share of the issue at stake than when power is evenly distributed or when the power relationship is reversed.

These predictions establish the baseline against which the theoretical model will be assessed, though subsequent discussion will address situations in which disputants pursue third-party management and war-type strategies that the theory, based on a complete-information narrative of conflict bargaining, does not directly account for.

Experimental Design

To examine these implications, I employ a bargaining experiment that follows an alternating-offer bargaining protocol where disputants exchange offers and make suggestions about tactics to resolve a conflict. Subjects were randomly assigned to one of two roles, Player A

(*Challenger*) – who initiated each bargaining period – and Player B (*Target*), randomly paired, and instructed that they would be negotiating over the division of an issue. Subjects interacted through an experiment computer program and the bargaining protocol allowed subjects to make offers to divide the issue directly or to choose one of two other settlement options: unilateral termination (war) or third-party management. All subjects were told that the experiment involved an exploration of the factors that explain the use of various strategies (e.g., bilateral negotiations, mediation) in dispute resolution. All bargaining scenarios were described in terms of a generic problem-solving situation defined to subjects as the division of a number of points as allusions to foreign policy or instructions that ask subjects to act as though they were foreign policy decision-makers have been shown elsewhere to influence study participants' behavior in bargaining experiments (Mintz, Redd, and Vedlitz 2006). The expressed goals were for subjects to come to an agreement over the division of an issue by exchanging offers or using different settlement tactics and for each subject to attempt to earn as many points for him/herself as possible.[1] The issue at stake was the division of a fixed number of points, initially set to 30. Each settlement strategy, bilateral agreement, third-party management, and war, was described as follows:

- *Bilateral agreement*: A period ended in a bilateral agreement when subjects reached a mutually-accepted division of the points, without using a third-party mechanism or unilaterally terminating negotiations.

- *Third-party management:* Third-party settlement was described as an outside decision-making mechanism that, if appealed to, would result in a division of the points based on subjects' expectations about settlement outcomes (i.e., favors Player A, favors Player B, is

1   Transcripts of subjects' instructions available upon request.

impartial). If one subject suggested the use of a third-party mechanism, the other subject in the pair was given the opportunity to consent. If both subjects consented, then the outside decision-maker – an automated process – divided the points between the two subjects. The pair then simultaneously decided to accept or reject the payoffs from that decision, which simulates the decision by actors in the model to comply or defy the third-party's decision. If either subject rejected the decision, they paid non-compliance costs according to the forum's transparency (high or low) and received payoffs consistent with their counterparts' actions. If both accepted the decision, they received the third-party division. If both defied the third-party decision, then they each received zero points to avoid bankruptcy conditions.

Rather than having a third subject act as an arbiter, a program in the experiment software reveals the third-party decision. The advantage of this approach is that it allows the experimenter to test the proposition that expectations about the division of the issue resulting from third-party management affect forum selection and bargaining strategies because the experiment directly manipulates subjects' expectations. Other experimental studies on third-party conflict management assign the third party role to another study participant (see Birkeland 2010). These designs test the third party's decision calculus and the role of uncertainty about third party management on forum selection, rather than the influence of subjects' expectations about third party settlements on negotiation strategies.

- *War*: War was conveyed in the experiment as a unilateral termination of bargaining that would trigger a costly, chance-based payoff. The chance-based payoff was described in

terms of a coin flip, where the likely outcome of the coin flip defined the subjects' relative bargaining power. For instance, a coin weighted in Player A's favor indicated that Player A had a bargaining advantage with respect to its ability to use unilateral termination as an outside option to bargaining or third-party management. Likewise, a coin could be fair (balanced), or weighted in Player B's favor. If either subject decided to use its unilateral termination option, the experiment software determined the winner. The winner of the coin flip earned all of the available points and paid a penalty for failing to come to a bilateral agreement.[2]

After designating roles, subject-pairs were randomly assigned to one of 18 treatment conditions based on a 3 x 2 x 3 factorial research design. The first two variables in this design measure the characteristics of the third party forum. The first variable, expected distributional outcomes from third-party management, takes on three values – favors Player A, favors Player B, impartial – and captures the possibility that different third party fora will lead to different agreements in conflict management. The theory demonstrates that when subjects have the opportunity to veto the selection of a third-party solution, then biased third parties do not affect the bargaining process. But, when disputants expect that the third party will make an impartial decision, they modify their bargaining strategies to account for the credible threat to appeal to impartial outside decision-making mechanisms.

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2   Both the model (presented in another chapter) and the experimental design assume that parties have common knowledge about relative power and resolve. Therefore, in the experimental design, resolve – the costs of unilaterally terminating negotiations – is common knowledge, does not vary, and is the same for both parties. The penalty for unilaterally terminating negotiations in the experiment is 18 points; the winner of the coin flip earned 12 points and loser received 0 points, regardless of which party triggered the termination payoff.
    The experiment software determined winners of *terminate* actions by drawing a random number between 0 and 1. If the number was less than or equal to the subject's relative bargaining power (0.2, 0.5, 0.8), then the subject was awarded the points for terminating negotiations.

The second variable, forum transparency, takes on two values for the transparency of a forum, high and low. Non-compliance costs are a function of a forum's ability to enforce agreements by generating international and domestic punishments for defection. In a forum that is more transparent, defections will be more easily detected and, as illustrated in the theory, penalties will be larger because transparent fora hold the attention of a larger number of international actors. Rejecting a third-party decision results in the defecting party capturing the entire value of the issue and paying costs for non-compliance, which were either large (greater than half the value of the issue) or small (less than half the issue), according to the forum's transparency, and were the same for both subjects.

The last variable describes subjects' relative bargaining power, measured as the probability that a subject would win a weighted coin flip if he/she unilaterally terminated negotiations. The variable, relative bargaining power, takes on three values where the outcome of the coin flip favors Player A, favors Player B, or is fair, and is common knowledge to both subjects.

Procedure Summary

Once subjects were paired and given instructions about the scenario within which they were bargaining, the period began with Player A making an opening offer. Player B then had the option to accept or reject the offer. If Player B rejected the offer, s/he made a counter-offer to Player A. If after this first exchange of offers the subjects had not yet come to an agreement, then the subject in the Player A role had the opportunity to use one of his/her additional options – unilateral termination or suggest third-party management – in addition to making a new proposal

to divide the points.   Depending on Player A's decision at this stage, the Player B subject would then have the chance to suggest one of the outside options as well. If after a predetermined number of exchanges, the subjects had yet to reach an agreement, six points were deducted from the fixed number of points.[3] The number of points discounted due to delay were determined to reduce Player A's advantage as the initiating party.

Play proceeded in alternating-offer fashion with until

1. an agreement was reached;

2. a player opted out by terminating negotiations, resulting in a chance-based payoff;

3. subjects consented to third-party management and proceeded to the compliance subgame; or

4. a cutoff point was reached at which the subject in the final role as a proposer made a take-it-or-leave-it offer that the respondent could either accept or reject and receive a payoff of zero points for both parties.[4]

Subjects repeated these steps across ten periods of bargaining and were re-assigned roles and treatment conditions at the beginning of each new round. Re-assigning roles each period reduced the cumulative advantage that any subject may have when assigned to the role of Player A.

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3   Point deductions due to delay occur in two places in the experimental model. The first time that points are reduced is after Player A's first opportunity to use an outside option. If Player A rejects Player B's previous offer and makes a new proposal, then the number of points available for Player A to divide is reduced from 30 to 24. Because termination and third-party management can be used without delay, points are not reduced if Player A choose to implement either of these options. If Player B rejects a proposal from Player A to use third party management, then Player B makes an offer to divide a reduced number of points (24). If after Player A's or Player B's offers to divide the reduced number of points, the responding party rejects, then the number of available points is reduced again from 24 to 18. At this stage, the game ends with an ultimatum offer in order to avoid bankruptcy conditions.

4   A cutoff point was implemented because after four rounds of offers, bankruptcy conditions (negative payoffs) would emerge as a result of penalties due to delay. In a few instances (27/450) subjects reached this cutoff point where they were instructed to divide the 18 remaining points and either reach an agreement or accept payoffs of zero points.

Random re-assignment of treatment conditions at each round also reduces possible repeated game effects.[5]

Experiment sessions were conducted using the experiment software tool kit, *z-Tree* (Zurich Toolbox for Ready-made Economic Experiments [Fischbacher 2007]). For enrolling in the study, subjects were paid a $10.00 show up fee. Additionally, subjects were compensated according to their performance in the bargaining game: for every point a subject earned across the ten bargaining periods, he or she received an entry into a lottery. The lottery awards one $100 prize for every ten subjects who enrolls. The intention of basing entry into the lottery on performance in the bargaining game is to elicit subjects to play strategically and seek as large as divisions of the issue for themselves as possible. After ten rounds of bargaining, subjects' total number of points ranged between 85 and 163, and averaged 128 points (median = 127.5). Figure 1 summarizes the distribution of subjects' total points.

