Do Democratic Institutions Constrain or Inform? Contrasting Two Institutional Perspectives on Democracy and War

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How do domestic political institutions affect the way states interact in international crises? In the last decade we have witnessed an explosion of interest in this question, thanks largely to the well-known claim that democratic states do not fight wars with one another. Work on the "democratic peace" has generated a number of theoretical arguments about how practices, values, and institutions associated with democracy might generate distinctive outcomes.[1] Although the level of interest in this topic has focused much-needed attention on the interaction between domestic and international politics, the proliferation of competing explanations for a single observation is not entirely desirable. Progress in this area requires that researchers devise tests not only to support different causal stories but also to discriminate between them.

In this article I construct an empirical test that can help discriminate between two sets of arguments that have emerged in this literature. The first set of arguments is generally referred to as the "institutional constraints" approach. Scholars in this tradition have argued that institutions promoting accountability and competition tend to increase the political risks associated with waging war.[2] The second set of arguments shares this institutional perspective but focuses, not on the constraining role of democracy, but on its informational properties. Scholars in this tradition have argued that democratic institutions help reveal information about the government's political incentives in a crisis by increasing the transparency of the political process and/or by improving a government's ability to send credible signals.[3] According to this logic, democracy facilitates peaceful conflict resolution by overcoming informational asymmetries that can cause bargaining to break down.

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1. For a recent review of this enormous literature, see Chan 1997.
2. See, for example, Bueno de Mesquita and Lalman 1992; Lake 1992; Morgan and Campbell 1991; Rummel 1979; and Siverson 1995.
3. See, for example, Fearon 1994; Schultz 1998; and Siegel 1997.

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Given that both sets of arguments were inspired by, and claim to be consistent with, the democratic peace observation, we cannot distinguish between them by conducting yet another test of that proposition. Instead, it is necessary to construct critical tests—that is, tests in which the theories make unambiguously different predictions. In doing so, we can take advantage of the fact that, though both arguments arose to explain the absence of war between democracies, they are both fundamentally claims about the nature of democratic states, not democratic dyads. Hence, if they are valid, they should have testable implications beyond the democratic peace. By identifying additional implications on which the two approaches disagree, we can begin to say something about their relative merit.

I show that we can perform such a test by looking at how states respond when threatened militarily by democracies. Although most analyses of democracy and war focus on the frequency of crises or the frequency of wars, a simple formal model of crisis bargaining shows that neither of these dependent variables is useful for distinguishing between the institutional constraints and informational perspectives. The two sets of arguments make identical or ambiguous predictions on these dependent variables. Instead, the best way to determine how democratic institutions affect a state's behavior in a crisis is to examine the other side's reaction to being challenged. It is here that the two approaches make opposite predictions. The institutional constraints argument suggests that democratic leaders generally face higher political costs for waging war. As a result, when a state is challenged by a democracy, the target has reason to doubt that the challenge will actually be carried out. Targeted states should be more likely to resist when threatened by a democracy than when threatened by a state that is not similarly constrained. The informational perspective, on the other hand, suggests that democratic governments are better able to reveal their true preferences in a crisis. Relative to nondemocracies, they are less likely to engage in bluffing behavior, meaning that the threats they do make are more likely to be genuine. As a result, the target of a threat made by a democracy should be less inclined to resist or further escalate the crisis.

These competing hypotheses are operationalized and tested. Using data on militarized disputes from 1816 to 1980, I model the probability that a target state will reciprocate militarily when confronted by a challenge. The results show that the likelihood of reciprocation is lower when the initiating state is a democracy than when it is not, a result that is consistent with the predictions of the informational perspective. Moreover, this effect is substantively significant: A regime shift in the initiating state from nondemocracy to democracy has an equivalent effect on the probability of reciprocation as a shift in power status from a minor to a major power. Although these results cannot conclusively prove or disprove either set of arguments, they should lead us to increase our confidence in the informational perspective and decrease our confidence in the institutional constraints perspective.

The article is organized as follows. In the first section I review the two perspectives on democracy and discuss the methodological challenge of discriminating between them. I then present and solve a formal model of crisis bargaining. The model is based on standard deterrence and crisis-bargaining games offered elsewhere, but it

serves as a framework from which empirical predictions can be derived.[4] In particular, we can use comparative statics to determine the relationship between parameters in the model and observable outcomes such as the probability of a crisis, the probability that a state will resist if threatened, and the probability of war. In the third section I show how the institutional constraints and informational perspectives can be captured in the model. I consider the specific empirical predictions that follow from the two sets of arguments and show that they make opposite predictions about how the regime type of a challenging state affects the probability of resistance by the target. The empirical test is performed in the fourth section. In the fifth section I discuss the possibility that the results are accounted for by an alternative interpretation suggesting that democratic states simply seek out targets that are unlikely to reciprocate. This alternative is useful to consider, since it raises the concern that the results are tainted by selection bias. I explore a partial test for selection effects and tentatively rule them out.

I conclude with some comments about testing theories on democracy and war. One major conclusion is that greater attention should be paid to what can and cannot be learned from tests on a given dependent variable. Although the research program on democratic distinctiveness has been unified by its interest in whether democracy (either singly or jointly) reduces the likelihood of war, empirical tests in this tradition have been conducted using a variety of dependent variables, including the probability of war, the probability of a crisis, and the probability that a crisis escalates to war. We need more explicit recognition not only that these variables measure different phenomena but also that there is value in moving beyond them to consider other observable outcomes. An almost exclusive emphasis on the likelihood of war, for example, has led to the conclusion that there are no, or weak, unit-level effects associated with democracy, since democracies do not appear to be significantly less war-prone than other states.[5] The theoretical and empirical results presented here, however, show that it is possible for a country's regime type to have no clear effect on its probability of engaging in war and still have substantial influence on other observable outcomes, such as the probability of resistance by the target.

Two Institutional Theories

The institutional constraints approach derives from Immanuel Kant's observation that, when leaders face no personal costs from international conflict, waging war is "the easiest thing in the world to do."[6] Kant felt that republican polities would be

4. See, for example, Fearon 1992, 1994, and 1997; Morrow 1989; Powell 1990; Bueno de Mesquita and Lalman 1992; and Bueno de Mesquita, Morrow, and Zorick 1997.

5. The question of whether democratic states are less war-prone in general has been a matter of intense debate and contradictory findings. The conventional wisdom tends to support the idea that democracies are not less war-prone overall. See, for example, Maoz and Abdolali 1989; Ray 1995, chap. 1; Rousseau et al. 1996; and Chan 1997, 63. There are, however, dissenters from this conventional wisdom. See, for example, Rummel 1983; and Benoit 1996.

6. Kant [1795] 1983, 113.

more cautious about using force since representative political institutions mean that the People, who do face personal costs from war, have some say over state policy and the choice of political leaders. In this sense, institutions of accountability ensure that, even if state leaders do not suffer personally from war, they can suffer politically—through the loss of office.

Recent contributions to the institutional constraints argument have amplified this basic logic. Bruce Bueno de Mesquita and David Lalman argue that democratic institutions facilitate the mobilization of opposition, making it easier for challengers to unseat a government that undertakes costly or failed policies.[7] War is thus an especially risky prospect for democratic leaders, who may find themselves in early retirement if things go badly; nondemocratic leaders, in contrast, are better insulated from such risks. T. Clifton Morgan and Sally H. Campbell add that democratic institutions help to diffuse decision-making authority, making it easier for those with dovish preferences to veto a resort to force.[8] These arguments suggest that those who control the sword in democratic polities tend to have lower expected value from going to war, and a greater incentive to avoid violent conflict, than their nondemocratic counterparts.

The informational perspective on democracy is of more recent origin and grew out of several key insights in the literature on crisis bargaining.[9] When states bargain in a crisis, the costs of war generally ensure that there exists some range of settlements that all sides prefer to war. When states have complete information about the political and military factors that determine each side's expected value for war, it is relatively easy to identify those settlements ex ante and thereby defuse disputes before they escalate. However, when information of this sort is distributed asymmetrically—meaning that at least one state has information that the other cannot observe—identifying and agreeing on a mutually beneficial bargain can be problematic. Moreover, the fact that states have conflicting interests over the distribution of gains means that they have incentives to misrepresent their private information in hopes of getting a more favorable settlement. Thus, informational asymmetries are compounded by a strategic environment that encourages concealment, deception, and bluff. Unless reliable mechanisms exist for credibly revealing private information, bargaining can fail to reach an efficient, peaceful solution.

Several recent works have attempted to bridge this insight with the literature on democracy and war. James Fearon argues that institutions of accountability facilitate information revelation by improving a government's ability to send credible signals of its resolve.[10] According to this argument, state leaders incur "audience costs" if they make threats that they later fail to carry out. The magnitude of these costs helps determine how credible a threat to use force is. When a threat generates large audience costs, there is a strong possibility that the government intends to—indeed, has

7. Bueno de Mesquita and Lalman 1992.
8. Morgan and Campbell 1991.
9. See, for example, Fearon 1992, 1994, and 1995; Powell 1990; Morrow 1989; and Bueno de Mesquita, Morrow, and Zorick 1997.
10. Fearon 1994.

to—carry through on that threat. When a threat generates small audience costs, the government has more leeway to engage in bluffing behavior—that is, to make empty threats from which it can readily back away if necessary. This argument suggests a role for political institutions, because the magnitude of these costs should depend on how easily domestic audiences can sanction their leaders. Since electoral institutions provide a low-cost mechanism for this purpose, Fearon hypothesized that democratic governments could generate higher audience costs and hence send more credible signals of resolve.[11]

Elsewhere, I built on this logic to argue that open political competition of the kind generally associated with democratic polities can further enhance a government's ability to signal its preferences.[12] In this argument, democracy promotes the emergence of multiple information sources by permitting opposition parties to compete openly for the support of the electorate. Since the government is not the lone voice of the state, it faces constraints on its ability to conceal or misrepresent its preferences for war and peace. A government that faces weak domestic support for war cannot easily hide this fact if there are domestic competitors who have an incentive to give voice to that opposition. Bluffing and other deceptive practices are consequently harder to carry out and less likely to be effective. On the other hand, a government that enjoys strong support for war may be better able to signal that fact if there are opposition parties that can, in effect, confirm the government's resolve. Thus, institutionalized competition constrains a government to be more selective about resorting to threats, while at the same time improving the effectiveness of the threats it does make.

