Alliance Institutionalization and Alliance Performance

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Military alliances are formed with varying degrees of institutionalization. While some alliances involve little initial investment or joint planning, others involve significant peacetime costs in establishing formal structures and engaging in military coordination. Several scholars have addressed the reasons states are willing to pay these governance costs in establishing cooperation—through controlling the risks of opportunism and coordinating policy more extensively, state leaders may be able to achieve higher benefits from cooperation. What has received less systematic empirical attention, however, is the comparative performance of highly institutionalized alliances. Are alliances that represent "deeper" cooperation more reliable than their less institutionalized counterparts? The newly expanded Alliance Treaty Obligations and Provisions (ATOP) dataset includes detailed information about the institutionalization of alliances formed between 1815 and 1989. Using these data, we evaluate the effects of institutionalization on alliance performance. Surprisingly, we find no evidence that alliances with higher levels of peacetime military coordination or more formal alliances are more reliable when invoked by war. We speculate about directions for future research that might help to explain these results.

Keywords: alliance, institution, cooperation, reliability, war

ALLIANCE INSTITUTIONALIZATION AND ALLIANCE PERFORMANCE

For the last twenty years, a major debate in international relations has focused on whether or not international institutions have an independent effect on international outcomes (e.g., Mearsheimer, 1995; Keohane and Martin, 1995). More recently, however, scholarship has begun to move beyond this question to explore differences in international institutions. Accepting that states form and design international institutions purposively because they believe these institutions will help them to achieve particular goals, scholars have begun to study more intensely the causes and effects of differing institutional designs (e.g., Koremenos, Lipson, and Snidal, 2001).

Military alliances are, arguably, the most studied international institutions of all time, and yet rarely have studies systematically evaluated the varying effects of alliances with different institutional designs. While scholars have begun to recognize the variance in design of cooperative security structures (e.g., Lake, 1996, 1999, 2001; Weber, 1997, 2000; Haftendorn, Keohane, and Wallander, 1999; Leeds, Ritter, Mitchell, and Long, 2002), this research is in its infancy.[1] In general, contemporary theory suggests that when leaders believe that they can achieve significant benefits from cooperation, but that those benefits may be jeopardized by fears of opportunism, they may be willing to incur more substantial governance costs to institutionalize their policy coordination (e.g., Lake, 1999; Weber, 2000; Abbott and Snidal, 2000; Leeds, 2000).

Formal models of alliance formation and reliability specifically predict that increased policy coordination and increased formalization should have an impact the performance of alliances—on their credibility, their ability to deter challengers, their reliability, and their potential for victory in military conflict (Morrow, 1994; Smith, 1995, 1998; Fearon, 1997). While choosing more highly institutionalized structures imposes greater peacetime costs, these costs are sometimes justified by the improvement in performance. These plausible deductions are commensurate with the intuition of previous scholars (e.g., Holsti, Hopmann, and Sullivan, 1973), but they have yet to be subjected to systematic empirical test over an extensive time period. We attempt to fill this void by evaluating whether more highly formalized alliances or alliances with more intensive peacetime military coordination are more reliable when invoked by war.

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[1]For early empirical studies of the design of alliances see Russett (1971) and Holsti, Hopmann, and Sullivan (1973).

In our analysis of 137 cases in which alliances were invoked by war between 1816 and 1991, we find no evidence to support the hypotheses that more formal alliances or alliances with greater peacetime military coordination are more reliable when invoked by war. We speculate about possible explanations for these results that can be investigated in future empirical tests, but from this study we can not conclude that alliance institutionalization improves alliance performance, at least once the alliance has been invoked by war.

This paper proceeds as follows. In the next section, we explain why peacetime military coordination and increased formalization should be associated with greater wartime reliability, paying particular attention to the models of Morrow (1994) and Smith (1995, 1998). Following that, we explain how we operationalize alliance institutionalization and wartime reliability. Next, we present and discuss our empirical results. The final section offers concluding remarks.

THE EXPECTED EFFECTS OF ALLIANCE INSTITUTIONALIZATION ON ALLIANCE RELIABILITY

An alliance is a formal agreement among independent states to cooperate militarily. Alliances include promises by states to coordinate their actions in the event of military conflict while retaining their sovereignty and identities as independent states. Leaders form alliances to enhance the security and power of their states. Alliances may allow states to take advantage of economies of scale in the provision of defense and to benefit from specialization by coordinating training, equipment, and procedures. By pooling their efforts and/or cooperating with states that have different comparative advantages, leaders hope to create a stronger joint fighting force.