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5   Statistical checks also reveal no repeated-game effects. Subjects' payoffs and decisions were uncorrelated across periods.
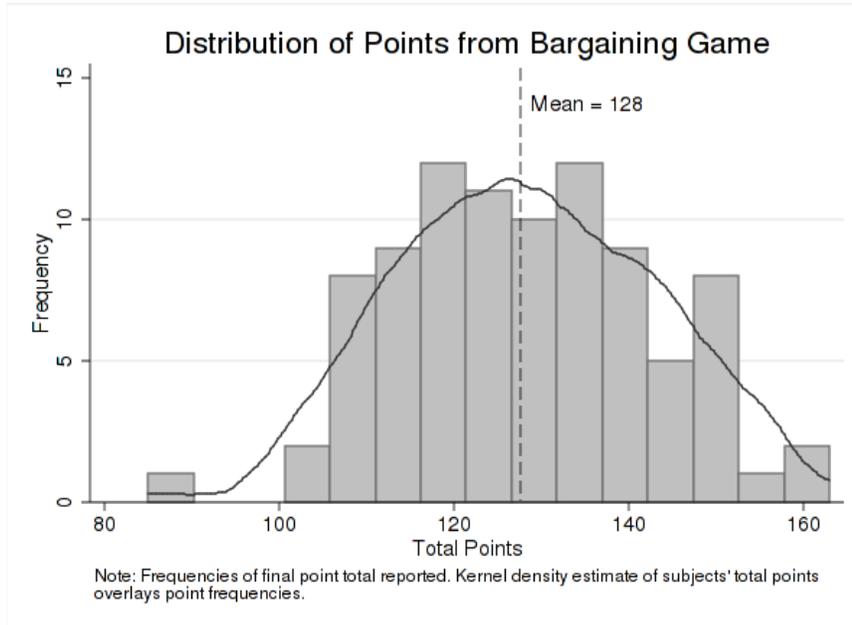
Figure 1: Distribution of Points from Bargaining Game

Ninety subjects (66 women, 24 men) were recruited to participate in this study, conducted over eight different sessions at the University of Iowa.[6] This produced 450 subject-pair observations, which were randomly assigned as listed in Table 1.

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6 Subjects enrolled into the study by responding to a campus-wide e-mail.

	Table 1: Distribution of Factor Conditions in Experimental Data									
	Expectations about Settlement Outcomes									
	Favors A			*Impartial*			*Favors B*			
	Relative Power			*Relative Power*			*Relative Power*			
	B	=	A	B	=	A	B	=	A	
Non-compliance costs Low	11	18	21	27	20	12	41	32	15	Low *Non-compliance costs*
High	19	42	62	14	31	39	5	21	20	High

Note: N = 450. In the operationalization of the relative power variable, A = Player A advantage, B = Player B advantage, and "=" = neither player advantaged (fair coin). Treatment conditions were selected according to the results of random assignment for each independent variable.

As evidenced by Table 1, the distribution of cases to factors is not evenly distributed; there is a distinct over-selection of high non-compliance cost cases and treatments where Player A is advantaged in both the chance-based termination payout and in third-party management. ANOVA analyses are unaffected by these imbalances as they can take into account unevenly distributed factors when the imbalance may be attributed to random assignment (Herr 1986; Langsrud 2003); all results are checked against results from ANOVA tests. Additional experiment trials will correct this uneven distribution.

Experimental Results

Results from the experimental analysis show that the availability of alternatives to bilateral negotiations affects the types of agreements that are reached in conflict bargaining. This is especially true when the option to use these alternatives – namely, third-party options – is

credible. That is, when neither party is willing to veto the use of third party option, actors are able to convert potentially violent, coercive scenarios into agreements that reflect more pacific methods of settlement. Additionally, the experimental analysis reveals conflict bargaining processes not discovered through the formal theoretical analysis, but are nonetheless significant for explaining conflict bargaining outcomes. Particularly, the experimental analysis demonstrates a "chilling effect" of power preponderance where attempts to make large demands of a weaker adversary are rejected and the conflict is prolonged – contrary to expectations from the coerced concessions prediction. In sum, the experimental analysis provides general support for the conclusions of the theoretical model and provides additional insight into conflict bargaining processes in observations of off-the-equilibrium-path behavior.

Buy Now! Don't Delay

The theoretical model predicts that bargaining outcomes will result in one of three outcomes: the Rubinstein bargaining outcome, peaceful concessions outcome, coercive concessions outcome. These results reflex actors' preferences for alternatives to direct, bilateral negotiations, but share a similar property that in each case the parties agree to an immediate bilateral agreement that reflects their preferences across settlement tactics. Furthermore, in equilibrium-path behavior, outside options of war and third-party management are never implemented. Thus, the central behavioral prediction is that disputes end with the first offer to divide the issue, assuming that the offer conforms with other criteria. I test this proposition by considering the stage and conditions under which subjects end each bargaining period. Process tracing analysis of the data provides modest support for this conclusion by showing that subjects

generally reach immediate, bilateral agreements. As Table 2 shows, 75 percent of all bargaining

periods (336/450) ended in bilateral agreements, and 168 (37%) of these periods ended in

negotiated settlements after Player A's opening offer (Stage 1). This accounts for the

preponderance of exit conditions observed in the experimental data. Approximately 45% of

bargaining periods (182/450) ended after the second round of offers, and 112 of these 182 cases

(62%) ended with a negotiated agreement.

Table 2: Bargaining Exit Condition[7] in Relation to Management Strategy									
Management Strategy				*Exit Stage*					
	1	2	3	4	5	6	7	8	*Total*
Bilateral Agreements	168	112	28	10	4	6	2	6	336
Termination		23	11	1	2	4	2	1	44
Third-Party Mgt.		47	19	4					70
Total	168	182	58	15	6	10	4	7	*450*
Note: Cells are left blank if management strategy is not an option at that exit stage.									

The expediency with which subjects reached agreements was also affected by their

treatment condition. Experimental analyses of arbitration elsewhere observe that conventional

arbitration options increase dispute costs, or the duration of the conflict, because disputants will

attempt to extract larger concessions from their counterparts to offset potential arbitration

outcomes (Ashenfelter, Currie, Farber, and Spiegel 1992). Here, I find that disputants settled

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7   Each stage in the model indicates an opportunity where a player may either propose a new division of the issue or
    end the bargaining round by accepting an offer or triggering one of the outside options (i.e., unilateral
    termination, third-party management). Stage 1 is the first decision stage in the model where Player B responds to
    Player A's opening offer by either accepting the proposal or rejecting it and making a counter-offer. Stage 2 is the
    first decision stage where Player A can select from additional outside options. The remaining stages follow this
    alternating-offers structure.

earlier when there were credible, peaceful alternatives: Table 3 reports the results of ANOVA[8]

tests of bargaining exit stage based on third-party expectations and relative bargaining power,

which show that third-party decision bias compelled subjects to reach earlier agreements. The

distribution of bargaining power between the subjects had no significant effect on the stage at

which subjects reached a settlement and there was no observable interaction between these

variables. Figures 2 and 3 demonstrate how each factor of third-party decision bias affects

subjects' bargaining expediency and settlement strategies.

Table 3: ANOVA of Bargaining Exit Stage based on Expectations about Third-Party Outcomes and Relative Bargaining Power			
Variable	Model 1 One-way ANOVA	Model 2 Two-way ANOVA	Model 3 Two-way Factorial
Third-Party Decision Bias	11.711*** (6.35)	11.210*** (6.05)	7.538** (4.07)
Relative Power	-	0.249 (0.13)	0.509 (0.27)
Decision Bias x Power	-	-	1.1765 (0.95)
Model	11.711*** (6.35)	5.980** (3.23)	3.873** (2.09)
Residual	1.846	1.853	1.854
R-squared	0.0276	0.0282	0.0365
# Observations	450	450	450
Note: Mean squares and *F* statistics reported. Third-party decision bias measured as the degree to which Player A is favored by the third-party distribution of points (disfavored, impartial, favored). Relative power measured as the probability that Player A has of winning the *terminate* option (0.2, 0.5, 0.8). */**/*** = 10%/5%/1% level of significance.			

