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# *Domestic Political Institutions, Credible Commitments, and International Cooperation*

Brett Ashley Leeds, *Florida State University*

I consider the influence of domestic political institutions on the ability of leaders to establish bilateral cooperation in the international system. Leaders operating in different domestic institutional environments have differing abilities to commit credibly to future courses of action, to accept the costs of policy failures, and to adjust to changes in the international environment. Using game theory, I deduce hypotheses about the effects of domestic institutional structures on the likelihood of cooperation. My model suggests that jointly democratic dyads and jointly autocratic dyads will cooperate more readily than dyads composed of one democracy and one autocracy. Analysis of COPDAB events data reveals evidence commensurate with these hypotheses. This research suggests that international cooperation theory will benefit from consideration of the influence of domestic politics on leaders' decisions, but that this influence can only be fully understood in the context of strategic behavior in the international system.

## **1. DOMESTIC POLITICS AND INTERNATIONAL COOPERATION**

In recent years, scholars of international relations have focused considerable attention on the influence of domestic politics on international behavior. One example of this renewed interest in the second image is the argument that characteristics typical of democratic political systems advantage states in making credible commitments in the international arena (Cowhey, 1993; Fearon, 1994; Gaubatz, 1996; McGillivray and Smith, 1998). If democracies are more capable of guaranteeing their own future behavior and if this ability is crucial to achieving cooperation under anarchy, then it may follow that democracies exhibit more cooperative behavior in the international system. In this article I examine this potential relationship through the logic of a simple model of cooperation, and I come to conclusions that offer partial support for the contentions in the literature, but that also suggest that previous thinking is incomplete. My research suggests that integration of levels of analysis is warranted; state level factors do have an influence on the

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ability and willingness of state leaders to coordinate policy internationally. At the same time, however, my research suggests that drawing conclusions regarding international interaction based on the domestic politics of a single state is also inappropriate. Instead, international policy coordination is better understood as an outcome of strategic interaction among state leaders responding to both domestic and international constraints and imperatives.

My article proceeds in four steps. First, I offer a simple model of dyadic cooperation in the international system. Neoliberal institutionalists have noted that the lack of external enforcement in the international system may impede cooperation because cheating and opportunistic abrogation are difficult to prevent (e.g., Axelrod and Keohane, 1986). When incentives exist for unilateral defection and when such behavior has the potential to prove costly to partners to agreements, mutually beneficial cooperation may be precluded by the inability of state leaders to guarantee their own future behavior. The model I present captures the fact that decisions to form agreements are based in part on actors' expectations regarding the probability that agreements will be fulfilled. The decisions to form agreements and to fulfill agreements are not separate decisions, but inextricably linked (see also Downs, Rocke, and Barsoom, 1996; Fearon, 1998). Cooperative agreements with a low probability of being fulfilled are unlikely to be formed, and thus the likelihood of cooperation is driven both by the ability and willingness of states to assuage fears of opportunism and the ability and willingness of states to accept remaining risks.

Next, I explain the means through which the structures of domestic policy-making processes systematically affect the incentives faced by state leaders acting internationally. According to my argument, variance in domestic accountability and the flexibility with which policies can be formulated and adjusted affect the choices that state leaders make in attempting to coordinate policy internationally. Because leaders in democracies experience costs from foreign policy failures and find it difficult to alter policy quickly, they find both breaking promises and being exploited by others to be undesirable policy outcomes. Democratic executives experience costs from not following through on a planned course of action and find it difficult to adjust quickly to changing circumstances in the international environment. As a result, their commitments are likely to be credible, and they seek to form only secure agreements. Since autocratic states tend to be characterized by more policy-making flexibility and lower levels of domestic constraint, leaders can adjust more quickly and easily to changes in the international environment. As a result, they have more difficulty guaranteeing their own future behavior, but they are more likely to accept agreements with some risk of abrogation.

Third, I derive comparative-statics hypotheses from the game regarding the likelihood of dyadic cooperation among states with varying domestic po-

litical structures. Both jointly democratic and jointly autocratic dyads are more likely to form agreements than are dyads composed of one democracy and one autocracy. The domestic accountability of democratic leaders and the lack of policy-making flexibility characteristic of democratic institutional structures make it easier for democratic states to assure others of their future intentions. Thus, jointly democratic dyads find it easier to overcome the problems associated with the lack of external enforcement of international agreements. The tendency for democracies to fulfill commitments and the difficulties they face in altering policy quickly, however, make them reluctant to enter into agreements that they fear may be broken; jointly autocratic dyads are willing to form agreements that a democracy would not accept. The result is that states with similar structures find it easier to cooperate with one another than do states with different internal institutional designs.

Finally, I test these hypotheses regarding the relationship between regime type and international cooperation using events data from the Conflict and Peace Data Bank (COPDAB) dataset (Azar, 1993). The evidence is commensurate with the hypotheses. I find that domestic political structure, and particularly dyadic similarity in domestic structure, does have an impact on levels of cooperation and that both jointly democratic and jointly autocratic dyads tend toward higher average levels of cooperation than do states with different domestic political structures.

The lessons of this research are as follows. International cooperation is fundamentally an interactive process. No attribute of a single state or individual decision can logically explain an outcome that requires the participation of at least two states. At the same time, however, aspects of domestic politics can help us to understand international outcomes if they help to explain the interests, actions, and expectations of state leaders. The research presented here suggests that the incentives and constraints created for state leaders by their domestic political institutions are relevant for understanding international cooperation, but that a full appreciation of their effects requires integrating an understanding of these incentives with an understanding of strategic behavior.

## 2. A MODEL OF COOPERATION

According to Keohane (1984), cooperation occurs when actors adjust their behavior through a process of policy coordination. Policy coordination may have the potential to result in mutual benefit, but these benefits cannot be achieved without active effort; the interests of the actors are not in harmony. Because mutual benefit is possible when policy is coordinated, state leaders wish to cooperate, but the condition of anarchy in the international system may make cooperation difficult to achieve. In some interactions, states can receive short-term unilateral benefits by defecting from agreements despite the long-term desirability of mutual cooperation. In these

instances, the risks of cheating and abrogation loom large; cooperation requires actors to convince others that they have both the ability and the incentive to behave as promised.