Alliances also serve as formal notification to others of a state's intentions in the event of international conflict. One of the main motivations for forming alliances is to deter aggression. By warning potential adversaries that any attack will face a multinational force, alliances can discourage aggressive adversaries from initiating war. Offensive alliances may also serve to encourage potential targets to give up quickly in recognition of the strength of the opposing force. State leaders have an interest in making their cooperative relationship known if doing so may discourage attacks and/or encourage adversaries to give up quickly.

While most scholars agree that signaling and coordination are the general goals sought by leaders in forming their alliances, there is a great deal of variation in the design of military alliances.[2] Not only

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[2]For a review of the literature regarding alliance formation, see Morrow (2000).

do leaders make choices regarding the obligations they are willing to incur should conflict arise, but they also determine the level of formality of the obligations and the extent of peacetime military coordination associated with the alliance. A general argument regarding the use of more formal commitments and stronger delegation in international relations suggests that states constrain themselves with formal institutions when the potential benefits of cooperation are substantial, but the risks and costs of failed cooperation due to opportunism are high (e.g., Abbott and Snidal, 2000; Lake, 1999; Weber, 2000). In other words, states are willing to incur greater governance costs in managing their joint projects when doing so makes profitable joint action possible where it would otherwise have been considered too risky.

Leaders choose a level of formality and peacetime military coordination when committing to an alliance. Presumably, these design decisions are driven at least in part by their expected influence on the effectiveness of the alliance; leaders bear higher costs when there is more to gain. More formal commitments (for instance, those that are formally ratified and/or establish formal administrative structures) are more costly to establish, but should also be more costly to break, suggesting enhanced credibility (e.g., Abbott and Snidal, 2000). Greater peacetime military coordination should increase the value of an alliance, making the whole greater than the sum of its parts in fighting effectiveness (e.g., Holsti, Hopmann, and Sullivan, 1973, p. 22). This, in turn, should increase the incentives for allies to assist each other in conflict.[3]

Morrow (1994) develops a formal model of the formation and effects of military alliances in which the choice of alliance "tightness" is endogenous. In other words, allies can choose how much peacetime military coordination to require when negotiating their alliance. Choosing a tighter alliance imposes greater peacetime costs, but also increases the ability of the allies to fight together should conflict occur, making it more likely that allies will fulfill their obligations and win wars that they fight together.[4]

In Morrow's model, the tightness of alliances is driven in part by how "deterrable" the threatener is. When a particular level of alliance

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[3]Holsti, Hopmann, and Sullivan (1973) claim that institutions established by the alliance are one way to foster alliance cohesion and efficacy, which in turn influences the credibility of the deterrent threats. Russett, however, is surprised to find that the set of variables he groups together under the rubric of "integrated defense" "do not predict to fighting on the same side" (1971, p. 275).

[4]Smith (1998) also suggests that allies have an advantage in fighting together due to prior coordination in comparison to non-allies. He does not, however, allow this benefit to vary based on the design of the alliance.

tightness will deter all threateners, there is no incentive for the alliance members to invest in a tighter alliance. When all threateners can not be deterred, however, most equilibria of Morrow's model suggest that tighter alliances have a greater impact in encouraging intervention than less tight alliances. In other words, a state with identical characteristics becomes increasingly likely to intervene to support an ally as alliance tightness increases due to the increased utility for war with the tight alliance.

Other theories of alliance formation and reliability, however, model the influence of alliance formation not in the impact of military coordination on the potential to be victorious, but on the domestic and international audience costs associated with breaking a past commitment. Because of the formal promise, leaders find it less palatable to abandon allies. As a result, leaders make promises that they expect to be willing to fulfill and are generally likely to honor their commitments. Allies are more likely to fight together than non-allies (e.g., Smith, 1995; Fearon, 1997).[5]

While none of the existing models allows the formality of the promise, and in turn, the level of audience costs, to be endogenous, empirically there is variation in this feature of alliances. While by definition all alliances are written agreements signed by officials of at least two independent states, some are formed by executive agreement, while others require formal ratification by domestic political bodies (Leeds, et al. 2002; Singer and Small, 1966). Some alliances are kept secret, while others are publicized. And some alliances require the establishment of administrative structures and bureaucratic bodies, increasing their public profile considerably. It is reasonable to assume that the effect of increasing formality is to increase both the peacetime formation costs and the costs of not honoring an alliance if it is invoked by war (e.g., Abbott and Snidal, 2000; Martin, 2000).

