

# Using Game Theory to Link Domestic and International Politics

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**H**ow do the links between domestic politics and the international system affect the way that states interact in the global arena? Scholars are giving this question greater attention today than they have in the past. One reason is that many see the end of the cold war as having made domestic politics more important in foreign policy matters. Similarly, the increasing importance of economic affairs in international relations has made domestic interest groups and coalitions more salient.

Theoretical developments in the field of international relations also point toward a greater need to study the links between domestic politics and foreign affairs. For several decades, many in the field organized their arguments around particular “levels of analysis” or made claims about the primacy of one level over another (Singer 1961; Waltz [1954] 1959, 1979). Although the distinction has helped scholars make significant contributions to our understanding of international politics, many now feel a theoretical synthesis of variables from the international system and domestic politics is necessary.

Some scholars who argue for a move past the levels-of-analysis distinction take issue with the positivist epistemology underlying most work in international relations. In particular, constructivists argue that looking at how states and systems mutually constitute each other can increase our understanding of world politics (Ashley 1984; Cox 1981; Wendt 1992). Others maintain that a positivist synthesis is possible, under the rubric of “two-level games” or a similar metaphor (Evans, Jacobson, and Putnam 1993; Mastanduno, Lake, and Ikenberry 1989; Putnam 1988). The contributors to this special issue agree with the latter position; we need not toss out the positivist baby with the levels-of-analysis bathwater.

This issue explores the role that game theory can play in transcending the levels-of-analysis distinction and debate. The contributors show that game-theoretic tools can help scholars think rigorously about the simultaneous or interactive effects of

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domestic- and international-level variables on state behavior. By using game theory to formalize a series of problems, the contributors move past levels-of-analysis distinctions and toward theories that link domestic- and international-level determinants of states' foreign policy behavior. Moreover, by constructing explicit models of particular substantive puzzles, several contributors help us move beyond the use of game theory as merely a metaphor or analogy,<sup>1</sup> providing insightful new explanations for important empirical puzzles that existing theories cannot explain.

### **RIGOROUS FLEXIBILITY AND DOMESTIC-INTERNATIONAL LINKAGES**

Game theory is well suited for this agenda because it provides scholars with what we refer to as *rigorous flexibility*. Its central concepts (e.g., utility, choice, strategy, structure, information, and signals) and mathematical logic provide the rigor, but scholars have substantial flexibility in applying the method to specific problems. Game theory does not require scholars to make any particular assumptions about who the important actors are, what issues dominate policy agendas, or what interests actors have. This is an asset for studying domestic-international linkages because the nature of these links varies across issues and from one country to another. Thus we see the authors in this special issue make a variety of assumptions about the nature of domestic politics, international interactions, and the link between the two levels, depending on the most salient features of the substantive problem they are examining. Game theory's rigorous flexibility lets the contributors be flexible in their modeling choices, even as they exploit the theoretical rigor of the formal method.

The contributors model domestic politics in one of two ways. In the first approach, domestic politics affects the utility that governments receive from their international strategies. For instance, Fearon and Papayoanou examine how domestic politics influence leaders' preferences or the audience costs they would incur in backing down from threats. These changes influence, in turn, the strategies they pursue.

In the other approach, contributors model a game between governments and domestic actors. Bueno de Mesquita and Siverson provide a domestic coalition with an option to remove a leader who pursues a policy at variance with its interests. For Lohmann, the government and its society may cooperate with each other while the government decides whether to cooperate with foreigners. These links to domestic actors may inhibit governments from defecting on previous bargains with other governments. Milner and Rosendorff and Pahre examine the domestic ratification of international agreements, as in the two-level games literature (Putnam 1988). In these games, a government must strike a bargain internationally that can meet the approval of its legislature.

The contributors also differ in what aspect of international interactions they study. Some model the negotiations leading up to international cooperation and conflict

1. For a critique of such uses of game theory, see Snidal (1986, 29-32); for a defense of certain metaphorical uses of mathematical models, see Pahre (1996).

(Milner and Rosendorff, Pahre, Fearon, Papayouanou). They examine whether domestic politics gives one side bargaining leverage or whether and how a government, given (at least in part) certain domestic-level considerations, can establish the credibility of a bargaining position. Others focus on the enforcement of agreements (Morrow, Lohmann) and consider how repeated play, issue linkage, or domestic-international linkage makes it more or less likely that threats to punish will deter actors from cheating.

Finally, the contributors make varying assumptions about information in modeling international interactions. Where bargaining credibility is a problem, models assume incomplete information, with one or more actors uncertain about another's type (Fearon, Papayouanou). Other problems, such as institutional design (Pahre), regime choice (Bueno de Mesquita and Siverson), or linkage (Lohmann), are amenable to analysis with complete information. One also can examine the same model with both complete and incomplete information to isolate the effects of information (Milner and Rosendorff, Fearon).