When actors are deciding whether to propose and form agreements to coordinate policy, they consider the likelihood that the agreement will be fulfilled and the costs to be borne should the agreement be broken. The risks and costs associated with unilateral defection from an agreement are not uniform; if there is no incentive for cheating or abrogation or if such opportunistic behavior is costless to others, lack of external enforcement should not impede cooperation. If, however, actors believe that an agreement will not be adequately enforced and that nonfulfillment is costly, they are less likely to engage in policy coordination, even if it might offer mutual benefits if compliance could be enforced. Thus to understand the choices of state leaders to form cooperative agreements and to commit to policy coordination, we must understand their expectations regarding compliance with the terms of the agreement.<sup>1</sup>

I approach this task through the use of game theory. The game pictured in Figure 1 is a simplified representation of the steps involved in policy coordination. It is a two-player game of complete information; the payoffs received by each player from each outcome are common knowledge. Through observing the internal structure and political environment of the negotiating partner, international actors develop strong hypotheses about the costs and benefits anticipated by their counterparts. The game is not a game of perfect information, however; players are occasionally uncertain about the actions of their counterparts. As a result, the game does allow for the study and understanding of the impact of strategic uncertainty on the likelihood of cooperation.<sup>2</sup>

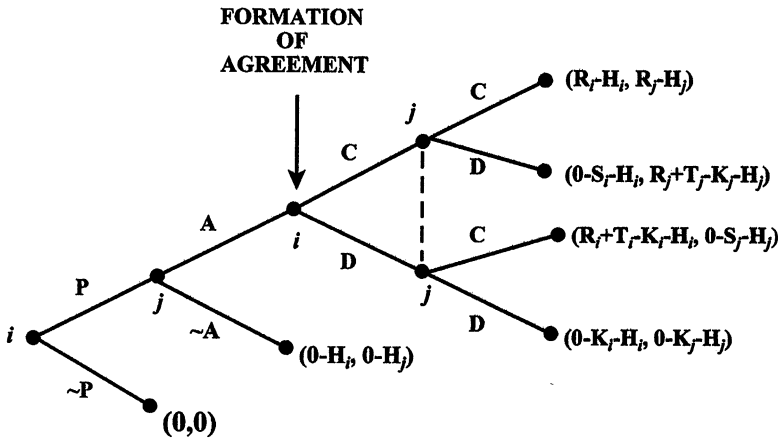
The process of policy coordination is represented in two steps. First, the two actors (*i* and *j*) make a decision whether to form an agreement.<sup>3</sup> *i* chooses whether to propose cooperation, and *j* chooses whether to accept or reject the agreement. If the agreement is formed, *i* and *j* decide whether to uphold their obligations under the agreement. At the time each decides whether to fulfill

<sup>1</sup>Many scholars begin their studies of cooperation with the assumption that actors face payoff structures characteristic of prisoners' dilemma. The formulation of the model presented here allows for the representation of a number of different  $2 \times 2$  games through variance in the payoff parameters.

<sup>2</sup>I assume that all players are risk neutral. My use of the term risk throughout this paper refers to the information situation that occurs when players know the probability of each outcome, and more than one outcome has a probability of occurring between 0 and 1. I do not make assumptions about variance in the shapes of players' utility functions. Unless variance in attitudes toward risk is highly correlated with variance in domestic political institutions, my hypotheses should be unaffected by this simplifying assumption.

<sup>3</sup>The model applies not only to formal agreements but also is intended to apply to decisions to coordinate policy more generally.

**Figure 1. A Model of Cooperation**



<b>PAYOFF PARAMETERS</b>	
R	Benefit to mutual cooperation
T	Marginal benefit to unilateral defection (compared to mutual cooperation)
S	Cost suffered by actor due to unilateral defection by partner
K	Cost to breaking a commitment
H	Cost to negotiation

the agreement, neither knows whether the other has chosen to cooperate or defect. If they both elect to follow through on their promises, the agreement is fulfilled.<sup>4</sup>

<sup>4</sup>I have represented the fulfillment subgame as a one-shot game of simultaneous choice. The assumption of simultaneous choice is intended to represent the fact that upon forming the agreement, neither actor knows whether the other actor will cooperate or defect; each actor forms expectations without knowledge of the other's actions. Although it is certainly the case that some agreements will be fulfilled through a series of repeated steps involving the same incentives (an iterated game), many agreements are not characterized by such a process. Leaders may get one chance to fulfill an agreement; if the agreement is not fulfilled, it is obsolete and must be replaced. Some possible examples are decisions to assist an ally when conflict arises or decisions to adhere to a peace treaty. The findings presented here may be sensitive to the structure of the fulfillment subgame; I begin with a parsimonious depiction.

Formal discussion of the equilibria is reserved for the appendix, but the intuition is as follows. Whether the players elect to form a given agreement depends partially on their expectations regarding the likelihood that the agreement will be fulfilled. Actors will not form an agreement that they expect will be broken; doing so would always be more costly than the status quo. When the actors believe a potential agreement will be upheld, they form the agreement if the benefits of cooperation exceed the costs involved in negotiating the agreement; if there are benefits to cooperation and no reason to fear noncompliance, cooperation is not impeded.<sup>5</sup> Sometimes, however, the actors are not certain whether an agreement will be fulfilled; they know only the probability with which it will be fulfilled. When the actors are uncertain whether the obligations of the proposed agreement will be met, the actors consider the probability of fulfillment, the costs of a failed agreement, and the benefits of successful cooperation in deciding whether to make the deal.

Translating these actions into outcomes, we can conclude that we will not observe the formation of agreements that the actors are certain are not enforceable. Agreements that are formed have some probability of being fulfilled. At the same time, because actors sometimes form agreements that they are uncertain will be upheld, we do witness the failure of some agreements.

Actors develop their expectations regarding the likelihood of fulfillment based on the relationships among only a few parameters. For each player, if the cost associated with breaking a promise ( $K$ ) is greater than both the cost borne if the other player defects unilaterally ( $S$ ) and the benefit to defecting unilaterally ( $T$ ), the player has a dominant strategy of cooperation; the cost of breaking the agreement exceeds both the benefit to breaking it and the cost suffered from cooperating even if a partner cheats or reneges. Similarly, if the cost associated with breaking a promise ( $K$ ) is less than the cost borne if the other player defects unilaterally ( $S$ ) and the benefit of defecting unilaterally ( $T$ ), the player has a dominant strategy of defection. If at least one player has a dominant strategy, the players can determine whether the agreement will be fulfilled with certainty.

