

Premature Alliance Termination:  
Explaining Decisions to Abrogate or Renegotiate Existing Alliances<sup>1</sup>

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ABSTRACT

Under what conditions do leaders choose to terminate existing alliances before their scheduled end dates? If states form military alliances purposively and endure costs in order to achieve the benefits of policy coordination, how can we understand decisions to terminate existing alliance relationships prior to fulfillment of the previously negotiated conditions for the alliance to end? In this paper, we build an argument that links changes in specific factors within and outside the member states to the decision to abandon sunk costs and terminate a cooperative relationship. We assume that leaders form alliances based on their beliefs at the time of formation that the benefits of the alliance exceed the costs, and that alliances become vulnerable to termination when the conditions supporting their formation change in such a way that the expected future benefits are not worth the continuing costs. Yet, whether and how alliances end are also influenced by factors that affect the costs associated with abrogation and renegotiation. We evaluate our argument empirically on a sample of bilateral alliances formed between 1816 and 1989 using competing risks duration analysis and find support for our hypotheses.

## I. INTRODUCTION: EXPLAINING DECISIONS TO TERMINATE ALLIANCES

When scholars, policymakers, or casual observers of world history identify major changes in the international political landscape, they tend to use changes in alliance relationships as their guideposts. Sometimes these changes are associated with the ends of major wars, but one reason the ends of wars tend to usher in new eras is because they are associated with a change in political alignments. For example, the Cold War era was defined by competing western and eastern alliance blocs, and the post-Cold War era is often dated to the collapse of the Warsaw Pact. Thus, understanding sea changes in international relations requires understanding changes in alliance politics.

Our goal in this paper is to identify the conditions under which political leaders choose to terminate existing alliances. We assume that forming and maintaining alliances is costly, and that leaders form alliances only when they deem them beneficial. It follows that decisions to end existing alliances are most likely a response to changes in factors that affect the costs and benefits of the alliance relationship. When the conditions that led to alliance formation change, leaders become more likely to end their alliances prematurely (i.e. prior to their scheduled termination dates). We find that changes in the international power of members, changes in the internal politics of members, changes in the external threat environment, and the formation of new outside alliances by alliance members increase the probability of premature alliance termination.

A major innovation in our analysis is the recognition that alliances end in different ways. While some previous studies have tended to assume that all alliances end through opportunistic abrogation and that alliance termination is equivalent to alliance violation, empirically this is not the case; only 34% of the alliances in our sample end in violation. Some alliances (16% of our cases) end because they have fulfilled their purpose and are not renewed at their scheduled termination date by agreement among the members, usually because the *casus foederis* ceases to exist. Some alliances end because one or more members can no longer execute an independent foreign policy when they are conquered by an outside power; this is the mode of termination for 11% of our cases. Other alliances (25 % of our sample) end when the parties mutually agree to renegotiate their relationship and replace their alliance with a new agreement with different obligations. If, as we expect, different modes of alliance termination are governed by different causal mechanisms, our research design must take this into account.

In particular, we distinguish between alliances that end for exogenous reasons (their purposes are fulfilled or members can not conduct an independent foreign policy) from those that terminate due to a decision by the leaders of one or more member states to end the alliance prematurely. Premature alliance termination, whether through unilateral abrogation or through mutual renegotiation of the primary obligations, signals an active change in foreign policy, and this is the process that we wish to understand in this study. Under what conditions do leaders end existing alliance commitments prior to their scheduled end dates?

We argue that leaders make decisions about whether to continue an alliance, renegotiate its major obligations, or to abrogate the agreement, and that these decisions are based on the expected future costs and benefits of the alliance *and* the costs and benefits associated with the acts of abrogation or renegotiation. Informed by recent literature on international cooperation, we develop hypotheses linking features of members and of the design of the alliance agreements themselves to the probability that an alliance ends in a particular way (e.g., abrogation) rather than in another way (e.g., mutual renegotiation). Leaders of states with certain characteristics expect to experience greater costs for violating international agreements, and all else equal, these leaders are less likely to abrogate their alliance agreements. Most importantly, however, leaders can influence the probability of opportunistic abrogation and of successful renegotiation when they design their alliances. By choosing the formality of their instruments, links to other areas of cooperation, and the terms of their agreements, leaders affect the stability of their future cooperation.