The question we wish to answer is whether the additional costs incurred by leaders who create more formal alliances and who engage in more extensive peacetime military coordination result in more effective alliances. In particular, we are interested in whether, when an alliance member becomes involved in a war, allies are more likely to fulfill their commitments when their agreement is more formal, and thus,

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[5]While Fearon (1997) makes a distinction between "tying hands" and "sinking costs", existing formal models of alliance formation often assume that alliances involve peacetime costs that are not recovered *and* generate additional costs to be incurred in event of abrogation (e.g., Smith, 1995, 1998). In other words, alliances impose sunk costs and also tie hands.

we presume, the costs for not honoring the agreement are higher. Our first hypothesis is:

H1: More formal alliances (e.g., those that have formal administrative structures, are public, and/or have been ratified according to constitutionally specified procedures) are more likely to be honored when invoked by war.

Because peacetime military coordination is aimed at creating a more efficient and effective joint fighting force through rationalizing supplies, equipment provision and maintenance, training, and military planning, allies who have engaged in more extensive prior military coordination should be more optimistic about their chances of prevailing in conflicts that they enter together. Models of alliance behavior have consistently shown that expectations of winning increase the probability that leaders will honor their commitments to support their allies when war occurs. Thus, our second hypothesis is:

H2: Alliances that involve higher levels of peacetime military coordination are more likely to be honored when invoked by war.

In the following sections we develop and execute an empirical test of these hypotheses based on data on alliances and wars covering the period 1815–1991.

MEASURING ALLIANCE INSTITUTIONALIZATION AND WARTIME RELIABILITY

The Alliance Treaty Obligations and Provisions (ATOP) dataset includes information on the provisions included in formal alliance agreements, and from these provisions, we can construct measures of the extent to which different alliance agreements require explicit military cooperation during peacetime and the formality of the alliance structure (Leeds, et al., 2002).[6] Importantly, our data are based on the requirements laid out in the initial written agreements and any later protocols or renegotiations of the formal agreements establishing the alliance. We can not capture informal linkages that emerge through established practice but are never codified in written agreements, nor can we be certain if the signatories consistently complied with the institutionalization requirements in the written agreements.

First, we create a variable to capture the level of peacetime military coordination required by the alliance. We identify three provisions that we believe capture the highest levels of joint preparation: (1) alliances that require an integrated military command during both peacetime and

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[6]We use version 3.0 of the ATOP dataset, which includes 440 alliances signed between 1815–1989. These data are available at http://atop.rice.edu

wartime;[7] (2) alliances that require the members to conduct a common defense policy, including integrated military plans, training, procurement, etc.;[8] and (3) alliances that provide for joint troop placements, mutual exchange of bases, or for one state to establish bases on the territory of another state.[9] We believe that these three provisions will have the greatest impact on the benefits of joint action, and any alliance that includes any of these three provisions is coded as highly institutionalized. These particular peacetime investments increase the probability that the forces will be successful in their joint efforts due to pre-integration, comparable doctrine, training, and supplies, and pre-positioning for joint action.

Next, we specify a variety of provisions that we believe indicate a moderate degree of military institutionalization. Any alliance that does not provide for integrated command, common defense policy or bases, but does include any of the following provisions is coded with a moderate degree of military institutionalization: (1) alliances that require official contact among the military officials of the member states for planning and coordination during peacetime; (2) alliances that create any formal military organization to coordinate plans and behavior; (3) alliances that require one party to provide training and/or technology for the military of other parties; (4) alliances that include specific plans for subordination of one military to another during conflict or that specify military contribution levels (troops, supplies, and/or funds) from the parties in the event of conflict. These alliances include provisions that make it more likely that the parties are benefitting from shared procedures and supplies and standardization of training and equipment and have explicity considered

[7]An example of an alliance featuring an integrated command is the Warsaw Pact, signed by seven communist bloc states in 1955. Article five of the Warsaw Pact states, in part, "The Contracting Parties have agreed to establish a Unified Command, to which certain elements of their armed forces shall be allocated by agreement between the Parties, and which shall act in accordance with jointly established principles" (United Nations, 1955, pp. 24–32).

[8]Russia signed several alliances with other former Soviet republics after 1991 that provided for a common defense policy. Typical of this is a 1992 agreement between Russia and Turkmenistan, which provides in article three for a common defense policy based on previously agreed military doctrines and commits the parties to maintain a coordinated military–technology policy and have a single position on maintaining military forces sufficient for defense purposes (Treaty of Friendship and Cooperation Between Russia and Turkmenistan, signed 31 July 1992—text provided by Ministry of Foreign Affairs of Russia).

