Endogenous Compliance, Enforcement, and Jurisdiction in International Adjudication*

Leslie Johns†

April 17, 2007

Prepared for delivery at the 2007 Journeys in World Politics Workshop.

Abstract

Why do states accept jurisdiction of the International Court of Justice (ICJ) and refer disputes to it, and why are disinterested third parties willing to incur the costs of enforcing the Court's judgments? I construct a formal model in which two states are engaged in a dispute over an asset. A judgment of the Court does not forestall future renegotiations between the two states, but it does serve as a commitment device because unilateral defections from the ICJ's judgment trigger the imposition of non-compliance costs by disinterested actors. This constrains the post-adjudicative bargaining positions of the disputants. States endogenously enforce judgments and submit to the jurisdiction of the Court in order to gain a favorable bargaining position in future disputes. The model also predicts that weaker states have greater incentives to promote the spread of international adjudication.

*Many thanks to Bruce Bueno de Mesquita, Michael Gilligan, Catherine Hafer, Susan Hyde, Dimitri Landa, Peter Rosendorff, Alastair Smith, and Erik Voeten. A previous draft was presented at the 2007 Annual Conference of the Midwest Political Science Association.

†Department of Politics, New York University. E-mail: leslie.johns@nyu.edu

1 Introduction

The International Court of Justice (ICJ) is often believed to be a 'toothless' institution because it lacks effective mechanisms for compelling compliance with its rulings. Nonetheless, as legal scholars have highlighted, the Court is often successful in resolving contentious disputes.[1] Even in difficult cases in which one or more parties to the dispute refuse to comply immediately and fully, the issuance of a judgment by the Court usually opens the door to third-party involvement. These third parties often impose great diplomatic pressure to induce compliance with the Court's decisions, as well as overseeing negotiations over outcomes that were not previously acceptable to the disputants.[2] This prompts three important puzzles.

First, if the issuance of a judgment by the ICJ results in further rounds of diplomatic bargaining, why do states go through the costly and time-consuming process of adjudication? Why don't they simply strike an *ex ante* Pareto efficient bargain? Second, why are disinterested third parties willing to impose costs on actors in order to induce compliance with ICJ rulings? While qualitative research has clearly established the existence of international non-compliance costs in the real world, past theoretical models assume these costs and neglect to explain why disinterested actors would be willing to impose them. Finally, what explains and affects the willingness of states to accept and promote the jurisdiction of the Court?

In addition to the vast international law literature on the legal doctrines and rulings of the ICJ, there exists a large body of case studies and empirical analyses of many issues related to the International Court of Justice, including acceptance of the Court's jurisdiction, case

[1] See Paulson (2004) Schulte (2004) for an extensive study of compliance with ICJ rulings.

[2] Recent examples include the agreement overseen by UN Secretary General Kofi Annan on the withdrawal of Nigerian troops from the Bakassi peninsula following the ICJ's judgment in *Land and Maritime Boundary between Cameroon and Nigeria (Cameroon v. Nigeria: Equatorial Guinea intervening) (1994-2002).*

submission rates, judicial bias, and compliance with the judgments of the ICJ.[3] However, we lack a firm understanding of how these various factors interact and to my knowledge there does not exist a game theoretic analysis of the incentives facing nation-states when deciding whether to accept jurisdiction of the Court, appeal to the ICJ in a given dispute, comply with the rulings of the the Court and enforce the ICJ's judgments.

The most closely related formal work is Fang (2006), which consists of a model in which two players are engaged in negotiations over the division of the asset. Each player has the opportunity to leave the bargaining table and make an appeal to an generic international institution. This institution is modeled as a non-strategic randomization device which proposes divisions of the asset. Each disputant must then choose whether to comply with the institution's division or to defect. If a player unilaterally defects, he gains full control over the asset, but must pay an exogenous non-compliance cost. If both players defect, the asset is destroyed and both must pay non-compliance costs.

Four key aspects of the model below differentiate it from previous research. First, I allow for the possibility of post-adjudicative bargaining. Previous research assumes that once an international institution issues a ruling, states can only comply or defect from the imposed agreement (Fang 2006). However, as numerous case studies of ICJ rulings have shown, Court decisions often open the door to post-adjudicative bargaining (Fischer 1982; Gill 2003; Paulson 2004). For example, many cases in which the Court allocates an asset (such as a piece of territory) to a particular state result in subsequent negotiations in which the winner of the Court's judgment makes concessions to the loser.[4] Also, many Court cases consist of two states making competing claims over which legal principles should prevail in allocating ownership of an asset. Once the Court has ruled on which legal principle prevails,

[3]For examples of recent research, see Paulson (2004), Posner and de Figueiredo (2005), Powell and Mitchell (2007), and Schulte (2004).

[4]E.g., *Land and Maritime Boundary between Cameroon and Nigeria* (Cameroon v. Nigeria; Equatorial Guinea intervening), Judgment on the Merits of 10 October 2002.

the disputants must subsequently return to the bargaining table in order to actually negotiate a final settlement.[5] Indeed, ICJ judgments often contain explicit provisions urging litigants to return to negotiations and reach a new settlement in accordance with the principles established by the Court.[6]

In the model below, I allow states to re-enter the bargaining process and create a new agreement following a ruling of the Court. While states may not always choose to hold such negotiations, the option is always available to them. The key factor differentiating these post-adjudicative negotiations from the bilateral bargaining that could have taken place in lieu of appeals to the Court is that open defiance of the Court's ruling triggers the imposition of endogenous non-compliance costs by disinterested actors.

Second, the ICJ differs from most other international institutions in that it lacks the ability to divide assets that are in dispute. While the assumption of divisibility of an asset may be reasonable for some situations, such as appeals for mediation or arbitration by a regional organization or third-party actor, the ICJ generally lacks the ability to divide assets in a meaningful way even if the asset is inherently divisible because it is typically adjudicating between competing legal claims.[7] For example, a large body of the rulings of the ICJ concern maritime delimitation prior to the codification of this area of international law in the United Nations Convention on the Law of the Sea of 10 December 1982. In many ways, this would be an ideal area for the Court to engage in meaningful divisions of the territory in dispute because the asset is fully divisible and there are no human inhabitants whose rights must be considered, as in many land disputes. Nevertheless, the Court has been unwilling to

[5]E.g., *North Sea Continental Shelf* (Federal Republic of Germany v. Denmark; Federal Republic of Germany v. Netherlands), Judgment on the Merits of 20 February 1969.

[6]E.g., *Case Concerning the Gabcikovo-Nagymaros Project* (Hungary v. Slovakia), Judgment on the Merits of 25 September 1997, para. 155 (2) (B).

[7]A rare exception in which the Court had latitude to actually draw a boundary in a territorial dispute was in *Maritime Delimitation in the Area Between Greenland and Jan Mayen* (Denmark v. Norway), Judgment on the Merits of 14 June 1993. However, even this case resulted in re-negotiation by the disputants; see Paulson (2004).

engage in border-drawing, and has restricted itself to issuing rulings on the legal validity of state behavior. This translates into the full allocation of disputed territory to one party or another, rather than fine-grained divisions of the asset.

My model assumes that a ruling of the Court fully allocates the asset to one of the two parties to the dispute. As in most actual jurisprudence, the Court is unable to divide the asset. While a more political process, such as mediation by the UN Secretary General or a disinterested third-party, might result in such divisions, the Court generally limits itself to choosing between two competing legal claims.[8]

Third, the model below extends existing models of international adjudication by endogenizing the non-compliance costs that disputants must pay when they defy the judgment of the Court. As documented extensively in Fang (2006) and Paulson (2004), countries usually face positive costs from refusing to comply with the judgments of the ICJ. These costs can take the form of diplomatic pressure at the bilateral or multilateral level, trade sanctions, or even domestic pressure from the electorate or interest groups. Even nations with immense military and economic power, such as the U.S., often find compliance with ICJ judgments or subsequent post-adjudicative agreements to be less costly than defiance of the Court's ruling (Stiles 2000).[9] However, a salient feature of all of the different types of non-compliance costs above is that they are costly to both the enforcer and the non-compliant actor. Why should we expect disinterested actors to take costly actions in order to induce compliance

[8]Of course, this raises the interesting question of why states would prefer appealing to the Court rather than to another institution that can divide the asset. This issue is set aside for now.

[9]Even the current Bush Administration in the U.S., which has been hostile to the growth of international courts, has complied with rulings of the ICJ. For example, the U.S. has recently lost a series of cases in which foreign nationals living within the U.S. have been subjected to the death penalty without being notified of their right to consular assistance under the Vienna Convention on Consular Relations of 1963. [See *Vienna Convention on Consular Relations* (Paraguay v. United States of America), Order of Provisional Measures of 9 April 1998; and *LaGrand* (Germany v. United States of America), Judgment on the Merits of 27 June 2001.] The U.S. State Department has since begun a massive public education campaign for law enforcement officers regarding the treatment of foreign nationals and President Bush even issued an executive determination ordering state courts to give effect to the decision of the ICJ. [See *Avena and other Mexican Nationals* (Mexico v. United States of America), Judgment on the Merits of 31 March 2004, and Kirgis (2005).]

by others?[10]

My model endogenizes non-compliance costs by allowing states to develop reputations about their history of enforcing Court judgments. In my framework, two states are randomly chosen to be involved in a dispute. These states can choose whether to engage in bilateral bargaining or to refer the case to the Court. If adjudication takes place and the loser chooses to engage in conflict rather than to respect the Court's judgment or participate in post-adjudicative bargaining, all of the disinterested actors (that is, those actors who were not chosen as disputants) must decide whether to enforce the Court's judgment by imposing non-compliance costs. This basic stage game is infinitely-repeated, ensuring that any actor who is a disinterested party in a given period can reasonably expect that it will have a future opportunity to refer a dispute to the Court. This allows states to develop enforcement reputations. States who impose non-compliance costs when they are disinterested parties are 'providers' of enforcement, while states that refuse to do so are 'free-riders.' If disinterested parties are willing to enforce Court judgments when the winner is a provider of enforcement and refuse to impose non-compliance costs when the winner has a history as a free-rider, then it can become incentive-compatible for states to spend resources on enforcing judgments for disputes in which they have no inherent interest. This shows that even if an institution lacks explicit enforcement mechanisms, it is possible for actors to develop a shared set of expectations about behavior that lead to informal and incentive-compatible enforcement of the institution's decisions (Maggi 1999).[11] As such, equilibrium behavior in the game generates a self-enforcing norm of reciprocity of enforcement (Keohane 1986).

Finally, past research has failed to analytically examine why states would accept jurisdiction

[10] A similar criticism has been made by Smith (1998) against explanations of war that rely on domestic audience costs without providing microfoundations for why rational actors would be willing to impose them.

[11] The ICJ does have a formal mechanism for enforcement: Article 94 of the UN Charter allows for injured parties to appeal to the UN Security Council, which can "make recommendations or decide upon measures to be taken to give effect to the judgment." However, the UN Security Council has never exercised this authority to enforce a judgment (Gill 2003, 33-37).

of the Court in the first place. All states that are members of the United Nations are also parties to the Statute of the ICJ. However, since the Court operates on the principle of consent to jurisdiction, states must explicitly accept the jurisdiction of the Court in order to actually be involved in ICJ litigation by either filing a declaration of the acceptance of jurisdiction under Article 36 (2) of the Statute of the ICJ, or by including language in an international treaty that specifies that disputes arising regarding the treaty's interpretation and/or application will be referred to the Court.[12] Finally, the jurisdiction of the Court operates on a reciprocity principles: if state A has accepted jurisdiction of the Court and state B has not, neither state is able to sue the other.

The principle of consent to jurisdiction does not imply that a state must consent to every single case to which it is a party before adjudication can proceed. Indeed, many legal cases before the ICJ involve attempts by one or more parties to have the case dismissed for a lack of jurisdiction. However, there must exist an ostensible basis for jurisdiction of the Court in order for a state to submit a particular case to the Court.[13] So understanding why states choose to accept jurisdiction of the Court is vital for understanding how states subsequently decide whether to submit cases to the Court.

In the analysis below, there are two model variants. In the first, jurisdiction is exogenous: it is assumed that all states within the 'international system' have already consented to the jurisdiction of the Court. In the second model variant, each state must choose whether to

[12] The former is commonly known by the misnomer of the acceptance of 'compulsory jurisdiction,' while the latter treaty-specific method is known as acceptance via compromissory clauses. Note that the contemporary customary international law on treaty reservations ensures that even if a particular treaty contains a compromissory clause, a party to the treaty need not be subject to this clause. There are additional protocols available for states to submit cases via special agreements and for states that are not UN members to become parties to the Court. See Gill (2003: 67-89) for a more detailed exposition of the jurisdiction of the ICJ.

[13] Early in the history of the Court, parties were permitted to file cases absent a basis for jurisdiction and the respondent was invited to offer its consent; e.g. *Treatment in Hungary of Aircraft and Crew of the United States of America* (United States of America v. Hungary) (1954). However, no legal proceedings took place without the consent of the respondent. This procedure became so inefficient that it was ultimately eliminated in 1978; see Rules of the Court, 14 April 1978, Art. 38 (5).

accept jurisdiction of the Court prior to the start of the game. This latter model with endogenous jurisdiction allows us to examine which states have the greatest incentives to accept the ICJ as a body for international adjudication and provides intuition about incentives for institution-building by states.

Both models are very stark in their institutional features. The Court plays no epistemological role: since the value that each player derives from the asset is common knowledge, players don't learn any new information from the Court's judgments. This simplifying assumption is made in order to demonstrate an alternative mechanism to information-provision; namely, that the prospect of non-compliance costs for defying Court judgments can ensure that the Court serves as a commitment device. A related model simplification is that the Court is modeled as a non-strategic randomization device. It is undoubtedly the case that real-life judges are strategic actors who must carefully weigh competing arguments with an eye to the political and legal implications of their judgments (Posner and de Figueiredo 2005; Voeten 2007). Similarly, it is undoubtedly the case that the willingness of disinterested players to bear enforcement costs is a function of the information provided by the Court. Such an interpretation of the judicial and enforcement process is complementary to the model below, because the randomization device can be viewed as a reduced-form of the game in which the Court plays a role as an information-provider and the model permits sufficient flexibility for non-compliance costs to be a function of the information revealed in equilibrium.[14]

[14]Indeed, this is precisely the technology employed in a companion paper on judicial bias that is currently a work in progress. See footnote 25 for an intuition of how the model can accommodate this technology.