Explaining not only whether alliances end, but how they end, requires two major advances over past research. First, it requires the use of new data that describe the means and causes of the termination of alliances. We have collected this information for 304 bilateral alliances signed between 1816 and 1989 in the Alliance Treaty Obligations and Provisions (ATOP) dataset (Leeds, Ritter, Mitchell, and Long 2002). The ATOP dataset also includes extensive information about the design of alliance agreements, allowing us to evaluate the effects of alliance design on alliance termination. Second, explaining both when and how alliances end requires the use of statistical techniques that allow us to compare the influence of independent variables upon different possible means of termination. We employ competing risks event history analysis to evaluate our hypotheses.

In the end, our study provides evidence that decisions to terminate alliances prior to their scheduled termination dates (that is, by abrogation or renegotiation of primary obligations) can be traced to changes in factors that influence the value of the alliance to members. This is reassuring in that it indicates that we have correctly identified factors influential in alliance decisions. Aspects of the member states and the design of the alliance, however, also have an impact on the probability an alliance is terminated and particularly on how it is terminated. Some characteristics of members (for instance, democracy) seem to make violation less likely, and some design features (for instance, finite terms) lend themselves more readily to renegotiation than others.

## II. CHANGING CONDITIONS AND ALLIANCE TERMINATION

An alliance is a formal agreement among independent states to cooperate militarily. Alliances may include any of a variety of specific promises, but what they share in common is a written commitment to coordinated action in the event of crises that have the potential to involve military conflict. Unlike tacit alignments, alliances begin, and often end, through active political choices. Not only do leaders agree to ally and sign a formal document indicating their allied status, but they design the content of the agreement, specifying the actions they are obligated to take and the conditions under which they are obligated to take them.

Contemporary alliance theory suggests that leaders formalize their alliance commitments in written cooperative agreements for two primary reasons. Leaders may use a formal agreement and any institutional structure that goes along with it to manage cooperation among themselves. Military cooperation among independent states may be desirable because it allows for greater specialization and for states to take advantage of economies of scale in the provision of defense (e.g., Lake, 1999). Leaders may also use formal alliance agreements to send signals to others of their future intentions should international conflict occur. By incurring the costs of negotiating and instituting an alliance and the policy coordination that supports it, states are able to signal, both to partners and to potential adversaries, their value for their alliance partners. By informing potential adversaries of the costs they are willing to incur in support of a partner, leaders may be able to deter the initiation of conflict or encourage quick capitulation (Morrow 1994, Smith 1995, 1998, Fearon 1997).

Many contemporary scholars also agree that having formed an alliance changes the incentives of leaders if conflict does occur, making it more likely that they will intervene to support their partners. Having

engaged in policy coordination improves the allies' ability to work together and enhances their chances for joint success when they fight together (Morrow 1994, Smith 1998). Breaking a formal commitment is often viewed as undesirable, as it can lead both international and domestic audiences to question a leader's credibility and competence (Smith 1995, 1998, Fearon 1997). Thus, due to the increased benefits of joint action and the increased costs of abrogating a formal agreement, alliances improve the prospects for cooperation.

Common to these arguments is that leaders form alliances purposively. Alliance formation is an active choice of cooperation, and a costly one at that. So when do alliances end? Theorists have focused much less attention on the reasons leaders terminate alliance commitments than they have on the reasons they form them. In fact, empirical studies of the duration of alliances have tended to assume that factors related to the initial value of the alliance play a large role in determining its duration; alliances that provide more security improvement, offer non-security benefits, and include states with similar liberal political structures should last longer (e.g., Bennett 1997). Yet, given that state leaders saw enough value in all observed alliances to incur the costs of forming them, we need to explain why they change their policy at a later date and choose to terminate these agreements.

It seems reasonable to assume that leaders occasionally review their foreign policy to determine whether current policy continues to be beneficial. When it comes to alliances, one can imagine that leaders will occasionally consider whether the value of an alliance continues to exceed its costs. While the initial costs of negotiating and forming the alliance have already been paid and cannot be recuperated, there are both continuing and potential costs associated with an alliance that can be avoided with alliance termination. If the current and projected future benefits of the alliance do not justify their continuing and potential future costs, we expect leaders to consider actions to end their alliances. The continuing costs associated with an alliance include managing the alliance (maintaining official organizations and coordinative entities, engaging in joint planning, etc.) and the lost autonomy and increased foreign policy consultation and coordination that are required to maintain a credible joint position. The potential costs are those that the leader expects to incur should the full alliance obligations be invoked. This might involve a choice between participating in a war and abandoning an ally in an hour of need. When the expected benefits gained from the deterrent properties of the

alliance and from defense specialization and coordination stop exceeding the expected value of the continuing and potential costs, alliances become vulnerable to termination.