When neither player has a dominant strategy, however, the actors are uncertain whether the agreement will be fulfilled. Each player's preferred action depends on the choice of the other player. For instance, player  $j$  may wish to cooperate if player  $i$  cooperates, but defect if player  $i$  defects. Player  $j$  may not think unilateral defection is better than mutual cooperation, but may fear being the victim of defection—the sucker payoff may be very undesirable. We can imagine that this circumstance might exist, for instance, in

<sup>5</sup>Under complete information, there are no costs to determining which proposals will be acceptable. The costs of negotiation refer instead to the costs of generating and instituting the agreement.

the decision to uphold a ceasefire. The leaders may both prefer not to fight, but may fear being the victim of a first strike. Similar incentives might accompany an arms-reduction agreement. Both sides may prefer to disarm but fear the result should either disarm and find the other had not. If player  $j$  does not know at the time the agreement is proposed whether player  $i$  will cooperate or defect (because player  $i$  is simultaneously trying to guess what player  $j$  will do), neither player knows whether the agreement will be successfully upheld. Each player does know the costs and benefits that she and her partner will experience given each potential outcome of the game; as a result, each player makes a decision whether to form the agreement based on the probability of each outcome under a mixed strategy equilibrium.<sup>6</sup> To determine the desirability of forming the agreement, players weigh the probability of fulfillment and the benefits of fulfillment against the probability of nonfulfillment and the costs of nonfulfillment; in other words, the players determine their expected utility for this probabilistic outcome. When the potential benefits outweigh the risks, the actors elect to form an agreement that may be upheld or may be broken.

As the benefit to unilateral defection and the cost suffered from a partner's unilateral defection decrease in relation to the cost of breaking a commitment, agreement fulfillment becomes more likely. When for both players the cost of breaking a commitment is greater than the benefit to unilateral defection and the cost suffered from a partner's unilateral defection, cooperation is not impeded by the lack of external enforcement; there is no incentive for cheating or abrogation. Under these conditions, whether an agreement is formed depends only on the relationship between the benefits of mutual cooperation and the costs of negotiating the agreement. When the benefits to cooperation outweigh the costs of negotiating an agreement, a cooperative agreement is formed and fulfilled.

What this equilibrium of the model suggests is that when neither player has any incentive to defect unilaterally from an agreement, beneficial cooperation should occur with little difficulty. Interactions that simply involve coordination do not require special guards against defection, and while they may be inhibited by disputes over the distribution of benefits, they are not impeded by the lack of external enforcement. Interactions involving nonspecific assets that pose little to no cost associated with a partner's defection are also less likely to require external enforcement. Similarly, actors who experience high domestic political costs from breaking commitments or who attribute high value to an international reputation for trustworthiness will be able to achieve cooperative outcomes without external enforcement; these actors experience high costs from breaking commitments.

<sup>6</sup>Please see the mathematical appendix for further discussion.



It is also possible for agreements to be formed when players are unsure that the agreements will be fulfilled. If the players hold positive expected utilities for the probabilistic outcome and these expected utilities exceed the costs of negotiation, the players will elect to form the agreement. In other words, players will form agreements when the probability that they will receive benefits is worth the possibility that they will suffer costs. It follows, therefore, that some agreements will be formed and later broken. State leaders do not, however, form agreements that they are certain will be broken.

Actors consider the likelihood that an agreement will be fulfilled in determining whether to form the agreement. Some possibility of cheating or abrogation may be considered an acceptable risk, and thus some agreements will be formed that are later broken. Agreements that are formed, however, should have a reasonably high probability of being fulfilled if nonfulfillment imposes costs. It follows, therefore, that if features of states or of dyads influence the likelihood that agreements will be fulfilled, these features should be influential in determining the likelihood that a state or a dyad will form cooperative agreements to begin with. In the next section, I examine the potential links between domestic political structure and the credibility of international commitments.

### **3. DOMESTIC POLITICAL INSTITUTIONS AND CREDIBLE COMMITMENTS**

Domestic political structures vary along several dimensions that should affect the abilities of states to make credible commitments and the willingness of states to enter into international agreements. In the following discussion I consider the effects of two of these dimensions in turn: accountability and flexibility.<sup>7</sup>

Most arguments that relate domestic political structure to the ability of states to make credible commitments emphasize the degree to which state leaders are held accountable by a domestic population for their actions. In states with higher degrees and broader ranges of political accountability, state leaders are more likely to face domestic political costs for breaking international commitments. There are two mechanisms through which accountability discourages defection. First, leaders suffer domestic audience costs for policy vacillation. Second, domestic coalitions develop that benefit from international conditions and would suffer from a change in policy; when accountability is high, the interests of these coalitions have an influence on policy. Thus, there are both short-run and long-run factors that encourage consistency in policy.

<sup>7</sup>Variance in the transparency of the policy-making process may also affect the ability and willingness of state leaders to form and fulfill international agreements (Cowhey, 1993; Gaubatz, 1996). Because the model presented here is a game of complete information, I cannot examine the influence of variance in transparency on the behavior of leaders.

Fearon (1994) relies on the concept of domestic audience costs to explain the democratic peace. Fearon observes that when a leader makes threats and engages in highly conflictual activity with a rival, the national honor is seen to be at stake. In political systems in which leaders are held accountable for their actions, each level of crisis escalation results in the potential for increasing domestic audience costs for backing down. As a result of the costs faced from backing down from a public statement or action, highly accountable leaders are likely to follow through on threats; when they escalate crises, their willingness to use force increases because changing policy becomes more costly.

While Fearon's primary intention is to explain the development of crises involving threats of the use of force, in his conclusion he indicates a belief that the approach is more generally applicable. He argues that alliances among democratic states are also less risky, as leaders would incur domestic costs for reneging. Smith (1998) endogenizes these audience costs in his model of crisis behavior in the context of a domestic re-election process, explaining that due to information asymmetries and the need for electorates to rely on observations of policy outcomes to judge leader competence, leaders who desire re-election have an incentive not to make promises they will not fulfill; thus, the promises they do make are highly credible. Przeworski, in his discussion of democracy and economic reform, suggests that democratic leaders pay a price for not following through on public policy declarations. He states, "Confidence is a stock: it can be depleted and it can be accumulated. It can be eroded in two ways: by erroneous forecasts and by vacillations" (Przeworski, 1991, 168).