[9]For example, in the 1878 Convention of Defensive Alliance between Great Britain and Turkey, England promises to defend Turkey, "And in order to enable England to make necessary provision for executing her engagement, His Imperial Majesty the Sultan further consents to assign the Island of Cyprus to be occupied and administered by England" (Hurst, 1972: p. 549). Similarly, Article four of the 1953 Mutual Defense Treaty between the United States and the Republic of Korea states "The Republic of Korea grants, and the United States of America accepts, the right to dispose United States land, air and sea forces in and about the territory of the Republic of Korea as determined by mutual agreement" (United Nations, 1956b, p. 204).

plans for joint action, but they do not involve the extensive investment in joint action represented by the alliances that exhibit a high level of military institutionalization.

Because our military institutionalization measures are specifically disigned to capture preparation for joint action, they are unlikely to be relevant to alliances that do not require active assistance in military conflict, i.e., neutrality, nonaggression, and consultation pacts. Among those alliances in the ATOP dataset that provide for active assistance (defense and/ or offense pacts), 25.4% (65) exhibit a high degree of military institutionalization according to our coding rules, 26.9% (69) are coded with a moderate level of military institutionalization, and 47.6% (122) feature a low level of institutionalization (see Table 1).

Importantly, however, while Morrow (1994) emphasizes the effects of the benefits of coordination on alliance reliability, others (e.g., Smith, 1995, 1998; Fearon, 1997) emphasize the domestic and international audience costs associated with breaking an international agreement. We expect that these costs will vary with the formality and public nature of the alliance. We examine three factors to code the formality and public nature of the commitment: (1) Did the agreement that formed the alliance require ratification (i.e., was it a formal treaty rather than an executive agreement)? (2) Was the agreement public?[10] (3) Did the agreement require creation of a named organization to administer the alliance?[11] We believe that audience costs for breaking agreements are higher for public agreements, for agreements that were formally ratified, and for agreements that have their own bureaucratic organizations. Thus, any alliance that meets all three of these criteria is coded as highly formal, and any agreement that (a) was formed by a public treaty requiring ratification, or (b) required creation of a formal organization, is coded as moderately formal, with agreements that do not require creation of formal organizations

Table 1. Level of Military Institutionalization in ATOP Alliances Requiring Active Assistance in Conflict (i.e., defense and/or offense pacts), 1815–1989

high	moderate	low	total
65	69	122	256
(25.4%)	(26.9%)	(47.6%)	

[10]Our coding is based on whether the treaty included a requirement for the members to keep the pact secret and does not reflect whether or not they were successful at doing so.

[11]Examples of alliances that required the creation of named bureaucratic organizations are the German Confederation (1815), the Little Entente (1933), the Arab League (1945), and the Organization of American States (1948).

and are either secret or formed by executive agreement coded as the least formal alliances.

Among all alliances included in the ATOP dataset, 15.7% (69) are coded as highly formal, 59.8% (263) are moderately formal, and 24.5% (108) fall into the least formal category. Among alliances providing for active assistance, 15.6% (40) are highly formal, 58.2% (149) are moderately formal, and 26.2% (67) fall into the least formal category (see Table 2).

We measure alliance reliability using the operationalization of Leeds, Long, and Mitchell (2000). We identify instances in which a member of an alliance becomes involved in a war, the alliance obligations are invoked, and alliance partners must choose whether to fulfill their alliance obligations by engaging in an observable action. We refer to these as alliance-war performance opportunities.[12] For alliances that promise active military support (defense and offense pacts), we code alliance members as honoring their alliance if they participate in the war or the militarized interstate dispute (MID) connected to the war on the same side as their ally according to data provided by the Correlates of War project (Sarkees, 2000; Jones, Bremer, and Singer, 1996). We code members who (1) do not join the war or MID on the side opposite the alliance partner and (2) do not provide material or diplomatic support to the adversary as honoring their neutrality pacts. Occasionally, allies who have committed to remain neutral in a conflict actually join the conflict on the side of their ally. We code these alliances as fulfilled.