If we assume that leaders enter alliances with rational expectations of alliance costs and benefits, then it makes sense that alliance termination becomes likely only when the conditions that encouraged the members to invest in the alliance have changed. Alliances that were once viewed as valuable may become too costly when factors that encouraged their formation give way to new realities. Thus, the most compelling explanations for alliance termination should be found in changes in factors affecting the expected future value of the alliance since the time of alliance formation.

Walt (1997), for instance, argues that alliances are most likely to collapse as a result of changes in perceptions of threat, declining credibility, and changes in domestic politics. While Walt provides only anecdotal evidence of his claims, we agree with his general framework. Surprisingly, however, existing large N empirical analyses of alliance termination have not examined the effects of changes in factors affecting the value of alliances since alliance formation. Morrow (1991) argues that states that are undergoing changes in their international power are more likely to terminate their alliances and finds evidence to support his hypothesis. Morrow's test, however, relates the extent of power change within a given five year period to the probability that an alliance terminates during that time period, with no explicit reference to the conditions in effect at the time of alliance formation. Bennett (1997) re-examines Morrow's hypothesis and evaluates hypotheses that regime changes and the ends of wars within a given five year period will be related to an increased probability of alliance termination during the same era. While these studies are a step in the right direction, we believe that a key to predicting alliance termination is to examine changes in the costs and benefits of alliances in comparison to the conditions in effect when leaders chose to form these alliances. We are aware of no existing large N empirical study that faithfully evaluates the argument that aggregate changes in relevant factors since the time the alliance was formed should be related to its termination.

But what general factors influence the costs and benefits of alliances? Alliances are fundamentally about military coordination, and military power should certainly influence the value of an alliance. If a state or its ally experiences a significant change in international power, it is possible that the benefits of the alliance could decline in comparison to its costs. Weaker states are less helpful in deterrence and less able to contribute

to joint defense. As a state gets weaker, the military commitments it can safely undertake also decline, and participating in war becomes less desirable as success becomes more unlikely. When one's own power or that of an ally declines, one might expect incentives to terminate an alliance to increase. Becoming stronger, however, could also change the value of an existing alliance. Stronger states are more capable of relying on their own forces and deterring challenges on their own. As the additional benefits of an ally's forces become less important, the state may come to value autonomy over the benefits of coordination. Thus, we believe that changes in power, whether they lead an alliance member to become stronger or weaker, can reduce the value of an alliance and lead to its termination. Alliance termination might be instigated by the state itself, or by its ally, if the ally views the state as a less desirable partner given its change in power.

*H1: When an alliance member experiences a significant change in international power in comparison to the conditions in effect when the alliance was formed, the alliance becomes more likely to terminate prior to its scheduled expiration.*

While alliances are certainly about aggregating military power, that is not all they are about. Alliances are also about policy. Alliances are most credible, and thus most valuable, when the states involved pursue similar foreign policies. The policies of the allies must remain commensurable and must undergo active coordination for the alliance to retain its value; the costs of coordination must not become excessive. In recent years, scholars have come increasingly to accept that foreign policy is not given by the external environment, but results, at least in part, from domestic political incentives (e.g., Moravcsik 1997, Bueno de Mesquita, Smith, Siverson, and Morrow, 2003).

Changes in internal political governance, therefore, can result in large shifts in foreign policy, making continued allied coordination difficult, costly, and potentially undesirable. While such changes can occur with any change in leadership, they may be particularly likely to accompany changes in policy making processes themselves. Bueno de Mesquita et al. (2003), for instance, argue that leaders choose foreign policies to maximize their probability of staying in power, and that the best policies for staying in power vary with the political institutional structure of states. Siverson and Starr (1994) have demonstrated that changes in regime type tend to be associated with changes in alliance portfolios, suggesting some preliminary support for the claim that changes in internal institutional structure can change the costs and benefits of continuing existing



alliances.<sup>2</sup> We provide a new test of the hypothesis here, based on the idea that a change in policymaking processes may cause a state to change its foreign policy orientation, or may cause its current allies to change their foreign policies toward the state in question.