2 Model I: Exogenous Jurisdiction

2.1 Model I: Stage game

There is a set of unitary-actor nation-states, $N = \{1, 2, 3, ...\}$ where $n \in N$ denotes an arbitrary player and the cardinalty of N is denoted by $|N|$.[15] In each time period $t = 1, 2, ...$, the stage game begins with Nature selecting two players $i, j \in N$ to be involved in a dispute over an asset. I refer to the chosen players i and j as 'disputants,' and the other players as 'enforcers.' Each player is equally likely to be chosen as a disputant, which means that the probability that Nature selects a given player to be involved in a dispute is: $\frac{2}{|N|}$.[16] Nature then selects the types of the disputants, which are the values that i and j assign to the asset in dispute. These values, v_i and v_j, are independently and identically distributed with full support along the unit interval according to the continuous density function $f(\cdot)$ and the distribution function $F(\cdot)$. Each disputant's type becomes common knowledge after it is drawn; so there is no uncertainty regarding the value that i and j derive from the asset.[17]

[INSERT FIGURE 1 HERE.]

Each disputant then simultaneously decides whether to engage in bilateral bargaining or to refer the case to adjudication. If both i and j choose to engage in bilateral bargaining, there exists a standard bargaining framework in which each disputant's disagreement payoff

[15] Figure 1 shows the structure of the stage game.

[16] Note that the number of possible pairs of two disputants from $|N|$ actors is: $\binom{|N|}{2} = \frac{|N|!}{(|N|-2)!2!}$; and the number of pairs to which a particular actors belongs is $|N| - 1$. So the probability that a particular actor is involved in a dispute is $\frac{(|N|-1)(|N|-2)!2!}{|N|!} = \frac{2}{|N|}$, and the probability that the actor is an enforcer for a given dispute is $1 - \frac{2}{|N|}$.

[17] Note that an alternative model of international adjudication might allow for uncertainty about (v_i, v_j). This would provide an informational rationale for use of the Court. The assumption of common knowledge of player-types means that we are only examining the use of the Court as a commitment device. This ensures that we do not confound the commitment mechanism with an informational explanation for use of the Court.

is his expected utility from engaging in conflict over the asset.[18] Let α_i and α_j represent the probability of player i and player j, respectively, prevailing in conflict and gaining full control of the asset, where $\alpha_i + \alpha_j < 1$. So with the complimentary probability, $1 - \alpha_i - \alpha_j$, the asset is destroyed in the conflict, thus establishing the costliness of conflict in expectation. Then the disagreement payoffs for bilateral bargaining are:

$$d^B = (d_i^B, d_j^B) = (\alpha_i v_i,\ \alpha_j v_j)$$

I assume that the bargaining framework results in the selection of the Nash bargaining solution (NBS), in which i's share of the asset is denoted by x^B, as the final outcome.[19]

If at least one disputant chooses adjudication, the case is referred to the ICJ. The adjudication process results in stochastic rulings, where $p \in [0, 1]$ is the probability that player i wins. Additionally, the process is costly, so each disputant pays a cost $k > 0$ if adjudication takes place, regardless of which player referred the case to the Court. If the ICJ rules in favor of i, then the asset is fully allocated to i, and if the ICJ rules in favor of j, the asset is fully allocated to j. Following the Court's judgment, players i and j may subsequently negotiate an agreement, but the use of conflict results in a non-compliance cost levied against the player who lost in the Court's judgment,

$$c = \sum_{n \in N/\{i,j\}} e_n$$

[18] See Muthoo (1999) for an introduction to bargaining problems. Allowing for initial asset ownership does not disturb this framework because the player who lacks initial ownership of the asset always has incentive to initiate conflict, hence establishing conflict as the disagreement payoff.

[19] See Nash (1950) and Muthoo (1999) for an overview of the NBS. See Johns (2007), Koremenos (2005), Maggi (1999), and Milner and Rosendorff (1996) for applications of the NBS to international bargaining problems. NOTE TO SELF: At some point, I need to check the robustness of everything to alternative bargaining solution concepts. My intuition is that the symmetry of the NBS makes it a very conservative choice (in terms of the likelihood of case submission) since it reduces the desirability of having a privileged position in post-adjudicative bargaining.

where the choice variable e_n is the cost paid by an enforcer n from the set of non-disputants, $N/\{i,j\}$. So conflict is credible for player j when i wins adjudication iff $c < \alpha_j v_j$, and conflict is credible for player i when j wins adjudication iff $c < \alpha_i v_i$. This yields the following disagreement payoffs for post-adjudicative bargaining:

$$d^A = (d_i^A, d_j^A) = \begin{cases} (\alpha_i v_i - k,\ \alpha_j v_j - k - c) & \text{if } i \text{ wins and } c < \alpha_j v_j; \text{ and} \\ (v_i - k,\ \ -k) & \text{if } i \text{ wins and } c \geq \alpha_j v_j; \text{ and} \\ (\alpha_i v_i - k - c,\ \alpha_j v_j - k) & \text{if } j \text{ wins and } c < \alpha_i v_i; \text{ and.} \\ (-k,\ v_j - k) & \text{if } j \text{ wins and } c \geq \alpha_i v_i. \end{cases}$$

As in the bilateral bargaining subgame, I assume that post-adjudicative bargaining results in the choice of the NBS, in which i's share of the asset is denoted by $x^A(i)$ when i wins and $x^A(j)$ when j wins.[20]

2.2 Model I: Markovian framework

Since the stage game described above is infinitely-repeated and all actions are observed by all players, at any point in time t each player $n \in N$ knows all actions that have been chosen prior to t. These past actions can be summarized by a history h^t. In repeated-game environments, most equilibrium concepts (including both the Nash equilibrium and subgame perfect equilibrium concepts) allow players to condition their strategies on all possible components of h^t. An alternative solution concept, the Markov perfect equilibrium (MPE), restricts the set of possible equilibrium outcomes by limiting the manner in which past actions, as manifested in h^t, can affect current play of the stage game.[21]

[20] An alternative modeling approach would allow for the Court to serve as an outside option in the bilateral bargaining framework (Fang 2006, Muthoo 1999: 99-105). This modeling choice would ensure that no cases are actually submitted to the court in equilibrium, but all other substantive results concerning endogenous enforcement and jurisdiction would continue to hold. Results are available from the author upon request.

[21] See Fudenberg and Tirole (2000: 501-540) for a more extensive introduction to Markov equilibria.

The analysis of Markov equilibria begins with the creation of a state-space, which is a partition of all possible histories h^t. Let $\omega(h^t)$ denote the state variable associated with history h^t. Then a MPE must satisfy the following conditions:

Definition 1: A Markov perfect equilibrium (MPE) is a profile of strategies $\sigma = (\sigma^t)_{t=1,2,...}$ s.t.:

1. $u_n(\sigma_n^t(h^t), \sigma_{-n}^t(h^t)) \geq u_n(\sigma_n'(h^t), \sigma_{-n}^t(h^t))$, for all $n \in N$, $\sigma_n' \in \Sigma_n$, t, and h^t;
2. $\omega(h^t) = \omega(\hat{h}^t)$ implies that $\sigma_n^t(h^t) = \sigma_n^t(\hat{h}^t)$ for all $n \in N$, and $h^t, \hat{h}^t$.

I construct a four-dimensional state variable. The first two components of the state variable for a period t indicate the two disputants chosen by Nature, i and j.[22] The second two components are reputation variables pertaining to an enforcement history. Broadly speaking, the enforcement history of the game allows us to classify all players as either 'free-riders' or 'providers.' Free-riders, who have a parameter $\rho_n(h^t) = 0$, are players who have been non-disputants in past periods, but have not paid the cost of enforcing Court judgments when a disputant has engaged in conflict. In contrast, providers, who have a parameter $\rho_n(h^t) = 1$, have not defected from past obligations to enforce ICJ judgments.[23] This leads to the following definition:

Definition 2: A player n's enforcement reputation is described by

$$\rho_n(h^t) = \begin{cases} 0 & \text{if there exists a } t' < t \text{ s.t. } n \in N/\{i,j\} \text{ in period } t',\ m \in \{i,j\} \text{ wins} \\ & \text{adjudication in period } t', \text{ and } e_n^{t'} < \hat{c}\rho_m(h^{t'}); \text{ and} \\ 1 & \text{otherwise.} \end{cases}$$

Note that by the definition above, enforcers need not always impose non-compliance costs in order to preserve their reputations as providers. For example, if the winner of a particular

[22] This also implicitly identifies which players must serve as enforcers.

[23] By definition, in the first iteration of the game, $\rho_n(h^1) = 1$ for all $n \in N$.

dispute is himself a free-rider (i.e. $\rho_m(h^{t'}) = 0$), other players are not required to provide costly enforcement in order to preserve their good reputations; providers need only enforce judgments on behalf of other providers.[24] Also note that the definition above relies on an enforcement cost threshold, $\hat{c}$. [25] Enforcers who impose costs less than $\hat{c}$ when the winner of a dispute is a provider develop reputations as institutional free-riders since in all subsequent periods in which they are a disputant, they have a value $\rho_n(h^t) = 0$.

So the game has a four-tuple state variable, $\omega = (i, j, \rho_i, \rho_j)$, that indicates the players involved in the dispute as well as their past history of levying non-compliance costs against other players. For example, suppose there are $|N| \geq 5$ players in the game and players 2 and 5 are chosen to be involved in the dispute with $i = 2$ and $j = 5$. If the history of play h^t is such that neither 2 nor 5 have failed to levy sufficient non-compliance costs in past disputes for which they were enforcers, then $\omega(h^t) = (2, 5, 1, 1)$. In contrast, for a history $\hat{h}^t$ in which player 5 failed to impose sufficient non-compliance costs in a past dispute, $\omega(\hat{h}^t) = (2, 5, 1, 0)$. Let Ω denote the set of all possible state variables of the game.

In order to specify strategies for the game, partition the state space Ω into two sets. Let Ω_n^d denote the set of states in which player n is a disputant (i.e. $n = i$ or $n = j$); and let Ω_n^e denote the set of states in which player n is an enforcer (i.e. $n \neq i$ and $n \neq j$). Then the set of decision nodes for an enforcer n is denoted by $\mathbf{D}_n = \Omega_n^e \times \{i, j\}$, where the second component of $d(\cdot) \in \mathbf{D}_n$ denotes which player has won adjudication in the given state. An enforcement strategy for player n consists of a mapping, $e_n : \mathbf{D}_n \rightarrow \mathbf{R}_+$. Since an axiomatic

[24]NOTE TO SELF: I need to consider the implications of other ways of operationalizing $\rho_n(h^t)$. I might be able to get a nice institutional stability vs. rigidity result a la Rosendorff (2005). But first I need to figure out what is the key DV of interest. Is it case submission or jurisdiction (or both)? The notation will be messy, but the mechanics shouldn't be too difficult.

[25]A more sophisticated model might allow for the threshold to be a function of the identity of the enforcer, winner, and/or loser of adjudication; i.e. $\hat{c}_n(d)$. For example, we might believe relativity weak and/or poor states within the international state should be expect to bear less of the enforcement burden than relatively strong and/or rich states (so $\hat{c}_n(d)$ would be increasing in α_n). I thank Susan Hyde for this insight. Incorporating this complexity does not change the substantive results of the model and the upper bounds on enforcement cost thresholds derived below in Propositions 4 and 5 continue to hold. Results are available from the author upon request.

bargaining solution is used in the stage game, a dispute strategy for a player n consists of a mapping, $s_n : \Omega_n^d \times [0,1] \times [0,1] \to [0,1]$, where $s_n(\omega, v_i, v_j)$ denotes the probability that n will submit a dispute to the Court in state $\omega \in \Omega_n^d$, given values v_i and v_j. The pair (s_n, e_n) constitutes a fully-specified Markov strategy for a player $n \in N$ since it specifies actions for all possible decision nodes in all possible states of the game. Let $p(d)$ denote the *ex ante* probability of a particular enforcement decision node, conditional on $\omega \in \Omega_n^e$. Let $V_n(\rho_n(h^t))$ denote the expected payoff to player n of being a disputant in period t, given $\rho_n(h^t)$. Then player n's expected utility from the strategy pair (s_n, e_n) is:

$$EU_n(s_n, e_n; s_{-n}, e_{-n}) = \sum_{t=1}^{\infty} \delta^{t-1} \left\{ \frac{2}{|N|} V_n(\rho_n(h^t), s_n; s_{-n}, e_{-n}) + \left(1 - \frac{2}{|N|}\right) \sum_{d \in \mathbf{D}_n} p(d) e_n(d) \right\}$$

2.3 Model I: Analysis

In order to identify the Markov perfect equilibrium of the game described above, we must fully specify behavior for all possible state variables, $\omega = (i, j, \rho_i, \rho_j)$. Before proceeding to an analysis of disputant behavior, it is useful to first establish the following results regarding enforcer behavior:

Lemma 1: In equilibrium,

- $e_n(d) \in \{0, \hat{c}\}$ for all $n \in N$ and $d \in \mathbf{D}$;
- $e_n(d) = 0$ anytime the winner at decision node d has a history of non-enforcement; and
- $e_n(d) = 0$ anytime n has a reputation as a free-rider at decision node d.[26]

This clearly establishes that $c = 0$ if i wins and $\rho_i = 0$, or if j wins and $\rho_j = 0$. So any time that a disputant who has been an enforcement free-rider prevails in adjudication, he can

[26]Proofs of all lemmata and propositions are included in the Appendix.

expect that no non-compliance cost will be imposed on his opponent if she decides to engage in conflict over the asset. Also, once a player declines to enforce the Court's judgment (by choosing $e_n = 0$), the player will refuse to enforce any subsequent judgments. We can now examine the outcomes that result from bilateral and post-adjudicative bargaining.