Finally, Eric Siegel argues that media freedoms, which often accompany democracy, increase the transparency of a state, making it easier for foreign decision mak-

11. Although the audience costs story has intuitive and empirical plausibility, its microfoundations are not fully developed. In particular, it is reasonable to ask why voters would punish their leaders for getting caught in a bluff, if bluffing is sometimes an optimal strategy. After all, anyone who has ever played poker understands that bluffing is not always undesirable behavior. One, somewhat unsatisfying, answer is that the state is generally better off if its citizens can commit to punishing the leader for backing down. As we will see, and as Fearon showed, higher audience costs increase the chances that a state will prevail in a crisis. Nevertheless, this answer still begs the question of why such a commitment is incentive compatible—that is, why voters would actually impose the costs when the time came to do so. Fearon assumes that voters value the "national honor" and are therefore motivated to punish those who sully the national honor by making public commitments and then failing to carry through on them. Making a threat and then backing down would be seen by voters—and exploited by challengers—as a foreign policy failure. This story is consistent with a reading of many historical cases, but it is not clear that this behavior is fully rational. Alastair Smith generates an audience cost effect in a model with rational voters, who infer their leader's foreign policy competence from actions and statements made during a crisis. In his model, voters infer that leaders have very low competence if they make commitments to intervene and then fail to do so. This assumption is reasonable given that the leader's payoff from intervention depends on the leader's competence, so those who choose not to intervene must have low competence. However, it is not entirely clear why voters would ascribe lower competence to those who make a threat and then fail to intervene than to those who refrain from making the threat in the first place. Clearly, additional work remains to be done on why and under what conditions rational voters would impose audience costs. See Fearon 1994; and Smith 1998a,b.

12. Schultz 1998.

ers to obtain information about the government's preferences and constraints.[13] In this view, laws and institutions that take the control of information out of a government's hands greatly reduce the opportunities for concealment or deception. A free press can inform outside observers about a state's military capabilities, its policy preferences, and the extent of domestic opposition, if any. When such data are readily available, a condition of incomplete information, with all its inherent dangers, may never arise.

Although both sets of arguments were inspired by the democratic peace observation, researchers have sought out additional hypotheses to test their validity. Randolph M. Siverson, for example, shows that democracies tend to incur fewer battle deaths in war than do nondemocracies, suggesting that democratic leaders choose lower cost wars in order to minimize their political risks.[14] Joe Eyerman and Robert A. Hart show that crises involving democratic dyads go through fewer stages of escalation than do crises involving other kinds of dyads, an observation that they claim is consistent with the audience costs argument.[15]

These tests are useful in probing the plausibility of various hypotheses, but they are not able to discriminate between theories. My goal is to identify and test hypotheses that can help in this respect. Are democracies different because they have systematically different preferences—in particular, a lower than average expected utility from war? Or are democracies different because they are better able to reveal their true preferences, whatever those may be? There is, of course, a third alternative suggested by realist theory: if international outcomes are not affected by domestic political institutions, then democracies should not be distinctive in any fundamental way.[16]

Identifying hypotheses that allow us to differentiate between these alternatives is not a trivial exercise. Although it is relatively easy to determine whether democracy influences observed outcomes, it is much harder to sort out different arguments for why democracy might have that effect. A major reason for this difficulty is that most of the contending approaches rely on identical or highly correlated independent variables. For example, both a Kantian argument about accountability and Fearon's argument about audience costs point to the importance of electoral institutions.[17] If we find that states with the requisite institutions are less likely to engage in wars, we can conclude that such institutions matter, but we cannot discriminate between the two causal stories for why they matter.[18] Likewise, differentiating between an argument

13. Siegel 1997.
14. Siverson 1995.
15. See Eyerman and Hart 1996; and Fearon 1994.
16. See, for example, Gowa 1995.
17. Fearon 1994.
18. Eyerman and Hart's test runs into a similar issue. Their finding that crises between democratic states tend to go through fewer rounds of escalation than do crises between other kinds of states is consistent with the proposition that democracies are more effective signalers. However, as they note, this observation is also consistent with a normative/cultural argument, according to which democratic states consider threats and escalatory behavior as illegitimate in their relations with one another. Eyerman and Hart 1996, 602–603.

about electoral institutions and an argument about press freedoms is complicated by the fact that the two phenomena tend to go hand in hand: Most countries have either both or neither.[19] Empirical models that seek to measure both effects simultaneously are likely to be plagued by high levels of multicollinearity, which can make inference difficult. The results become heavily dependent on a small number of unusual observations. Moreover, even if one can distinguish independent effects of press freedom from other aspects of democracy, the causal story underlying this correlation is ambiguous. While Siegel sees open media as informing decision makers in foreign states, others argue that a free press is an essential source of accountability and one of the mechanisms through which democratic institutions constrain leaders.[20]

When theories rely on identical or highly correlated independent variables, the most effective way to distinguish between them is to identify dependent variables for which the theories make opposite predictions. If two arguments both predict a negative correlation between democracy and outcome A, then we get little leverage from using A as the dependent variable. If, on the other hand, one theory predicts a positive correlation between democracy and outcome B and the other predicts a negative correlation, then tests using B as the dependent variable can be decisive. The first step in constructing a critical test, then, is to find a dependent variable that can serve this purpose.

A Formal Model of Crisis Bargaining

To this end, we construct a simple formal model of crisis bargaining. Assume that two states, labeled S_1 and S_2, have a dispute over the possession of some good. The exact nature of the good is unimportant, and it can be thought of as anything states value, such as territory, wealth, or a policy. Without loss of generality, we set the value of the good at 1 and assume that, in the status quo, it belongs to S_2.

Sequence of moves. The extensive form of the game is depicted in Figure 1. The interaction begins with the decision by S_1 either to challenge S_2 for the good (*CH*) or to accept the status quo (*SQ*). We assume that the challenge is accompanied by an explicit threat to use force if the demands are not met. In the event of a challenge, S_2 chooses either to concede the good to S_1 (*CD*) or to resist the challenge (*RS*). If the former, the game ends peacefully with the good in S_1's possession. If the latter, S_1 can either back down from its challenge (*BD*) or stand firm (*SF*). In the event that S_1 stands firm, the states fight a war.

Payoffs. In the event of a peaceful outcome—that is, the status quo, S_2 concedes, or S_1 backs down—the state that gets the good receives a payoff of 1, and the other

19. Van Belle and Oneal compare an indicator of press freedom that they developed to a standard indicator of democracy. They find that the indicators overlap in 86 percent of the country-years in their sample (1950–92). Thus, in only 14 percent of country-years was the country democratic but without a free press or nondemocratic and with a free press. Van Belle and Oneal 1998.

20. See Siegel 1997; Owen 1997, 46; Van Belle 1997; and Van Belle and Oneal 1998.

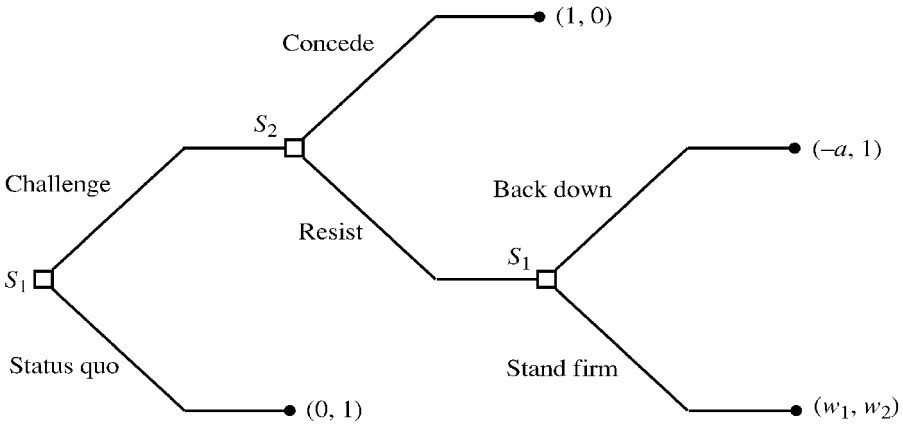

FIGURE 1. *Crisis bargaining model*

state receives a payoff of zero. Following Fearon, we also assume that S_1 incurs audience costs of magnitude a in the event that it makes a challenge and then backs down.[21] If the states fight a war, their payoffs are given by their expected values for war, which we will denote by w_1 and w_2, respectively. These expectations capture the probabilities that states assign to the possible outcomes of war and the relative values of winning and losing, including the costs they expect to incur. We will assume that the w_i are constrained to be less than zero. The assumption that neither state can have positive expected utility from war does not have a significant effect on the results; it is made for the sake of tractability.

Information and beliefs. It is useful to consider both complete and incomplete information versions of this game. In the former, w_1 and w_2 are common knowledge; in the latter, each state knows its own expected value for war but is incompletely informed about its rival's. We generate this uncertainty by assuming that the w_i are randomly and independently drawn from uniform probability distributions over the range $[-C_i - d_i, -d_i]$, where $C_i, d_i \geq 0$ for $i = 1,2$.[22] This specification implies that the w_i are restricted to a finite range of nonpositive values. S_1 observes the value of w_1, and S_2 observes the value of w_2. Neither state observes the other's draw, but the probability distributions are common knowledge.