For leaders of democracies, once a public commitment is made, a change in policy becomes undesirable. The competence of leaders may be judged in part by consistency in policy and willingness to uphold commitments. A democratic leader should fear censure for breaking a public agreement, for not following through on a stated course of action, for backing down and risking the national honor. This potential domestic audience cost makes defection less desirable for that leader and cooperation less risky for the state's partners.

In addition, once agreements have been instituted, subnational actors adjust their behavior so that they receive the most benefit from government policy. For example, a free-trade agreement encourages the development and increases the power of firms that benefit from free trade (Lipson, 1983). These actors come to serve as a supporting coalition, making a change in policy less desirable for democratic state leaders who wish to maintain political support from these groups. Rogowski (1989) claims that international policies have a causal effect on future domestic political cleavages and power relations; those who benefit from international conditions are strengthened

politically. Forming and instituting an agreement thus results in a change in incentives for democratic executives that reduces the probability of altering policy.

While there may be exceptions, democratic states are generally expected to be characterized by higher degrees of political accountability than autocratic states. Democratic policy-making procedures also tend to feature checks and balances that reduce the speed and ease with which states can reverse major foreign-policy commitments (Cowhey, 1993; Gaubatz, 1996). Policy making in democratic states tends to be slow and methodical and to exhibit a significant status quo bias. Democratic leaders have much less flexibility to alter policy drastically than do their autocratic counterparts. As a result, once agreements are created and implemented, they are more likely to be maintained.

It is an old theme in international relations that the leader with the least autonomy and the most domestic constraints is advantaged in international bargaining (Schelling, 1960; Putnam, 1988). Fearon, Cowhey, and Gaubatz follow in this tradition, arguing that the leaders with the least autonomy will be most successful at encouraging cooperation because of their greater ability to commit credibly to a course of action. They reason that if democracies are advantaged in making credible commitments and if the ability to make credible commitments is crucial to establishing cooperation without enforcement, then we should expect that democracies find it easier to achieve cooperation under anarchy. Some empirical analyses have lent support to the claim that democratic states exhibit high levels of international cooperation (Siverson and Emmons, 1991; Leeds and Davis, 1999).

Yet, we can imagine potential advantages to domestic autonomy as well. Autonomy allows flexible response, which is key to implementing strategies of reciprocity (Milner, 1992). Reciprocity, it has been shown, can encourage the emergence of cooperation (Axelrod, 1984). Flexible states can respond more easily to the actions of their international counterparts and may suffer less from a change in the international environment, for instance from a defection by a dyadic partner. More flexible states may be willing to form agreements that democratic states would avoid.

This suggests a more complicated relationship between executive constraint and cooperation. Domestic audience costs for renegeing and slow, methodical policy-making processes may make international counterparts more willing to enter into agreements with a state, but they may also affect the willingness of the state in question to accept the possibility that an agreement will not be fulfilled. While democracies might be better at making credible commitments, they may find it more difficult to make any commitments. Autocratic states, with their greater degree of policy flexibility, may find some chance of unilateral defection acceptable. Through the application

of the model of cooperation developed above, we can examine the logic and implications of variance in leader accountability and policy-making flexibility for strategic behavior in the international system.

#### 4. THE EFFECTS OF DOMESTIC POLITICAL INSTITUTIONS ON INTERNATIONAL COOPERATION

By making assumptions about the relationships between domestic political institutions and some of the payoff parameters in the game, I can develop hypotheses about the types of dyads that are least likely to find cooperation difficult without mechanisms for enforcement. Based on the above discussion, I assume that domestic political structure affects two of the cost/benefit parameters in the model. First, I assume that states that feature higher degrees of accountability to domestic groups (democracies) face high costs for breaking promises. Second, I assume that states characterized by more flexible policy-making apparatuses (autocracies) suffer reasonably low costs from a partner's unilateral defection because they can more quickly and easily adjust to changes in the international environment. In contrast, autocracies suffer low costs from breaking promises, and democracies suffer high costs from a partner's defection. I additionally assume that domestic politics asserts a greater proportional influence on the costs to breaking commitments than on the costs suffered from unilateral defection. While the costs suffered from a change in the international environment should vary with the flexibility of the state policy-making apparatus, these costs remain largely dependent on characteristics of the interaction. Regardless of their abilities to adjust policies, we can assume that states suffer more from some defections than others. For instance, a surprise attack representing a partner's defection on a cease-fire agreement might be more costly than a failure to contain inflation as promised in an agreement designed to manage exchange rates. And yet, it may still be the case that on either issue, democratic leaders would find adjusting to the new environment particularly costly, whether the adjustment involved military defense or monetary policy.

The relationships between the costs to breaking promises ( $K$ ), the costs suffered from a partner's unilateral defection ( $S$ ), and the benefits of unilateral defection ( $T$ ) for both players determine whether agreements are fulfilled. Agreements are fulfilled whenever the costs of breaking a commitment are greater than both the benefits to unilateral defection and the costs suffered from a partner's unilateral defection for both players. As the costs associated with breaking a commitment increase, actors are more likely to meet their obligations. Because I have assumed that democratic states suffer high costs for breaking commitments, and because I assume that the influence of domestic politics on  $K$  is stronger than the influence of domestic politics on  $S$ , interactions between two democracies are most likely to be

characterized by this relationship among these payoff parameters. All else being equal, agreements formed by two democracies are more likely to be fulfilled, and agreements formed by jointly autocratic dyads and mixed dyads are less likely to be fulfilled.

When actors expect agreements to be fulfilled, agreements are formed whenever the benefits of cooperation are positive and exceed the costs of negotiation. These are not the only conditions, however, under which agreements are formed. International actors will form agreements that they are not certain will be fulfilled if the expected benefits exceed the costs. When players know that there is some probability that obligations under the agreement will be met, but that this probability is neither 1 nor 0, each actor decides whether to form the agreement by determining if the potential benefits of achieving a good outcome warrant accepting the possibility of a less desirable outcome.