Lemma 2: In equilibrium,

- $x^B = \frac{1+\alpha_i-\alpha_j}{2}$ for all ω
- $x^A(i) = x^B$ if $\rho_i = 0$, and $x^A(j) = x^B$ if $\rho_j = 0$
- if $\rho_i = 1$,

$$x^A(i) = \begin{cases} 1 & \text{if } c \geq \alpha_j v_j \\ x^B + \frac{c}{2v_j} & \text{if } c < \alpha_j v_j \end{cases}$$

- if $\rho_j = 1$,

$$x^A(j) = \begin{cases} 0 & \text{if } c \geq \alpha_i v_i \\ x^B - \frac{c}{2v_i} & \text{if } c < \alpha_i v_i \end{cases}$$

As shown in Table 1, this means that equilibrium bargaining behavior in each state ω is contingent on the enforcement histories of the disputants, as reflected in ρ_i and ρ_j. Note in particular that if the winner of adjudication has a reputation as an enforcement free-rider, post-adjudicative bargaining results in the same outcomes as bilateral bargaining. In contrast, when the winner of adjudication has a reputation as a provider of enforcement, she is able to extract more favorable bargaining outcomes because the expectation of non-compliance costs reduces the disagreement payoff of her opponent. In particular, if these costs are sufficiently high (i.e. $c \geq \alpha_j v_j$ when i wins or $c \geq \alpha_i v_i$ when j wins), then post-adjudicative bargaining is effectively forestalled. Since engaging in conflict is no longer a credible choice for the loser of adjudication, this means that the winner retains full control over the asset. This raises an important substantive point: states can have the opportunity to engage in post-adjudicative bargaining, but choose not to do so. If we observe in a particular case that disputants did not initiate post-adjudicative bargaining, that does not necessarily mean that they lacked to opportunity to negotiate a new deal.

[INSERT TABLE 1 HERE.]

We can now consider the willingness of players to submit disputes to the ICJ. Adjudication is preferable to bilateral bargaining for each player iff:

$$\begin{aligned} px^A(i)v_i + (1-p)x^A(j)v_i - k &\geq x^B v_i \qquad \text{for player } i \\ p(1-x^A(i))v_j + (1-p)(1-x^A(j))v_j - k &\geq (1-x^B)v_j \quad \text{for player } j \end{aligned}$$

The threshold values of v_i and v_j for which these statements hold depend on anticipated bargaining outcomes, which in turn depend on the enforcement reputation parameters ρ_i and ρ_j, as well as the magnitude of non-compliance costs, c. The values of these thresholds under all of the various parameter combinations are displayed in Table 2. Note that when $\rho = (0, 1)$, conditions are such that i will never submit a case to adjudication. Similarly, when $\rho = (1, 0)$, j will never want to engage in adjudication.

[INSERT TABLE 2 HERE.]

In order to provide intuition about these thresholds, Figure 2 displays graphs of these submission regions as a function of v_i and v_j for a set of fixed parameter values for $(\alpha_i, \alpha_j, c, k, p)$. Note two important characteristics of these graphs. First, the submission regions of the two players never overlap; that is, there is no set of values for which both i and j wish to submit the dispute to adjudication. Second, the set of values for which i wishes to submit the case is larger under $\rho = (1, 0)$ than under $\rho = (1, 1)$. Similarly, the set of values for which j wishes to submit the case is larger under $\rho = (0, 1)$ than under $\rho = (1, 1)$.

[INSERT FIGURE 2 HERE.]

The following two propositions demonstrate that the observations made about this figure hold as a more general analytical result for all possible parameters of the game. First, players i and j never both want to submit a case to the Court.

> Proposition 1: For any given ρ and set of parameters, the submission regions of the two players, i and j, are non-overlapping.

Second, a player is more likely to want to refer a case to the Court if his opponent has a reputation as an enforcement free-rider.

> Proposition 2: Player i is always more likely to submit a case under $\rho = (1, 0)$ than under $\rho = (1, 1)$, and player j is always more likely to submit a case under $\rho = (0, 1)$ than under $\rho = (1, 1)$.

Note that since each disputant has a discrete choice about whether to submit a case to the ICJ, comparative statics about how changes in parameter values affect the likelihood of adjudication are essentially statements about: whether a change in parameters $(\alpha_i, \alpha_j, c, k, p)$ expands or contracts the set of disputant types (v_i, v_j) that engage in adjudication;[27] or whether a change in (v_i, v_j) expands or contracts the set of parameters $(\alpha_i, \alpha_j, c, k, p)$ under which adjudication takes place. Regardless of the method used to express each player's willing to submit cases to the ICJ, the following comparative statics hold:

> Proposition 3: In equilibrium,

[27]Note that expansion or contraction to the set of (v_i, v_j)-pairs that engage in adjudication is equivalent to an increase or decrease, respectively, to the *ex ante* likelihood of adjudication because $f(\cdot)$ has full support over the type space.

- player i's willingness to submit a dispute to the Court is increasing in α_j, p, and v_i, and decreasing in α_i and v_j;
- player j's willingness to submit a dispute to the Court is decreasing in α_j, p, and v_i, and increasing in α_i and v_j;
- an increase in c increases the willingness of both i to submit the case in $\rho = (1, 0)$ and j to submit the case in $\rho = (0, 1)$, but has mixed effects when $\rho = (1, 1)$; and
- both i and j are always less likely to initiate adjudication as k increases.

The effect of changes in α_i and α_j suggest that the ICJ is essentially an imperfect substitute for conflict because as the value of conflict to a particular player increases (via an increase to her α_n parameter), her willingness to use the Court declines. In contrast, as a disputant derives more value from the asset in dispute, her willingness to engage in adjudication increases. However, an increase in v_i does not affect what disputant i can expect to gain from successful adjudication. Rather, an increase in v_i decreases the amount that she expects to lose if she is not successful at adjudication, thereby raising the overall expected value of using the Court. Finally, the ambiguity of the effect of the parameter c when $\rho = (1, 1)$ suggests that an increased willingness by disinterested actors to enforce ICJ judgments will not necessarily lead to more widespread use of the ICJ. While an increase in c makes winning a dispute more desirable since the winner will be able to extract more in post-adjudicative bargaining, it also makes losing the dispute more costly. And since referring a case to the Court inherently involves some risk of losing the dispute, an increase in c does not unambiguously increase use of the ICJ by the disputants, as it does when $\rho = (0, 1)$ and $\rho = (0, 1)$.[28]

Before proceeding to an examination of the incentives of enforcers to levy non-compliance costs, we must first know how they evaluate their *ex ante* expected utility from being involved

[28]Indeed, it is not even possible to derive comparative statics on the overall likelihood of case submission absent extreme assumptions about the distribution of v_i and v_j and values of the parameters $(\alpha_i, \alpha_j, c, k, p)$.

in a dispute. More specifically, we must examine how a player's reputation parameter, $\rho_n(h^t)$, affects what she can expect to get from being involved in a conflict prior to the realization of (v_i, v_j) pairs. Suppose that the parameters of the game are such every player in the game expects that with some positive probability he will be involved in a dispute that gets referred to the Court. Then the following result holds:

> Lemma 3: The expected utility for a player n from being involved in a dispute is higher if n has an enforcement history as a provider, $\rho_n(h^t) = 1$, than if he is an enforcement free-rider, $\rho_n(h^t) = 0$, when there is a non-zero probability of adjudication; i.e. $V_n(1) > V_n(0)$.

So it is clearly beneficial for a player to have a reputation as a provider of enforcement if he expects that at some future period he will be involved in a case that gets referred to the Court. In contrast, if a player knows that she will never be involved in a dispute that goes to the Court, then her enforcement history has no effect on her expected utility because the only possible equilibrium outcome, x^B, is not affected by her enforcement reputation. This means that $V_n(1) = V_n(0)$ when there is a zero probability of adjudication. The combination of Lemmata 1 and 3 allows us to proceed to a characterization of the willingness of enforcers to impose non-compliance costs on disputants.

> Proposition 4: In equilibrium, an enforcer $n \in N/\{i, j\}$ will levy non-compliance costs in any given period iff:
>
> $$\hat{c} \leq \frac{\delta}{1-\delta} \left\{ \frac{2}{|N|} \left[V_n(1) - V_n(0) \right] \right\} \equiv \bar{c}_n$$

So the upper bound on the costs that an enforcer is willing to bear is inherently related to her expected value from having a reputation as a provider when she is involved in future disputes. As the marginal benefit of being a provider (as opposed to a free-rider) increases, so does the willingness of players to bear the costs of enforcement. We can now examine how each player's expected utility is affected by the possibility of recourse to the Court. Let $V_n(\rho|\alpha_m)$ denote player n's expected utility from being involved in a dispute with a player m when players are able to submit cases to the court (as in the current model). Let $B_n(\alpha_m)$ denote player n's *ex ante* expected utility from being involved in a dispute with a player m when submission to the Court is impossible (so only bilateral bargaining can take place). Then the following holds:

Lemma 4: In equilibrium:

- $\Delta_n(\rho|\alpha_m) \equiv V_n(\rho|\alpha_m) - B_n(\alpha_m)$ is decreasing in α_n and increasing in α_m.
- $\Delta_n(\rho_n) \equiv E_{-n}[\Delta_n(\rho|\alpha_{-n})] = V_n(\rho_n) - B_n$ is decreasing in α_n.

Note that $\Delta_n(\rho|\alpha_m)$ expresses the expected benefit that a player n derives from the availability of the Court when she is engaged in a dispute with player m, and $\Delta_n(\rho_n)$ expresses the expected benefit that a player n derives from the availability of the Court when she is uncertain about who her opponent will be. It need not be the case that either (or both) of these terms are positive: it may be the case that a given player would prefer to live in a world in which recourse to the Court was impossible. Then she could always ensure that she receives her expected payoff from bilateral bargaining, B_n. As Lemma 4 establishes, the greater the value of α_n, the less that player n benefits from the availability of the Court. Indeed, players who are 'weakest' in conflict (i.e. have the lowest values of α_n) derive the greatest benefit from the availability international adjudication, while players who are 'strongest' derive the least benefit. Analysis of these $\Delta_n(\rho_n)$ terms will become key when we allow for the possibility of endogenous jurisdiction of the Court in model II.

3 Model II: Endogenous Jurisdiction

3.1 Model II: Stage game

As in model I, suppose that there is a set of unitary-actor nation-states, $N = \{1, 2, 3, ...\}$. Each player begins the game by choosing whether to submit himself to the jurisdiction of the Court. A jurisdiction strategy for a player $n \in N$ is denoted: $r_n \in \{0, 1\}$, where $r_n = 1$ iff i accepts the jurisdiction of the Court.[29] Define $\mathbf{X} \equiv \{n \in N | r_n = 1\}$ as the set of players who accept jurisdiction, and $\mathbf{Y} \equiv \{n \in N | r_n = 0\}$ as the set of players who reject jurisdiction.

After making their decisions regarding whether to accept jurisdiction, Nature randomly chooses two players to be involved in a dispute and also chooses their values for the asset, v_i and v_j. If $i \in \mathbf{Y}$ or $j \in \mathbf{Y}$ (or both), the principle of reciprocity of jurisdiction implies that recourse to the Court is not possible. So players are restricted to bilateral bargaining, as described in model I above. If $i, j \in \mathbf{X}$, then there exists a clear basis for the jurisdiction of the Court, and each player simultaneously decides whether to engage in bilateral bargaining or to refer the case to multilateral adjudication. This results in a stage game that is equivalent to the full stage game for model I.

3.2 Model II: Markovian framework

Allowing players to choose whether to submit themselves to jurisdiction means that we must expand our definition of the state variable. Let $r \equiv (r_n)_{n \in N}$. We now have a five-tuple state variable, $\omega = (i, j, \rho_i, \rho_j, r)$, that indicates the players involved in the dispute, their past history of levying non-compliance costs against other players, and the jurisdiction decisions initially made by all players. Let Ω denote the set of all possible state variables of the game.

[29] We can restrict attention to pure strategies without loss of generally because of the monotonicity result in Lemma 9 below.

Let Ω_n^d denote the set of states in which player n is a disputant; Ω_n^e denote the set of states in which player n is not a disputant and $i, j \in \mathbf{X}$; and Ω_n^o denote the set of state in which player n is not a disputant and $i \in \mathbf{Y}$ or $j \in \mathbf{Y}$ (or both). Then the set of decision nodes for the enforcer is denoted by: $\mathbf{D}_n = \Omega_n^e \times \{i, j\}$, where the second component of $d(\cdot) \in \mathbf{D}_n$ denotes which player has won adjudication in the given state. Let $p(d)$ denote the *ex ante* probability of a particular decision node, conditional on r_n and $\omega \notin \Omega_n^d$. Then an enforcement strategy for player n consists of a mapping: $e_n : \mathbf{D}_n \to \mathbf{R}_+$. Let $V_n(\rho_n(h^t), r_n)$ denote the expected payoff to player n of being a disputant in period t, given $\rho_n(h^t)$ and r_n.[30]

3.3 Model II: Analysis

We can begin by showing that all of the fundamentals regarding enforcer behavior derived in Lemma 1 continue to hold when jurisdiction is endogenous.

Lemma 5: The results of Lemma 1 in model I continue to hold in model II.

Disinterested actors will refuse to enforce judgments when the winner of a Court judgment is himself a free-rider or when the enforcer has already developed a reputation as a free-rider in past periods of play. Additionally, if disputants i and j have both accepted jurisdiction of the Court, bargaining outcomes are equivalent to the results in model I. If either i or j (or both) has refused jurisdiction, then the only possible outcome is the bilateral bargaining outcome from model I.

Lemma 6: In equilibrium,

- if $i \in \mathbf{Y}$ or $j \in \mathbf{Y}$ (or both), the only possible outcome is: $x^B = \frac{1+\alpha_i-\alpha_j}{2}$;

[30] The definitions of s_n and $EU_n(s_n, e_n; \cdot)$ follow directly from this revised framework.