Complete information equilibrium. We first consider the complete information version of this game, in which w_1 and w_2 are known to both sides.[23] Backwards induction leads to a rather straightforward equilibrium. At its final node, S_1 must

21. Fearon 1992 and 1994.

22. All of the results reported here would hold if we assumed arbitrary probability distributions. The uniform distributions were selected in order to simplify the notation.

23. The solution is identical if only w_1 is common knowledge. Hence, the effect of complete information about w_1 does not depend on whether or not there is also complete information about w_2.

choose either to back down and incur the audience costs, $-a$, or to stand firm and receive its expected value for war, w_1. Clearly, S_1 will stand firm if and only if

$$w_1 > -a. \tag{1}$$

This condition creates a distinction between genuine threats and bluffs. A challenge is genuine, in the sense that S_1 is willing to back it with force, if condition (1) holds. A challenge is a bluff if condition (1) does not hold, since S_1 would back down in the face of resistance.

Because w_1 is common knowledge, S_2 knows whether or not condition (1) holds and, by implication, whether or not the threat is genuine. If the threat is genuine, S_2 faces a choice between conceding the good or resisting and fighting a war; since $w_2 \leq 0$, S_2 always prefers the former. If, on the other hand, the threat is a bluff, S_2 will resist the challenge, knowing that S_1 will ultimately back down.

This brings us to S_1's initial decision node. Again, the key question is whether or not condition (1) holds. If it does, S_1 can make the challenge knowing that S_2 will back down. If it does not, S_1 knows a challenge will be resisted, leading to a humiliating retreat in the final node. In the first case, S_1 strictly prefers making a challenge to retaining the status quo; in the latter case, the opposite is true.

The equilibrium strategies for the complete information game are thus as follows: S_1 plays $\{CH, SF\}$ if $w_1 > -a$, and $\{SQ, BD\}$ otherwise. S_2 plays CD if $w_1 > -a$, and RS otherwise. This game thus has two outcomes—status quo and S_2 concedes—both of which are peaceful. If we assume that the w_i are drawn from the distributions described earlier before being observed, then the ex ante probability of a challenge is

$$\frac{-d_1 + a}{C_1}$$

The probability that S_2 will resist a challenge is zero, and the ex ante probability of war is zero.

The equilibrium under complete information is driven by the fact that, after seeing a challenge, S_2 knows for sure whether or not S_1 intends to follow through on the threat. This certainty means that S_2 can always make the right decision: conceding if the threat is genuine and resisting if it is a bluff. S_1 likewise faces no ambiguity about the optimal choice. If its value for war is such that the challenge will succeed, then it always prefers to make one. If a challenge would be a bluff, the fact that S_2 will always call the bluff means that S_1 prefers the status quo. Since all challenges are genuine, none are resisted, and there is no danger of war.

Incomplete information equilibria. Under incomplete information, S_2 can no longer observe w_1 directly but must infer it from S_1's behavior. This uncertainty creates an opportunity for bluffing behavior, which occurs when types of S_1 that would back down at the final node (that is, $w_1 \leq -a$) nevertheless make the challenge in an attempt to convince S_2 that w_1 is higher than it really is. Because S_2 can no

longer be sure that S_1 will stand firm at the final node, it has an incentive to resist some challenges. When the challenge is a bluff, this gamble pays off; when the challenge is genuine, the result is war.

The equilibria for the incomplete information game are more complicated, so the formal derivations are given in the appendix. In general, they take the following form. As before, S_1 always makes the challenge and stands firm at its final node whenever $w_1 > -a$. However, the incentive to bluff implies that some types of S_1 for which $w_1 \leq -a$ also make the challenge but back down at their final node. We let b denote a cutpoint in the range $[-C_1 - d_1, -a]$ such that S_1 makes the challenge if $-a \geq w_1 \geq b$. The remaining types, for which $b > w_1 \geq -C_1 - d_1$, choose the status quo. This strategy effectively divides the continuum of possible types into three ranges. As shown in the appendix, all three ranges need not exist for all possible values of the parameters. The formal solution includes a full treatment of all cases.

As in the complete information game, the main question for S_2 is whether or not S_1 will stand firm at its final decision node—that is, whether $w_1 > -a$. However, since some types may bluff in equilibrium, S_2 can no longer be certain that all threats are genuine. Let q denote the probability that $w_1 > -a$ given that S_1 has made a challenge. Because some types of S_1 bluff, it is generally the case that $1 > q > 0$, meaning that there is uncertainty as to whether or not the challenge is genuine. After updating, S_2 can either concede the good for a certain payoff of zero, or it can resist and gamble that S_1 is bluffing. In the event it resists, S_2 expects war with probability q, and it expects S_1 to back down with probability $1 - q$. In equilibrium, then, S_2 resists only if its expected value from war, w_2, is sufficiently high to make the gamble worthwhile. The probability that a challenge will be resisted is equal to the probability that w_2 exceeds this threshold.

Democracy and Crisis Bargaining: Comparing the Two Perspectives

We can now use these results to derive predictions about the effect of democratic institutions on crisis behavior and outcomes. How does democracy influence the predicted outcomes if, as the institutional constraints approach suggests, democratic institutions tend to lower the leader's expected payoff from war? How does democracy affect the predicted outcomes if, as the informational approach suggests, democratic governments are better able to reveal their preferences, either through costly signals or the transparency of their decision-making process?

In this section, I consider the empirical implications of these two perspectives by examining how behavior and outcomes change when S_1 becomes democratic. Each argument makes some claim about how S_1's regime type affects parameters in the model. By seeing how observable outcomes vary as these parameters change, we can derive empirical predictions for each argument. Three observable outcomes are considered: the ex ante probability that S_1 will make a challenge, the ex ante probability of war, and the probability that S_2 resists given that it has been challenged.

Obviously, if domestic institutions affect parameters in the model, then S_2's regime type will also influence the way the game is played. However, it is not necessary for the purposes of this analysis to do explicit comparative statics on parameters that describe S_2. As noted earlier, one common feature of both institutional arguments is that they are fundamentally claims about democratic states, rather than democratic dyads. Unlike arguments that have been made about the influence of shared norms,[24] the logics of the purely institutional theories do not depend on the constitution of the rival state. For example, neither the political costs of war in Bueno de Mesquita and Lalman's analysis nor the audience costs that a leader can generate in Fearon's model are contingent on whether the other state in the crisis is democratic.[25] Moreover, it can be shown that, though S_2's characteristics affect the magnitude of some of the comparative statics considered here, they do not affect the direction of any of them.[26] Thus, we do not need to manipulate the regime type of S_2 in order to determine whether a regime change in S_1 increases or decreases the probability of a particular outcome.

The Institutional Constraints Perspective

According to the institutional constraints perspective, democratic leaders face higher costs of war, on average, than their nondemocratic counterparts. Following Bueno de Mesquita and Lalman,[27] we capture this hypothesis in the model by assuming that democratic states draw their expected value for war from a different distribution than do other states—in particular, a distribution with a lower mean. Recall that w_1 was drawn from a uniform distribution over the range $[-C_1 - d_1, -d_1]$. A natural way to lower the mean of this distribution, without altering any of its other characteristics, is to shift the range downward by increasing d_1. Thus, the institutional constraints argument translates into an assumption that democracy in S_1 leads to systematically higher values of d_1.

What happens in the model as d_1 increases? Figure 2 shows how the probabilities of three outcomes vary as a function of d_1, holding all other parameters constant. The figure has four ranges, which correspond to different configurations of the parameters. To simplify the discussion of the intuition, d_2 has been set to zero. The boundary point d_1^{**} is defined in the appendix. As the figure makes clear, the ex ante probability that S_1 will make a challenge is weakly decreasing in d_1. This result makes intuitive sense. S_1 makes a challenge only when its expected payoff from war is sufficiently high. Thus, as d_1 increases and the average value of w_1 decreases, it

24. See, for example, Russett 1993; Dixon 1994; and Owen 1997.

25. See Bueno de Mesquita and Lalman 1992; and Fearon 1994.

26. Table 4 in the appendix presents expressions for the equilibrium probabilities of the three outcomes considered here. As shown in the table, the direction of none of the relationships depends on the magnitude of d_2 or C_2, as long as both parameters are nonnegative. Moreover, as noted in fn. 23, the effect of complete information about S_1's type is not conditional on the distribution of information about S_2's type.

27. Bueno de Mesquita and Lalman 1992, 156–57.

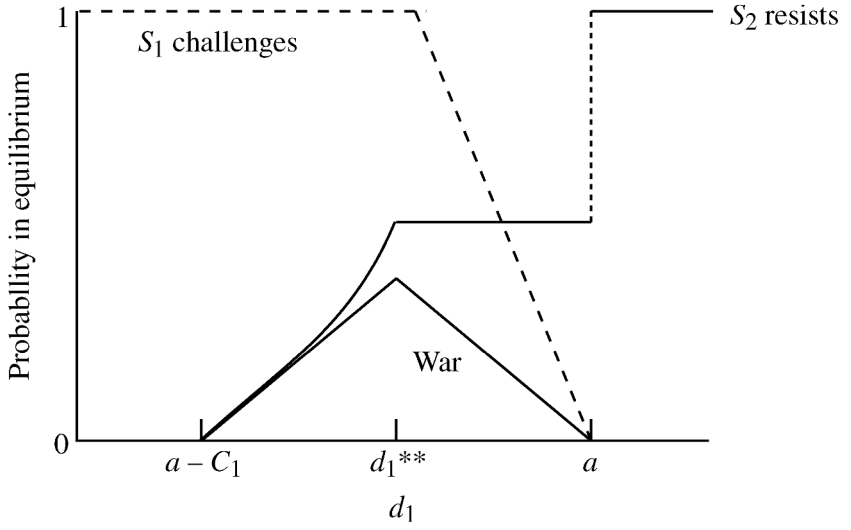

FIGURE 2. *Predicted outcomes as a function of the costs of war*

becomes less likely that this condition will be met. The ex ante probability of seeing a challenge goes down accordingly.