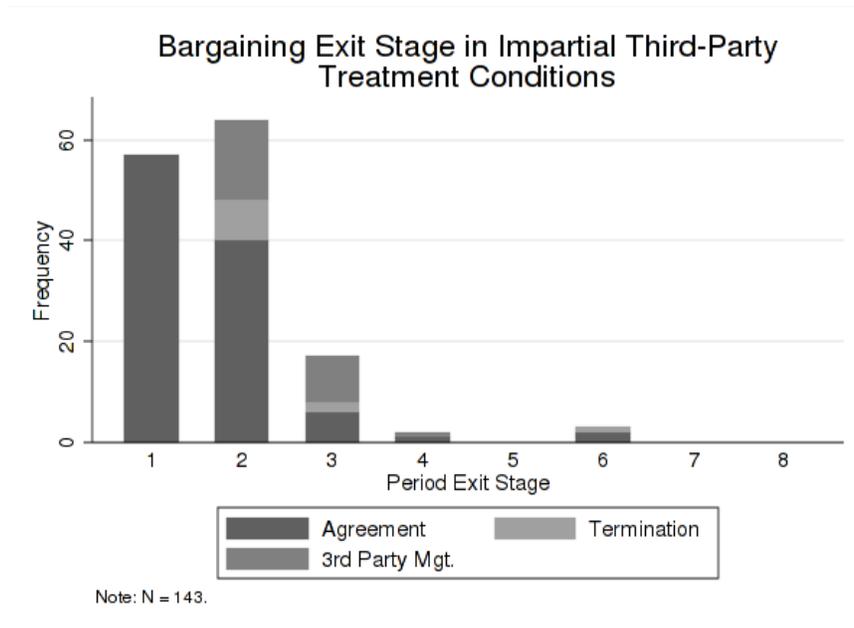8 All statistical results presented also obtain in multivariate regression.

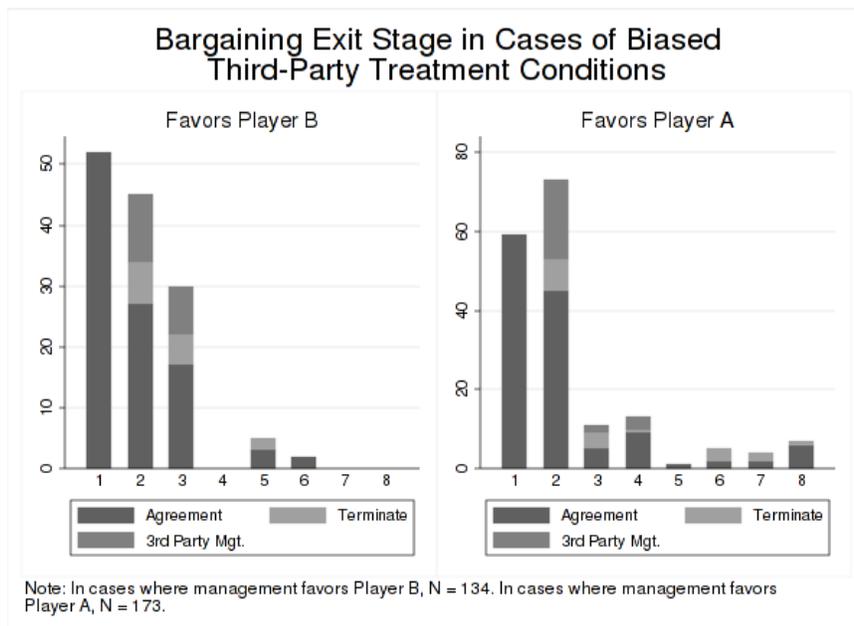Figure 2: Bargaining Exit Stage in Impartial Conditions

Figure 3: Bargaining Exit Stage in Biased Third-Party Conditions

The information presented in Table 2 and Figures 2 and 3 also show that subjects in the bargaining experiment deviated from the theory's central prediction that disputes end in immediate, bilateral agreements. There are three potential explanations for these observations. The first is that subjects attempted to make larger demands that what would be reasonable by their position relative to their counterpart. The second is that subjects rejected offers that they should have accepted according to the model. The third is that uncontrolled for factors, such as mistakes or normative preferences for third-party solutions affected decision-making. In the first case, subjects may have been motivated to bargain hard in order to coerce their counterpart in making a larger concession and gain an advantage in the lottery payoff. If this explained the observations of delayed settlement, it would occur with subjects who were either weaker or balanced with their counterpart in bargaining power through the option to unilaterally terminate negotiations. Focusing on the opening offer, when Player A was either balanced or weaker than Player B, Player A attempted to demand a share of the points greater than 15 in 178 instances (109 when balanced, 69 when weaker). However, in only 32 of these cases did Player B accept this offer (18 when balanced, 14 when Player A weaker). These observations indicate that subjects did occasionally attempt to extract larger concessions than their relative bargaining power would support.

The influence from the second explanation for delayed settlement – that subjects reject offers they should accept in equilibrium – is a well-documented phenomenon in the study of bargaining through experimental analysis. Experimental analysis of the Ultimatum Game, finds that subjects often rejected what they considered low or unfair offers, despite strategic incentives

to accept any offer (Güth, Schmittberger, and Schwarze 1982). Subsequent study of the Ultimatum Game and other bargaining models reach similar conclusions, observing that the range of accepted offers rarely deviates from a 50-50 division of the issue at stake (Binmore, Shaked, and Sutton 1985; Fehr and Schmidt 2011). In this analysis, I observe that subjects typically rejected offers that were less than a 50-50 division of the issue, with rejected offers differing from accepted offers by 2.5 points, on average.[9]

Last, it is difficult to account for any influence that the third factor had on the outcomes of the experiment. Participant instructions attempted to reduce the introduction of mistakes and the influence of individual dispositions to third-party management by allowing subjects plenty of time to read the instructions and ask questions both prior to and during the experiment session and by explaining the choice and function of third-party management in neutral terms to avoid eliciting subjects' own dispositions toward third-party management. Nonetheless, subjects could have used other information, besides that provided to them, to make decisions, which could account for remaining observations that deviate from the theory's prediction. In sum, however, the experimental results generally support the theory's prediction that disputes will end bilaterally and immediately, with the preponderance of cases ending with an acceptance of Player A's opening offer.

In addition to their expediency, subjects' bargaining efficiency – defined as a settlement that divides all of the points initially available, with none lost to bargaining delay or outside costs – was affected by the treatment condition. Figure 4 illustrates subjects' point shares according to their relative bargaining power and expectations about third-party outcomes. The figure imposes

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9   Difference statistically significant at the 1% level, two-tailed test.

the divisions of points that resulted in each treatment condition on top of the point divisions that

resulted across all cases. Divisions of points along the diagonal line between (0, 30) and (30, 0)

indicate an efficient division of the points. Immediately apparent in the figure is the strong

clustering around an even division of the points, regardless of treatment condition. The average

profit in periods ending after the first two stages – before points were reduced due to delay – was

15 points for players in either role. In 104 of the 168 agreements first-round (62%) reached

bilaterally, Player A offered a 50-50 division of the points. Likewise, in 79 of 112 second-round

agreements (70%), Player B offered to evenly divide the points (typically after rejecting a round

1 offer from Player A less than 50%). Within each period, points earned ranged between 0 and

25, with a median of 15 points (average = 12.82).[10]

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10 Subjects assigned to the role of Player A obtained between 0 and 21 points per session, averaging 12.84 points
    (median = 15). Subjects assigned to the role of Player B obtained between 0 and 25 points per session, averaging
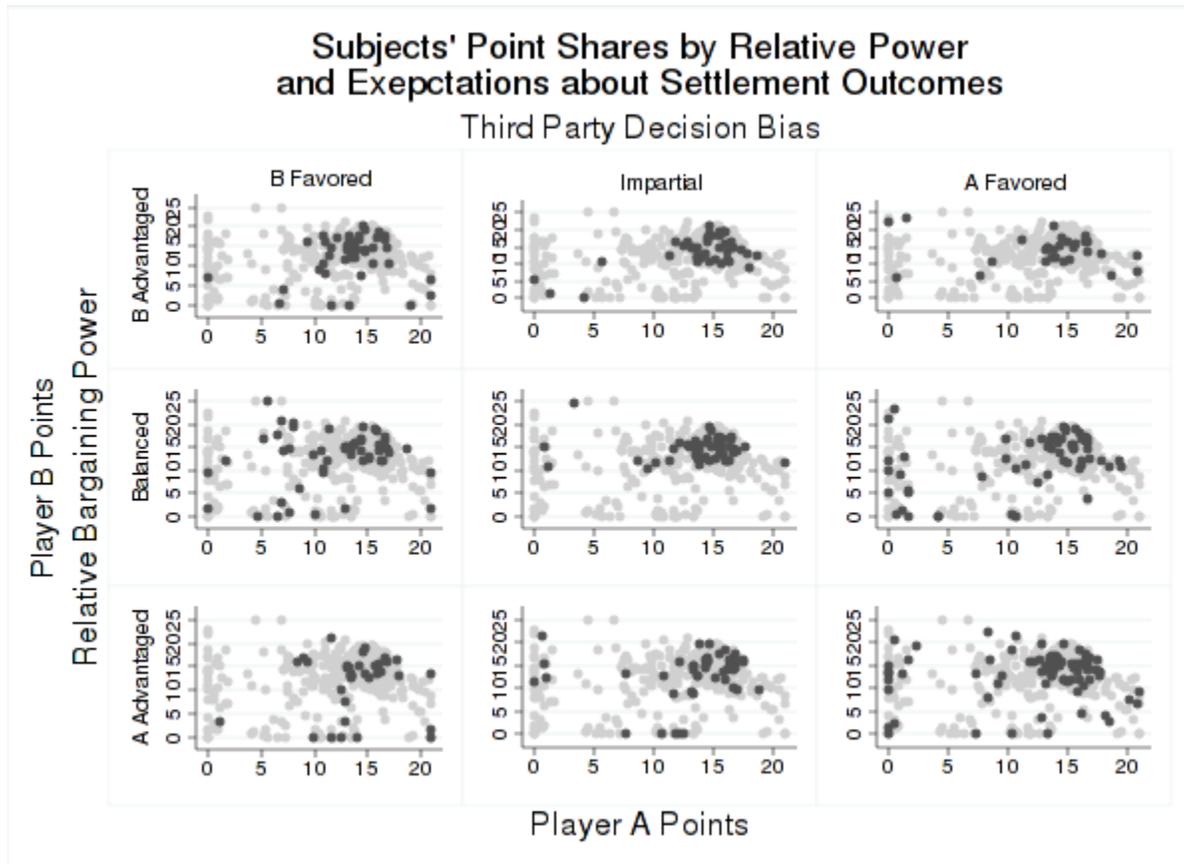   12.82 points (median = 15).