A discussion of the formal comparative statics analysis is reserved for the mathematical appendix. In general, however, when all else is equal, autocratic states are more likely to take chances in forming agreements that may not be fulfilled. Because democratic states experience high costs from breaking agreements and from a partner's opportunism, democratic leaders are less likely than their autocratic counterparts to enter into insecure cooperative arrangements. Because the costs of a failed agreement are high for democratic leaders, they are less likely to judge the chance of a desirable outcome to be worth the possibility of an undesirable outcome. Autocratic leaders, because their costs from failed agreements are comparatively low, are more likely to expect positive utility from an uncertain outcome. Importantly, this result is dependent on assumptions about both  $K$  and  $S$ , both audience costs and the flexibility of policy making. Democracies may be advantaged in making credible commitments, but they are also more wary of making commitments that they are uncertain will be fulfilled.

Given the assumptions about the relationship between domestic institutional structure and two payoff parameters, therefore, we can derive the following general conclusions from the model. First, democracies can make more credible commitments. As a result, cooperation among democracies is less likely to be impeded by fears of opportunistic behavior. Second, defections from agreements will be more common in jointly autocratic dyads than in jointly democratic dyads. This conclusion derives from the willingness of autocracies to select themselves into agreements with a greater chance of abrogation. Third, because democracies are more likely to have incentives to fulfill agreements, making them self-enforcing, and because autocracies are willing to form agreements that democracies would consider too risky, both jointly democratic and autocratic dyads will form more agreements than dy-

ads composed of one democracy and one autocracy.<sup>8</sup> Those dyads that are composed of one democracy and one autocracy find cooperation under anarchy difficult because the autocracy in the dyad is less likely to have certain incentive to fulfill the agreement, and the democracy is less likely to accept the possibility of potential defection. Interactions in dyads containing one democracy and one autocracy should result in comparatively low levels of cooperation because uncertainty regarding fulfillment is unappealing to democracies. These conclusions suggest the following hypotheses that can be tested empirically:

*H1:* Jointly democratic dyads will engage in comparatively high levels of cooperation.

*H2:* Jointly autocratic dyads will engage in higher levels of cooperation than dyads composed of one democracy and one autocracy.

*H3:* Dyads composed of one democracy and one autocracy will find the impediments to cooperation strongest; they will engage in lower levels of cooperation than states with similar internal structures.

These are the hypotheses that are tested below.

## 5. TESTING THE HYPOTHESES

Selecting a domain for an empirical test of these hypotheses is challenging given the importance of nonobservations. Because I argue that decisions to form cooperative agreements are fundamentally connected to the likelihood that their obligations will be fulfilled, tests that include only formed agreements are inappropriate. Empirical tests of compliance with agreements that are performed on a sample of agreements that states choose to form should be biased; those that are particularly unreliable will never be observed.

What this means is that the decision to cooperate and the success with which policy is coordinated as promised should be studied jointly. The appropriate sample is all sets of states that might have chosen to form a cooperative relationship. Since intentions are unobservable and such a sample

<sup>8</sup>I do not develop hypotheses regarding the relative likelihood of different equilibrium conditions, and thus I cannot address the question of whether jointly democratic or jointly autocratic pairs of states will form more agreements; jointly democratic dyads are more likely to meet one equilibrium condition, and jointly autocratic dyads are more likely to meet another equilibrium condition. Mixed dyads are less likely to meet either of these equilibrium conditions. Thus, the hypotheses tested in this paper emphasize the difference between states with similar internal structures and those with different political institutions. I do expect that more of the agreements formed among democracies will be fulfilled.

can never be identified, it is necessary to make some assumptions about which states are likely to have reason to interact. Maoz (1996) has done just this in defining each state's politically relevant international environment (PRIE) to include all contiguous states and all major and regional powers. The spatial-temporal domain of this empirical test includes each politically relevant dyad for each year between 1953 and 1978; the unit of analysis is the dyad year.

Because I am interested in capturing both the extent to which a dyad chooses to interact cooperatively and the success states have in doing so (in other words, both formation and fulfillment), I use a very general measure drawn from events data. Measures of international cooperation come from the Conflict and Peace Data Bank (COPDAB) data set (Azar, 1993). COPDAB is an events data set that measures international behavior through the coding of primary news reports. Events are scaled, weighted in terms of intensity by a panel of experts, and aggregated to produce a continuous measure of the tenor of relations between two states. For this project, only cooperative interactions were included.<sup>9</sup>

Values of zero indicate that the dyad exhibited no cooperative interactions in the given year. In this analysis, 47 percent of the cases engage in no cooperative interactions. Nonzero values indicate that at least one cooperative act occurred in the dyad in that year. For this study, the dependent variable is the average level of cooperation in the dyad in the given year. Because the dependent variable is the average level of cooperation, higher nonzero values indicate greater intensity to cooperative acts, not greater frequency. This measure of the dependent variable is advantageous for two reasons. First, credible commitments become increasingly important for more intensely cooperative acts. A theory based on credible commitments suggests a focus on the intensity of cooperation, rather than the number of acts. Second, because COPDAB data are collected from news media, the interactions of some states are reported with much more frequency than are those of others. Using the average level of cooperation helps to counteract this bias.

Measures of regime type were obtained from the POLITY III data set (Jagers and Gurr, 1996). I code as jointly democratic any dyad in which both states receive scores of six or higher on the ten-point POLITY III democracy scale. Similarly, jointly autocratic dyads are composed of two

<sup>9</sup>The COPDAB cooperation scale includes behaviors ranging from simple meetings and supportive statements to economic agreements, military collaboration, and political integration. COPDAB events are coded on a fifteen-point scale and then weighted to capture differences in intensity from one scale value to the next. To create an average yearly measure of cooperation in a dyad, I summed the weighted values for the year and divided by the number of events.

states that are coded six or higher on the ten-point autocracy scale. Mixed dyads contain one partner with a democracy score of at least six and one with an autocracy score of at least six.

In the sample employed in this analysis, 15 percent of the dyads are jointly democratic, 22 percent are jointly autocratic, and 32 percent are mixed. The remaining dyads contain at least one state that has unclear or undeveloped authority characteristics; the authors of the POLITY dataset refer to these states as anocracies. Because my hypotheses concern the relationship between domestic institutional structure and international behavior, I cannot develop hypotheses about the behavior of states with undefined or undeveloped institutions. Thus, I have no hypotheses about the behavior of anocracies.