Conversely, the probability that S_2 will resist on being challenged is weakly increasing in d_1. Again the intuition is straightforward: The more likely it is that S_1's threat is a bluff, the more willing S_2 is to refuse a challenge. When d_1 is such that $-C_1 - d_1$ is greater than $-a$ (that is, $d_1 < a - C_1$), then even if S_1 draws its worst possible payoff from war, it would still stand firm at the final node. Since S_2 would rather concede the good than fight, it never resists in this case. As d_1 increases beyond this point, there is a chance that some challenges are bluffs, and S_2's willingness to resist in the face of a challenge increases accordingly. The probability of resistance levels off once $d \geq d_1$** because the probability that a challenge is a bluff also levels off beyond this point. Once $d_1 > a$, then none of the possible types of S_1 will stand firm at their final node. The probability of resistance is exactly one, but this outcome is never seen in equilibrium because S_1 never makes the challenge under these conditions.

Finally, the ex ante probability of war follows a predictable pattern given the rate of challenges and the rate of resistance. Recall that war occurs whenever S_1 makes a genuine threat (that is, $w_1 > -a$), and S_2 resists. In the lowest range of d_1, all threats are genuine, but S_2, knowing this, never resists; the probability of war is zero. In the middle range, the probability that a threat is genuine decreases with d_1, but the probability of resistance increases. The net effect is an increasing danger of war. When d_1 exceeds d_1**, this trend reverses. The reason is that, as d_1 increases, the ex ante probability that S_1 will be in a position to make a genuine threat decreases. The decreasing rate of genuine challenges combined with a constant probability of resistance leads to a decreasing probability of war. Finally, in the highest range of d_1,

when $d_1 > a$, no possible type of S_1 can make a genuine threat, so the probability of war is once again zero.

The Informational Perspective

Now consider the informational perspective on democracy. What happens if, rather than affecting the state's payoff from war, democratic institutions influence the state's ability to reveal its payoff credibly? We will try to capture this perspective in the model in two different ways. First, following Fearon, we assume that democratic states are capable of generating higher audience costs, meaning that a is systematically higher in democracies.[28] Alternatively, we can assume that S_1's type is more easily observable when it is a democracy because of the transparency of its polity. In this case, the draw of w_1 is common knowledge, and the states play the complete information version of the game.[29] Elsewhere, I provide a third informational story, in which democracy implies the existence of a strategic opposition party. Since capturing that argument here would require a significant revision of the game, the exercise is not done. However, the comparative statics from this game are identical to those derived later when we assume that democracy creates complete information about w_1.[30]

How would these changes affect behavior and outcomes in the crisis game? First, consider the audience costs argument. Figure 3 shows how the model's predictions vary with a. As before, the figure is partitioned into four ranges, depending on the relative magnitudes of the parameters; an expression for a^{**} is given in the appendix. As the figure shows, the ex ante probability of a challenge is weakly increasing in the magnitude of the audience costs. This result follows from the fact that S_1 always makes the challenge whenever $w_1 > -a$. Thus, as the audience costs increase, the range of types that can and do make a genuine threat grows. For values of a less than d_1, no possible types of S_1 can make a genuine threat, so bluffing is pointless; the probability of a challenge is consequently zero. At the highest end,

28. Technically, Fearon hypothesizes that democratic leaders generate audience costs at a higher *rate*, rather than a higher *level*. This distinction matters in his multistage bargaining model, but the two concepts are identical in the one-stage model considered here. Fearon 1994.

29. A more theoretically appealing way to capture the concept of transparency would be to assume that, after nature draws w_1, S_2 receives a noisy signal of that draw. In other words, we could assume that S_2 observes a message of the form $m_1 = w_1 + \varepsilon$, where ε is a random variable with mean zero and variance σ^2. If transparency implies that S_2 receives a more accurate signal—that is, a signal with lower σ^2—we could perform comparative statics on this parameter. Unfortunately, there are serious technical obstacles to amending the model in this way and deriving empirically useful comparative statics. It is worth noting that the method employed in the text—assuming that transparency leads to complete information about w_1—is a special case of the method suggested here, since it is equivalent to assuming that S_2 receives a signal with no noise, or $\sigma^2 = 0$. By comparing the incomplete and complete information cases, we have a comparison between the case in which σ^2 is arbitrarily large (so that m_1 conveys no information) and the case in which $\sigma^2 = 0$. Having observations on just two values is only a problem if the relationship between σ^2 and the outcomes we are interested in is nonmonotonic.

30. Schultz 1998.

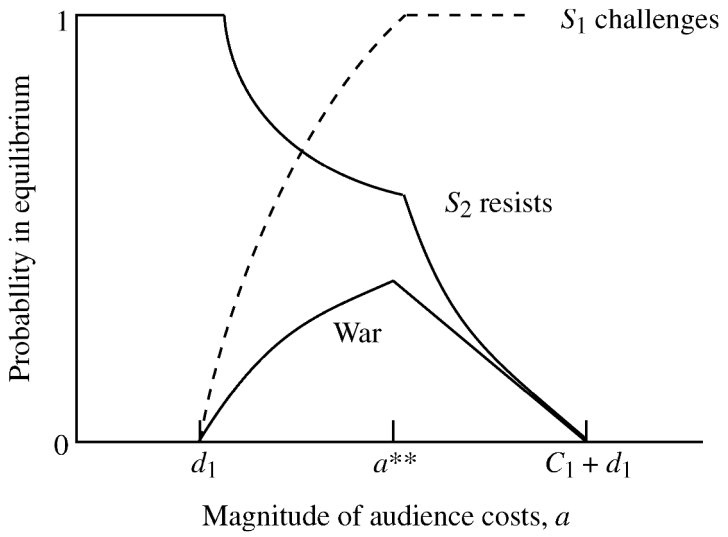

FIGURE 3. *Predicted outcomes as a function of the audience costs*

when a exceeds $C_1 + d_1$, all possible types of S_1 can commit themselves to standing firm at the final node, so the probability of a challenge is 1.[31]

Conversely, the probability with which S_2 will resist a challenge decreases as S_1's audience costs increase. The reason, very simply, is credibility. As a increases, the range of types that are willing to carry out a threat grows as well. Because S_1's threats are more likely to be genuine, S_2 is less willing to gamble that S_1 is bluffing. The probability of resistance decreases accordingly. For values of a less than d_1, none of the possible types of S_1 will stand firm in the face of resistance, so S_2 always resists. Since S_1 never makes a challenge under these conditions, however, this outcome is not seen in equilibrium. In the highest range of a, all threats are genuine, and, knowing this, S_2 always concedes.

As before, the ex ante probability of war follows a pattern determined by the rate of genuine challenges and the rate of resistance. The resulting relationship is not monotonic. While a is less than $C_1 + d_1$, there are two countervailing effects: the probability that any challenge is genuine increases with the audience costs, but the probability of resistance decreases. For values of a less than d_1, S_1 never makes a challenge, so the probability of war is zero. As a increases to a^{**}, the increasing probability of a genuine challenge dominates the decreasing rate of resistance, and

31. Note that Fearon's model suggests a somewhat different conclusion. Though the result is not worked out formally, Fearon suggests that states facing high audience costs may be more cautious about initiating threats because of the danger of getting "locked" into an unwanted war. One important difference is that S_2 in the present model does not face audience costs for conceding the good and hence will always back down when confronted by a credible threat. If we added that feature to this model, the relationship between S_1's audience costs and its propensity to make challenges would be more complicated. Fearon 1994, 585.

the net result is that the probability of war increases. In the next range, the opposite is true, and the ex ante probability of war decreases. Once a exceeds $C_1 + d_1$, all threats are genuine, but since S_2 never resists a challenge, the probability of war is zero.

Now consider the second interpretation of the information perspective, in which democracy generates complete information about S_1's expected value for war. First, the ex ante probability of a challenge is lower under complete information. This is not surprising given that uncertainty creates an opportunity for bluffing behavior that is not available when w_1 is commonly known. In both cases, S_1 makes the challenge whenever $w_1 > -a$; however, under incomplete information, some additional types that would not stand firm at the final node make the challenge as well. The probability that S_2 will resist a challenge is also smaller under complete information. This result follows from the first: since there is no bluffing in this case, all threats are known to be genuine, and S_2 has no incentive to resist. Finally, as noted earlier, the probability of war under complete information is zero, which represents a decrease from the incomplete information case.[32]

Comparing the Two Perspectives

We can now compare the empirical predictions made by the two perspectives on democracy considered here. Table 1 summarizes the comparative-static results. It is clear from this table that the model's findings with respect to the probability of a challenge and the probability of war are not very helpful in distinguishing between the two views of democracy. In both cases, the predictions of the informational perspective are ambiguous and, even worse, overlap with the predictions of the institutional constraints perspective. It is particularly interesting to note that the institutional constraints and audience costs arguments imply that the relationship between democracy and the probability of war is nonmonotonic. Although this result does not help us in distinguishing the two arguments, it may explain why studies of the overall war-proneness of democratic regimes have had inconsistent results.[33]

The model's findings with respect to S_2's behavior, on the other hand, are quite promising. On this matter, the predictions of the two perspectives clearly point in opposite directions. According to the constraints view, the target of a challenge should be more likely to resist if the challenger is democratic than if it is not. Since democracy implies that a state has, on average, a lower expected value for war, threats made by such a state are inherently more suspect. As the average value of w_1 decreases, the probability that a threat is a bluff weakly increases. Consequently, the target state is more likely to resist in the face of such a challenge. The informational perspective, on the other hand, makes exactly the opposite prediction, regardless of how we opera-

32. Obviously, if we assume that democracy is associated with complete information about w_1, the precise predictions of the model are unrealistic empirically. As with all comparative-static exercises, though, the important results deal with the *relative* probabilities of an outcome across two games, not the *absolute* probability in either game.