- if $i, j \in \mathbf{X}$, bargaining outcomes are equivalent to those in model I.

Note that if a player refuses jurisdiction of the Court (i.e. $r_n = 0$), then her expected payoff from being chosen as a disputant is simply her expected payoff from bilateral bargaining, B_n. This quantity is unaffected by a player's enforcement reputation, so a player that has rejected jurisdiction of the Court has no incentive to enforce the Court's judgments in dispute involving other players. This establishes the following:

<u>Lemma 7:</u> In equilibrium,

- $V_n(1, r_n = 0) = V_n(0, r_n = 0) = B_n$; and
- $e_n(d) = 0$ for all $d \in \mathbf{D}_n$ if $r_n = 0$.

In contrast, when both disputants i and j have accepted jurisdiction of the Court, equilibrium behavior in the stage game is equivalent to the behavior derived in model I. So Propositions 1-3 continue to hold. However, the equilibrium value of c will likely differ across the two models because (as established by Lemma 7) any players that decide to reject jurisdiction of the Court will refuse to contribute to enforcement of Court judgments. Nonetheless, suppose that a player n who accepts jurisdiction of the Court (i.e. $r_n = 1$) believes that there is some *ex ante* positive probability that she will be involved in a dispute that gets referred to the Court. Then it continues to be the case that such players have incentives to preserve their reputations as providers of enforcement:

<u>Lemma 8:</u> The expected utility for a player n who accepts jurisdiction from being involved in a dispute is higher if n has an enforcement history as a provider, $\rho_n(h^t) = 1$, than if she is an enforcement free-rider, $\rho_n(h^t) = 0$, when there is a non-zero probability of adjudication; i.e. $V_n(1, r_n = 1) > V_n(0, r_n = 1)$.

However, as in model I, if a player n believes that it is impossible that she will be involved in a dispute that gets referred to the Court, then her reputation history becomes irrelevant and $V_n(1, r_n = 1) = V_n(0, r_n = 1) = B_n$. The combinations of Lemmata 5, 7, and 8 allow us to characterize the constraint on the willingness of non-disputants to enforce Court judgments:

Proposition 5: In equilibrium, an enforcer $n \in N/\{i, j\}$ s.t. $r_n = 1$ will levy non-compliance costs in any given period iff:

$$\hat{c} \leq \frac{\delta}{1-\delta}\left\{\frac{2}{|N|}\left[V_n(1, r_n = 1) - V_n(0, r_n = 1)\right]\right\} \equiv \bar{c}_n(r_n = 1)$$

As in model I, the upper bound on the costs that an enforcer is willing to bear is inherently related to her expected value from having a reputation as a provider when she is involved in future disputes. As the marginal benefit of being a provider (as opposed to a free-rider) increases, so does the willingness of a player to bear the costs of enforcement.

Note that the decision about whether to accept jurisdiction of the Court is inherently strategic in nature. If no other players submit to jurisdiction, then a case will never be submitted to the Court. As such, a player's enforcement reputation is irrelevant since all disputes are always resolved via bilateral bargaining, resulting in an expected payoff of B_n. This means that there is no incentive to accept jurisdiction of the Court if no other states accept jurisdiction. This logic ensures that there always exists an equilibrium in which no players accept jurisdiction of the Court. I call this a 'no jurisdiction equilibrium.'

Proposition 6: *(No jurisdiction equilibrium)* There always exists an equilibrium in which $r_n = 0$ for all $n \in N$ (i.e. $\mathbf{Y} = N$ and $\mathbf{X} = \emptyset$).

However, suppose all players but n decide to accept jurisdiction of the Court. It does not necessarily follow that player n will accept jurisdiction as well. As established by Proposition

7 below, a 'universal jurisdiction equilibrium' in which all players submit to jurisdiction of the Court only exists if the player who is 'strongest' in conflict (i.e. has the highest value of α_n) decides that he prefers universal jurisdiction of the Court to bilateral bargaining.

> Proposition 7: *(Universal jurisdiction equilibrium)* There exists an equilibrium in which $r_n = 1$ for all $n \in N$ (i.e. $\mathbf{X} = N$ and $\mathbf{Y} = \emptyset$) iff the following condition holds for the player with the largest value of α_n:
>
> $$\Delta_n(1) = V_n(1) - B_n \geq 0$$

Note that if the universal jurisdiction equilibrium exists, all equilibrium behavior is equivalent to behavior in model I. This means that model I is a special case of model II, which allows for endogenous jurisdiction of the Court. The strategic nature of the decision about whether to accept jurisdiction of the Court makes it much more difficult to think about cases in which some players will accept jurisdiction while others will not. Before considering such 'partial jurisdiction' equilibria, it is useful to first establish a monotonicity result.

> Lemma 9: *(Monotonicity of jurisdiction in α_n)* If a player $\hat{n}$ accepts jurisdiction (i.e. $r_{\hat{n}} = 1$), then all players n s.t. $\alpha_n < \alpha_{\hat{n}}$ will also accept jurisdiction.

The substantive implication of Lemma 9 is that if an equilibrium exists in which some players accept jurisdiction while others do not, it must be the case that there are two groups of players adopting equivalent jurisdiction strategies. Specifically, there must be a group of relative 'weak' players with low values of α_n that accept jurisdiction, while the relatively 'strong' players with high values of α_n refuse jurisdiction. To mathematically characterize such equilibria, first order the set N s.t. $\alpha_1 < \alpha_2 < ... < \alpha_{|N|-1} < \alpha_{|N|}$, and let $\underline{N}(m) \equiv \{j \in N | \alpha_j \leq \alpha_m\}$. Then the following result holds:

Proposition 8: *(Partial jurisdiction equilibrium)* There exists an equilibrium in which some players accept jurisdiction while others do not (i.e. $\mathbf{X} \neq \emptyset$ and $\mathbf{Y} \neq \emptyset$) iff there exists a player $\hat{n} < |N|$ s.t.:

$$\Delta_{\hat{n}+1}(1|\underline{N}(\hat{n}+1)) \leq 0 \leq \Delta_{\hat{n}}(1|\underline{N}(\hat{n}))$$

The monotonicity result in Lemma 9 ensures that the definition of the partial jurisdiction equilibrium consists of identifying the breaking-point in the set of players, $\hat{n}$. If player $\hat{n}$ prefers accepting jurisdiction, given that all players with a lower value of α_n also accept jurisdiction, then the set $\mathbf{X}$ is non-empty and no player within that set has incentive to deviate from her jurisdiction strategy. Similarly, if player $\hat{n}+1$ wants to refuse jurisdiction, given that all players with a higher value of α_n also refuse jurisdiction, then the set $\mathbf{Y}$ is non-empty and no player within that set has incentive to deviate from his jurisdiction strategy.

3.4 Equilibrium Selection as Institutional Choice

Recall that the no jurisdiction equilibrium always exists. While there are constraints on the existence of the universal jurisdiction and partial jurisdiction equilibria, note that nothing in their definition shows them to be always mutually exclusive. Indeed, it is possible for all three types of equilibria for model II to simultaneously exist. For example, suppose $|N| = 5$ and all three equilibria exist in the forms shown in Table 3. The existence of a universal equilibrium ensures that $V_n(1) \geq B_n$ for all players n. Since $\Delta_n(\rho|\alpha_m)$ is increasing in α_m, all players in $\mathbf{X}$ in the partial jurisdiction equilibrium (i.e. players 1, 2, and 3) expect to benefit from the expansion of the Court's jurisdiction to include players with higher α-values. As such, they strictly prefer the universal jurisdiction equilibrium to the partial jurisdiction equilibrium, which they prefer in turn to the no jurisdiction equilibrium. Now consider players 4 and 5. In the partial jurisdiction equilibrium, their expected payoffs are B_n, but in the universal jurisdiction equilibrium, their expected payoffs are $V_n(1)$. So the feasibility of the universal jurisdiction equilibrium ensures its optimality from the perspective of all players. However, if a partial jurisdiction equilibrium is already in place, a switch to the universal jurisdiction equilibrium requires the coordinated actions of both players 4 and 5. The fact that partial jurisdiction constitutes a Markov equilibrium ensures that neither 4 nor 5 will find it incentive-compatible to unilaterally switch to accepting jurisdiction.[31] So the problem of equilibrium selection for this example is clearly a coordination problem, not a distributional problem: conditional on all three types of equilibria existing, all players agree on which equilibrium is best, but they must coordinate their actions in order to reach it.

[INSERT TABLE 3 HERE.]

One way to conceive of such problems of equilibrium selection is to consider the payoffs of the various players across equilibria to examine which players have the greatest incentives to invest resources in establishing a particular equilibrium (Banks and Calvert 1992; Calvert 1995; Hafer 2007; Morrow 1994). The next result establishes that the preferences across equilibria in the example above hold more generally.

Proposition 9: If all three types of equilibrium are possible, then the universal jurisdiction equilibrium is preferred by all players to the partial jurisdiction equilibrium, which is in turn preferred by some players (and opposed by no players) to the no jurisdiction equilibrium

So if the universal jurisdiction equilibrium is possible, it is clearly optimal from the perspective of all players. However, if universal jurisdiction is not feasible, then the partial

[31] A similar problem plagues the no jurisdiction equilibrium since transitions to partial jurisdiction equilibria will generally require a simultaneous change in strategy by multiple players.

jurisdiction of the Court is preferred to the no jurisdiction equilibrium by all players who would accept the Court's jurisdiction in the partial jurisdiction equilibrium. Players who would refuse jurisdiction are indifferent as to whether the partial jurisdiction or no jurisdiction equilibria prevail because their refusal to accept jurisdiction of the Court ensures that the behavior of other players does not affect their own payoff. So we can now consider how the incentives to establish the various equilibria differ across the players in the game.

Proposition 10: If all three types of equilibrium are possible, then

- when the no jurisdiction equilibrium is in place, incentives to switch to a partial jurisdiction or a universal jurisdiction equilibrium are both decreasing in α_n; and
- when the partial jurisdiction equilibrium is in place, the incentive to switch to a universal jurisdiction equilibrium is decreasing in α_n.

This result shows unambiguously that the players with the greatest incentive to press for expansion of the Court's jurisdiction are those players with the lowest values of α_n. Those players who are relatively weak in bilateral conflict stand to gain the most from the availability of the Court. This prompts two substantive points. First, we should expect these weaker states to be the most active in establishing institutions for international adjudication, such as the ICJ. Second, once such institutions are established, we should also expect these weaker states to be the most active in pushing for expansions in the jurisdiction of the Court.[32]

This finding severely challenges past theoretical accounts of the creation of international institutions, which have argued that international hegemons will take the lead in building and promoting international institutions (e.g. Keohane 1984; Krasner 1983). On the contrary,

[32] That is, we should expect to see them pushing for new countries to accept jurisdiction of the Court, resulting in either the expansion of **X** in a partial jurisdiction equilibrium, or a complete transition to a universal jurisdiction equilibrium.

the analysis above shows that hegemons have the least incentive in the international system to promote institutions for international adjudication, precisely because an international court serves as an imperfect substitute for conflict. It is the weak, not the strong, that stand to gain the most from the spread of the jurisdiction of international courts.

However, note that there is a fundamental difference between incentives to change institutions and the availability of resources to do so. This distinction is not captured in the result above. For example, both Belgium and Botswana can probably expect to gain much through the expansion of international adjudication. However, Botswana most likely lacks the resources to invest in the institution-building required to coordinate a change in equilibrium. To the extent that changing institutions and expectations about the behavior of others is costly and time-consuming, we should expect for leadership to come from countries that are rich in resources but weak in bilateral conflict, such as Belgium.

4 Conclusion

The key mechanism highlighted in the models above is the use of adjudication as a commitment device. Even if each party to a dispute possesses complete information about his/her opponent's value from a contested asset, it can still be beneficial to refer the dispute to the Court. If a player wins in the judicial proceedings, her opponent can expect to pay a non-compliance cost for initiating conflict during the post-adjudicative bargaining stage. These non-compliance costs weaken the bargaining position of the loser of adjudication, thereby creating incentives for a player to refer disputes to the Court in order to obtain a privileged bargaining position. Winning a Court judgment can credibly commit one's opponent to a weak position in post-adjudicative bargaining. It is this same desire to 'lock in' a strong bargaining position in future disputes that creates incentives for disinterested states to engage in reciprocal enforcement of Court judgments. As the benefit of having a reputation as a ‘provider’ of enforcement (as opposed to an enforcement ‘free-rider’) increases, so does the willingness of disinterested states to serve as enforcers for Court judgments. The iterated nature of interstate interactions allows states to adopt a norm of reciprocity of enforcement while simultaneously acting in a self-interested manner.

A key factor that affects how much a state expects to gain from adjudication relative to bilateral bargaining, and hence how willing a state is to submit to jurisdiction of the Court, is the likelihood that the state will prevail in conflict over the asset, α_n. A lower value of α_n translates to a weaker position in bilateral bargaining, and hence an increased willingness to use the Court and a higher value from the availability of the Court. This is the primary mechanism driving the willingness of states to accept the jurisdiction of the Court in the first place. States with weak bilateral bargaining positions have the most to gain from accepting the jurisdiction of the Court, as well as from promoting the Court as an institution. While the weakest states in the international system may not have the most resources, they do have the greatest incentives to promote the spread of international adjudication. This finding challenges past theoretical accounts of the hegemonic provision of international institutions as public goods. According to the results of the models above, we should expect hegemons to refrain from promoting international courts.