Figure 4: Subjects' Point Shares by Treatment Conditions

Moving away from the scenario in which neither party is advantaged by relative power or third-party decision bias (the middle graph in the figure), one observes more dispersion away from the 50-50 focal point, especially as one actor increases its preponderance over its counterpart for both variables. In the treatment condition in which Player A is advantaged in both relative power and third-party outcomes (bottom-right graph), it is evident that Player A is not only able to extract larger concessions from Player B (indicated by the larger number of points to the right of the 15-point mark), but also tends to delay agreements to later stages in the period (indicated by payoffs below the efficiency line) and takes riskier, chance-based, actions that deviate away from bilateral agreements (indicated by the observations along the axes of the graphs). Such

observations gives a first glance at explaining the three different types of settlements predicted by the theory.

Buying when the Price is Fair: Rubinstein and Peaceful Concession Outcomes

The convergence of subjects' behavior on early, 50-50 divisions of the points may be explained by two different implications of the model. The Rubinstein bargaining outcomes result suggests that disputants will immediately reach a bilateral agreement, with the *Challenger* offering $x_0^* = \frac{1}{(1+\delta)}$ and the *Target* accepting. Theoretical and experimental research on Rubinstein bargaining demonstrates that these agreements approach a 50-50 division of the issue at stake, absent access to outside options such as third-party management or unilateral termination (Birkeland 2010). At the same time, the peaceful concessions outcomes prediction implies that subjects will also come to an agreement that divides the issue evenly if their expected value of pursuing third-party management is at least as great as their value for the Rubinstein bargaining outcome, and the initiating party's value for war does not exceed its expected payoff from third-party management. When both parties prefer the third-party option to war and negotiation, they agree on a settlement that divides the issue as the intermediary would – evenly. Therefore, the theory offers two explanations for the outcome of a bilateral agreement that divides the issue evenly: concessions due to costly delay, or impasse, and concessions designed to correspond with expectations about third-party outcomes. Testing these propositions, then, requires careful consideration of how different treatment conditions correspond with the model's predictions drawn from different preference orderings. To draw out the causal logic, I focus on the unique

features of each prediction, which correspond with how relative power and expectations about third-party settlement outcomes affect bargaining efficiency and issue division.

An important condition for the Rubinstein bargaining outcome is that neither actor's expected value for war can exceed their value for peaceful solutions. Assuming that the Rubinstein offer is large enough, it should not matter whether any actor prefers to pursue third party management. In the experimental analysis, this can be examined by considering the middle row of cases in Figure 4, where the subjects' probability of winning in a unilateral termination scenario is even. If the Rubinstein prediction is correct, then subjects in these scenarios should immediately agree to 50-50 divisions of the points (resulting in a payoff of 15 points each), which should not significantly differ across different values for third-party decision bias. Moving away from this scenario to another where one of the subjects has a bargaining advantage from its unilateral termination option should result in point divisions that reflect this advantage. In analysis, I would expect that Player A's share of the division of points in a scenario where Player B has an advantage will be less than the 50-50 division and greater than the 50-50 division when Player A has the advantage.

Figure 5 illustrates the average division of points reached after the opening round of offers for each value of third-party decision bias when subjects were in a balanced bargaining power scenario. As the figure shows, the average point share that parties agreed to was a 50-50 division of the issue, regardless of third-party advantage. When Player A was expected to receive a better payoff from third-party management, that subject was able to extract a small concession from its counterpart, but this difference is not statistically significant.[11] This provides support for

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11 ANOVA analysis finds that expectations about third-party outcomes has a positive effect on the division of points

the first implication of the Rubinstein bargaining outcome proposition: When parties do not have

a bargaining advantage through outside options, then they will agree to an even division of the

points, regardless of potential third-party settlement opportunities.
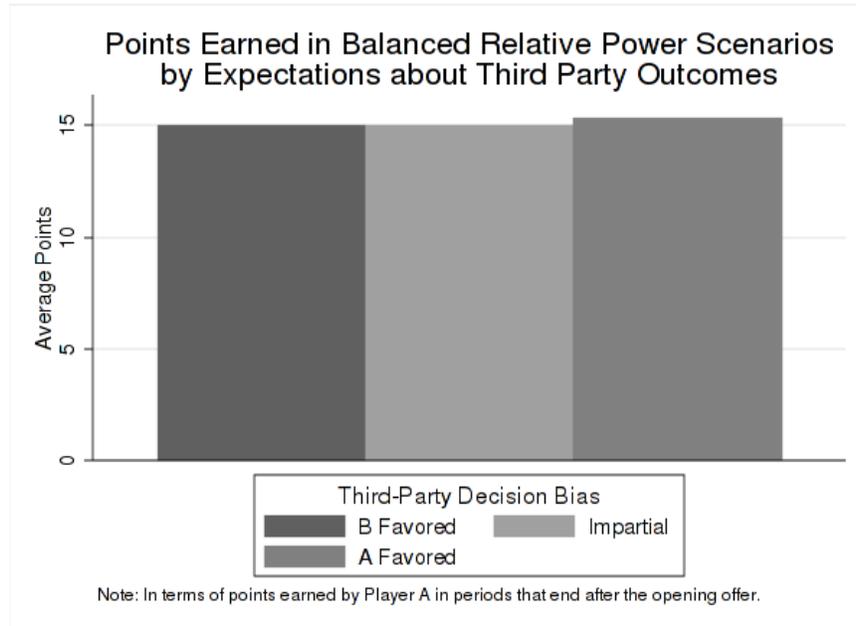

Figure 5: Illustrating first condition of Rubinstein outcome

The second implication of the Rubinstein outcome prediction is that the division of points

obtained with subjects in unbalanced bargaining power treatments will reach agreements that

reflect those differences, all else equal. Table 4 reports the results of a difference of means test

that compares the average points earned by Player A given different levels of relative bargaining

power. Focusing on the columns that report the results for first-round agreements, two

observations are of note. First, subjects in the Player A role earned, on average, larger shares of

the points when either party – including Player B – had an advantage through the use of a

unilateral option. While intuitive in the case where Player A has an advantage, it is interesting to

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earned after the opening bargaining round with 0.801 level of significance.

observe in the cases where Player B had an advantage. The result may reflect the bargaining advantage Player A has as the initiating actor.

Table 4: Difference of Means Analysis of Points Earned by Player A by Relative Bargaining Power				
	Player B Advantaged		*Player A Advantaged*	
Condition	*All Exits*	*First Exit/ Opening Offer*	*All Exits*	*First Exit/ Opening Offer*
Imbalanced Power	13.479 (0.384)	15.367 (0.142)	12.941 (0.381)	15.5 (0.204)
Balanced Power	12.268 (0.403)	15.143 (15.241)	12.268 (0.403)	15.143 (0.270)
Combined	12.772 (0.286)	15.241 (0.224)	12.610 (0.277)	15.311 (0.345)
Difference	1.210** (0.577)	0.224 (0.330)	0.673 (0.555)	0.357 (0.345)
t	2.0962	0.6793	1.2127	1.0366
Degrees of Freedom	279	110	331	117
# Observations	281	112	333	119

Note: Mean and standard errors reported. In Player B Advantaged models, bargaining power measured as dummy variable indicating coded 1 for balanced power scenario, 0 for Player B advantage. In Player A Advantaged models, bargaining power coded 1 for balanced power and 0 for Player A advantage. ** = 5% level of significance, two-tailed test.

The analysis also shows that this difference in opening stage agreements is not statistically different from the average payoff reached when neither party has an advantage, and subjects instead reach agreements that are close to an even division of the points. This weak support for the second implication of the Rubinstein bargaining outcome proposition may be affected by other strategic factors in the experiment and, possibly, uncontrolled-for concerns about fairness in the bargaining scenario.