33. For a discussion of the conflicting findings on this point, see the references cited in fn. 5.

TABLE 1. *Predictions of the two views of democracy*

	View of democracy		
	Institutional constraints perspective	*Informational perspective*	
Outcome	*Increase in costs of war*	*Complete information*	*Increase in audience costs*
S_1 challenges	−	−	+
S_2 resists	+	−	−
War	+/−	−	+/−

Note: Entries indicate how the probability of the outcome is predicted to change when S_1 becomes democratic.

tionalize this view in the model. If democratic institutions enhance the state's ability to reveal its type—either by increasing the amount of information available ex ante or by improving the credibility of its signals—then the targets of their challenges should be less likely to resist. Democracy in this view lowers the probability that a given threat is a bluff, so the targets of democratic challengers have to take those threats more seriously. The result is a smaller probability that S_2 will resist in the face of a challenge.

Because the two perspectives make mutually exclusive predictions regarding the effect of the initiator's regime type on the target state's behavior, it is here that we can find leverage to distinguish between the two empirically. If our empirical tests show that target states are more likely to resist democratic challengers than they are to resist nondemocratic challengers, these results favor the institutional constraints story over the informational one. If the relationship between the challenger's regime type and the target's behavior goes in the opposite direction, the results favor the informational perspective. Of course, a third possibility also exists: It may be that domestic political institutions have no systematic effect on the parameters in the model. If this is true, there should be no statistically significant relationship between the challenger's regime characteristics and the target's willingness to resist. We are thus confronted by three mutually exclusive hypotheses:

Hypothesis 1 (null): The regime type of a state that makes a challenge has no effect on the probability that the targeted state will resist.

Hypothesis 2 (institutional constraints perspective): A targeted state is more likely to resist a challenge made by a democratic state than to resist a challenge made by a nondemocratic state.

Hypothesis 3 (informational perspective): A targeted state is less likely to resist a challenge made by a democratic state than to resist a challenge made by a nondemocratic state.

Testing the Hypotheses

The data for testing these hypotheses come primarily from the Correlates of War's (COW) Militarized Interstate Dispute (MID) data set.[34] MIDs are instances in which at least one state took militarized action against at least one other state, where militarized action can take the form of a threat, display, or actual use of force. This set contains information on 2,042 disputes in the period 1816–1992; once the availability of other data is taken into account, the tests in this section cover 1,654 disputes in the period 1816–1980.

For each dispute, the MID data set identifies the state or states on the initiating side and the state or states on the target side. The initiating side is defined as the side containing the state that took the first codable action in the dispute—that is, at least a threat to use force. The data set also distinguishes between revisionist and nonrevisionist states, depending on whether the state sought some revision of the status quo. Most states on the initiating side are revisionist, but this is not always the case, and revisionist states can be found on the target side or, in some cases, on both sides of a dispute. Because of this, it makes sense to think of the initiating state(s), rather than revisionist state(s), as analogous to the challenger in the preceding model. We recast the MID data set into dispute dyads, with the first state in each dyad representing an initiator and the second state representing a target.

Dependent variable. Testing the hypotheses requires that we code the dependent variable in a way that captures whether or not the target state chose to resist the initiator's challenge. One way to do so is to ask whether the target reciprocated that challenge with a militarized action of its own. That is, did the target take steps to escalate the crisis beyond the initial threat, or did it avoid a military response? As Daniel M. Jones, Stuart A. Bremer, and J. David Singer note, a large proportion of militarized actions—indeed, roughly 50 percent—are not reciprocated by the target state(s).[35] A lack of reciprocation does not mean that the targets did nothing in response to the initial threat, but it does suggest that they did not consider military escalation of the conflict to be in their interests. On the other hand, a willingness to reciprocate suggests that the target considered a military response potentially worthwhile. The decision to reciprocate is thus a plausible indicator of how genuine the target believes the challenge to be.

A coding to this effect can be derived from the MID data set, which provides information on the highest hostility level reached by each dispute participant. A hostility level of 1 is recorded when the participant took no militarized action. For each dyad, then, we set the dependent variable, RECIP, equal to 1 when the hostility level reached by the target state was greater than 1, implying that it responded with a threat, display, or use of force. RECIP equals zero when the target state took no militarized action.

34. See Gochman and Maoz 1984; and Jones, Bremer, and Singer 1996.
35. Jones, Bremer, and Singer 1996, 195.

A complication arises because, unlike in our simple model, not all disputes are one-on-one interactions, involving only a single dyad. In about 20 percent of the cases, there is more than one state on either the initiating or target sides. These multilateral disputes present some potential difficulties. The first stems from the fact that, in many of these cases, the growth of the dispute took place after it was already underway—and, in some cases, after the dispute had escalated to war. Since the model deals primarily with the initial threat and the response of the target, we have little to say about the diffusion of conflict to other states.[36] It would be a mistake to treat as S_1 some state that joined the initiating side long after the original challenge was made and resisted; likewise, it would make little sense to treat as S_2 some state that joined the target side once the decision to resist had already been made by the original target. The empirical tests should include only those states that participated in the dispute from the very beginning. Fortunately, the MID data set codes states as "originators" if they entered the dispute on the first day. Using this coding, we can limit the analysis to those dispute dyads in which both states were originating participants.[37]

Even after removing nonoriginating states, there remain a number of disputes that involve more than one originating dyad. The proportion of such cases is rather small: only 133 disputes out of 1,654, or 8 percent; however, once the MIDs are rendered as dyads, they account for almost 20 percent of dispute dyads. These cases are problematic because they introduce nonindependent observations into the sample. It is almost certain that probabilities of reciprocation are highly correlated among target states within the same dispute. Of the seventy-eight MIDs in which there is more than one target state, there are only ten in which some target states reciprocated but others did not; in the rest of the cases, either all target states reciprocated or none did. Moreover, in disputes with more than one initiating state, reciprocation take places against all initiators or none. Thus, if Italy and Germany both challenge France, the value of RECIP in the Italy–France dyad must be the same as its value in the Germany–France dyad.

There is no simple way to deal with this problem, but two methods are employed here. First, standard errors are corrected to take into account nonindependence among dyads in the same MID. Huber-White standard errors generate robust estimates of variance even when we relax the assumption that all observations within each dispute are independent. Second, the regressions are run on the subsample of MIDs that involve only one originating state on each side; because observations in this subsample are independent of one another, these results serve to check whether the multilateral disputes have undue influence on the results.

36. Siverson and Starr 1991.

37. However, there are sixteen MIDs in which the original target(s) chose not to reciprocate, but other states that joined the target side after the first day did take militarized action. It may make sense to include these joining states in the sample, since they clearly considered the initiator's challenge worth resisting, even if the original target(s) did not. As it turns out, the results are unaffected by the inclusion of dyads involving these states; the estimates reported later do not include these additional dyads.

Independent variables. The main independent variable of interest is the regime type of the initiating state. This study relies on the Polity III data set, which contains information on regime characteristics for every state in the international system over the period 1800–1994.[38] The procedure for identifying states as either democratic or nondemocratic is one commonly used in the literature.[39] The eleven-point autocracy scale is subtracted from the eleven-point democracy scale, generating a twenty-one-point scale that goes from −10 (wholly autocratic) to 10 (wholly democratic). In the results reported here, states are coded as democratic if their score on this scale is greater than 6; other cutoffs were also tried with predictable results: The effect of democracy tends to weaken as the cutoff is lowered to include more states; the effect strengthens slightly when the cutoff is raised.[40]

The democracy scores are used to create three dummy variables: DEMINIT indicates whether or not the initiating state in the dyad is democratic, DEMTARG indicates whether or not the target state in the dyad is democratic, and DEMDEM indicates whether or not both states are democratic.[41] The hypotheses generated earlier center on the first of these variables, which is coded 1 in about 25 percent of the observations. Hypothesis 1 predicts that the coefficient on DEMINIT will be statistically indistinguishable from zero. Hypothesis 2, which suggests that targets should be more likely to resist a democratic initiator, predicts a positive and significant coefficient on this variable. Hypothesis 3 predicts a negative and significant coefficient. The hypotheses do not speak to the expected sign and significance of the coefficients on DEMTARG and DEMDEM, but they are nevertheless included as controls. Since the formal model's predictions regarding DEMINIT were derived by holding the characteristics of S_2 constant, we need to do the same in the empirical model. The DEMDEM variable also permits us to test the hypothesis that democracy only matters when both sides in the dispute are democratic.

The regression models include a number of additional independent variables to control for international factors that might affect the target's willingness to reciprocate a challenge. The first controls for observable indicators of relative military power. Based on the COW classification system,[42] states were coded as being either major or minor powers, and three dummy variables were created: MAJMAJ, indicating that both states were major powers; MAJMIN, indicating a major power initiator and a minor power target; and MINMAJ, indicating a minor power initiator and a major power target. The next control variable measures whether or not the states in the dyad

38. Jaggers and Gurr 1996.

39. See, for example, Rousseau et al. 1996.

40. Although this pattern suggests that democracy should be treated as a continuous variable, Gleditsch and Ward warn against using the Polity data in this way. Gleditsch and Ward 1997.

41. In a number of cases, one or both states in a dyad are missing data on their regime type, typically indicating that the polity was in transition during that period. These states are clearly not stable democracies, but it would also be incorrect to lump them in with stable nondemocracies. Following standard practice, dyads including transitional states are excluded.