Appendix

<u>Proof of Lemma 1:</u> (1) Consider an arbitrary period t' and decision node $d \in \mathbf{D}_n$. Let e_n be a strategy s.t. $e_n(d) = \hat{c}$. Let e'_n be a strategy s.t. $e'_n(d) = c' > \hat{c}$ and $e'_n(d') = e_n(d')$ for all $d' \neq d$. Then:

$$\begin{aligned} EU_n(e_n|d) &= -\hat{c} + \sum_{t=t'+1}^{\infty} \delta^{t-t'} \left\{ \frac{2}{|N|} V_n(\rho_n(h^t)) + \left(1 - \frac{2}{|N|}\right) \left[p(d)[-\hat{c}] + \sum_{\{d' \neq d\}} p(d') e_n(d') \right] \right\} \\ &> -c' + \sum_{t=t'+1}^{\infty} \delta^{t-t'} \left\{ \frac{2}{|N|} V_n(\rho_n(h^t)) + \left(1 - \frac{2}{|N|}\right) \left[p(d)[-c'] + \sum_{\{d' \neq d\}} p(d') e_n(d') \right] \right\} \\ &= EU_n(e'_n|d) \qquad \Rightarrow e_n \succ_n e'_n \end{aligned}$$

Similarly, let e^o_n be a strategy s.t. $e^o_n(d) = 0$. Let e''_n be a strategy s.t. $e''_n(d) = c'' \in (0, \hat{c})$ and $e''_n(d') = e^o_n(d')$ for all $d' \neq d$. Then:

$$\begin{aligned} EU_n(e^o_n|d) &= \sum_{t=t'+1}^{\infty} \delta^{t-t'} \left\{ \frac{2}{|N|} V_n(0) + \left(1 - \frac{2}{|N|}\right) \sum_{\{d' \neq d\}} p(d') e^o_n(d') \right\} \\ &> -c'' + \sum_{t=t'+1}^{\infty} \delta^{t-t'} \left\{ \frac{2}{|N|} V_n(0) + \left(1 - \frac{2}{|N|}\right) \left[p(d)[-c''] + \sum_{\{d' \neq d\}} p(d') e^o_n(d') \right] \right\} \\ &= EU_n(e''_n|d) \qquad \Rightarrow e^o_n \succ_n e''_n \end{aligned}$$

(2) Consider an arbitrary period t' with a decision node $d = (\omega, i) \in \mathbf{D}_n$ for which $\rho_i = 0$. Let e^o_n be a strategy s.t. $e^o_n(d) = 0$. Let e'_n be a strategy s.t. $e'_n(d) = \hat{c}$ and $e'_n(d') = e^o_n(d')$ for all $d' \neq d$. Then:

$$\begin{aligned} EU_n(e^o_n|d) &= \sum_{t=t'+1}^{\infty} \delta^{t-t'} \left\{ \frac{2}{|N|} V_n(\rho_n(h^t)) + \left(1 - \frac{2}{|N|}\right) \sum_{\{d' \neq d\}} p(d') e^o_n(d') \right\} \\ &> -\hat{c} + \sum_{t=t'+1}^{\infty} \delta^{t-t'} \left\{ \frac{2}{|N|} V_n(\rho_n(h^t)) + \left(1 - \frac{2}{|N|}\right) \left[p(d)[-\hat{c}] + \sum_{\{d' \neq d\}} p(d') e^o_n(d') \right] \right\} \\ &= EU_n(e'_n|d) \qquad \Rightarrow e^o_n \succ_n e'_n \end{aligned}$$

(3) Consider an arbitrary period t' and decision node $d \in \mathbf{D}_n$. Suppose $\rho_n(h^{t'}) = 0$. Let e_n^o be a strategy s.t. $e_n^o(d) = 0$. Let e_n' be a strategy s.t. $e_n'(d) = \hat{c}$ and $e_n'(d') = e_n^o(d')$ for all $d' \neq d$. Then:

$$\begin{aligned} EU_n(e_n^o|d) &= \sum_{t=t'+1}^{\infty} \delta^{t-t'} \left\{ \frac{2}{|N|} V_n(0) + \left(1 - \frac{2}{|N|}\right) \sum_{\{d' \neq d\}} p(d') e_n^o(d') \right\} \\ &> -\hat{c} + \sum_{t=t'+1}^{\infty} \delta^{t-t'} \left\{ \frac{2}{|N|} V_n(0) + \left(1 - \frac{2}{|N|}\right) \left[p(d)[-\hat{c}] + \sum_{\{d' \neq d\}} p(d') e_n^o(d') \right] \right\} \\ &= EU_n(e_n'|d) \qquad \Rightarrow e_n^o \succ_n e_n' \quad \square \end{aligned}$$

Proof of Lemma 2: Define the set of possible bargaining agreements as:

$$X \equiv \{(x_i, x_j) | x_i \in [0,1] \ \wedge \ x_j = 1 - x_i\}$$

Let $W_k(x_k)$ denote player k's one-period utility from an allocation x_k. By definition, the Nash bargaining solution (NBS) is the agreement that solves the following optimization problem (Nash 1950): $max_{(x_i,x_j)\in X} \ (W_i(x_i) - d_i)(W_j(x_j) - d_j)$. Note that $W_k(x_k) = w_k$ is strictly increasing in x_k for $k = i, j$. This means that the inverse function $W_k^{-1}(w_k)$ exists over X. When combined with the differentiability and non-convexity of W_k for $k = i, j$, this ensures that the NBS is unique and solves the following equation:

$$\frac{W_i(x_i) - d_i}{W_i'(x_i)} = \frac{W_j(x_j) - d_j}{W_j'(x_j)}$$

Filling the relevant values into this equation yields the outcomes displayed in Lemma 2. $\square$

Proof of Proposition 1: The proposition holds trivially for $\rho \in \{(0,1),(1,0)\}$. Consider $\rho = (1,1)$ and examine the submission conditions in Table 2. If $v_i < \frac{c}{\alpha_i}$ and $v_j < \frac{c}{\alpha_j}$, it cannot be true that both $p < x^B$ and $x_B < p$, so the submission regions are non-overlapping. For all other cases, one threshold is always larger than the other, ensuring that submission regions do not intersect. □

Proof of Proposition 2: First consider i's submission thresholds across cases on ρ. Suppose $v_j < \frac{c}{\alpha_j}$. Then if $\rho = (1,0)$, i submits iff $v_i > \frac{k}{p(1-x^B)}$. And if $\rho = (1,1)$, i submits iff $\left(v_i < \frac{c}{\alpha_i} \wedge v_i > \frac{k}{p-x^B} > 0\right) \vee \left(v_i > \frac{c}{\alpha_i} \wedge v_i > \frac{c(1-p)+2k}{2p(1-x^B)}\right)$. Note that $\frac{k}{p(1-x^B)} < \frac{k}{p-x^B}$ and $\frac{k}{p(1-x^B)} < \frac{c(1-p)+2k}{2p(1-x^B)}$. Suppose $v_j > \frac{c}{\alpha_j}$. Then if $\rho = (1,0)$, i submits iff $v_j < \frac{cpv_i}{2k}$. And if $\rho = (1,1)$, i submits iff $\left(v_i < \frac{c}{\alpha_i} \wedge v_j < \frac{cpv_i}{2v_i x^B(1-p)+2k}\right) \vee \left(v_i > \frac{c}{\alpha_i} \wedge v_j < \frac{cpv_i}{c(1-p)+2k}\right)$. Note that $\frac{cpv_i}{2k} > \frac{cpv_i}{2v_i x^B(1-p)+2k}$ and $\frac{cpv_i}{2k} > \frac{cpv_i}{c(1-p)+2k}$. So i is more likely to submit a case under $\rho = (1,0)$ than under $\rho = (1,1)$. Now consider j's submission thresholds across cases on ρ. Suppose $v_i < \frac{c}{\alpha_i}$. Then if $\rho = (0,1)$, j submits iff $v_j > \frac{k}{x^B(1-p)}$. And if $\rho = (1,1)$, j submits iff $\left(v_j < \frac{c}{\alpha_j} \wedge v_j > \frac{k}{x^B-p} > 0\right) \vee \left(v_j > \frac{c}{\alpha_j} \wedge v_j > \frac{cp+2k}{2x^B(1-p)}\right)$. Note that $\frac{k}{x^B(1-p)} < \frac{k}{x^B-p}$ and $\frac{k}{x^B(1-p)} < \frac{cp+2k}{2x^B(1-p)}$. Suppose $v_i > \frac{c}{\alpha_i}$. Then if $\rho = (0,1)$, j submits iff $v_j > \frac{2kv_i}{c(1-p)}$. And if $\rho = (1,1)$, j submits iff $\left(v_j < \frac{c}{\alpha_j} \wedge v_j > \frac{2kv_i}{c(1-p)-2pv_i(1-x^B)} > 0\right) \vee \left(v_j > \frac{c}{\alpha_j} \wedge v_j > \frac{cpv_i+2kv_i}{c(1-p)}\right)$. Note that $\frac{2kv_i}{c(1-p)} < \frac{2kv_i}{c(1-p)-2pv_i(1-x^B)}$ and $\frac{2kv_i}{c(1-p)} < \frac{cpv_i+2kv_i}{c(1-p)}$. So j is more likely to submit a case under $\rho = (0,1)$ than under $\rho = (1,1)$. □

Proof of Proposition 3: For each value of $\rho \in \{(0,1),(1,0),(1,1)\}$, consider the four possible cases: $\{v_i < \frac{c}{\alpha_i}, v_i > \frac{c}{\alpha_i}\} \times \{v_j < \frac{c}{\alpha_j}, v_j > \frac{c}{\alpha_j}\}$. Use standard comparative statics techniques on the submission regions for each case. □

Proof of Lemma 3: Consider a dispute between an arbitrary pair of players parameterized by (α_i, α_j) that face some positive *ex ante* probability that their dispute will be referred to the Court. Define: $I(\rho) \equiv \{(v_i, v_j)|\ v_i, v_j \in [0,1] \text{ and } i \text{ submits in } \rho\}$ and $J(\rho) \equiv \{(v_i, v_j)|\ v_i, v_j \in [0,1] \text{ and } j \text{ submits in } \rho\}$. So $\neg(I(\rho) = \emptyset \wedge J(\rho) = \emptyset)$. Then:

$$\begin{aligned} EU_i(\rho) &= \iint_{I \cup J} \left\{[px^A(i|v_i,v_j) + (1-p)x^A(j|v_i,v_j)]v_i - k\right\}\ dF(v_i)\ dF(v_j) \\ &\quad + \iint_{[0,1]^2/(I \cup J)} x^B v_i\ dF(v_i)\ dF(v_j) \end{aligned}$$

If i submits for a given pair (v_i, v_j), then it must be the case that:

$$\begin{aligned}
& [px^A(i|v_i,v_j) + (1-p)x^A(j|v_i,v_j)]v_i - k > x^B v_i \\
\Leftrightarrow\ & 1 - x^B > 1 - \left[px^A(i|v_i,v_j) + (1-p)x^A(j|v_i,v_j) - \tfrac{k}{v_i}\right] \\
& > p[1 - x^A(i|v_i,v_j)] + (1-p)[1 - x^A(j|v_i,v_j)] \\
\Leftrightarrow\ & (1-x^B)v_j > \{p[1 - x^A(i|v_i,v_j)] + (1-p)[1 - x^A(j|v_i,v_j)]\}v_j \\
& > \{p[1 - x^A(i|v_i,v_j)] + (1-p)[1 - x^A(j|v_i,v_j)]\}v_j - k
\end{aligned}$$

So if for a given pair (v_i, v_j), player i's payoff is higher from adjudication then from bilateral negotiations, it must be the case that player j's payoff is lower from adjudication than from bilateral bargaining. The opposite also holds: for any pair (v_i, v_j) for which j prefers adjudication, i prefers bilateral bargaining. By Proposition 2, $I(1,1) \subset I(1,0)$ and $J(1,1) \subset J(0,1)$. Also, $I(0,0) = I(0,1) = \emptyset$ and $J(0,0) = J(1,0) = \emptyset$. So $EU_i(\rho = (1,0)) > EU_i(\rho = (0,0))$, $EU_i(\rho = (1,1)) > EU_i(\rho = (0,1))$, $EU_j(\rho = (0,1)) > EU_j(\rho = (0,0))$, and $EU_j(\rho = (1,1)) > EU_j(\rho = (1,0))$. Since these relationships hold for an arbitrary pair (α_i, α_j), it holds more generally that in expectation, $V_n(1) > V_n(0)$ for all $n \in N$. □

Proof of Proposition 4: Let $\hat{\mathbf{D}}_n$ denote the set of decision nodes such that $d \in \mathbf{D}_n$ and the winner of the dispute at d has a past history of enforcement. Consider an arbitrary $d \in \hat{\mathbf{D}}_n$. Let e_n be a strategy such that $e_n(d) = \hat{c}$. Let e_n^o be a strategy such that $e_n^o(d) = 0$ and $e_n^o(d') = e_n(d')$ for all $d' \neq d$. Then conditional on arriving at d at a time period t':

$$\begin{aligned}
EU_n(e_n) &= -\hat{c} + \sum_{t=t'+1}^{\infty} \delta^{t-t'} \left\{ \frac{2}{|N|} V_n(\rho_n(h^t)) + \left(1 - \frac{2}{|N|}\right) \left[p(d)[-\hat{c}] + \sum_{d' \neq d} p(d') e_n(d') \right] \right\} \\
EU_n(e_n^o) &= \sum_{t=t'+1}^{\infty} \delta^{t-t'} \left\{ \frac{2}{|N|} V_n(0) + \left(1 - \frac{2}{|N|}\right) \sum_{d' \neq d} p(d') e_n(d') \right\}
\end{aligned}$$

However, in equilibrium, $p(d) = 0$ for all d. So:

$$\begin{aligned} EU_n(e_n) &= -\hat{c} + \sum_{t=t'+1}^{\infty} \delta^{t-t'} \left\{ \frac{2}{|N|} V_n(\rho_n(h^t)) \right\} \\ EU_n(e_n^o) &= \sum_{t=t'+1}^{\infty} \delta^{t-t'} \left\{ \frac{2}{|N|} V_n(0) \right\} \end{aligned}$$

Let e_n' be a strategy such that $e_n'(d) = \hat{c}$ for all $d \in \hat{\mathbf{D}}_n$ and $e_n'(d') = 0$ for all $d' \in \mathbf{D}_n/\hat{\mathbf{D}}_n$. Then:

$$\begin{aligned} EU_n(e_n') &= -\hat{c} + \sum_{t=t'+1}^{\infty} \delta^{t-t'} \left\{ \frac{2}{|N|} V_n(1) + \left(1 - \frac{2}{|N|}\right) \sum_{d \in \hat{\mathbf{D}}_n} p(d)[-\hat{c}] \right\} \\ &= -\hat{c} + \sum_{t=t'+1}^{\infty} \delta^{t-t'} \left\{ \frac{2}{|N|} V_n(1) \right\} \geq EU_n(e_n) \end{aligned}$$