Although these assumptions vary across the models, game theory's rigor makes these differences transparent. Moreover, changing one or two important assumptions across otherwise similar models is like changing assumptions within a single model, so we can do comparative statics across a body of work. This lets us isolate the effects of particular domestic or international factors on states' strategies. After summarizing the models in this special issue, we briefly engage in such an exercise, discussing how some of the assumptions that the authors make lead them to similar or different conclusions.

## THE MODELS

In the first article, Morrow establishes the need for models that link domestic and international politics. He does so by providing a powerful critique of a leading systemic theory in international political economy today: the relative gains argument. This thesis, elucidated by Gowa and others, examines how security externalities may inhibit trade because of states' concerns with relative gains (Gowa 1989, 1994; Gowa and Mansfield 1993; Grieco 1988). With a model of military allocations and trade, Morrow demonstrates that the theory is inadequate. A concern for relative gains should not block trade even between rivals because the gains from most trade cannot be turned into a military advantage quickly. Hence relative gains concerns do not explain protection in the international system. To understand trade patterns, he argues, requires models that link domestic and international politics.

Lohmann's article does precisely that in analyzing the effects of domestic-international linkages in repeated games. She extends research examining issue and player linkage in repeated prisoners' dilemmas (e.g., McGinnis 1986; Tollison and Willett 1979) to develop the notion of domestic-international linkage, which connects trigger strategy punishments across games played over different issues by different sets of players. As a result, she finds that domestic-international linkage facilitates cooperation when it allows for a "credibility surplus" at one level to spill over to offset the "credibility

deficit” on the other level. Lohmann’s model also allows her to specify the conditions under which governments are better off delinking domestic and international issues.

Whereas Morrow and Lohmann are concerned with enforcement problems, the next four articles address bargaining issues. Two articles on security affairs (Fearon, Papayoanou) examine whether and how governments can make credible commitments and how this affects bargaining strategies. Two on trade policy (Milner and Rosendorff, Pahre) examine how the need for domestic ratification may give one actor bargaining leverage.

Fearon and Papayoanou use games of incomplete information in which actors have private information and the potential to signal others. When there is uncertainty, domestic-level factors carry informational content on the international level that influences the beliefs state leaders have about one another. This affects credibility and, in turn, bargaining strategies.

Fearon distinguishes between two ways that state leaders might signal their foreign policy interests: tying hands and sinking costs. Leaders tie hands by creating audience costs that they will suffer if they do not follow through on their commitment. When sinking costs, leaders take actions that are financially costly, such as mobilizing troops. Fearon’s model shows that state leaders never bluff with either type of signal and that leaders do better on average by tying hands, despite the fact that the ability to do so creates a greater *ex ante* risk of war than the use of sunk-cost signals.

In his intra-alliance bargaining model, Papayoanou specifies the conditions under which a government will risk alliance discord by bargaining hard with an ally as opposed to when a government will pursue compromise with an ally. If a government sees alliance discord as the worst possible outcome, it may either pursue compromise or take a tough approach that risks alliance discord. Its choice depends on three other factors highlighted by the model: the difference between the value it assigns to collaboration on its preferred policy and collaboration on a compromise policy, how bad it sees an alliance discord outcome to be, and its beliefs about an ally’s preferences. The smaller the difference between the two policies of collaboration, the worse an alliance discord outcome; the higher the beliefs that an ally has “go-it-alone” preferences, the more likely these governments are to pursue compromise strategies, and vice versa. In applying the model, Papayoanou shows how these payoffs and beliefs depend on domestic political processes, and, like Fearon, he considers how domestic audience costs can influence governments’ bargaining strategies.

In contrast to Fearon’s and Papayoanou’s models, Milner and Rosendorff and Pahre use a two-level game framework. This lets them better examine the effects of domestic political processes, at the cost of giving less attention to international bargaining processes.

Milner and Rosendorff examine how executives may negotiate trade agreements without knowing the composition of the legislature that will ultimately have to ratify them. Without uncertainty, the legislature always ratifies agreements; the executive always anticipates correctly what agreements the legislature will accept and negotiates internationally with this in mind. Under complete information, protection in a trade agreement increases monotonically with the level of divided government. Milner and Rosendorff also demonstrate that Schelling’s (1960) conjecture that an international

negotiator can point to a hawkish legislature to extract greater concessions from the foreign country holds only when the legislature is not too hawkish. With electoral uncertainty, ratification failures are more likely as divisions in government grow, and agreements become more protectionist as divisions in government rise. Finally, in a challenge to Schelling's conjecture, an executive's ability to extract concessions internationally declines with uncertainty.

Like Milner and Rosendorff, Pahre examines the ratification of international agreements. He argues that the institutions requiring ratification are often not exogenous; legislatures and executives frequently choose whether to use ratification rules. These domestic actors will agree to ratification rules when these rules give the executive bargaining leverage over foreigners, which will be true only when there are some differences in executive-legislative preferences. The nature of the political system also affects ratification institutions. In a parliamentary system in which political parties form governing coalitions and choose institutions, endogenous ratification rules will never allow the parliament to amend international agreements but only to vote yea or nay on them.