Converting Coercion to Peaceful Concession

The second type of outcome predicted by the theoretical model is that only impartial third-party fora will be acceptable to both disputants. If the third-party is expected to decide in favor of one party over another, then the disfavored party will object to its implementation. In equilibrium, the parties will agree to a bilateral settlement that divides the points according to their expected payoffs from the impartial third-party forum. This results in a 50-50 division of the points, which is equal to the optimal offer in the Rubinstein bargaining outcome. What is necessary for this outcome, that makes it unique from the Rubinstein outcome proposition, is that the third-party option can only be impartial and that Player A not have a bargaining advantage through its unilateral termination option. These conditions create two scenarios in which the peaceful concession outcome obtains. The first is when relative bargaining power between the parties is balanced and the third party is expected to make an impartial decision – an identical condition to that of the Rubinstein bargaining outcome. The second is when the third party is expected to divide the points evenly and Player B has a bargaining advantage through its termination option and Player A takes advantage of its initiating position to convert the negotiations from a coerced settlement to a peaceful concession.

Table 5: Difference of Means Analysis of Points Earned by Player A in Impartial Third-Party Decision Bias Scenarios by Relative Bargaining Power

Condition	Player B Advantaged		Player A Advantaged	
	All Exits	*First Exit/ Opening Offer*	*All Exits*	*First Exit/ Opening Offer*
Imbalanced Power	13.585 (0.612)	15.444 (0.246)	13.392 (0.629)	16.056 (0.308)
Balanced Power	13.745 (0.501)	15 (0.561)	13.745 (0.501)	15 (0.561)
Combined	13.674 (0.387)	15.205 (0.321)	13.569 (0.400)	15.487 (0.340)
Difference	-0.160 (0.783)	0.444 (0.648)	-0.353 (0.804)	1.056 (0.670)
t	-0.2040	0.6862	-0.4394	1.5756
Degrees of Freedom	90	37	100	37
# Observations	92	39	102	39

Note: Mean and standard errors reported. In Player B Advantaged models, bargaining power measured as dummy variable indicating coded 1 for balanced power scenario, 0 for Player B advantage. In Player A Advantaged models, bargaining power coded 1 for balanced power and 0 for Player A advantage.

Table 5 re-visits the analysis presented in Table 4, but focuses solely on deviations in relative power when the third-party decision bias is impartial. Essentially, these results compare the average division of points in the center column of Figure 4 to examine the first implication of the peaceful concession outcomes proposition. As the results show, when Player A has a bargaining advantage through the termination option, it obtains a larger share of the points than if Player B has an advantage or if the relative bargaining power is balanced, with Player A gaining more than one point more than Player B when s/he has the advantage. This difference is not significant at standard levels, but result is suggestive of the fragility of the peaceful concessions

outcome: When both parties must consent to the use of third-party settlement fora, the plaintiff party is an important factor in determining the incidence of peaceful conflict management.

This last observation also explains the second implication of the peaceful concessions outcome. If Player A is facing a Player B with a bargaining advantage through the terminate option, but the third-party forum is expected to divide the points evenly, then Player A can use its advantage as the initiating actor to avoid coercion from Player B. In other words, Player A gains a larger share of points when the expected third-party outcome is unbiased and Player B has a unilateral termination advantage than if the third-party decision is expected to favor one player over another. Table 6 presents the results of this analysis where the support condition is the case in which relative power advantages Player B and the third-party decision bias is impartial and the contrast condition are cases of biased third-party outcomes. For reference, the cases under analysis in this model are those in the top row of Figure 4, where the center graph is the support condition and the outside graphs make up the contrast condition. In both immediate agreements and settlements reached later in the period, Player A subjects gained a larger share of points in the support condition than in the contrast condition. Figure 6 illustrates the difference in these shares across exit stages of the bargaining period. Expectedly, Player A's advantage in this scenario ends when Player B has its first opportunity to trigger a terminate tactic, though in neither case (immediate or long-term) is this share significantly greater.

|	**Table 6: Difference of Means Analysis of Points Earned by Player A in Peaceful Conversion Scenario, across Exit Stages**	
	All Exits	*First Exit/Opening Offer*
Conversion Scenario	Mean (Std. Err.)	Mean (Std. Err.)
Contrast Condition	13.4 (0.934)	15.091 (0.163)
Support Condition	13.585 (0.612)	15.444 (0.246)
Combined	13.507 (0.527)	15.310 (0.165)
Difference	-0.185 (1.073)	-0.354 (0.340)
t	-0.1727	-1.0388
Degrees of Freedom	69	27
# Observations	71	29
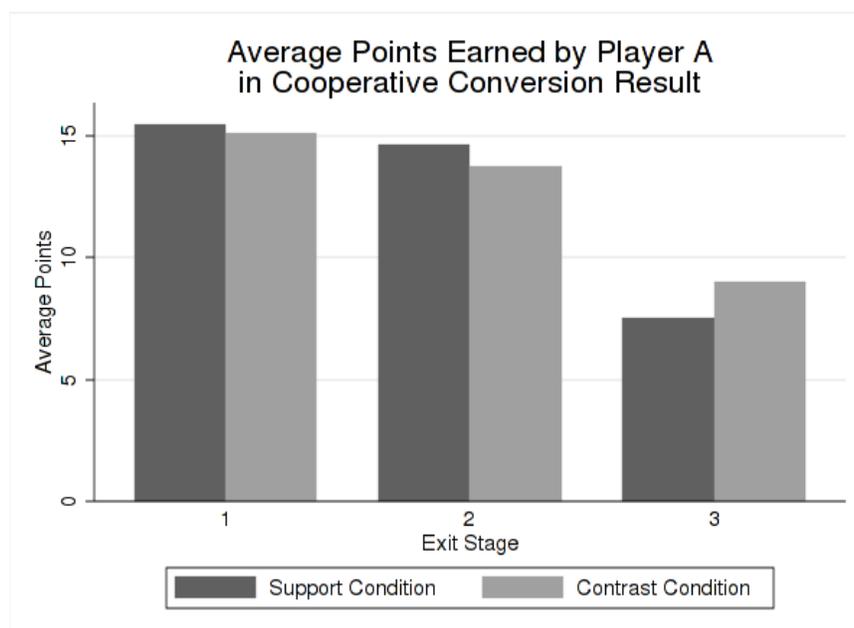
Figure 6: Cooperative Conversion Result

The weakness of these results lends doubt to the conclusions from the model that suggest that disputants are responsive to third-party management options that are mutually acceptable. Another way to contemplate the effect of third party options on conflict bargaining strategies is to consider the effect of expectations about settlement outcomes on bargaining behavior independently from relative bargaining power. Table 7 shows that expectations about third-party outcomes and relative bargaining power do not have an interactive effect on the point divisions that subjects settled on as the theory implies. Further, relative power does not appear to have an independent effect on settlement divisions with third-party effects. This last observation may be because the costs of unilaterally terminating negotiations is both relatively large, 18 points, and because it is common knowledge to both disputants.

Table 7: ANOVA of Points Earned in Bargaining Period based on Expectations about Third-Party Outcomes and Relative Bargaining Power			
Variable	One-way ANOVA	Two-way ANOVA	Two-way Factorial
Impartial 3rd Party	114.637*** (11.60)	108.331** (4.66)	92.746** (4.00)
Relative Power	-	48.620 (2.09)	20.927 (0.90)
Impartial x Power	-	-	34.348 (1.48)
Model	157.637*** (11.60)	70.454** (3.03)	56.012** (2.41)
Residual	23.365	23.252	23.202
R^2	0.0108	0.0108	0.0265
# Observations	450	450	450
Note: Mean squares and *F* statistics reported for analysis of points earned by Player A. Relative power measured as the probability that Player A has of winning the terminate option (0.2, 0.5, 0.8). * = 10%, ** = 5%, and *** = 1% level of significance.			

When the third-party option is expected to result in an even division of the points, Player A earns, on average, a larger share of points than when the third-party is expected to favor either Player A or Player B (Figure 7). Further, subjects in the impartial third party condition were more likely to settle on point divisions that were closer to a 50-50 split than subjects in either of the biased conditions.
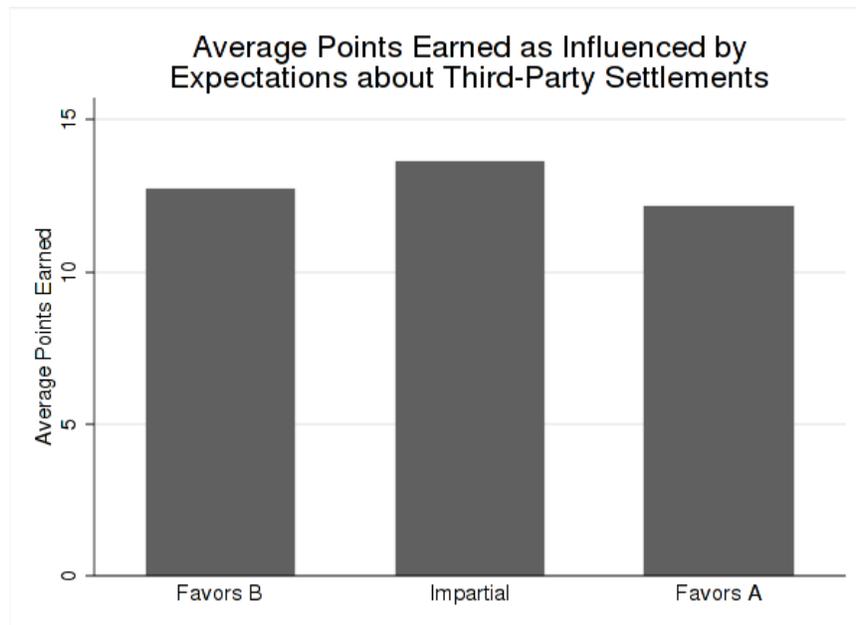

Figure 7: Average Points Earned by Third-Party Decision Bias

The relationship between subjects' expectations about distributional outcomes from third-party management and their resulting agreement is, furthermore, substantively large. Difference of means analysis shows that the number of points earned by subjects when a third party was impartial, compared to when a third party was expected to be biased, were substantially different, with subjects in the impartial third-party treatment condition earning on average one more point than when the third-party condition produced a biased decision.[12]

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12 Difference of means calculated using -ttest- in Stata 11. Difference significant at 5% level, two-tailed test.