So if n is willing to enforce a judgment at a particular decision node $d \in \hat{\mathbf{D}}_n$, then she is willing to enforce at every decision node $d \in \hat{\mathbf{D}}_n$. So player n's choice of relevant enforcement strategies is between e_n' and e_n^o, and $e_n' \succ e_n^o$ iff:

$$-\hat{c} + \sum_{t=t'+1}^{\infty} \delta^{t-t'} \left\{ \frac{2}{|N|} V_n(1) \right\} \geq \sum_{t=t'+1}^{\infty} \delta^{t-t'} \left\{ \frac{2}{|N|} V_n(0) \right\}$$

$$\Leftrightarrow \hat{c} \leq \frac{\delta}{1-\delta} \left\{ \frac{2}{|N|} \left[V_n(1) - V_n(0) \right] \right\} \equiv \bar{c}_n \quad \square$$

<u>Proof of Lemma 4:</u> (1) On the equilibrium path, $\rho = (1, 1)$ always because $\rho_n(h^1) = 1$ and

$p(d) = 0$ for all $d \in \mathbf{D}_n$ for all $n \in N$. So:

$$\begin{aligned}
\Delta_n(1|\alpha_m) &= Pr(i=n)EU_i(\rho=(1,1)|\alpha_i=\alpha_n,\alpha_j=\alpha_m) \\
&\quad +Pr(i=m)EU_j(\rho=(1,1)|\alpha_i=\alpha_m,\alpha_j=\alpha_n) - B_n(\alpha_m) \\
&= \frac{1}{2}\left\{ \int\int_{I(1,1|i=n)\cup J(1,1|i=n)} \left[(px^A(i)+(1-p)x^A(j)-x^B)v_i - k\right] dF(v_i)dF(v_j) \right. \\
&\qquad \left. + \int\int_{[0,1]^2} x^B v_i dF(v_i)dF(v_j) \right\} \\
&+ \frac{1}{2}\left\{ \int\int_{I(1,1|i=m)\cup J(1,1|i=m)} \left[(1-px^A(i)-(1-p)x^A(j))-(1-x^B))v_j - k\right] dF(v_i)dF(v_j) \right. \\
&\qquad \left. + \int\int_{[0,1]^2} (1-x^B)v_j dF(v_i)dF(v_j) \right\} - \int\int_{[0,1]^2} \frac{1+\alpha_n-\alpha_m}{2} v_i dF(v_i)dF(v_j) \\
&= \frac{1}{2}\left\{ \int\int_{I(1,1|i=n)\cup J(1,1|i=n)} \left[(px^A(i)+(1-p)x^A(j)-x^B)v_i - k\right] dF(v_i)dF(v_j) \right\} \\
&+ \frac{1}{2}\left\{ \int\int_{I(1,1|i=m)\cup J(1,1|i=m)} \left[(x^B-px^A(i)-(1-p)x^A(j))v_j - k\right] dF(v_i)dF(v_j) \right\}
\end{aligned}$$

Suppose $i = n$. Then an increase in α_n $(= \alpha_i)$ contracts $I(1,1|i=n)$ and expands $J(1,1|i=n)$ by Proposition 3. Similarly, an increase in α_m $(= \alpha_j)$ expands $I(1,1|i=n)$ and contracts $J(1,1|i=n)$. Recall from the Proof of Lemma 3 that $(v_i, v_j) \in I(\cdot)$ implies $(px^A(i)+(1-p)x^A(j)-x^B)v_i - k > 0$ and $(x^B - px^A(i)-(1-p)x^A(j))v_j - k < 0$. Conversely, $(v_i, v_j) \in J(\cdot)$ implies $(x^B - px^A(i)-(1-p)x^A(j))v_j - k > 0$ and $(px^A(i)+(1-p)x^A(j)-x^B)v_i - k < 0$. So an increase in α_n decreases the likelihood that n will benefit from adjudication and increases the likelihood that n will be hurt by adjudication, relative to the payoff that she can achieve via bilateral bargaining. The opposite holds for increases in α_m. Additionally,

$$px^A(i) + (1-p)x^A(j) - x^B = \begin{cases} \frac{cp}{2v_j} - \frac{c(1-p)}{2v_i} & \text{if } c < min\{\alpha_i v_i, \alpha_j v_j\}; \\ -(1-p)x^B + \frac{cp}{2v_j} & \text{if } c \in [\alpha_i v_i, \alpha_j v_j); \\ p(1-x^B) - \frac{c(1-p)}{2v_i} & \text{if } c \in [\alpha_j v_j, \alpha_i v_i); \text{ and} \\ p - x^B & \text{if } c \geq max\{\alpha_i v_i, \alpha_j v_j\}. \end{cases}$$

$$\Rightarrow \frac{\partial[px^A(i) + (1-p)x^A(j) - x^B]}{\partial \alpha_n} = \begin{cases} 0 & \text{if } c < min\{\alpha_i v_i, \alpha_j v_j\}; \\ -\frac{1-p}{2} & \text{if } c \in [\alpha_i v_i, \alpha_j v_j); \\ -\frac{p}{2} & \text{if } c \in [\alpha_j v_j, \alpha_i v_i); \text{ and} \\ -\frac{1}{2} & \text{if } c \geq max\{\alpha_i v_i, \alpha_j v_j\} \end{cases}$$

because $x^B = \frac{1+\alpha_n-\alpha_m}{2}$. So the first term of the simplified $\Delta_n(1|\alpha_m)$ above is unambiguously decreasing in α_n. Since $\frac{\partial x^B}{\partial \alpha_n} = -\frac{\partial x^B}{\partial \alpha_m}$, the first term of the simplified $\Delta_n(1|\alpha_m)$ above is unambiguously increasing in α_m.

Suppose $i = m$. Then an increase in α_n ($= \alpha_j$) contracts $J(1,1|i = m)$ and expands $I(1,1|i = m)$ by Proposition 3. Similarly, an increase in α_m ($= \alpha_i$) expands $J(1,1|i = m)$ and contracts $I(1,1|i = m)$. So an increase in α_n decreases the likelihood that n will benefit from adjudication and increases the likelihood that n will be hurt by adjudication, relative to the payoff that she can achieve via bilateral bargaining. The opposite holds for increases in α_m. Additionally,

$$x^B - px^A(i) - (1-p)x^A(j) = \begin{cases} \frac{c(1-p)}{2v_i} - \frac{cp}{2v_j} & \text{if } c < min\{\alpha_i v_i, \alpha_j v_j\}; \\ (1-p)x^B - \frac{cp}{2v_j} & \text{if } c \in [\alpha_i v_i, \alpha_j v_j); \\ -p(1-x^B) + \frac{c(1-p)}{2v_i} & \text{if } c \in [\alpha_j v_j, \alpha_i v_i); \text{ and} \\ x^B - p & \text{if } c \geq max\{\alpha_i v_i, \alpha_j v_j\}. \end{cases}$$

$$\Rightarrow \frac{\partial[x^B - px^A(i) - (1-p)x^A(j)]}{\partial \alpha_n} = \begin{cases} 0 & \text{if } c < min\{\alpha_i v_i, \alpha_j v_j\}; \\ -\frac{1-p}{2} & \text{if } c \in [\alpha_i v_i, \alpha_j v_j); \\ -\frac{p}{2} & \text{if } c \in [\alpha_j v_j, \alpha_i v_i); \text{ and} \\ -\frac{1}{2} & \text{if } c \geq max\{\alpha_i v_i, \alpha_j v_j\}. \end{cases}$$

because $x^B = \frac{1+\alpha_m-\alpha_n}{2}$. So the second term of the simplified $\Delta_n(1|\alpha_m)$ above is unambiguously decreasing in α_n. Since $\frac{\partial x^B}{\partial \alpha_n} = -\frac{\partial x^B}{\partial \alpha_m}$, the first term of the simplified $\Delta_n(1|\alpha_m)$ above is unambiguously increasing in α_m. This means that $\Delta_n(1|\alpha_m)$ is decreasing in α_n and increasing in α_m.

(2) Since the first part held for any arbitrary m, it follows directly that $\Delta_n(\rho_n) \equiv E_{-n}[\Delta_n(\rho_n|\alpha_{-n})] = V_n(\rho_n) - B_n$ is decreasing in α_n. □

Proof of Lemma 5: Take the proof of Lemma 1 and replace all $V_n(\rho_n(h^t))$ terms with the relevant value of $V_n(\rho_n(h^t), r_n)$. □

Proof of Lemma 6: Filling the relevant values into the equation derived in the Proof of Lemma 2 yields the outcomes displayed in Lemma 6. □

Proof of Lemma 7: (1) This is a direct implication of the fact that $r_n = 0$ implies $n \in \mathbf{Y}$, which means that Lemma 6 applies. So the bargaining outcome is invariant to $\rho_n(h^t)$.

(2) Consider an arbitrary period t' and decision node $d \in \mathbf{D}_n$ s.t. $r_n = 0$. Let e_n^o be a strategy s.t. $e_n^o(d) = 0$. Let e_n be a strategy s.t. $e_n(d) = \hat{c}$ and $e_n^o(d') = e_n(d')$ for all $d' \neq d$. Then:

$$\begin{aligned} EU_n(e_n^o|d) &= \sum_{t=t'+1}^{\infty} \delta^{t-t'} \left\{ \frac{2}{|N|} V_n(0, r_n = 0) + \left(1 - \frac{2}{|N|}\right) \sum_{\{d' \neq d\}} p(d') e_n^o(d') \right\} \\ &> -\hat{c} + \sum_{t=t'+1}^{\infty} \delta^{t-t'} \left\{ \frac{2}{|N|} V_n(\rho_n(h^t), r_n = 0) + \left(1 - \frac{2}{|N|}\right) \left[p(d)[-\hat{c}] + \sum_{\{d' \neq d\}} p(d') e_n^o(d') \right] \right\} \\ &= EU_n(e_n|d) \qquad \Rightarrow e_n^o \succ_n e_n \quad \square \end{aligned}$$

Proof of Lemma 8: Apply the proof strategy from the Proof of Lemma 3 to an arbitrary pair of players parameterized by (α_n, α_m) that face some positive *ex ante* probability that their dispute will be referred to the Court. □

Proof of Proposition 5: Take the proof of Proposition 4 and replace all $V_n(\rho_n(h^t))$ terms with the relevant value of $V_n(\rho_n(h^t), r_n = 1)$. □

Proof of Proposition 6: Consider an arbitrary n. Deviation to $r_n = 1$ does not affect her expected payoff because Lemma 6 ensures that all outcomes are x_B. □

Proof of Proposition 7: Consider the strategy profile r s.t. $r_n = 1$ for all $n \in N$. Consider an arbitrary $n \in N$. The following holds:

$$\begin{aligned} EU_n(r) &= \sum_{t=1}^{\infty} \delta^{t-1} \left\{ \frac{2}{|N|} V_n(\rho_n(h^t), r) + \left(1 - \frac{2}{|N|}\right) \sum_{d \in \mathbf{D}_n} p(d) e_n(d) \right\} \\ &= \sum_{t=1}^{\infty} \delta^{t-1} \left\{ \frac{2}{|N|} V_n(1, r) \right\} = \frac{1}{1-\delta} \left\{ \frac{2}{|N|} V_n(1) \right\} \end{aligned}$$

If n deviates to $r_n = 0$, this yields:

$$\begin{aligned} EU_n(r_n = 0, r_{-n}) &= \sum_{t=1}^{\infty} \delta^{t-1} \left\{ \frac{2}{|N|} V_n(\rho_n(h^t), r_n = 0, r_{-n}) + \left(1 - \frac{2}{|N|}\right) \sum_{d \in \mathbf{D}_n} p(d) e_n(d) \right\} \\ &= \sum_{t=1}^{\infty} \delta^{t-1} \left\{ \frac{2}{|N|} V_n(1, r_n = 0, r_{-n}) \right\} = \frac{1}{1-\delta} \left\{ \frac{2}{|N|} B_n \right\} \end{aligned}$$

So n has no incentive to deviate from $r_n = 1$ iff:

$$\Delta_n(1) = V_n(1) - B_n \geq 0$$

By Lemma 4, $\Delta_n(1)$ is decreasing in α_n. □

Proof of Lemma 9: Define $\bar{v} \equiv E[v_i] = E[v_j]$. Let $V_n(1|S)$ denote the quantity $V_n(1)$ for a game with $N = S$. Adopt the analogous definitions for $B_n(S)$ and $\Delta_n(1|S)$. Consider a jurisdiction strategy profile, r, s.t. $\mathbf{X} \neq \emptyset$ and $\mathbf{Y} \neq \emptyset$. The following must hold for any player $y \in \mathbf{Y}$:

$$\begin{aligned}
EU_y(r_y = 0, r_{-y}) &= \sum_{t=1}^{\infty} \delta^{t-1} \left\{ \frac{2}{|N|} \left(\frac{1 + \alpha_y - E[\alpha_{N/\{y\}}]}{2} \right) \bar{v} \right\} \\
&= \frac{1}{1-\delta} \left\{ \frac{2}{|N|} \left(\frac{1}{|N|-1} \sum_{j \in N/\{y\}} \frac{1 + \alpha_y - \alpha_j}{2} \right) \bar{v} \right\} \\
EU_y(r_y = 1, r_{-y}) &= \sum_{t=1}^{\infty} \delta^{t-1} \left\{ \frac{2}{|N|} \left[\frac{|\mathbf{X}|}{|N|-1} V_y(1|\mathbf{X} \cup \{y\}) + \frac{|\mathbf{Y}|-1}{|N|-1} \left(\frac{1 + \alpha_y - E[\alpha_{\mathbf{Y}/\{y\}}]}{2} \right) \bar{v} \right] \right\} \\
&= \frac{1}{1-\delta} \left\{ \frac{2}{|N|} \left[\frac{|\mathbf{X}|}{|N|-1} V_y(1|\mathbf{X} \cup \{y\}) + \frac{|\mathbf{Y}|-1}{|N|-1} \left(\frac{1}{|\mathbf{Y}|-1} \sum_{j \in \mathbf{Y}/\{y\}} \frac{1 + \alpha_y - \alpha_j}{2} \right) \bar{v} \right] \right\}
\end{aligned}$$