From 1816–1991, we find 137 alliance-war performance opportunities. That is, there are 137 cases in which a member of an alliance is involved in a war that invokes an obligation requiring observable action on the part

Table 2. Level of Formality of ATOP Alliances, 1815–1989

	high	moderate	low	total
active assistance	40 (15.6%)	149 (58.2%)	67 (26.2%)	256
not active assistance	29 (15.7%)	114 (62.0%)	41 (22.3%)	184
total	69 (15.7%)	263 (59.8%)	108 (24.5%)	440

[12]As is detailed in Leeds, Long, and Mitchell (2000), we include cases as alliance–war performance opportunities whenever the circumstances of the war fall within the conditions specified in the alliance agreement. Because judging the reliability of nonaggression pacts and consultation pacts requires a sample that is not limited to war performance, we exclude nonaggression and consultation pacts from our analysis. The first state to become involved in the war (or the MID that became the war if more than one ally entered the war the same day) creates the war performance opportunity, and all other members of the alliance are coded as honoring or violating their obligation to that initial war participant.

Table 3. Alliance Reliability in War by Alliance 1816–1991

All Members Honor	All Members Violate	Some Honor, Some Violate	Total
93	39	5	137
(67.8%)	(28.5%)	(3.6%)	

of other members of the alliance. In 93 cases (67.8%), the alliance is fulfilled by all members. In 39 cases (28.5%), the alliance is violated by all members. In the remaining five cases (3.6%), some members honor the alliance, and others violate it (see Table 3).[13]

EMPIRICAL EVIDENCE: THE INFLUENCE OF ALLIANCE INSTITUTIONALIZATION ON ALLIANCE RELIABILITY

Our study aims to determine whether the level of military coordination or the formality of an alliance affects the probability that the alliance is honored in times of war. Our unit of analysis is the alliance-war performance opportunity (N = 137), our dependent variable is whether all the members honored their alliance commitment (1 = yes, 0 = no), and our primary independent variables are our measures of military institutionalization and formality described above.[14]

We also include three control variables in our analysis that have proven important in predicting alliance reliability in past studies.[15] First, we control for whether the international power or the domestic political institutions of any member have changed significantly since the alliance was formed. Leeds (2003) demonstrates that two strong predictors of a member state's decision to violate an alliance are changes in the member's international power or domestic policymaking processes between the time the alliance is formed and when it is invoked. Because we code

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[13]The five cases in which some members honor and some violate the alliance are: (1) the triple alliance of 1882 and (2) the triple alliance agreement with Romania in 1883 in World War I. While Germany honors these alliances to Austria–Hungary, Italy and Romania violate them. (3) the 1942 Declaration of the United Nations in World War II. While all other members fulfill their obligations, Ecuador does not participate in any MID with the alliance's opponents in WWII nor in the war, and thus by our rules is coded as violating the agreement. (4) and (5) the Arab Collective Defense Pact in the Six Day War of 1967 and the Gulf War of 1991. In each case, some members participated in the conflict in support of their allies, and others did not.

[14]We also ran the model with the five multilateral alliances that are honored by some members and violated by others as honored if a majority of members fulfilled obligations and the results are substantively similar.

[15]We assembled a number of the control variables using the EUGene computer program, version 3.03 (Bennett and Stam, 2000).

an alliance as honored only when all members fulfill their obligations, a single state's decision to violate is sufficient for the alliance to be coded as violated. As a result, we believe that changes affecting any individual member are appropriate predictors of alliance violation.[16] We use the index of national capabilities provided by the Correlates of War project (Singer 1988) to measure changes in capabilities. If an alliance member's capabilities are more than 10% greater or more than 10% lower when the alliance is invoked than they were when the alliance was formed, we code a dummy variable for change in alliance capabilities 1.[17] We use the Polity 4 dataset (Marshall and Jaggers, 2002) to determine whether any member of the alliance has experienced a change of at least two points on either the democracy or autocracy index; if so we code a dummy variable for change in domestic political institutions 1.[18] Finally, we include a dummy variable representing whether a member of the alliance was the original target in the war. Smith (1995) argues that conflict initiators are more likely to target states with allies that the initiator expects will be unreliable. This variable, therefore, captures the information that adversaries believe they have about reliability that is not captured by the other variables in the model.[19] We identified original targets using the Correlates of War data (Sarkees, 2000). Original targets are states that are involved in the war on its first day on the side opposite the initiator who experience fighting in their territory—in other words, states that are attacked at the onset of a war.

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[16]We also analyzed the model substituting a variable representing change in aggregate capabilities of the alliance members between alliance formation and invocation rather than change in individual member capabilities and found substantively similar results.

[17]The choice of 10% as the threshold is arbitrary, but we analyzed the model using a 20% threshold as well and found no difference in the results. Following Leeds (2003), we choose to use a dummy variable rather than a continuous measure of change to reduce the influence of a few very large values.