Separating the influence of third-party expectations and relative bargaining power provides additional, if incomplete, support for the conclusion that subjects in impartial third-party treatment conditions are more likely to reach agreements that reflect their expectations for third-party outcomes and that subjects in these conditions can circumvent losses from unilateral termination.

Coercive Concessions Outcomes

The last type of settlement that can occur in equilibrium results when either party has a strategic advantage through its unilateral termination option. In these cases, the threat to trigger a chance-based payoff induces actors to reach compromises that reflect the relative balance of power. The theory predicts that Player A will be able to command a larger share of points when it is relatively stronger than Player B and make concessions when Player B is stronger – unless the third-party option is unbiased. Earlier analysis demonstrated that relative bargaining power does not have a direct effect on the distribution of point agreed to in experimental analysis, however, it does have an effect of subjects' bargaining behavior. Table 8 shows the results an ANOVA test on Player A's opening offer based on relative bargaining power and third-party decision bias. The results show that both variables influence the type of offer Player A makes in the opening round and that there is no interaction between these two variables on the opening offer. Player A subjects make larger concessions to Player B when Player B has a bargaining advantage through the outside option. Alternatively, when Player A has an advantage, it makes a smaller offer (smaller concession), attempting to keep a larger share of the points.

Table 8: ANOVA of Opening Offer based on Expectations about Third-Party Outcomes and Relative Bargaining Power		
Variable	Two-way ANOVA	Two-way Factorial
Relative Power	25.190** (2.93)	23.347* (2.70)
Third-Party Decision Bias	68.271*** (7.94)	55.181*** (6.38)
Power x Decision Bias	-	2.936 (0.34)
Model	57.030*** (6.64)	29.983*** (3.47)
Residual	8.594	8.645
R-squared	0.0563	0.0592
# Observations	450	450

Note: Mean squares and *F* statistics reported. Third-party decision bias measured as the degree to which Player A is favored by the third-party distribution of points (disfavored, impartial, favored). Relative power measured as the probability that Player A has of winning the *terminate* option (0.2, 0.5, 0.8). */**/*** = 10%/5%/1% level of significance.

In the next stage of the bargaining period, where Player B has the opportunity to accept or reject Player A's offer, Player B subjects tend to reject offers that are substantially less than a 50-50 division of the points. In 308 cases, Player A made an offer that gave fewer than 15 points to Player B. Player B accepted this offer in only 55 (18%) instances. In contrast, Player A subjects proposed even divisions of the points 131 times, which was accepted in 104 (79%) cases. More often, as discussed above, these rejected offers were when Player B had an expected advantage through third-party options or when Player A had only an even chance in the termination option. This difference is illustrated in Figure 8, which shows the average offer the Player A makes in the opening round and the average division of the points accepted after the first offer. Notably, the

type of offer that Player A makes aligns with the theory's expectations, but the types of offers that are accepted reflect values unrelated to relative bargaining power. In sum, relative bargaining power influences offers, but has no significant impact on the types of agreements that are obtained.
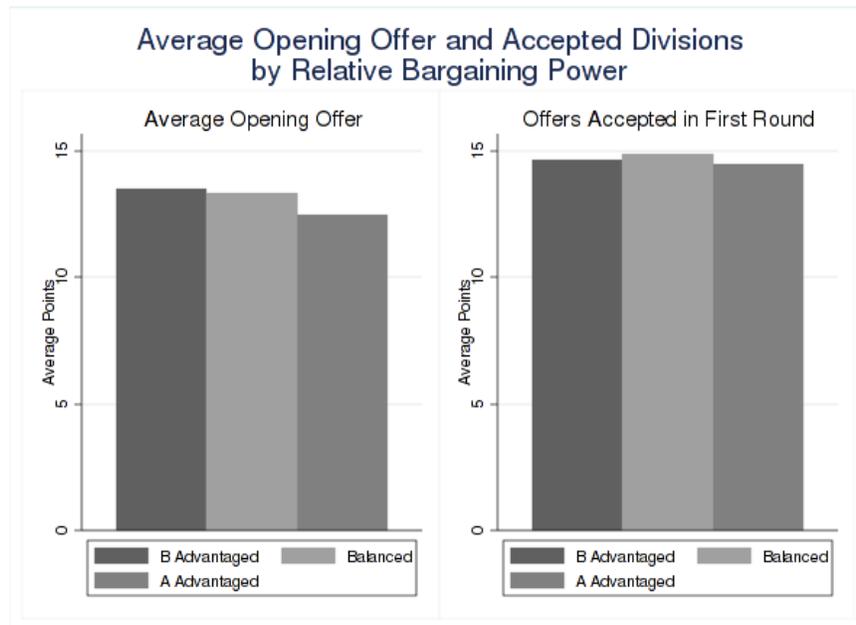

Figure 8: Opening Offers and Offers Accepted by Relative Power

These observations reveal an interesting narrative about the effect of outside options on conflict bargaining: When disputants have a bargaining advantage through an outside option, the duration of the conflict and the rate of disagreement increases. Consistent with the model's intuition, actors demand larger concessions from their counterpart when they have a bargaining advantage. Despite being disadvantaged, adversaries do not concede. Instead, the conflict is prolonged. Typically, this "chilling effect" is observed in economics research on arbitration (Ashenfelter, et al. 1992; Feuille 1975), but it is not an unforeseeable consequence of coercive tactics like war. International conflict scholars observe that disagreements about the value for war

tend to have an exacerbating effect on the incidence of conflict (Fearon 1998). The similarity in each case – arbitration and war – is that these options are unilaterally implemented. One solution to the prolonging effect of imbalanced power in military conflict is making acceptable third-party options available to disputants.

Discussion & Shopping Other Avenues

The experimental analysis provides support for many of the causal claims of the theoretical model:

1. Actors tend to reach immediate, bilateral agreements that divide the issue evenly (Rubinstein bargaining outcome proposition).

2. Decisions reached in conflict bargaining reflect parties' access to alternatives to bilateral negotiations. This is especially observed in the types of offers that subjects make when they have a bargaining advantage.

3. Disputants may be able to convert potentially bellicose scenarios into peaceful agreement by taking advantage of impartial third-party settlement fora.

The value of this analytical approach is that the researcher can separate the phenomenon of interest from other mechanisms that may otherwise influence outcomes in the observation of naturally-occurring data (Morton 1999). Laboratory experiments, in some cases, may be the only way to demonstrate causality – especially in testing formal models where the structural logic aligns with the experiment's methodology (McDermott 2002). Interstate conflict management, for instance, is plagued by a number of potential selection problems that bias the interpretation of statistical models. Some scholars suggest that states only enter into settlement agreements with

which they already intend to comply; thus observations of compliance with settlement agreements result from parties' consent to only modest concessions (Downs and Jones 2002; Downs, Rocke, and Barsoom 1996). Others speculate that only certain types of challengers will trigger disputes (Werner 2000). Furthermore, disputants only receive assistance from third-party intermediaries when their disputes are either easily resolved or especially difficult (Fortna 2004). Third, the supply of third-party intermediaries is influenced by outside actors' interests, expectations of success, and whether there are others who might attempt to intervene (Beardsley 2010; Bercovitch and Schneider 2000; Crescenzi et al. 2011; Melin 2010). The theory and research design employed here begins from the premise that in a conflict that is under-way, disputants select from a set of mechanisms that facilitate negotiated agreements. Setting aside the endogeneity problems of states selecting themselves into conflicts and the strategic supply of third party fora, the analysis concentrates on the causal mechanisms of forum selection in conflict management. Together, the theoretical and experimental results demonstrate that parties are influenced by strategic factors related to their outside options – particularly third-party alternatives – in conflict bargaining. Support for the theory's central proposition is fragile, but persuasive. Independently, expectations about third party outcomes and relative power influence bargaining outcomes.