I begin by examining the mean levels of cooperation for dyads composed of states with democratic and autocratic institutional structures. I find a statistically significant relationship between regime type at the dyadic level and average levels of cooperation. Fully commensurate with the hypotheses developed above, dyads composed of two democracies exhibit the highest mean levels of cooperation: 9.77; dyads composed of two autocracies exhibit the next highest levels: 7.95; and mixed dyads engage in less cooperation: 6.88. A one-way analysis of variance demonstrates that these differences in means are statistically significant.

In order to demonstrate that the relationship between regime type and cooperation is not spurious, I perform statistical analysis with three control variables. First, I control for state wealth. Wealthy states tend to be well integrated into the international system and to require many transnational ties. As a result, wealthy states might engage in more cooperative behavior, particularly with each other, regardless of regime type. To create a measure of wealth, I calculate national income per capita as a percentage of the U.S. per capita national income for each year based on data obtained from Summers and Heston (1988) and USACDA (various years).<sup>10</sup> Dyads in which both states have per capita incomes of at least 30 percent of the U.S. per capita income in the given year are coded as wealthy.

Second, I consider the political stability of the interacting states. Regardless of domestic structure, a state that has undergone a dramatic and recent change in regime type may have difficulty assuaging its international partners' uncertainty about its future interactions (Maoz, 1989; Walt, 1992). Thus, dyads in which both partners are politically stable should engage in more cooperation. The data for this variable were obtained from the POLITY II data set (Gurr, Jagers, and Moore, 1989). Dyads are coded as jointly

<sup>10</sup>USACDA data were used to create measures for cases missing in the Summers and Heston data set.



stable if neither partner has undergone a change in political regime type in the last five years.

Third, I control for shared alliances. The formation of a military alliance is an act representing a high level of international cooperation. Upholding an alliance and supporting an ally is also a new decision to cooperate; many alliance commitments are not fulfilled (Sabrosky, 1980; Siverson and King, 1980). Thus, it is reasonable to argue that alliances should be captured in the dependent variable rather than included as a control variable in this test. Because this empirical test is limited to the Cold War era, however, including a control variable representing shared alliances is an appropriate way to capture the overriding bipolar nature of international interactions. I employ a variable representing shared alliances to serve as a proxy for shared positions on the East-West conflict. Thus, I expect that states that share alliances will engage in higher levels of cooperation with one another because of their similar international interests. If I find that after controlling for shared alliances regime type continues to have an effect on levels of cooperation, I will have more confidence that an explanation based on commitment credibility is warranted; it will be less likely that the finding is merely an artifact of common interests.

Statistical analysis of these relationships requires a technique that takes into account unusual characteristics of the data. The data include both cross-sectional and time-series components, and because many states achieved independence during the period covered by this study, the number of politically relevant dyads changes over time. I use a maximum likelihood estimator that recognizes the cross-sectional and time-series properties of the data, but does not require time-series of equal lengths. I correct for temporal autocorrelation using a common value for  $\rho$  and specify the use of Huber-White standard errors, which are appropriate when heteroskedasticity across cases is likely.

The results of this estimation appear in the first column of Table 1. While wealthy, politically stable, and allied dyads do engage in higher levels of cooperation than the norm, the inclusion of these additional variables does not affect the primary relationships between regime type and cooperation. The coefficient for each of the dummy variables representing regime type characteristics is highly significant, and the differences among the coefficients are statistically significant as well.<sup>11</sup> Jointly democratic and jointly

<sup>11</sup>I performed a Wald test and found that the differences among the coefficients for the different regime type categories are statistically significant. Statistical significance is to be expected, however, with such a large number of cases. As a result, I also estimated each of my three models (model 1 discussed here and the two additional models discussed below) with the three regime type dummy variables included one at a time. This procedure allowed me to compare the coefficients of each of the dummies against the rest of the population. In all cases, I found that jointly democratic and jointly autocratic dyads are more cooperative than mixed dyads.

**Table 1. Regime Type and International Cooperation, 1953–1978**  
**Unit of Analysis: Dyad-Year**

Independent Variable	Model 1 Average Level of Cooperation	Model 2 Cooperation (1 = Yes; 0 = No)	Model 3 Average Level of Cooperation if Cooperation > 0
Jointly Democratic Dyad	3.108** (0.408)	0.606** (0.101)	2.847** (0.237)
Jointly Autocratic Dyad	3.062** (0.275)	0.410** (0.077)	1.335** (0.166)
Mixed Regime Type Dyad	2.180** (0.255)	0.311** (0.059)	0.563** (0.174)
Jointly Wealthy Dyad	0.890* (0.394)	0.225* (0.098)	0.616** (0.192)
Jointly Stable Dyad	0.728** (0.167)	0.187** (0.034)	0.271* (0.130)
Shared Alliance	4.553** (0.361)	0.542** (0.082)	1.541** (0.159)
Constant	3.523	-0.455	10.847
N	22,320	22,320	11,815

Note: Each cell contains the estimated coefficient with its associated standard error listed in parentheses below. \*\*indicates statistical significance at the .001 level. \*indicates statistical significance at the .05 level.

autocratic dyads are most cooperative, with mixed dyads exhibiting lower levels of cooperation. All of these types of dyads, however, exhibit higher mean levels of cooperation than do dyads containing states with undefined political characteristics. Dyads containing anocracies have a high probability of engaging in no cooperative interactions.<sup>12</sup>

In fact, the number of observations in this data set for which no cooperation is observed poses an additional challenge for analysis. The data are not

<sup>12</sup>65 percent of the politically relevant dyad-years involving at least one anocracy engage in no cooperative interactions. I also conducted analysis with dyads containing anocracies excluded from the analysis rather than used as the reference category. Mixed dyads showed a statistically significant and negative relationship with cooperation compared to the rest of the population. Both jointly democratic and jointly autocratic dyads showed a statistically significant and positive relationship with cooperation compared to the rest of the population, with the coefficient for jointly democratic dyads slightly larger than that for jointly autocratic dyads. This was true both when jointly democratic and jointly autocratic dyads were compared individually to the rest of the population and when they were included in the same equation with mixed dyads as the reference category.

normally distributed due to the high number of zero values. Interpreting the meaning of a zero value can be challenging. It is possible that a zero value represents the fact that states elected not to engage in potentially beneficial cooperation due to concerns regarding fulfillment, or it is possible that a zero value represents the fact that the states didn't have any reason to believe that cooperation could be beneficial; in other words, policy coordination was viewed as unnecessary. Because we can never observe unrealized possibilities, I make the assumption that states would expect benefits from successful policy coordination on some issue each year with states in their politically relevant environments, or at minimum, that anticipated benefits from policy coordination are uncorrelated with my primary independent variable, dyadic regime type. In order to ensure that a poor definition of relevant dyads is not skewing the results, however, and to account for the unusual statistical distribution of the dependent variable, I perform an additional two stage analysis.