*H2: When an alliance member experiences a significant change in internal political processes in comparison to the conditions in effect when the alliance was formed, the alliance becomes more likely to terminate prior to its scheduled expiration.*

The primary purpose of alliances is to aid member states in their defense, by preparing them to fight jointly should military conflict occur, and/or by deterring potential enemies from military engagement through a united front. It follows, therefore, that states form alliances and bear the ongoing and potential costs of alliances because they perceive threat in their external environment (e.g., Walt 1987). To the extent that this threat is reduced and one or more of the member states judges conflict with potential adversaries to be less likely, the alliance may no longer be sufficiently valuable to justify continued maintenance. Thus, when the level of threat from outside states decreases, alliance termination becomes more likely.<sup>3</sup>

*H3: When an alliance member experiences a significant decrease in external threat in comparison to the level of threat when the alliance was formed, the alliance becomes more likely to terminate prior to its scheduled expiration.*

The value of a given alliance also depends on the availability of preferable substitutes, and thus, changes in alliance relations with other states may affect a leader's view of the value of an existing alliance. If outside states experience changes that make them more desirable alliance partners, a leader may opt to form an alliance with a new alliance partner. If coordinating foreign policy with the new ally makes it more difficult (or even impossible) to coordinate foreign policy with the old ally, maintaining an existing alliance along with a new alliance may be too costly. Even if the old ally and the new ally share general foreign policy orientations, a state may find that the new alliance provides sufficient deterrence and security benefits to make

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<sup>2</sup> Siverson and Starr do not evaluate the effects of domestic institutional change on alliance termination directly, however, and Bennett (1997) does not find a statistically significant relationship between regime change and alliance termination.

<sup>3</sup> Bennett (1997) tests a related hypothesis about changes in the power of allies vs. enemies, but finds no support for the hypothesis.

the old alliance superfluous. Thus, when a state forms a new alliance with an outside state, we expect current alliances to be in greater jeopardy of termination.

*H4: When an alliance member forms a new outside alliance, the alliance becomes more likely to terminate prior to its scheduled expiration.*

Changes in the factors discussed above create incentives for leaders to terminate their alliances prematurely. Yet, because of the costs associated with violating or renegotiating an existing commitment, leaders may maintain alliances even after their value fades. In other words, alliances that leaders would not be willing to form anew will be maintained if the costs of changing them are too great. In the next section we discuss features that may discourage alliance violation and/or encourage successful renegotiation.

### III. MEMBER CHARACTERISTICS, DESIGN FEATURES, AND DECISIONS TO ABROGATE OR RENEGOTIATE ALLIANCES

Leaders have a number of choices when it comes to their ongoing alliances. They can continue them unchanged, attempt to renegotiate their terms, or abrogate them unilaterally. The continuing costs and benefits of alliances play a major role in this decision. For any given vector of alliance costs and benefits, however, the costs associated with renegotiation and/or abrogation will also affect a leader's decision to violate an agreement, change its terms, or accept it as is. If costs associated with abrogation and/or renegotiation are high, we expect the probability of premature alliance termination to decrease.

For the purpose of this study, we are interested in renegotiations that affect the primary obligations of the alliance members. While studying the deepening of institutional structures and other aspects of the design of agreements is certainly important, here we are interested in significant changes in foreign policy obligations. We thus limit our study to renegotiations that affect the obligations required of members when war occurs—for example, the replacement of an alliance that includes commitments to defend each other in the event of attack with an alliance that commits the states only to consult one another in the event of crisis. Below we identify features of member states and of alliance agreements themselves that we believe increase the costs of abrogating alliances and features of member states and alliance agreements that we believe increase or decrease the probability that leaders will replace an alliance through negotiation of a new agreement with different obligations.

One of the features of alliance members that may affect how an alliance terminates is the structure of domestic policymaking processes. Several scholars have noted that democracies are less likely to change policy quickly than other types of states (e.g., Morgan and Campbell 1991, Gaubatz 1996, Leeds 1999, Martin 2000, Lipson 2003). Because democratic leaders operate under high levels of executive constraint with highly institutionalized policy procedures, it is harder for them to make abrupt changes in course. In addition, because democracies are societies based heavily on respect for the rule of law, they may be particularly unlikely to abrogate existing commitments that have become institutionalized as part of domestic or international law. McGillivray and Smith (2000) provide microfoundations for the tendency of democratic leaders to avoid defecting on international agreements; leaders who can be easily replaced by their constituents have an electoral incentive to maintain cooperative international relations. Gaubatz (1996) argues that the incentives for democratic leaders to fulfill their international commitments cause alliances involving democratic states to last longer, and he finds support for this hypothesis (see also Reed 1997, Bennett 1997).