[18]Requiring a two point change in coding on the Polity scale rather than any change makes it more likely that the change in policymaking processes was significant and notable; this operationalization follows Leeds (2003). Only seven of our cases include alliance members that experienced a regime change from autocracy to democracy or from autocracy to democracy between the time an alliance was formed and when it was invoked. In five of the seven cases, the alliance was violated. We use Polity 4d to code the authority characteristics of the state at the time of alliance formation or invocation if a change in authority characteristics happens within a year. We adopt the Polity 4 rules for dealing with cases of foreign interruption, interregnum, and transition. Cases of foreign interruption are coded as missing, cases of interregnum are coded as zero, and cases of transition are prorated across the transition.

[19]If Smith is correct that challengers choose targets strategically then we should see more alliance violations when an alliance member is the original target of a war than when the member is either an original initiator or a conflict joiner. See Leeds (2003, p. 818) for further development of this point.

The method of analysis is logit, which is appropriate for a dichotomous dependent variable, and the results of the analysis are reported in Table 4.[20] Not only are the results not supportive of our hypotheses, but they suggest exactly the opposite—alliances that are more formal and alliances that feature higher degrees of military institutionalization are LESS likely to be honored. The coefficients are negative and statistically significant. These variables also have a substantively large impact on the probability that an alliance will be honored. The predicted probability that an alliance will be fully honored declines 0.36 when we compare an alliance with a high level of formality to one with a low level of formality holding all other variables constant at their mean values. Similarly, the predicted probability that an alliance will be fully honored declines 0.29 when we compare an alliance with a high level of military institutionalization to one with a low level of military institutionalization.[21]

The control variables influence the outcome as expected—when a member experiences a significant change in power or policymaking processes, the alliance is more likely to be violated, and original targets are

Table 4. Logit Analysis of the Probability That All Members Honor Alliance in War, 1816–1991

	Estimated Coefficient with Associated Standard Error	Change in Predicted Probability of Honoring[#] with associated standard error
Level of Military Institutionalization	−0.709* (0.297)	−0.29 (0.12)
Level of Formality	−0.929* (0.358)	−0.36 (0.13)
Any member experiences significant change in power	−1.547* (0.516)	−0.29 (0.09)
Any member experiences change in policy process	−1.460* (0.604)	−0.32 (0.12)
Ally is Original Target in War	−1.359* (0.480)	−0.27 (0.10)
Constant	3.690*	
N	137	
Chi^2	57.31*	
Percent Correctly Predicted	82%	

*p < 0.05.

#Absolute change in probability of honoring associated with a change from min to max in this independent variable when all other variables are held constant at their mean values.

[20]All analysis was performed using STATA version 8.0.

[21]We generate predicted probabilities and their associated standard errors using the method and software introduced by King, Tomz, and Wittenberg (2000).

Table 5. Actual vs. Predicted Values (Analysis in Table 4)

	Model Predicts Alliance Honored	Model Predicts Alliance Violated	Total
Alliance Honored	85	8	93
Alliance Violated	17	27	44
Total	102	35	137

more likely to find themselves abandoned by allies in war.[22] These substantive effects are also strong. When at least one state experiences a change in domestic policymaking processes, the probability that the alliance is honored declines 0.32, holding all else constant, and when at least one state experiences a change in power, the probability of the alliance being honored declines 0.29. When a member of the alliance is an original target of a war, the probability of the alliance being honored is 0.27 less than when the ally requesting support is not an original war target.

The model as a whole improves our ability to predict which alliances will be honored and violated over a null model (See Table 5). Our model is correct in predicting outcomes 82% of the time, but is better at predicting which alliances will be honored (91% correct) than which will be violated (61% correct).

DISCUSSION OF RESULTS

We are surprised to find that the evidence does not suggest that military institutionalization and alliance formalization are positively associated with the probability of reliability and victory. While we can't provide any convincing explanation of these results at this time, we are willing to speculate about some possible reasons that can be evaluated empirically in the future.

FORMALIZATION

We have two ideas for why more formal alliances (those that are public, go through official ratification processes, and/or establish formal organizations)

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[22] Of the 137 cases, 33 (24%) include wartime alliances, alliances that were formed when at least one member of the alliance is already at war. Because one might expect wartime alliances to be particularly reliable (and they are), we reestimated the model including only non-wartime alliance cases, and the interpretation of the results remains unchanged. We also estimated the model using only alliances that require active assistance (leaving out neutrality pacts); under these conditions the variable representing formality remained negative and statistically significant, and the variable representing peacetime military coordination remained negative, but statistically significant only at the .16 level. Finally, we estimated the model with an additional control variable indicating whether the alliance was bilateral or multilateral. The interpretation of the other variables was unaffected.

may appear to be less reliable in this analysis.[23] First, more formal alliances may be harder to terminate. If, as we argue, breaking a formal treaty is more costly than ending a less formal arrangement, then it may be the case that formal alliances stay in effect even when the conditions under which they were established have changed dramatically. If less formal arrangements are more likely to be terminated when conditions change, then they are less likely to be invoked by conflict when fulfilling their obligations is unappealing to the members.