So the strategy profile r is incentive-compatible for player y iff:

$$\begin{aligned}
\frac{1}{|N|-1} \sum_{j \in N/\{y\}} \frac{1 + \alpha_y - \alpha_j}{2} \bar{v} &\geq \frac{|\mathbf{X}|}{|N|-1} V_y(1|\mathbf{X} \cup \{y\}) + \frac{|\mathbf{Y}|-1}{|N|-1} \left(\frac{1}{|\mathbf{Y}|-1} \sum_{j \in \mathbf{Y}/\{y\}} \frac{1 + \alpha_y - \alpha_j}{2} \right) \bar{v} \\
\Leftrightarrow \frac{1}{|\mathbf{X}|} \left[\sum_{j \in \mathbf{X}} \frac{1 + \alpha_y - \alpha_j}{2} \right] \bar{v} &\geq V_y(1|\mathbf{X} \cup \{y\}) \\
\Leftrightarrow 0 &\geq V_y(1|\mathbf{X} \cup \{y\}) - B_y(\mathbf{X} \cup \{y\}) = \Delta_y(1|\mathbf{X} \cup \{y\})
\end{aligned}$$

Similarly, the following must hold for player x:

$$\begin{aligned}
EU_x(r_x = 1, r_{-x}) &= \sum_{t=1}^{\infty} \delta^{t-1} \left\{ \frac{2}{|N|} \left[\frac{|\mathbf{X}|-1}{|N|-1} V_x(1|\mathbf{X}) + \frac{|\mathbf{Y}|}{|N|-1} \left(\frac{1 + \alpha_x - E[\alpha_{\mathbf{Y}}]}{2} \right) \bar{v} \right] \right\} \\
&= \frac{1}{1-\delta} \left\{ \frac{2}{|N|} \left[\frac{|\mathbf{X}|-1}{|N|-1} V_x(1|\mathbf{X}) + \frac{|\mathbf{Y}|}{|N|-1} \left(\frac{1}{|\mathbf{Y}|} \sum_{j \in \mathbf{Y}} \frac{1 + \alpha_x - \alpha_j}{2} \right) \bar{v} \right] \right\} \\
EU_x(r_x = 0, r_{-x}) &= \sum_{t=1}^{\infty} \delta^{t-1} \left\{ \frac{2}{|N|} \left(\frac{1 + \alpha_x - E[\alpha_{N/\{x\}}]}{2} \right) \bar{v} \right\} \\
&= \frac{1}{1-\delta} \left\{ \frac{2}{|N|} \left(\frac{1}{|N|-1} \sum_{j \in N/\{x\}} \frac{1 + \alpha_x - \alpha_j}{2} \right) \bar{v} \right\}
\end{aligned}$$

So the strategy profile r is incentive-compatible for player x iff:

$$\begin{aligned} \frac{|\mathbf{X}|-1}{|N|-1}V_x(1|\mathbf{X}) + \frac{|\mathbf{Y}|}{|N|-1}\left(\frac{1}{|\mathbf{Y}|}\sum_{j\in\mathbf{Y}}\frac{1+\alpha_x-\alpha_j}{2}\right)\bar{v} &\geq \frac{1}{|N|-1}\sum_{j\in N/\{x\}}\frac{1+\alpha_x-\alpha_j}{2}\bar{v} \\ \Leftrightarrow V_x(1|\mathbf{X}) &\geq \frac{1}{|\mathbf{X}|-1}\left[\sum_{j\in\mathbf{X}/\{x\}}\frac{1+\alpha_x-\alpha_j}{2}\right]\bar{v} \\ \Leftrightarrow \Delta_x(1|\mathbf{X}) = V_x(1|\mathbf{X}) - B_x(\mathbf{X}) &\geq 0 \end{aligned}$$

Let x^* denote the player $x \in \mathbf{X}$ with the largest value of α_x. Suppose that there exists a player $y' \in \mathbf{Y}$ s.t. $\alpha_{y'} < \alpha_{x^*}$. Note the following:

$$\begin{aligned} \Delta_{x^*}(1|\mathbf{X}) = \frac{1}{|\mathbf{X}|-1}\sum_{j\in\mathbf{X}/\{x^*\}}\Delta_{x^*}(1|\alpha_j) &\geq 0 \\ \Delta_{y'}(1|\mathbf{X}\cup\{y'\}) = \frac{1}{|\mathbf{X}|}\sum_{j\in\mathbf{X}}\Delta_{y'}(1|\alpha_j) &\leq 0 \end{aligned}$$

By Lemma 4, $\Delta_{x^*}(1|\alpha_j) < \Delta_{y'}(1|\alpha_j)$ for all $j \in \mathbf{X}/\{x^*\}$ because $\Delta_n(1|\alpha_m)$ is decreasing in α_n. Also, $\Delta_{y'}(1|\alpha_j) < \Delta_{y'}(1|\alpha_{x^*})$ for all $j \in \mathbf{X}/\{x^*\}$ because $\Delta_n(1|\alpha_m)$ is increasing in α_m. So $\Delta_{y'}(1|\mathbf{X}\cup\{y'\}) > \Delta_{x^*}(1|\mathbf{X}) \geq 0$, which is a contradiction. So there does not exist a player $y' \in \mathbf{Y}$ s.t. $\alpha_{y'} < \alpha_{x^*}$, which implies the monotonicity of jurisdiction in α_n. □

Proof of Proposition 8: This follows directly from the establishment of the monotonicity of jurisdiction in α_n and the incentive-compatibility constraints from the Proof of Lemma 9. □

Proof of Proposition 9: Let NJ denote the no jurisdiction eqm, PJ denote the partial jurisdiction eqm, and UJ denote the universal jurisdiction eqm. Then:

$$\begin{aligned} EU_n(NJ) &= \frac{1}{1-\delta}\left\{\frac{2}{|N|}B_n(N)\right\} \\ EU_n(PJ|n\in\mathbf{X}_{PJ}) &= \frac{1}{1-\delta}\left\{\frac{2}{|N|}\left[\frac{|\mathbf{X}_{PJ}|-1}{|N|-1}V_n(1|\mathbf{X}_{PJ}) + \frac{|\mathbf{Y}_{PJ}|}{|N|-1}B_n(\mathbf{Y}_{PJ}\cup\{n\})\right]\right\} \end{aligned}$$

$$
\begin{aligned}
EU_n(PJ|n \in \mathbf{Y}_{PJ}) &= \frac{1}{1-\delta}\left\{\frac{2}{|N|}B_n(N)\right\} \\
EU_n(UJ) &= \frac{1}{1-\delta}\left\{\frac{2}{|N|}V_n(1|N)\right\}
\end{aligned}
$$

Note that existence of the UJ ensures that $\Delta_n(1) \geq 0 \Leftrightarrow V_n(1|N) \geq B_n(N)$ for all $n \in N$, so $UJ \succeq_{n\in\mathbf{Y}_{PJ}} PJ \sim_{n\in\mathbf{Y}_{PJ}} NJ$. Similarly, $UJ \succeq_{n\in\mathbf{X}_{PJ}} PJ$ iff:

$$
\begin{aligned}
V_n(1|N) \geq \frac{|\mathbf{X}_{PJ}|-1}{|N|-1}V_n(1|\mathbf{X}_{PJ}) + \frac{|\mathbf{Y}_{PJ}|}{|N|-1}B_n(\mathbf{Y}_{PJ}\cup\{n\}) \\
\Leftrightarrow \frac{|\mathbf{Y}_{PJ}|}{|N|-1}\left[V_n(1|\mathbf{Y}_{PJ}\cup\{n\}) - B_n(\mathbf{Y}_{PJ}\cup\{n\})\right] \geq 0 \\
\Leftrightarrow \Delta_n(1|\mathbf{Y}_{PJ}\cup\{n\}) \geq 0
\end{aligned}
$$

which is assured by the fact that $\Delta_n(1|\alpha_m)$ is increasing in α_m and the monotonicity of PJ. Finally, $PJ \succeq_{n\in\mathbf{X}_{PJ}} NJ$ by the existence of PJ. □

Proof of Proposition 10: (1) Suppose that the NJ is in effect. As shown in the Proof of Proposition 9, $PJ \sim_{n\in\mathbf{Y}(PJ)} NJ$. Also $EU_n(PJ|n \in \mathbf{X}_{PJ}) - EU_n(NJ)$ is:

$$
\begin{aligned}
&\frac{1}{1-\delta}\left\{\frac{2}{|N|}\left[\frac{|\mathbf{X}_{PJ}|-1}{|N|-1}V_n(1|\mathbf{X}_{PJ}) + \frac{|\mathbf{Y}_{PJ}|}{|N|-1}B_n(\mathbf{Y}_{PJ}\cup\{n\}) - B_n(N)\right]\right\} \\
= \;&\frac{1}{1-\delta}\left\{\frac{2}{|N|}\left[\frac{|\mathbf{X}_{PJ}|-1}{|N|-1}\right]\Delta_n(1|\mathbf{X}_{PJ})\right\}
\end{aligned}
$$

which is decreasing in α_n. Also, $EU_n(UJ) - EU_n(NJ) = \Delta_n(1)$, which is decreasing in α_n.
(2) Suppose that the PJ is in effect. Then $EU_n(UJ) - EU_n(PJ|n \in \mathbf{Y}_{PJ})$ is:

$$
\frac{1}{1-\delta}\left\{\frac{2}{|N|}\left[V_n(1|N) - B_n(N)\right]\right\} = \frac{1}{1-\delta}\left\{\frac{2}{|N|}\Delta_n(1|N)\right\}
$$

which is clearly decreasing in α_n for all $n \in \mathbf{Y}$. Also $EU_n(UJ) - EU_n(PJ|n \in \mathbf{X}_{PJ})$ is:

$$\begin{aligned}
& \frac{1}{1-\delta}\left\{\frac{2}{|N|}\left[V_n(1|N)-\left[\frac{|\mathbf{X}_{PJ}|-1}{|N|-1}V_n(1|\mathbf{X}_{PJ})+\frac{|\mathbf{Y}_{PJ}|}{|N|-1}B_n(\mathbf{Y}_{PJ}\cup\{n\})\right]\right]\right\} \\
= & \frac{1}{1-\delta}\left\{\frac{2}{|N|}\left[\frac{|\mathbf{Y}_{PJ}|}{|N|-1}\right]\left[V_n(1|\mathbf{Y}_{PJ}\cup\{n\})-B_n(\mathbf{Y}_{PJ}\cup\{n\})\right]\right\} \\
= & \frac{1}{1-\delta}\left\{\frac{2}{|N|}\left[\frac{|\mathbf{Y}_{PJ}|}{|N|-1}\right]\Delta_n(\mathbf{Y}_{PJ}\cup\{n\})\right\}
\end{aligned}$$

which is also decreasing in α_n for all $n \in \mathbf{X}_{PJ}$. So the only thing left to demonstrate is that $EU_{\hat{n}}(UJ) - EU_{\hat{n}}(PJ|\hat{n} \in \mathbf{X}_{PJ}) > EU_{\hat{n}+1}(UJ) - EU_{\hat{n}+1}(PJ|\hat{n}+1 \in \mathbf{Y}_{PJ})$. This holds iff:

$$\begin{aligned}
\frac{|\mathbf{Y}_{PJ}|}{|N|-1}\Delta_{\hat{n}}(\mathbf{Y}\cup\{\hat{n}\}) &> \Delta_{\hat{n}+1}(1|N) \\
\Leftrightarrow \sum_{j\in\mathbf{Y}_{PJ}}\Delta_{\hat{n}}(1|\alpha_j) &> \sum_{j\in N/\{\hat{n}+1\}}\Delta_{\hat{n}+1}(1|\alpha_j) \\
\Leftrightarrow \sum_{j\in\mathbf{Y}_{PJ}}\{\Delta_{\hat{n}+1}(1|\alpha_j)+[\Delta_{\hat{n}}(1|\alpha_j)-\Delta_{\hat{n}+1}(1|\alpha_j)]\} &> \sum_{j\in N/\{\hat{n}+1\}}\Delta_{\hat{n}+1}(1|\alpha_j) \\
\Leftrightarrow \sum_{j\in\mathbf{Y}_{PJ}}[\Delta_{\hat{n}}(1|\alpha_j)-\Delta_{\hat{n}+1}(1|\alpha_j)]+\Delta_{\hat{n}+1}(1|\alpha_{\hat{n}+1}) &> \sum_{j\in\mathbf{X}_{PJ}}\Delta_{\hat{n}+1}(1|\alpha_j) \\
\Leftrightarrow \sum_{j\in\mathbf{Y}_{PJ}/\{\hat{n}+1\}}[\Delta_{\hat{n}}(1|\alpha_j)-\Delta_{\hat{n}+1}(1|\alpha_j)]+\Delta_{\hat{n}}(1|\alpha_{\hat{n}+1}) &> \sum_{j\in\mathbf{X}_{PJ}}\Delta_{\hat{n}+1}(1|\alpha_j)
\end{aligned}$$

Note that the existence of the PJ ensures that the RHS is negative. And the fact that $\Delta_n(1|\alpha_j)$ is decreasing in α_n ensures that the first-term of the LHS is positive. Suppose $\Delta_{\hat{n}}(1|\alpha_{\hat{n}+1}) \leq 0$. Then $\Delta_{\hat{n}}(1|\alpha_j) < 0$ for all $\alpha_j < \alpha_{\hat{n}+1}$, which implies that $\Delta_{\hat{n}}(1|\mathbf{X}) < 0$, which contradicts the existence of the PJ. So $\Delta_{\hat{n}}(1|\alpha_{\hat{n}+1}) > 0$ and the inequality above holds. □

References

Banks, Jeffrey S., and Randall L. Calvert. (1992) "A Battle of the Sexes Game with Incomplete Information." *Games and Economics Behavior.* 4(3): 347-372.