First, I conduct a logistic regression analysis of the likelihood of cooperative interaction, continuing to account for panel data characteristics. For this portion of the analysis, the dependent variable is coded zero if the dyadic level of cooperation is zero and one if the average level of cooperation in the dyad for the given year is greater than zero. This model allows me to determine whether the independent variables affect the likelihood that the states will engage in any cooperative interactions.

The results of this analysis are reported in the second column of Table 1. Wealthy dyads, stable dyads, and allied dyads are all more likely to engage in cooperative interactions than the norm. Despite controls for these factors, however, regime type has a definite influence on the likelihood that a dyad will cooperate. Even without considering the varying intensity of the acts, jointly democratic dyads are most likely to interact cooperatively, followed by jointly autocratic dyads, with mixed regime type dyads demonstrating a lower propensity for cooperation. In fact, with the three control variables held constant at their modal values (a nonallied, nonwealthy, but jointly stable dyad), the probability of any cooperation is 58.4 percent for jointly democratic dyads, 53.5 percent for jointly autocratic dyads, 51 percent for mixed dyads, and 43.3 percent for dyads including at least one anocracy.

Next, I drop all of the cases for which there are no cooperative interactions and consider only the intensity of cooperation in the cooperating dyads. After dropping the cases in which cooperation is zero, the dependent variable is much more normally distributed. Because dropping cases changes the structure of the data so that it no longer has panel data characteristics, I perform ordinary least-squares regression, but I continue to use Huber-White standard errors to account for heteroskedasticity across cases. This model al-

lows me to assess the impact of the independent variables on the intensity of cooperation given the decision to cooperate.<sup>13</sup>

The results of this analysis are presented in the third column of Table 1. A similar pattern emerges. Once again, all of the control variables are positively related to the intensity of cooperation, but the influence of regime type continues to be evident. The level of intensity with which jointly democratic dyads cooperate is higher than that of jointly autocratic dyads, which in turn is higher than that of dyads composed of states with different regime types.

These three analyses together tell a convincing story about the impact of domestic institutional structures on dyadic levels of cooperation. Dyads composed of two democracies are comparatively likely both to cooperate and to engage in more intensely cooperative acts than are other types of dyads. Yet, dyads composed of two autocracies exhibit a greater propensity to cooperate and a greater intensity to their cooperative relationships than do dyads composed of one autocracy and one democracy. The data are entirely commensurate with the hypotheses drawn from the model. These variables account for a very small portion of the variance in dyadic levels of cooperation, but the intent of this test has not been to explain conditions encouraging cooperation fully. There are a number of factors that influence levels of cooperation that are not captured in this test. Rather, the intent of this analysis has been to demonstrate the relationship between one variable of interest, regime type, and levels of cooperation.

## 6. REGIME TYPE AND DYADIC COOPERATION

Domestic political institutions affect international behavior because they affect the costs and benefits that leaders expect from different foreign-policy actions. The systems of incentives and constraints that arise as a result of the rules of domestic politics influence the behavior of leaders. Not only do domestic politics influence the decisions of a state's chief executive in international affairs, but domestic politics also affect the expectations and decisions of other leaders interacting with the state in question (Smith, 1996; Leeds and Davis, 1997).

I have argued that two ways in which democracies and autocracies systematically differ are in the accountability of chief executives to their populations and the flexibility with which chief executives can adjust policy. Because democratic leaders operate in political systems in which they are held accountable for their actions and in which they are constrained from changing policy quickly, democratic leaders find failed foreign policies costly.

<sup>13</sup>The intensity of the cooperative relationship is not a measure of fulfillment. This two-step analysis is not designed to test the two stages of the game. Rather, I offer it to demonstrate that both the existence and the intensity of cooperation considered independently share the expected relationships with the independent variables.

Scholars have claimed that these features of democratic rule advantage leaders in making credible commitments in the international system, and thus that democracies find it easier to establish cooperation under anarchy.

I find that high levels of accountability and low levels of policy-making flexibility do encourage democratic leaders to fulfill their international commitments. By incorporating assumptions regarding the incentives faced by leaders operating in different institutional settings into a strategic representation of international interaction, however, I am able to refine previous claims. Examining the impact of variance in costs to breaking promises and to adjusting policy in the context of a game reveals that the characteristics of democracies that are expected to advantage them in establishing cooperation under anarchy have mixed effects. The same characteristics that make democratic leaders likely to uphold commitments also make democratic leaders demand secure agreements. While democracies are comparatively able to make their commitments credible in the international arena, they are also less willing to form agreements that may not be upheld.

By more completely exploring the relationship between accountability, flexibility, and the decision to form agreements without external enforcement, I am able to derive hypotheses relating regime type to international cooperation. Because the formation of cooperative agreements requires accession by both parties, cooperation depends on the ability of two states to assuage their partners' fears of opportunism. Levels of cooperation are influenced both by the abilities of states to make credible commitments and by their willingness to accept the possibility that the agreement will fail. By considering strategic interaction among various dyadic combinations, I find that all else being equal, democracies are likely to cooperate with democracies, but will be less likely to form agreements with autocracies than other autocratic states will be. Levels of cooperation among states with similar domestic structures should be higher than levels of cooperation among states with different institutional designs.

It has long been argued that levels of cooperation in the international system vary inter-temporally or across issue areas based on variation in the international environment, for instance depending on power distributions or the existence of international institutions (e.g., Keohane, 1984; Axelrod and Keohane, 1986). The logic and evidence of this research suggest that cooperation varies dyadically as well. All states and all dyads do not find the lack of external enforcement of international agreements equally problematic; the structures of the domestic policy-making processes of states affect their abilities and willingness to cooperate internationally. Yet, without considering the impact of domestic institutions in the context of strategic behavior in the international system, the story remains incomplete. Decisions to cooper-

ate are dependent not only on one's own preferences, but on one's expectations regarding the behavior of others.