There is at least anecdotal evidence that formal agreements may continue in effect even after the states have no intention of fulfilling their obligations. For example, President Yeltsin assured South Korean leaders as early as 1992 that Russia would not provide North Korea with military support as provided for in the 1961 defense pact between the USSR and North Korea and that the treaty would not be extended beyond its expiration date in September, 1996 (*Keesing's Record of World Events*, 1992, 1994). Russia did not, however, abrogate the treaty, but simply let it expire quietly in 1996 (Republic of Korea, 1996).[24] We checked the relationship between formality and duration in the ATOP dataset and found that increased formality is significantly related to longer duration. The mean duration of highly formalized alliances is 5909 days; the mean duration of moderately formalized alliances is 5688 days, and the mean duration of alliances with a low level of formalization is 3557 days.[25] An analysis of variance reveals that the differences between a low level of formalization and either a moderate or high level of formalization are statistically

[23] Another possible explanation is that alliance provisions are bundled in single institutions with cooperative agreements on other issues, and that the formality of these institutions is driven by goals related to the other issues under consideration, thus lessening the direct connection between institutional design and effects on alliance reliability. Powers (2004), for instance, notes the regularity with which regional trade agreements include alliance provisions, Morrow (1991) claims that states may gain control over one another's foreign policies, Gibler (2000, see also Gibler and Vasquez, 1998) notes that alliances are often bundled with territorial settlements, and Long and Leeds (2006) discuss the joint negotiation of economic and security arrangements. Even if the governance costs incurred are driven by non-alliance benefits, however, increased formalization, to the extent that it increases the costs of breaking commitments, should still increase alliance reliability.

[24] Upon dissolution of the Soviet Union, Russia assumed responsibility as a successor state for all international agreements entered into by the Soviet Union in accord with the Vienna Convention on Succession of States in respect of Treaties.

[25] Duration is the number of days between the earliest formation date and the latest termination date of the alliance. Continuing alliances were censored as of 31 December 2003; thus the results present the minimum duration for each category—alliances in effect (61 as of 31 December 2003) actually last longer than reported. For alliances with missing termination or formation days, we coded the fifteenth of the month. No alliances are missing formation or termination months or years.

significant at the .01 level. This suggested explanation can be evaluated further with a model of alliance termination.

Second, states may only form less formal alliances when they are confident enough of shared interests that they feel the additional commitment of ratification, publicity, or organizational structure is unnecessary to ensure fulfillment. In other words, it may be when commitment is most in question that we see higher levels of formalization. Lake (1996, 1999, 2001) argues that additional governance costs are incurred only when fears of opportunism necessitate them, and Weber (1997, 2000) claims that as transaction costs increase (for instance, as the potential for cheating becomes more likely or more costly), states are likely to opt for more binding commitments. Similarly, to the extent that there is a continuous, inverse relationship between governance costs and credibility, states may not choose to bear costs sufficient to remove all risk of opportunism but merely to make the risks more palatable. If the choice of alliance formality is endogenous, leaders are only likely to pay the initial costs of increasing formalization when effectiveness without formalization is in question, and the degree of formalization may never be sufficient to remove all chance of defection. This potential selection effect could be evaluated in a model of alliance formation.

MILITARY INSTITUTIONALIZATION

We also have some ideas regarding the observed relationship between military institutionalization and reliability. The first possibility is that our measure of military institutionalization, which is based entirely on what is negotiated in written agreements, is noisy. Because we only know what the states promised to do, and not what they actually did, we can't be sure that these plans for coordination actually came to fruition. Again, anecdotal evidence suggests that in some cases, the coordination obligations were not fulfilled. Similarly, some allies may engage in significant coordination despite the fact that such actions are not provided for in their written agreements.

For instance, Syria does not come to the aid of Egypt during the Suez War, violating its obligations arising from the Joint Defense Agreement of October 1955. The alliance agreement stipulates that the allies should coordinate their efforts to form a peacetime integrated command structure (United Nations, 1956a, pp. 126–137). However, the integrated command was not established until the war had begun in October, 1956 (Kyle, 1991, p. 333). Thus, while the alliance is coded as a highly institutionalized alliance according to our coding rules, the institutionalization had not been accomplished before the war, and thus was not yet providing the anticipated benefits.