42. Singer and Small 1993.

were territorially contiguous, a factor that many studies have shown to be positively correlated with international conflict.[43] Based on the coding used by Randolph M. Siverson and Harvey Starr, CONTIG equals 1 if the states shared a common land, water, or colonial border.[44] The final international control variable indicates whether or not the states in the dispute had a military alliance at the time. Using an updated version of COW's Annual Alliance Membership data set,[45] the dummy variable ALLY indicates whether or not the states in the dyad had a defense pact, neutrality agreement, or entente in the year prior to the onset of the dispute. More refined measures that unpack the different types of alliance had no effect on the results. The lag of one year ensures that an alliance that ended because of the dispute is still counted as being in effect at the outset; here too, though, the results do not depend on this coding rule.

The last set of controls deals with the nature of the issue in dispute. In most cases, the initiating state's militarized action is accompanied by a demand to revise the status quo. These demands may involve a reallocation of territory, a shift in some policy, or a change in the target's regime or government. It is useful to control for the type of revision sought, as this may systematically affect the target's willingness to reciprocate. We might surmise, for example, that targets are more willing to resist demands for territory or a change in government than they are to resist a revision in policy. Moreover, Bueno de Mesquita and Siverson show that a state's regime type influences the kinds of revisions it tends to seek.[46] This creates a potential problem if, for example, democratic states generally make demands in issue areas that are of low value to their targets. In that case, a lower rate of reciprocation may simply reflect the low stakes of the disputes. Hence, isolating the regime effects considered here requires that we control for any indirect regime effects operating through the choice of issues. The MID data set codes states' demands according to whether they entail a revision of territory, policy, the target's regime type or government, or something else. For each of these four categories, a dummy variable was created indicating the type of revision sought by the initiator.[47]

Regression results. Since the dependent variable is dichotomous, the probit model is the preferred regression tool. For reasons noted earlier, estimates were obtained using both the full sample of originating dispute dyads and the subsample of disputes in which there was only one originating dyad. The former includes 1,639 dispute dyads for which data are available, and the latter includes 1,353 dispute dyads. When

43. See, for example, Bremer 1992; and Vasquez 1993, chap. 4.
44. Siverson and Starr 1991.
45. Singer and Small 1984.
46. Bueno de Mesquita and Siverson 1997.
47. All four dummy variables equal zero when the initiator made no revisionist demand, which happened in about 27 percent of the cases. The results are not affected if cases in which the initiator made no demand are dropped. Note that, when there was more than one initiator state, the revision type does not have to be the same for each state.

using the full sample, Huber-White robust standard errors were calculated in order to compensate for nonindependence among dyads within the same dispute.[48]

A preliminary examination of the data suggested that the periods of general warfare associated with World Wars I and II introduced effects that were not present at other times. The probability of reciprocation was 41 percent for disputes that took place during the world wars, compared to 62 percent in the rest of the sample. Clearly, target states were more selective about reciprocating disputes while these wars were underway. To deal with this fact, I identified as "world war MIDs" those disputes that took place during the world wars; 250 such cases exist, comprising 341 dispute dyads.[49] Regressions were run both including and excluding those disputes.

Table 2 displays the regression estimates for four models. The first two columns report estimates obtained using the full sample, and the next two columns report estimates obtained using the subsample of bilateral disputes. Each of these samples is further broken down according to whether or not the world war MIDs were included.

In all four models, the coefficient on DEMINIT is negative, meaning that the target was less likely to reciprocate a militarized action when the initiator was democratic than when it was not. Moreover, the coefficient on DEMINIT is statistically significant at conventional levels whenever the world war MIDs are excluded (columns 2 and 4). A comparison of these columns reveals that this result is not influenced by the inclusion of multilateral disputes. The insignificant coefficients on the two other regime variables, DEMTARG and DEMDEM, suggest that the effect of the initiator's regime type does not depend on the regime type of the target. A democratic initiator thus enjoys a lower probability of resistance whether or not the target is also democratic. Overall, these findings are consistent with hypothesis 3 and the informational perspective.[50]

48. All tests were performed with STATA 5.0. Huber-White standard errors were generated by using the "cluster" option to group dyads within the same dispute. See StataCorp 1997, 235–39.

49. For each world war, we can identify the dispute that escalated into that war: for World War I, the July Crisis, and for World War II, the dispute over Danzig. The cases identified as "world war MIDs" do not include these two disputes but do encompass all those that fell between the beginning of those disputes and the end of the resultant wars.

50. When the world war MIDs are included, the insignificance of the coefficients on DEMINIT stems from a decrease in the estimated coefficient, rather than an increase in the standard error. This suggests that the effect of the initiator's regime type attenuates during periods of general warfare. One possible explanation for this effect might be that states that are already involved in war are much less likely to reciprocate, regardless of the regime type of the initiator. To check for this possibility, I performed an additional set of tests in which controls were added for both the target and the initiator indicating whether or not those states were already engaged in an interstate war prior to the onset of the dispute. These controls had no statistically measurable effect on the probability of reciprocation, nor did they eliminate the difference in the results between the tests that include the world war MIDs and those that do not. Thus, there seems to be an effect associated with the world wars that is not accounted for by the fact that disputes during these periods were likely to involve states already involved in a war. Along the same lines, variables were added indicating whether or not either state was engaged in a civil war at the time of the dispute. A civil war in the initiating state has a positive and significant ($p < .05$) effect on the probability of reciprocation; a civil war in the target state has no effect. I am grateful to Hein Goemans for suggesting these tests. Dates for interstate and civil wars come from Singer and Small 1994.

TABLE 2. *Democracy and the probability of dispute reciprocation*

	Full sample		*Subsample of bilateral MIDs*	
	Model 1 with world war MIDs	*Model 2 without world war MIDs*	*Model 3 with world war MIDs*	*Model 4 without world war MIDs*
Variable	Coefficient	Coefficient	Coefficient	Coefficient
Constant	−0.16	0.081	−0.029	0.12
	(−1.57)[a]	(0.73)	(−0.27)	(1.01)
Regime variables:				
Democratic initiator	−0.11	−0.24	−0.16	−0.22
	(−1.18)	(−2.43)*	(−1.59)	(−2.08)*
Democratic target	0.036	−0.10	−0.026	−0.11
	(0.42)	(−1.11)	(−0.29)	(−1.13)
Both democratic	−0.056	0.15	0.095	0.23
	(−0.26)	(0.65)	(0.41)	(0.95)
International controls:				
Contiguous	0.53	0.45	0.53	0.47
	(6.83)**	(5.20)**	(5.94)**	(4.77)**
Alliance	0.025	−0.032	0.0029	−0.035
	(0.26)	(−0.32)	(0.029)	(−0.33)
Major power—major power	−0.16	−0.23	−0.22	−0.33
	(−1.33)	(−1.81)	(−1.72)	(−2.32)*
Major power—minor power	−0.20	−0.26	−0.28	−0.30
	(−2.21)*	(−2.46)*	(−3.07)**	(−3.04)**
Minor power—major power	−0.24	−0.033	−0.14	−0.065
	(−2.19)*	(−0.26)	(−1.13)	(−0.49)
Revision type:				
Territory	0.33	0.24	0.21	0.15
	(3.45)**	(2.30)*	(2.09)*	(1.45)
Policy	−0.59	−0.70	−0.65	−0.70
	(−6.81)**	(−7.40)**	(−7.22)**	(−7.26)**
Government or regime	0.59	0.37	0.45	0.33
	(2.96)**	(1.82)	(2.15)*	(1.49)
Other	−0.47	−0.55	−0.53	−0.55
	(−1.58)	(−1.83)	(−1.63)	(−1.62)
No. of observations	1,639	1,425	1,353	1,182
χ^2	222.26**	188.30**	222.63**	183.60**
Percentage correctly predicted	69%	67%	68%	67%
Reduction in error	38%	31%	33%	28%

[a]Numbers in parentheses are *t*-statistics.
**$p < .01$.
*$.05 > p > .01$.

To get a sense for the magnitude of this effect, we can calculate the change in the probability of reciprocation when the initiator state changes from nondemocratic to democratic. Since the probit model is nonlinear, the marginal effects of the coefficient on DEMINIT depend on the value of the other independent variables. Table 3

TABLE 3. *Predicted probabilities of reciprocation*

	Regime type of initiator	
Initiator—target	*Nondemocratic*	*Democratic*
Major power—major power	0.34	0.26
Major power—minor power	0.34	0.25
Minor power—major power	0.42	0.33
Minor power—minor power	0.43	0.34

Note: Predicted probabilities were calculated using the coefficient estimates from Table 2, column 2. The predictions shown are for a contiguous dyad, with no alliance, a nondemocratic target state, and a policy revision demanded.

reports the predicted probabilities of reciprocation for different power configurations, with all other independent variables set at their modes. The predictions are based on the estimates from the full sample, excluding the world war MIDs (Table 2, column 2). As can be seen from Table 3, changing the initiator's regime type from nondemocratic to democratic leads to an almost 25 percent reduction in the probability of reciprocation. To get a more concrete feeling for this effect, notice that the probability of reciprocation is roughly the same when the initiator is a major power and nondemocratic as when the initiator is a minor power and democratic. Thus, if the initiator shifts from a nondemocratic to a democratic polity, the effect on the predicted probability of reciprocation is the same as if the initiator shifts from a minor to a major power. Clearly, domestic political institutions matter, and they do so in a manner that is consistent with the informational perspective.[51]

It is worth pointing out that the overall empirical models fit the data relatively well. They make correct predictions in 67 to 69 percent of the observations; by comparison, a naive model which always predicts the modal outcome is correct 51 to 54 percent of the time. In addition, the coefficients on the other independent variables have intuitively plausible signs and magnitudes. Contiguity is positively correlated with reciprocation, a finding that is consistent with previous empirical work. Except in the full sample including world war MIDs (Table 2, column 1), targets are more likely to reciprocate threats made by minor powers than those made by majors. The coefficients on the revision type variables also make sense: Targets are more likely to resist demands to hand over territory or change their government than they are to resist revisions in policies. The main unexpected finding is that the target's power status does not seem to have a measurable impact on the likelihood of reciprocation. The same is true of the alliance indicator, but this result is less surprising given

51. Following Farber and Gowa, the tests were also performed on two subsets of the time period: the Cold War period, 1946–1980; and the pre–World War I period, 1816–1913. The coefficient on DEMINIT is negative and statistically significant in both eras. Farber and Gowa 1995.

previous contradictory or negative findings on the effect of alliance ties on interstate conflict.[52]

Are the Results a Product of Selection Bias?