International cooperation theory will benefit from integration of variables from different levels of analysis. Scholars should consider jointly the domestic political constraints and imperatives that influence the choices of state leaders, the strategic behavior leaders engage in while negotiating and acting internationally, and the international environment in which they negotiate and act. Together these factors will tell us more about international cooperation than any of them could independently.

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## MATHEMATICAL APPENDIX

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An agreement is formed in the game when  $U_i(\text{agreement}) > 0$  and  $U_j(\text{agreement}) > 0 - H_j$ . The following parameter restrictions are assumed:  $R_i, R_j, H_i, H_j, S_i, S_j, K_i, K_j \geq 0$ .

T is measured in relation to R. If T is positive, there is a benefit to unilateral defection. If T is zero or negative, there is no benefit or a cost to unilateral defection. As a result, the payoff for unilateral defection begins with the parameters (R + T).

Utility for an agreement is determined by the solution to the fulfillment subgame.

### SOLUTION TO THE FULFILLMENT SUBGAME

Both players cooperate when:

$$K_i > T_i \text{ and } K_i > S_i \text{ and } K_j > T_j$$

OR

$$K_i > T_i \text{ and } K_j > S_j \text{ and } K_j > T_j$$

Both players defect when:

$$T_i > K_i \text{ and } S_i > K_i \text{ and } S_j > K_j$$

OR

$$S_i > K_i \text{ and } T_j > K_j \text{ and } S_j > K_j$$

The solution to the fulfillment subgame is DC when  $T_j > K_j$  and  $S_i > K_i$  and  $K_j > S_j$ .

The solution to the fulfillment subgame is CD when  $K_i > T_i$  and  $K_i > S_i$  and  $T_j > K_j$ .

Under some conditions, there is either no equilibrium in pure strategies [when ( $S_i > K_i > T_i$  and  $T_j > K_j > S_j$ ) or ( $T_i > K_i > S_i$  and  $S_j > K_j > T_j$ )] or there are multiple Nash equilibria in pure strategies [when ( $S_i > K_i > T_i$  and  $S_j > K_j > T_j$ ) or ( $T_i > K_i > S_i$  and  $T_j > K_j > S_j$ )]. Under these conditions, players cannot calculate their utilities from the fulfillment subgame with certainty. In a single shot game with simultaneous play, there may

be no basis upon which the players can form a common conjecture around a pure strategy equilibrium when multiple equilibria exist. As a result, when no single pure strategy equilibrium exists, I assume that players calculate their expected utility for the fulfillment subgame under a mixed strategy equilibrium in order to determine their utility for an agreement. Other assumptions regarding behavior under these conditions are also possible, but given my assumption, the following holds:

Player  $i$  plays cooperate with a probability  $p$  such that:

$$p = \frac{K_j - S_j}{T_j - S_j}$$

Player  $j$  plays cooperate with a probability  $q$  such that:

$$q = \frac{K_i - S_i}{T_i - S_i}$$

Thus, player  $i$ 's expected utility for the mixed strategy equilibrium (symmetrical for  $j$ ) is:

$$\frac{(S_i - K_i)(R_i + T_i)}{(S_i - T_i)} - H_i - K_i$$

### EQUILIBRIA FOR THE FULL MODEL

Given the assumed parameter restrictions, agreements will only be formed when the expected outcome to the fulfillment subgame is CC or the mixed strategy equilibrium. Outcomes of DD, CD, or DC are always more costly for at least one player than the status quo. An agreement will be formed when the expected outcome to the fulfillment subgame is CC and  $R_i > H_i$  and  $R_j > 0$ .

An agreement will be formed when the outcome to the fulfillment subgame is uncertain and players calculate their expected utility for the mixed strategy equilibrium if:

$$R_i > \frac{S_i(K_i - T_i) - H_i(S_i - T_i)}{S_i - K_i} \text{ and } R_j > \frac{S_j(K_j - T_j)}{S_j - K_j}$$

### COMPARATIVE STATICS FOR DEMOCRACIES AND AUTOCRACIES

All else being equal, assume that democracies have high values of  $K$  and  $S$ , but that domestic politics has a larger proportional impact on  $K$ . Similarly, all else being equal, autocracies have low values of  $K$  and  $S$ . Formation of an agreement is a possible equilibrium when the outcome to the fulfillment subgame is CC. This will be true when  $K > S$  and  $K > T$  for one player and  $K > T$  for the other player. As  $K$  increases, the conditions specified by these inequalities are more likely to be met.

Formation of an agreement is also an equilibrium when the outcome of the fulfillment subgame is the equilibrium in mixed strategies and the following inequalities are met:

$$R_i > \frac{S_i(K_i - T_i)}{S_i - K_i} - \frac{H_i(S_i - T_i)}{S_i - K_i} \quad \text{and} \quad R_j > \frac{S_j(K_j - T_j)}{S_j - K_j}$$

As  $K$  and  $S$  increase holding all else constant, the conditions specified by these inequalities become harder to meet. For  $j$ , when  $S > K > T$ , and  $K$  and  $S$  increase, although  $K$  increases more proportionally, the denominator of the right side of the equation is a smaller positive number, and the numerator contains two terms that both increase. Thus, under the conditions that we assume are characteristic of democracies, the expected utility for the mixed strategy equilibrium is less likely to be positive. Conversely, under the conditions assumed to be characteristic of autocracies, the expected utility for the mixed strategy equilibrium is more likely to be positive. When  $T > K > S$ , the effects of increasing  $K$  and  $S$  are slightly more ambiguous. The denominator of the right side of the equation becomes a negative number with a slightly larger absolute value as the distance between  $K$  and  $S$  increases. The first term in the numerator,  $S$ , increases. The second term in the numerator becomes a negative number with a smaller absolute value as  $K$  approaches  $T$ . Thus, for conditions in which values of  $S$  are relatively large for all states and  $T$  is not dramatically larger, democracies will be less likely to expect positive utility from the mixed strategy equilibrium, and autocracies will be more likely to expect positive utility. Only in cases in which  $T > K > S$ ,  $T$  is very large, and  $S$  is small, will democracies be as likely or more likely to expect positive expected utility from the mixed strategy equilibrium than autocracies. For player  $i$ , similar conclusions can be drawn, although there is an additional term in the numerator of the right hand side of the equation that includes the costs of negotiation.

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