On the other hand, some of the alliances in our dataset display an opposite pattern. The Austro–German Dual Alliance of 1879 does not provide for the establishment of any peacetime military structure (Hurst, 1972, pp. 589–591). However, since these two allies later establish the highly institutionalized Triple Alliance, the realized level of institutionalization among them is much different than what is provided for in the Dual Alliance. The Dual Alliance proves reliable in World War I despite providing for no peacetime military coordination. We know, however, that the states actually engaged in considerable coordination. Hence, these examples constitute evidence for the existence of noise in our dataset.

The second possibility is that alliances with high levels of military coordination deter conflict when they are effective, and thus, there is a selection bias in the sample of war-performance opportunities that we observe. Alliances exhibiting a high level of military institutionalization are a small proportion of the cases in the reliability dataset (19%). This possibility can be investigated in a model of dispute and war initiation in the future.[26]

In fact, Morrow's (1994) model does suggest that alliance tightness should affect the threatener's decision to initiate conflict and that the choice of alliance tightness is driven first by deterrence concerns. In some equilibria, the alliance members choose to form an alliance just tight enough to deter all threateners. Under these circumstances, the improved fighting potential will serve as no benefit because war will not occur; just enough peacetime investment to ensure deterrence is justified. When some threateners cannot be deterred, however, very tight alliances will be formed under two different conditions—when the states will fight together under all conditions and want the benefit of pre-coordination and when a tighter alliance is necessary to ensure that the ally will have the incentive to fulfill the alliance. Because of the potential effect on deterrence, however, some states that will not fulfill alliances are willing to form tight alliances in the hope of enhancing deterrence. Finally, when no threatener can be deterred, there are incentives to form tight alliances even if these alliances perform poorly. As Morrow points out, we can not know how often the conditions supporting each equilibrium occur. Despite Morrow's general conclusion that "alliances do raise the probability of intervention, and tighter alliances raise it more than loose alliances" (1994, p. 293), if most cases fall into the areas in which optimal

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[26]This analysis will be particularly complicated, however, not only because there are several decisions to model in a connected manner—alliance formation, dispute initiation, dispute escalation, and alliance performance—but also because states may have multiple alliances in effect concurrently. Attributing deterrence to particular alliances with particular characteristics is difficult under these circumstances.

deterrence strategies drive alliance institutionalization rather than strategies to improve intervention, we would expect to find a larger effect of institutionalization on the probability of war occurrence than on reliability when war occurs.

While we believe these potential explanations for our findings are intuitively plausible and worthy of further investigation, for now we have no other choice but to conclude that there is no evidence in support of our hypotheses. Military institutionalization and formality of alliance agreements are not related to increased reliability. We hope that future research that incorporates decisions to form and to terminate alliances and decisions to initiate and escalate disputes will be able to shed further light on this surprising conclusion.

CONCLUSION

Any superficial glance at the history or current state of world politics will confirm that military alliances vary significantly in their design and that the provisions of alliance agreements are carefully negotiated. While some alliances involve few peacetime costs, others develop highly specialized governance structures and require significant investment in specific assets and strategy change. These differences are specifically chosen by leaders seeking to achieve particular goals. Leaders choose, for instance, how formal to make their commitments, and, in turn, the costs associated with breaking them. They also choose how much to invest in peacetime specialization and coordination that will presumably pay off later if the alliance is called into conflict. We believe they make these choices by weighing the benefits to be gained from a stronger commitment against the increased governance costs associated with that commitment.

In this article, we have made an initial attempt both to measure differences in the institutional design of alliances systematically across a wide range of cases and to evaluate the effects of these differences on alliance performance when war occurs. We do not find support for the hypotheses we develop based on past theories of alliance reliability. Neither alliances that are more formal, nor alliances that require higher levels of peacetime military coordination, are more likely to be honored when invoked by war. We believe, however, that we have identified a number of areas for future research that might help us to make sense of these surprising conclusions.

We hope that this study represents only an early phase in research that attempts to explain both the causes and effects of variance in design of international institutions, and of military alliances in particular. By focusing specifically on how and under what conditions particular institutional

structures will be attractive to state leaders, and how and under what conditions particular institutional structures enhance the prospects for successful cooperation, this line of research can help guide scholars and policymakers who seek to understand the potential for increased international cooperation in the future.

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