Finally, Bueno de Mesquita and Siverson's model examines whether the leader of a victorious power chooses to remove the leader of a defeated power and whether this choice meets the approval of its public, which can choose whether to keep its leader. Domestic institutional differences drive such decisions. They go beyond the typical democratic-nondemocratic distinction, however, distinguishing institutions by variation in the sizes of selectorates and winning coalitions. Their model suggests that single-party dictators are unlikely to overthrow their defeated foreign rivals, leaders of democracies are likely to be nasty to their defeated foes, and hereditary monarchs will be somewhere between nasty and nice. Meanwhile, the ability of a leader to survive removal by domestic constituents is contingent on the strength of the opposition, the size of the politically enfranchised population, and the size of the winning coalition. As a result, these authors conclude that in "majoritarian" systems with a strong opposition, leaders are more likely to survive domestic removal attempts when the franchise is limited than when it is universal.

### **VARYING ASSUMPTIONS AND RESULTS: RIGOROUS FLEXIBILITY AT WORK**

Although the contributions deal with a diverse set of substantive and theoretical issues by using a variety of models and assumptions, there are substantial areas in which the contributions overlap. Because game theory's rigor makes it relatively easy to compare formal models with one another, we can do comparative statics across the models to draw out implications that go beyond those found in the individual articles. This enables us to see whether results are robust or contingent and, if the latter, contingent on what. If a group of models yields similar results despite making very different assumptions, we can have substantial confidence in the robustness of the results in much the same way that empirical findings may be robust across many different specifications of a statistical model. If a group of models has different assumptions

and produces different results, then the models suggest the conditions under which particular results hold. Thinking in these ways about the assumptions and results of the models in this issue leads to several generalizations.

One generalization emerging from the very different models in this issue is that making domestic politics more salient is more likely to hurt the prospects for international cooperation under incomplete information than when there is complete information. Milner and Rosendorff find that increasing domestic differences in preferences produce higher tariffs and less liberal trade agreements under incomplete information, and Papayoanou shows that larger domestic audience costs make unilateralism more likely. These results are quite different from Lohmann's complete information result, where increasing the role of domestic politics sometimes makes cooperation easier by introducing an additional form of linkage. At least in the models here, then, we find that domestic politics is more likely to hurt the prospects for cooperation when there is incomplete information.

Interestingly, various models in this issue agree that governments cannot rationally bluff in international bargaining situations because of domestic politics. In the Fearon and Papayoanou models, domestic audience costs lock governments into coming through on threats. Pahre and Milner and Rosendorff find that governments cannot successfully claim that their hands are tied by a legislature when they are not, whether under complete or incomplete information. These results are largely consistent with the empirical record, as Fearon points out in his contribution, although there are some exceptions.

A final comparative statics result that follows from this issue concerns Schelling's (1960) conjecture that a government may, by tying its hands domestically, gain bargaining leverage abroad. The contributors find that this conjecture is only contingently true. Milner and Rosendorff find that Schelling's conjecture holds under complete information only if legislative preferences are not "too hawkish," and that it is less likely to hold with incomplete information. Pahre finds that an attempt to tie hands to gain bargaining leverage will be made in a parliamentary system only if there is a minority government, whether or not executive-legislative preferences are similar. The highly contingent nature of the Schelling conjecture is particularly striking because Milner and Rosendorff's and Pahre's models are similar in many other ways.

Such examples demonstrate the value of game theory's rigorous flexibility for studying domestic-international linkages. With game theory, scholars can and do make diverse assumptions, but the rigor of the method makes such differences transparent. This allows us to do comparative statics across a body of work and, in turn, generalize in ways that individual models and articles cannot about the domestic and international conditions necessary for the behavior we see in the global arena.

## CONCLUSION

This special issue focuses on how the interaction between domestic and international politics affects states' strategies in the global arena. Although many nonformal

scholars also have begun work on this issue, the contributors here show how game theory can enrich our understanding of the connections between domestic and international variables in world politics.

There is, however, tension between the contributors' unity of method and disunity of model. Although there are similar features across each pair of models, the set of models here does not add up to a theory of domestic-international linkages. Instead, we find that some conclusions are robust across several different models, whereas other results are sensitive to the particular assumptions made about the nature of domestic politics or of international interactions. In short, the contributors develop midlevel theories that provide fruitful implications for understanding the effects of domestic-international linkages.

The articles also lead us to an understanding of some important empirical puzzles that prevailing theories cannot explain. In so doing, the contributors show that game theory has something substantively useful to say about issues of concern to scholars who are not game theorists. Hence this special issue addresses many criticisms of the empirical limitations of rational choice theory (e.g., Green and Shapiro 1994) and shows how game theory can develop midlevel theories applicable to real political problems, thus developing a positivist agenda for the study of international politics.

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