We have thus found that targets of militarized action are less likely to respond militarily when the initiator of that action is a democracy. This result is consistent with the prediction of the informational perspective, which suggests that democratic institutions help reveal information about a state's preferences in a credible manner. According to this interpretation, democracies have less leeway to engage in bluffing behavior, so the threats they make are more likely to be genuine. Knowing this, the targets of democratic challenges are more likely to back down in the face of those threats in order to avoid escalating the crisis militarily.

Unfortunately, we cannot end the analysis here, since these results may be accounted for by an alternative interpretation. What if democratic states are not better at conveying their resolve but instead seek out targets that are likely to back down? This possibility is not derived from the game developed earlier, but it is nonetheless plausible intuitively. The institutional constraints argument suggests that leaders of democratic states find the resort to force a particularly risky prospect. If so, their leaders might systematically avoid making challenges that they think are likely to be resisted. There might also be a temptation to seek out "patsies"—targets that are likely to back down if challenged—in order to produce cheap foreign policy victories for domestic consumption. If so, we have an alternative explanation for the observed correlation between democratic initiators and a decreased probability of reciprocation.

This alternative story boils down to an argument that the previous results are a product of selection bias. Since there has been a good deal of recent interest in selection effects, it is important to be clear about how they might complicate this analysis.[53] Selection bias can arise when the process of selecting into the sample is nonrandom, as it is when states make strategic choices regarding crisis initiation. The states and dyads that appear in the sample of MIDs are not representative of all states and dyads in the larger population. Consequently, making inferences about the latter based on tests using the former is problematic. Fortunately, the predictions of the informational perspective anticipate—and, indeed, rely on—this observation. Hypothesis 3 is not an unconditional claim about all democratic states at all times; rather, it says that, conditional on a democratic state's having chosen to challenge a target, that target is less likely to resist than had the challenge been made by a nondemocratic state. It is precisely because democratic challengers are not representative of all democratic states in the system that we see this effect. Relative to the entire population of democratic states, those that initiate disputes have a higher expected value

52. See Senese 1997; Rousseau et al. 1996; Bremer 1992; and Bueno de Mesquita 1981.
53. See, for example, Smith 1998c; and Rousseau et al. 1996.

from war, on average. The same is true of nondemocratic challengers, but the informational perspective suggests that democracies are relatively more selective, in the sense that, conditional on having made a challenge, the probability that $w_1 > -a$ is greater. The fact that targets understand the strategic nature of dispute initiation explains their greater reluctance to resist threats made by democracies. If challengers selected into crises purely at random, the hypothesized effect might not hold.[54] Hence, a selection effect is built into the analysis.

Still, the alternative story suggests a different kind of selection effect that needs to be considered. The probability of reciprocation is a function of both the target's beliefs about the genuineness of the challenge and the target state's own characteristics. The alternative view suggests that the regime type of the initiator has no direct effect on the former but instead affects the choice of targets. If this kind of selection process were at work, ignoring it in the empirical model would generate bias in estimated coefficients in much the same way as an omitted variable does.[55] Say, for example, that there is some set of factors, *V*, that determines the probability that a target will reciprocate; for the sake of illustration, assume that the variables in *V* are all negatively correlated with RECIP. Assume, furthermore, that democratic states tend to select into disputes only if the values in *V* are relatively high, whereas nondemocratic states are willing to initiate disputes with lower values of *V*. In other words, assume that democratic leaders require a lower ex ante probability of reciprocation to decide that a challenge is worth making. If we then regress RECIP on DEMINIT without including *V*, we will get a negative coefficient on DEMINIT, even if the initiator's regime type has no direct effect on the probability of reciprocation. In this case, the omission of *V*, together with the correlation between *V* and DEMINIT, negatively biases the estimated coefficient.

We can, and did, control for some components of *V*. If, for example, democracies tend to select into disputes in which they have relative power advantage over the target, the inclusion of the power variables protects the results against that kind of selection effect. The real problem, as always, lies in the unmeasured components implicit in the error term of the regression model. If state leaders are selecting into disputes based on variables that we cannot measure, or did not include in the model, the coefficient on DEMINIT may be biased by this omission. Such bias can only be eliminated if the outcome model controls for every factor that influences the selection decision—a condition that will never be met.[56]

In principle, techniques exist for dealing with this problem,[57] but there are practical difficulties to implementing them in this context. We can, however, take a tenta-

54. The qualification "might not" reflects the fact that random selection can change the empirical prediction in one version of the informational perspective but not the other. In particular, if we assume that democracy leads to complete information about a state's type, then there are conditions under which random selection would cause targets to resist challenges by democratic states with higher probability than they resist challenges by nondemocratic states. In the audience costs interpretation, however, random selection would not change the original comparative static result.

55. Heckman 1979.

56. Achen 1986, 79.

57. Dubin and Rivers 1990.

tive step toward ruling out the alternative explanation. The problem is that there may be omitted variables that influence dispute reciprocation and that, because of the selection process, are correlated with DEMINIT. Although we cannot control for all such factors, we can test for one class of them: unit-level characteristics of the target state. It is plausible that among the unmeasured variables are attributes of the target state that systematically affect the likelihood that it will respond militarily when challenged. If this is the case, and if democratic states tend to seek out targets that are, for whatever reason, more likely to back down, then omitting these variables from the regression model will negatively bias the coefficient on DEMINIT.

We can test for this possibility by including a dummy variable for each state that has been a target of militarized action. Thus, for example, we create a variable called FRANCE that equals 1 in all observations in which France is the target state and zero otherwise. Any characteristics that systematically affect the probability that France will reciprocate a challenge are captured by this variable. Creating dummy variables for all target states permits us to control for any unit-level characteristics of this sort. The key question is whether or not the inclusion of these variables significantly affects the estimated coefficient on DEMINIT. If democracies are more likely to initiate disputes against states that are predisposed to backing down, then adding these controls should attenuate the coefficient on DEMINIT. Conducting this test requires a shift to the logit regression model, which is more appropriate for implementing such a fixed-effects treatment. Since logit coefficients are different from those obtained using probit, we first reestimate the baseline model. Using the full sample, excluding the world war MIDs, the estimated coefficient on DEMINIT is -0.40, with a standard error of 0.16. We then estimate the fixed-effects model using Chamberlain's conditional logit, which controls for unmeasured heterogeneity among target states without actually estimating coefficients for the 126 dummy variables—one for each country that was the target of a MID in this sample. A Hausman specification test suggests that the fixed-effect terms are jointly significant, meaning that there are systematic differences in states' propensities to reciprocate challenges.[58] However, the estimated coefficient on DEMINIT increases only modestly, to -0.28, which represents a change of three-quarters of a standard deviation. Based on this result, we cannot reject the null hypothesis that the coefficients are equivalent across both models. Thus, although there is evidence that the earlier regression models failed to control for unit-level factors that influence the probability of reciprocation, the core result is not a product of bias caused by this omission. Put another way, the lower rate of reciprocation against democratic challengers does not seem to stem from a tendency for such states to select targets that, because of unit-level characteristics, are predisposed to backing down—or, at least, more predisposed to backing down than the targets chosen by nondemocratic states. This result does not rule out the possibility that there are dyad-level or time-varying, unit-level variables whose omission from the regression model is biasing the estimated coefficient on DEM-

58. For a discussion of Chamberlain's conditional logit and the Hausman specification test, see Greene 1997, 899–900.

INIT. Nonetheless, the finding is suggestive and at least casts doubt on an alternative explanation based on selection effects.

Conclusions

I have explored the empirical implications of two theories about how democratic institutions affect behavior and outcomes in international crises. Using a simple model of crisis bargaining, I have showed that these perspectives make unambiguously different predictions about how the regime type of a state that initiates a militarized confrontation affects the probability that its target will resist. The informational perspective suggests that, relative to their nondemocratic counterparts, democratic states are less likely to engage in bluffing behavior, so that the threats they choose to make are more likely to be genuine; as a result, the targets of their challenges should be less likely to resist. The institutional constraints perspective, on the other hand, implies that democratic states have a harder time convincing their targets that they are serious; because democratic leaders face higher than average political costs for waging war, target states should be more likely to resist their threats. Using data from 1,654 militarized disputes in the period 1816–1980, these hypotheses were operationalized and tested. The results were strongly consistent with the informational perspective: Except during periods of general warfare, the disputes initiated by democratic states were less likely to be reciprocated than those initiated by nondemocratic states.

Two caveats remain. As was noted in the previous section, the empirical results may be consistent with an alternative explanation that follows from the institutional constraints perspective. The observation that challenges made by democratic states are less likely to be resisted may reflect, not their superior ability to credibly signal their type, but rather their incentive to select targets that are unlikely to put up a fight. A preliminary test helped to cast doubt on this argument, but we cannot rule out the possibility that the result is a product of selection effects.

The second caveat is that, although this study presented the informational and institutional constraints arguments as competing alternatives, it is possible that both are correct. Democratic institutions could serve two roles simultaneously: systematically increasing the political costs of war and facilitating information revelation. This possibility is not inconsistent with the empirical results, since it can be shown from the formal model that an increase in d_1 combined with either a shift to complete information or an increase in the audience costs can generate a lower probability of resistance. Does this consideration invalidate the entire exercise? No. The reason is that, even if democratic institutions tend to lower the average value of war, they would not be associated with a lower probability of dispute reciprocation unless those institutions also had the informational effects considered here. Ultimately, then, the results presented here do not conclusively falsify the institutional constraints argument, but they do lend support to the informational perspective.