Another advantage of this approach is that the researcher can explore off-the-equilibrium-path behavior. Recall that the theory predicts that with complete information subjects avoid the costs of violence and the potential risks of third-party management by reaching bilateral agreements. In other words, neither third-party management nor war occurs in equilibrium. One

explanation for this result is that disputants design bilateral fora to replicate some of the more effective features of third-party management or make concessions to stronger adversaries. In reality, disputants frequently turn to third party fora or violent tactics; theoretical foundations suggest that adversaries' expectations about third-party outcomes and relative power affect decisions to implement outside options to bilateral agreement (see also Fang 2010; Weigand and Powell 2010). The experimental design employed here can be used to assess the direct impact that these variables have on conflict bargaining tactics that are not observed in the behavioral equilibrium.

Reaching in the Experimental Grab-Bag for Third-Party Management

Consider the incidence of third-party management. One of the major motivating questions of this research is why disputants use or avoid the use of third-party management in interstate conflict. The model predicts that subjects will generally avoid the use of third-party management fora is that complete information allows them to *anticipate* the outcomes of outside options and make adjustments during bilateral negotiations. Another reason for the result that disputants will come to an immediate, bilateral agreement, is that both parties must consent third-party management procedures. This gives each party a veto over the other's forum choice. Implications from the model suggest that when actors anticipate that a third party mechanism will produce a settlement in their favor, they do not have a credible threat to apply to the forum due to the other actor's veto, but, if the forum is impartial, then the *Challenger* will adjust its offer in the first round to match the *Target's* expected payoff from third-party management. This result is obtained because off the equilibrium path, both parties would propose third-party management and

consent to its implementation, rather than continue bilateral negotiations. Therefore, another testable implication from the peaceful concessions outcome is that only impartial third-party fora will be acceptable to both parties. That is, both parties will consent to third-party management if and only if the forum is expected to divide the issue evenly.

Table 9 presents the cases in which third-party management was suggested or consented to by either party and whether the third-party forum was impartial. For simplicity of analysis, I collapse the variable, expectations about distributional outcomes from third-party settlement, to a dummy variable for impartial decision bias. In total, subjects attempted to pursue third party management 109 times. Seventy of these attempts resulted in mutual consent by both subjects. As the data show, the expectation that the third party will implement an impartial decision approaches requirements for sufficiency, but ultimately do not meet either the necessary or sufficient conditions for subjects' mutual consent to the use of third-party strategies in bargaining, failing to support the conclusion from the model that disputants would *only* submit to a third-party management forum if it was impartial (see Dion 1998). Many of the cases in which a subject objected to the suggestion to submit to third party management were instances in which the third party was expected to make a decision that favored one of the actors, but in a number of cases, subjects also consented to the biased third-party mechanism. Subjects in the Player A role attempted to suggest third party management at their second chance to reach an agreement 73 times – 47 of which were consented to by Player B. In 20 of these 47 observations, Player B consented to an outside decision-making process that favored Player A – that is, was likely to grant a larger share of the points to Player A than to Player B. Similarly, in the 19 (of 25 attempts)

instances where Player A consented to an offer from Player B to resolve the problem by using a third-party mechanism, Player A agreed to an unfavorable forum in 8 instances. Thus, biased fora were still rejected at a demonstrably higher rate than impartial fora.[13]

Table 9: Cross-Tab Results of Third-Party Bias on Mutual Consent for Third-Party Management			
		Mutual Consent	
		No	Yes
3rd-Party Bias	Biased	37	44
	Impartial	2	26

Statistical examination of the relationship between subjects' expectations about the distribution of points and their consent to third-party processes provides further support for the conclusion that third-party bias was more likely to deter subjects from agreeing to outside management. ANOVA tests of subjects' consent to use third-party management (Table 10) show that subject-pairs were more likely to agree on the use of a third-party forum when the forum was impartial than if the forum was anticipated to be biased. Further, relative bargaining power has no influence on the decision. The predicted probability of third-party management, given that it was suggested by either party, increases by 70% between a biased intermediary and an impartial intermediary.[14]

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13 In both of the cases where an impartial third party was rejected it was where Player B had an advantage through it unilateral option to terminate negotiations and Player A was recommending the option. This would appear to contradict the conclusions reached from the peaceful concessions outcome but it is likely the result of subjects' mis-estimation of the effects of bargaining delays on payoffs. In both cases after the impartial forum was rejected, the rejecting subjects either proceeded to accept a bilateral agreement or, interestingly, later suggest impartial third-party management.

14 Predicted probabilities calculated from logit analysis using S-POST in Stata 11 (Long and Freese 2005).

Table 10: ANOVA of Mutual Consent for Third-Party Management based on Expectations about Third-Party Outcomes and Relative Bargaining Power

Variable	Two-way ANOVA	Two-way Factorial
Impartial Third Party	3.077*** (14.73)	2.069*** (10.06)
Relative Power	0.009 (0.04)	0.074 (0.36)
Impartiality x Power	-	0.378 (1.84)
Model	1.036*** (4.96)	0.773*** (3.76)
Residual	0.209	0.2060
R-squared	0.1241	.1543
# Observations	109	109

Note: Mean squares and *F* statistics reported. Third party impartiality coded as a dummy variable. Relative power measured as the probability that Player A has of winning the *terminate* option (0.2, 0.5, 0.8). */**/*** = 10%/5%/1% level of significance.

In 41 of the 70 cases of third-party management both subjects complied with the decision. Scholars of compliance and conflict management question whether the high levels of compliance observed in arbitration and adjudication cases are the result of strong enforcement measures and norms (i.e., *pacta sunt servanda*) or whether they are a product of states only agreeing to terms that would follow even without the formal treaty (Chayes and Chayes 1993; Downs, Rocke, and Barsoom 1996; Simmons 2002; Simmons and Hopkins 2005; von Stein 2005). The model provides one answer to this debate: Disputants do not consider entering into third-party management arrangements when they anticipate that they will lose. Therefore, they consent to third-party management under conditions that would be *ex ante* favorable to their compliance.

However, once disputants agree to outside management, it is possible that one of the parties could defect in equilibrium when non-compliance costs induced through forum transparency are sufficiently low. Therefore, states may enter agreements with which they do not intend to comply – evidence that compliance with third-party settlements is a function of forum transparency, rather than endogeneity between agreement design and compliant behavior.

Experimental data provide additional evidence to these observations. Of the 29 cases of non-compliance, in 17 cases, only Player A complied with the third-party decision; in 12 cases, only Player B complied. Consistent with the analysis of the compliance subgame, in no case did both subjects defect against the third-party decision. Statistical analysis of the effect of forum transparency and third party bias on compliance supports the proposition that forum transparency – as it increases noncompliance costs – improves compliance with settlement agreements. Table 11 reports the results of a logistic regression analysis of mutual compliance, which shows that both noncompliance costs and forum impartiality improved the likelihood that both subjects accepted the third party division of points.[15]

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15 ANOVA tests produce similar results and, additionally, demonstrate that there is no interaction effect between third-party bias and noncompliance costs.

Table 11: Logistic Regression of Mutual Compliance with Third-Party Decisions	
	Mutual Compliance
Variable	Coef. (Std. Err.)
Forum transparency/Non-compliance costs	0.098** (0.047)
Third-party bias	2.441*** (0.495)
Constant	-1.830** (0.739)
N = 70, Pseudo R^2 = 0.2014	
Note: ** = $p < 0.05$, *** = $p < 0.01$.	

Subjects in high transparency treatment conditions where they faced higher costs for noncompliance were 43% (predicted probability from 0.409 in low noncompliance cost scenarios to 0.699 in high cost scenarios) more likely to comply with the third party decision than subjects in low transparency conditions. The actual division of the points delivered from the third party mechanism had an even larger effect on subjects' decision to accept. Study participants were 117% more likely to accept third party settlements that divided the points evenly than settlements that gave more points to one subject than another (predicted probability from 0.409 in biased third-party scenario to 0.888 in impartial scenario).[16] Together, these results demonstrate that *both* forum transparency and expected distributional outcomes from third party settlement are important factors in explaining compliance with third party agreements. Furthermore, the independent effect of noncompliance costs on actors' cooperation provides evidence to the

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16 Predicted probabilities calculated from logit analysis using S-POST in Stata 11 (Long and Freese 2005).

institutionalist argument that third party fora can be effective – in and of themselves – in ensuring international peace.

Finding Incidents of Unilateral Termination

For many of the same reasons, the theory also predicts that war will not be observed in equilibrium behavior. Instead, subjects' bargaining advantage through unilateral options affects the types of bilateral agreements that are reached. Nonetheless, in the experimental data, subjects employed their unilateral termination option in 44 instances. Given that subjects' costs for unilateral termination, or war, are equal, the theory would predict that relative bargaining power would most strongly predict the incidence of bargaining failure. At the same time, drawing from the peaceful concessions proposition, if the third-party forum is impartial, then the use of non-cooperative tactics to resolve the conflict may be prevented in some cases (e.g., when Player B is relatively stronger). Table 12 presents the results of a series of ANOVA that test the influence of relative bargaining power and third-party decision bias on the incidence of unilateral termination. The results show that subjects' decisions to terminate negotiations were strongly determined by their relative bargaining power. When Player A had the opportunity to exercise its ability to terminate negotiations, it was 400% (from predicted probability of 0.04 to 0.2) more likely to do so when it was preponderant than when Player B had an advantage. Player B was more than 600% (from predicted probability of 0.05 to 0.38) more likely to terminate negotiations when s/he had an advantage through terminating negotiations than when s/he did not have an advantage. Together, these results confirm the first expectation that actors are more likely to use

non-cooperative tactics when their relative power gives increases their expected value of violence.