Calvert, Randall L. (1995) "Rational Actors, Equilibrium, and Social Institutions." In Jack Knight and Itai Sened, editors, *Explaining Social Institutions.* Ann Arbor: University of Michigan Press.

Fang, Songying. (2006) "The Strategic Use of International Institutions in Dispute Settlement." Working Paper.

Fischer, Dana D. (1982) "Decisions to Use the International Court of Justice: Four Recent Cases." *International Studies Quarterly.* 26 (2): 251-277.

Fudenberg, Drew, and Jean Tirole. (2000) *Game Theory.* Cambridge, MA: MIT Press.

Gill, Terry D. (2003) *Rosenne's The World Court: What it is and How it Works.* Leiden: Martinus Nijhoff Publishers.

Hafer, Catherine. (2007) "Contests over Political Authority." Working Paper.

Johns, Leslie. (2007) "A Servant of Two Masters: Communication and the Selection of International Bureaucrats." *International Organization.* Forthcoming.

Keohane, Robert O. (1984) *After Hegemony: Cooperation and Discord in the World Political Economy.* Princeton, NJ: Princeton University Press.

Keohane, Robert O. (1986) "Reciprocity in International Relations." *International Organization.* 40(1): 1-27.

Kirgis, Frederic L. (2005) "President Bush's Determination Regarding Mexican Nationals and Consular Convention Rights." *ASIL Insights.* March.

Koremenos, Barbara. (2005) "Contracting around International Uncertainty." *American Political Science Review.* 99 (4): 549-565.

Krasner, Stephen D. (1983) "Regimes and the Limits of Realism: Regimes as Autonomous Variables." In Stephen D. Krasner, editor, *International Regimes.* Ithaca, NY: Cornell

University Press.

Maggi, Giovanni. (1999) "The Role of Multilateral Institutions in International Trade Cooperation." *American Economic Review.* 89 (1): 190-214.

Milner, Helen V., and B. Peter Rosendorff. (1996) "Trade Negotiation, Information and Domestic Politics: The Role of Domestic Groups." *Economics and Politics.* 8(2): 145-189.

Morrow, James D. (1994) "Modeling the Forms of International Cooperation: Distribution Versus Information." *International Organization.* 48(3): 387-423.

Muthoo, Abhinay. (1999) *Bargaining Theory with Applications.* New York: Cambridge University Press.

Nash, John. (1950) "The Bargaining Problem." *Econometrica.* 18: 155-162.

Paulson, Colter. (2004) "Compliance with Final Judgments of the International Court of Justice since 1987." *American Journal of International Law.* 98 (3): 434-461.

Posner, Eric A., and Miguel F. P. de Figueiredo. (2005) "Is the International Court of Justice Biased?" *Journal of Legal Studies.* 34: 599-630.

Powell, Emilia Justyna and Sara McLaughlin Mitchell. (2007) "The International Court of Justice and the World's Three Legal Systems." *Journal of Politics.* Forthcoming.

Schulte, Constanze. (2004) *Compliance with Decisions of the International Court of Justice.* Oxford: Oxford University Press.

Smith, Alastair. (1998) "International Crises and Domestic Politics." *American Political Science Review.* 92 (3): 623-638.

Stiles, Kendall W. (2000) "U.S. Response to Defeat in International Courts: A Contingent Model of Rule Compliance." *Political Research Quarterly.* 53 (2): 401-425.

Voeten, Erik. (2007) "The Impartiality of International Judges: Evidence from the European Court of Human Rights." Working Paper.

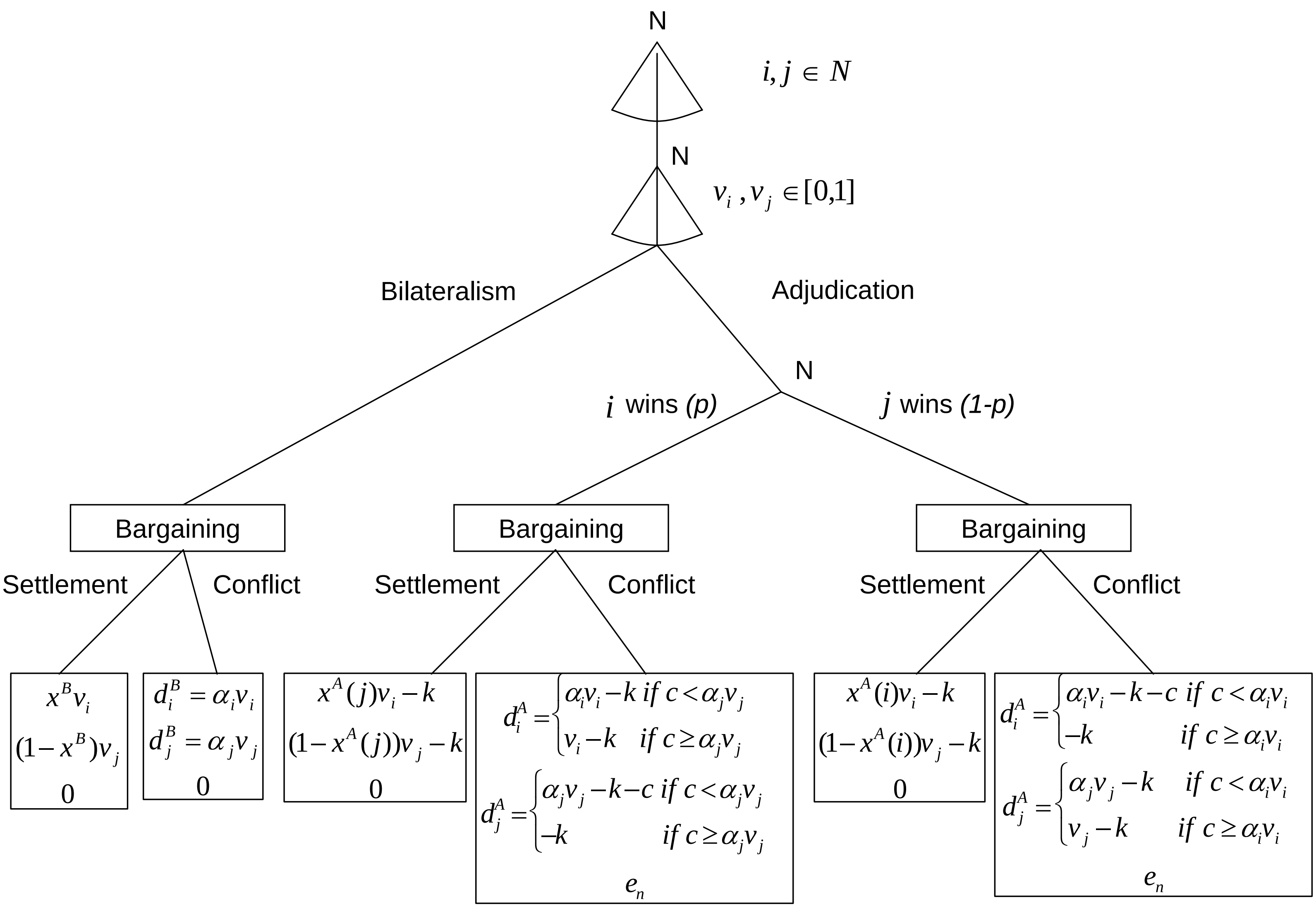

Figure 1: Structure of the Stage Game

Table 1: Nash Bargaining Outcomes under Different State Variables

	$\rho_j = 0$	$\rho_j = 1$
$\rho_i = 0$	$x^B = \frac{1+\alpha_i-\alpha_j}{2}$ $x^A(i) = \frac{1+\alpha_i-\alpha_j}{2}$ $x^A(j) = \frac{1+\alpha_i-\alpha_j}{2}$	$x^B = \frac{1+\alpha_i-\alpha_j}{2}$ $x^A(i) = \frac{1+\alpha_i-\alpha_j}{2}$ $x^A(j) = \begin{cases} 0 & \text{if } c \geq \alpha_i v_i \\ x^B - \frac{c}{2v_i} & \text{if } c < \alpha_i v_i \end{cases}$
$\rho_i = 1$	$x^N = \frac{1+\alpha_i-\alpha_j}{2}$ $x^A(i) = \begin{cases} 1 & \text{if } c \geq \alpha_j v_j \\ x^B + \frac{c}{2v_j} & \text{if } c < \alpha_j v_j \end{cases}$ $x^A(j) = \frac{1+\alpha_i-\alpha_j}{2}$	$x^B = \frac{1+\alpha_i-\alpha_j}{2}$ $x^A(i) = \begin{cases} 1 & \text{if } c \geq \alpha_j v_j \\ x^B + \frac{c}{2v_j} & \text{if } c < \alpha_j v_j \end{cases}$ $x^A(j) = \begin{cases} 0 & \text{if } c \geq \alpha_i v_i \\ x^B - \frac{c}{2v_i} & \text{if } c < \alpha_i v_i \end{cases}$

Table 2: Adjudication Thresholds for Cases on (v_i, v_j)

State (ρ)	Case	Conditions for i to submit	Conditions for j to submit
(0,1)	$v_i < \frac{c}{\alpha_i}$	-	$v_j > \frac{k}{x^B(1-p)}$
(0,1)	$v_i > \frac{c}{\alpha_i}$	-	$v_j > \frac{2kv_i}{c(1-p)}$
(1,0)	$v_j < \frac{c}{\alpha_j}$	$v_i > \frac{k}{p(1-x^B)}$	-
(1.0)	$v_j > \frac{c}{\alpha_j}$	$v_j < \frac{cpv_i}{2k}$	-
(1,1)	$\left(v_i < \frac{c}{\alpha_i}\right) \wedge \left(v_j < \frac{c}{\alpha_j}\right)$	$v_i > \frac{k}{p-x^B} > 0$	$v_j > \frac{k}{x^B-p} > 0$
(1,1)	$\left(v_i < \frac{c}{\alpha_i}\right) \wedge \left(v_j > \frac{c}{\alpha_j}\right)$	$v_j < \frac{cpv_i}{2v_i x^B(1-p)+2k}$	$v_j > \frac{cp+2k}{2x^B(1-p)}$
(1,1)	$\left(v_i > \frac{c}{\alpha_i}\right) \wedge \left(v_j < \frac{c}{\alpha_j}\right)$	$v_i > \frac{c(1-p)+2k}{2p(1-x^B)}$	$v_j > \frac{2kv_i}{c(1-p)-2pv_i(1-x^B)} > 0$
(1,1)	$\left(v_i > \frac{c}{\alpha_i}\right) \wedge \left(v_j > \frac{c}{\alpha_j}\right)$	$v_j < \frac{cpv_i}{c(1-p)+2k}$	$v_j > \frac{cpv_i+2kv_i}{c(1-p)}$

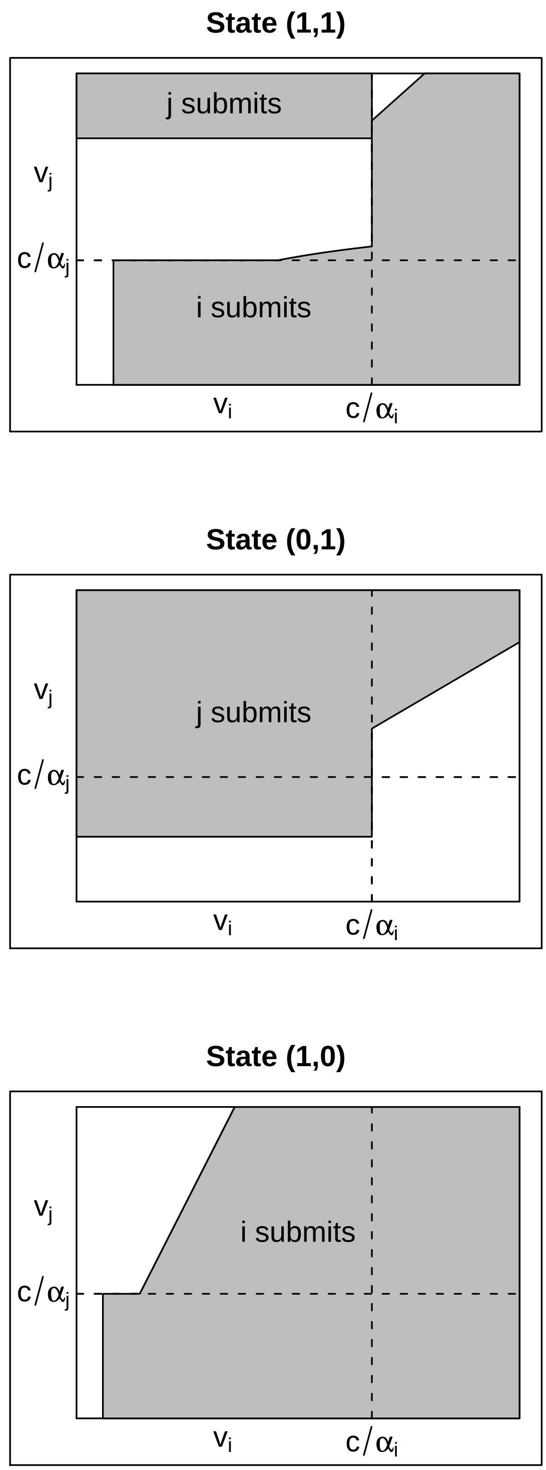

Figure 2: Submission Thresholds for (v_i, v_j) Values

Table 3: Example of the Existence of Multiple Equilibria in Model II when $N = \{1, 2, 3, 4, 5\}$

	X	**Y**
no jurisdiction eqm	$\emptyset$	$\{1, 2, 3, 4, 5\}$
partial jurisdiction eqm	$\{1, 2, 3\}$	$\{4, 5\}$
universal jurisdiction eqm	$\{1, 2, 3, 4, 5\}$	$\emptyset$