Beyond its specific findings, this article suggests some general conclusions about empirical testing of the democratic peace and related propositions. One striking as-

pect of the empirical literature on the democratic peace is that there seems to be little agreement on the dependent variable that is to be explained. Researchers have conducted tests on a variety of different outcome variables, including the probability of war,[59] the probability of a crisis,[60] and the probability that a crisis escalates to war.[61] And yet, there has been little explicit recognition that these variables measure different phenomena and that, depending on the theory in question, the effect of democracy need not be the same in all cases. The fact that these different studies have all been seen as tests of the democratic peace shows how incompletely specified that proposition is. More care should be taken in thinking about what can and cannot be learned from tests on a given dependent variable.

This article also casts doubt on an argument commonly seen in this literature that, while quantitative tests are mainly useful for determining whether democracy matters, qualitative case studies are more appropriate for determining why.[62] Although there is value in exploring these questions using a wide variety of research methods, a careful use of deductive logic can generate precise quantitative hypotheses that help with both the whether and the why.

Appendix: Solution to the Incomplete Information Game

This appendix presents the formal solution of the incomplete information game. The solution has four different forms depending on the relative magnitudes of d_1, C_1, d_2, C_2, and a. We consider each in turn.

Case 1: $0 \geq -C_1 - d_1 \geq -a - (a - d_1)d_2$

PROPOSITION 1.

The following strategies and beliefs describe a perfect Bayesian equilibrium to this game when $0 \geq -C_1 - d_1 \geq -a - (a - d_1)d_2$:

(P1.1) S_1 plays $\{CH, SF\}$ if $w_1 > -a$, and $\{CH, BD\}$ otherwise.
(P1.2) Let q denote S_2's posterior belief that $w_1 > -a$, given a challenge; then

$$q = \frac{a - d_1}{C_1}.$$

(P1.3) S_2 plays CD.

59. See, for example, Maoz and Abdolali 1989; Farber and Gowa 1995; and Spiro 1994.
60. See, for example, Russett 1993; Bremer 1993; Farber and Gowa 1995; and Oneal et al. 1996.
61. See, for example, Morgan and Campbell 1991; Russett 1993; Rousseau et al. 1996; and Senese 1997.
62. See Elman 1997, 43–44; and Owen 1997, 10–11.

Proof. S_1's optimal strategy at its final node is identical to that derived in the complete information game. That is, S_1 should play *SF* whenever $w_1 > -a$ and *BD* otherwise. The derivation of q in (P1.2) follows immediately from the specification of S_1's equilibrium strategies and Bayes' rule. At its decision node, S_2 chooses either to concede, and get zero for certain, or resist, and face a gamble between war and peace. Since the probability of war is exactly q, S_2's expected utility from resisting is

$$EU_2(\text{RS}) = qw_2 + (1 - q)(1). \tag{2}$$

Setting this expression greater than zero and substituting for q, we find that S_2 resists whenever

$$w_2 > \frac{a - d_1 - C_1}{a - d_1}. \tag{3}$$

However, the conditions on the parameters in this case imply that the highest possible value of w_2, $-d_2$, is less than the right-hand side of expression (3). Since this condition never holds, S_2 always plays *CD*. Because S_2 concedes all challenges, all types of S_1 prefer *CH* to *SQ*.

Case 2: $-a - (a - d_1)d_2 > -C_1 - d_1 \geq b$,

where $b = -a - (a - d_1)$

$$\left(\frac{C_2}{1 + a} + d_2\right).$$

PROPOSITION 2.

The following strategies and beliefs describe a perfect Bayesian equilibrium to this game when $-a - (a - d_1)d_2 > -C_1 - d_1 \geq b$:

(P2.1) S_1 plays $\{CH, SF\}$ if $w_1 > -a$, and $\{CH, BD\}$ otherwise.

(P2.2) $q = \dfrac{a - d_1}{C_1}$

(P2.3) S_2 plays *RS* if

$$w_2 > \frac{a - d_1 - C_1}{a - d_1},$$

and *CD* otherwise.

Proof. S_1's optimal strategy at its final node is determined as in proposition 1. The derivation of q in (P2.2) follows immediately from the specification of S_1's equilibrium strategies and Bayes' rule. S_2's decision rule is determined as in expressions (2) and (3), leading to the condition proposed in (P2.3). The ex ante probability with which this condition holds is

$$s \equiv \text{Prob}\left(w_2 > \frac{a - d_1 - C_1}{a - d_1}\right) = \frac{C_1 - (1 + d_2)(a - d_1)}{C_2(a - d_1)}. \tag{4}$$

When S_1 makes the challenge, it expects S_2 to concede the good with probability $1 - s$. With probability s, S_2 will resist, and S_1 will be left with a payoff of w_1 or $-a$, whichever is greater. To show that all possible types of S_1 make the challenge in equilibrium, we must show that those types that would back down and receive $-a$ at their final node nevertheless prefer the challenge to the status quo payoff of zero. The expected utility from making the challenge when $w_1 < -a$ is

$$EU_1(\text{CH} \mid w_1 < -a) = s(-a) + (1 - s). \tag{5}$$

Setting expression (5) greater than or equal to zero and substituting for s, we find that S_1 prefers to make the challenge as long as $-C_1 - d_1 \geq b$, which was assumed at the outset.

Case 3: $-C_1 - d_1 < b$ and $-d_1 > -a$

PROPOSITION 3.

The following strategies and beliefs describe a perfect Bayesian equilibrium to this game when $-C_1 - d_1 < b$ and $-d_1 > -a$:

(P3.1) S_1 plays $\{CH, SF\}$ if $w_1 > -a$, $\{CH, BD\}$ if $-a \geq w_1 \geq b$, and $\{SQ, BD\}$ if $b > w_1 \geq -C_1 - d_1$.

(P3.2) $q = \dfrac{-d_1 + a}{-d_1 - b}$.

(P3.3) S_2 plays RS if

$$w_2 > \frac{b + a}{a - d_1},$$

and CD otherwise.

Proof. S_1's strategy at its final node is determined as in proposition 1, and the specification of q in (P3.2) is derived from S_1's equilibrium strategies and Bayes' rule. S_2's

expected utility from resisting is determined as in expression (2). Setting expression (2) greater than zero and substituting for q generates the decision rule proposed in (P3.3). The ex ante probability with which this condition holds is

$$s \equiv \text{Prob}\left(w_2 > \frac{b+a}{a-d_1}\right) = -\frac{d_2(a-d_1)+b+a}{C_2(a-d_1)}. \tag{6}$$

For S_1's strategy at its initial node to be sequentially rational, it must be the case that a state of type $w_1 = b$ is indifferent between *CH* and *SQ*. Since a state of this type backs down at the final node, its expected utility from making the challenge is determined as in expression (5).

Setting expression (5) equal to zero, a state of this type is indifferent between *CH* and *SQ* when

$$s = \frac{1}{1+a}. \tag{7}$$

The cutpoint b must be such that expressions (6) and (7) hold simultaneously. This occurs when

$$b = -a - (a-d_1)\left(\frac{C_2}{1+a} + d_2\right), \tag{8}$$

as defined in proposition 2. Notice that $b < -a$, as required.

Case 4: $-d_1 < -a$

PROPOSITION 4.

The following strategies and beliefs describe a perfect Bayesian equilibrium to this game when $-d_1 < -a$:

(P4.1) S_1 plays {*SQ*, *BD*}
(P4.2) $q = 0$.
(P4.3) S_2 plays *RS*.

Proof. When $-d_1 < -a$, then there are no possible types for which $w_1 > -a$, so all types of S_1 back down at their final node. S_2's beliefs reflect this observation. S_2's strategy is driven by the fact that it knows S_1 will back down, so it never makes sense to concede the good.

We can use these results to calculate the equilibrium probability of three different outcomes: the ex ante probability of a challenge, the ex ante probability of war, and the probability that S_2 resists conditional on a challenge. Expressions for each of

TABLE 4. *Equilibrium probabilities of three observable outcomes*

Cases and conditions	*Outcome*		
	S_1 challenges	*S_2 resists*	*War*
Case 1 $0 \leq d_1 \leq d_1{}^*$ $a > a^*$	1	0	0
Case 2 $d_1{}^* \leq d_1 \leq d_1{}^{**}$ $a^{**} \leq a \leq a^*$	1	$\dfrac{C_1 - (1 + d_2)(a - d_1)}{C_2(a - d_1)}$	$\dfrac{C_1 - (1 + d_2)(a - d_1)}{C_1 C_2}$
Case 3 $d_1{}^{**} \leq d_1 \leq a$ $d_1 \leq a \leq a^{**}$	$\dfrac{a - d_1}{C_1}\left(1 + d_2 + \dfrac{C_2}{1 + a}\right)$	$\dfrac{1}{1 + a}$	$\dfrac{a - d_1}{C_1(1 + a)}$
Case 4 $d_1 \geq a$ $0 \leq a \leq d_1$	0	1	0
Complete information	$\dfrac{a - d_1}{C_1}$	0	0

these probabilities are given in Table 4, which also indicates the ranges of d_1 and a for which each expression holds. In order to simplify notation, let $d_1{}^*$ denote the value of d_1 such that $-C_1 - d_1 = -a - (a - d_1)d_2$, which describes the boundary between case 1 and case 2; let $d_1{}^{**}$ denote the value of d_1 such that $-C_1 - d_1 = b$, which describes the boundary between case 2 and case 3. Define a^* and a^{**} as the corresponding values for a. The information in this table was used to generate Figures 2 and 3. For comparison, the probabilities associated with the complete information case are also given.

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