Variable	Model 1 One-way ANOVA	Model 2 Two-way ANOVA	Model 3 Two-way Factorial
Table 12: ANOVA Test of Termination Incidence based on Relative Bargaining Power and Expectations about Third-Party Outcomes			
Relative Power	0.243* (2.77)	0.236* (2.68)	0.250* (2.86)
Third-Party Decision Bias	-	0.039 (0.44)	0.024 (0.27)
Power x Decision Bias	-	-	0.133 (1.52)
Model	0.243* (2.77)	0.141 (1.60)	0.137 (1.56)
Residual	0.088	0.088	0.088
R-squared	0.0123	0.0142	0.0276
Observations	450	450	450

Note: Mean squares and *F* statistics reported. Third-party decision bias measured as the degree to which Player A is favored by the third-party distribution of points (disfavored, impartial, favored). Relative power measured as the probability that Player A has of winning the *terminate* option (0.2, 0.5, 0.8). */**/*** = 10%/5%/1% level of significance.

Table 12 also indicates that there is no interactive effect between expectations about third-party outcomes and relative bargaining power, consistent with above analyses. Further examination of the individual factors, though, reveals that there is a weak, interactive relationship between relative power and third-party decision bias that supports the peaceful conversion implication of the model. In instances where the relative power between the disputants was balanced and the third-party decision was expected to be impartial (center graph in Figure 4),

subjects were less likely to use non-cooperative tactics than subjects in treatment conditions where Player B was preponderant (see Table 13).

	Two-way ANOVA	Two-way Factorial
	Coef.	Coef.
Variable	(Std. Err.)	(Std. Err.)
Relative Bargaining Power		
Balanced	0.079** (0.036)	0.107* (0.060)
Player A Stronger	0.070* (0.036)	0.071 (0.066)
Third-Party Decision Bias		
Impartial	-0.031 (0.036)	0.030 (0.064)
Favors A	-0.006 (0.035)	-0.043 (0.070)
Power x Decision Bias		
Balanced x Impartial	-	$-0.141^{\dagger}$ (0.086)
Balanced x Favors A	-	0.059 (0.089)
A Stronger x Impartial	-	-0.026 (0.091)
A Stronger x Favors A	-	0.038 (0.092)
Constant	0.055 (0.033)	0.043 (0.044)
R-squared	0.0142	0.0276
# Observations	450	450

Table 13: Regression Analysis of Termination Incidence based on Relative Bargaining Power and Expectations about Third-Party Outcomes, Base Levels

Note: Third-party decision bias measured as the degree to which Player A is favored by the third-party distribution of points (disfavored, impartial, favored). Relative power measured as the probability that Player A has of winning the *terminate* option (0.2, 0.5, 0.8). */**/*** = 10%/5%/1% level of significance. † = P > |t| = 0.101

Conclusion

Returning to the hypothetical example of a territorial conflict between two countries, the literature provides several explanations for the use and consequences of various dispute resolution methods. When in contention over a highly salient issue, such as territory, disputants have strong incentives to bargain hard and peaceful settlement is often derailed by bargaining problems. Scholars and practitioners recommend intervention by third-party intermediaries to help states overcome these barriers to settlement, but they often do so without acknowledging the factors that lead states to accept offers of mediation. Shallow explanations for forum selection in conflict management fail to account for a number of observations that are puzzling in light of the relative effectiveness of third-party solutions to interstate conflict: In the vast majority of cases, disputants attempt to manage conflicts bilaterally. Data from the Issue Correlates of War Project demonstrate that more than 75% of attempts to settle territorial, river, and maritime claims are bilateral, and this share is increasing relative to the number of third-party alternatives available (Lefler 2010). Disputes characterized by imbalances of power are more likely to be settled bilaterally. Additionally, disputes between democracies are also tend to avoid third-party fora because they have domestic sources of transparency that enhance their commitment to peaceful settlement (Mitchell, Kadera, and Crescenzi 2009). This project draws from conflict bargaining processes to isolate the factors that lead states to pursue third-party management in relation to other settlement alternatives, including war and bilateral negotiation. The logic of these processes indicate that in some cases states are able to anticipate the outcomes of alternatives to bilateral negotiation and, instead, construct agreements that reflect these anticipated distributional

divisions. Strategic motivations to avoid costly delays and potential risks of third-party options leads states to "bargain shop" for alternatives that are just as efficient but less effective than the types of management that the literature proves to be most successful at resolving interstate disputes.

To explore this logic further, I employ an experimental analysis of forum selection in conflict management. Together, the theoretical model and experimental analysis demonstrate that disputants proceed through conflict bargaining strategically, including making decisions about the use of violent and cooperative, third-party mechanisms. States are more likely to use third party management fora because such fora resolve commitment problems and because they help redirect the course of a potentially violent conflict. In particular, disputants' decisions to pursue third-party conflict management can be isolated to two features of a third party forum that relate to its effectiveness: transparency and expectations about distributional outcomes. When disputants expect a third party to rule largely in favor of one party over another, the disadvantaged party will likely object to that forum's inclusion in the negotiations. One potential trade-off for pursuing dispute settlement through such unfavorable fora is that a disputant can assure its adversary's commitment to the agreement if the forum is transparent to reveal abrogations of third-party settlements. The experimental results demonstrate the central logic of these observations as parties preferred to pursue third-party management through impartial fora, but were also willing to comply with settlements that divided the points unevenly when non-compliance costs were large.

These results introduce several interesting prospects for research on interstate conflict management. First, biased third party fora – or those that would result in an unbalanced division of the issue – must be highly transparent and backed by a large number of observers that would enforce settlement agreements if they are to be effective in managing interstate disputes. This may be one reason why biased intermediaries are elsewhere observed to be more effective in managing interstate conflict: Intermediaries that have extensive knowledge about capabilities and resolve of an adversary may be able to use that same information (or, alternatively, use other linkages that allowed them to have access to that information, such as military alliances or intelligence-sharing agreements [see Savun 2008]) to enforce agreements. Another explanation for the effectiveness of third party management is that management fora can take advantage of their domestic or institutional transparency to increase costs for non-compliance, which is often a justification for states' compliance with legal settlements. Where norms favoring compliance with legal agreements prevail (i.e., *pacta sunt servanda*), legal fora can deliver unbalanced judgments, yet obtain long-term commitment from disputants.

This second explanation is the approach studied here, and, as the analysis indicates, the balance between third-party decision bias and transparency also depends on disputants' ability to use coercive force – a strategic dynamic unexplored in other economic models of arbitration and mediation (e.g., Fang 2010; Manzini and Mariotti 2001). If a combatant has a capabilities advantage over its adversary, it can circumvent attempts to settle conflicts through third-party fora. This advantage supersedes states' preferences for third-party management in most cases, which has the effect of making biased fora inconsequential to states' bargaining tactics. Important

to the selection of third-party fora, imbalances of power divert disputants away from third-party tactics, making bilateral negotiations much more likely. Depending upon each states' resolve and the type of agreement forged, such bilateral agreements can be self-enforcing. The challenge, as demonstrated in the experimental analysis, is that coercive efforts tend to have a chilling effect on bargaining, prolonging conflict and increasing disagreement.

The theoretical and experimental analysis provide an alternative narrative to this outcome: A complainant can convert a potentially violent scenario into peaceful agreement when both parties can agree on a third-party forum. If third parties can commit to making impartial decisions about issue-based claims, then disputants can avoid violent conflict and reach agreements that reflect the third-party's decision. Together, this suggests that third parties are important to the settlement process because they offset imbalances of power that would otherwise lead to violent conflict.

This role is only realized, though, when third parties are invited to participate, as a forum can only be directly effective if it is implemented. The problem, as this project identifies, is not that third parties are viewed as ineffective or unacceptable in the conflict management process. Indeed, the observed success of international arbitration and adjudication in interstate conflict belies this conclusion. Rather, because third party solutions are effective – especially those that are highly transparent – disputants seek agreements that avoid their potential costs. Disputants replicate some of the features of third-party management fora in the design of bilateral negotiations, which is further abetted by other conflict dynamics that lead states to settle privately. The question left to future research is whether the disputes that are resolved bilaterally

because they sought a bargain to third-party management obtain different levels of compliance than those that are resolved bilaterally due to coercion or exogenous breakdown risks. This research serves as an important first step to pursuing this question by providing answering *when* disputants implement these tactics in the first place.

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