Yet, the absolute duration of alliances is a noisy proxy for alliance violation. Although Gaubatz's hypothesis receives some empirical support, we contend that associating the reluctance of democracies to violate agreements with alliance duration misses the central point we have been emphasizing—alliances may end in any one of many ways. Alliances that end in fulfillment of their obligations or in mutually acceptable renegotiation may be shorter or longer than alliances that end in violation. The established theory speaks to the probability that a leader will abrogate a commitment unilaterally rather than simply how long an alliance will last. We test this hypothesis:

*H5: Alliances involving democratic states are less likely to end in violation of terms.*

Another factor that might affect how an alliance terminates is the non-military benefits to be gained from the relationship. Morrow (1991) argues that some alliances, particularly those between major powers and minor powers, may offer broader benefits than simple capability aggregation in the face of threats. Specifically, Morrow (1991) argues that the major power agrees to provide security to the minor power in return for some non-military benefit. Because of their potentially broader scope, these alliances might be of especially strong continuing value and be particularly unlikely to be broken before their scheduled termination. Leaders who break such agreements risk losing not only military support but other cooperative benefits as

well. The temptation to abrogate such agreements, especially without negotiating a new relationship, should be comparatively low. Morrow (1991) finds support for the claim that asymmetric alliances last longer, but this finding is not supported in Bennett's (1997) subsequent analysis. Using a different research design and new data, we re-evaluate the hypothesis here, focusing specifically on the probability of unilateral abrogation.

*H6: Alliances between states of different power status are less likely to end in violation of terms.*

Morrow's (1991) argument assumes that alliances between major and minor powers are based on implicit issue linkage—major powers provide security to minor powers in return for support on other issues. Scholars have long hailed issue linkage as a way to encourage the development and continuation of cooperation—when cooperation on one issue is linked to cooperation on other issues, leaders should be less likely to defect on any issue for fear of losing the benefits of cooperation on other issues (e.g., Axelrod and Keohane 1985).

In fact, many alliance agreements include provisions for cooperation in non-military areas (e.g., Powers 2004, Gibler 2000, Long and Leeds 2006). They may, for instance, include promises of economic cooperation, territorial settlement agreements, and/or guarantees for minority rights. We believe that one of the reasons that leaders design broad agreements that link issues is to make their cooperative relations more durable and to make opportunistic abrogation more costly. When other aspects of the agreement remain valuable, the costs of maintaining the military promises may be worth the overall benefits to be gained from the agreement, and the military promises should be most likely to change in a mutual negotiation of a new cooperative relationship. These alliances should be less vulnerable to unilateral abrogation.

*H7: Alliances including obligations to cooperate on other issues are less likely to end in violation of terms.*

There are other features of alliance design that will also affect alliance durability; leaders choose, for instance, the type of instrument through which the alliance is formed. While all alliances are, by definition, formed through written agreements among state leaders, there is variance in the formality of the document. Some alliances are codified in formal treaties that require ratification through constitutionally specified processes. This often involves approval of additional governmental bodies beyond the chief executive, and ratified treaties become official domestic laws that may be changed only through specified procedures. Other

alliances are formed through executive agreement or the exchange of diplomatic notes— methods that require no approval beyond that of the chief executive, and which can be easily reversed through the same process. Because the costs of breaking a ratified treaty are higher than the costs of breaking an alliance formed by executive decree, we believe that alliances codified in treaties are less likely to end in abrogation. It may also be the case, however, that their more formal nature makes them more difficult to renegotiate as well; changing the requirements of a relationship, even through mutual agreement, becomes more difficult with more formal instruments. Thus, we believe that alliances codified in treaties are both less likely to be abrogated and less likely to be successfully renegotiated.

*H8a: Alliances codified in formal treaties are less likely to end in violation of terms.*

*H8b: Alliances codified in formal treaties are less likely to end in renegotiation.*

It is also the case, however, that when leaders negotiate their cooperative agreements, they may expect that the value of the agreements will not continue indefinitely. Leaders who are concerned about the costs of breaking commitments, but who also recognize that they may have reason to wish to renegotiate or terminate their promises later, may build the possibility of renegotiation into their agreements. Koremenos (2001, 2005), for instance, argues that uncertainty about the future value of an agreement may cause leaders to include provisions increasing the flexibility of agreements— for instance, finite durations, escape clauses, or renegotiation provisions. Alliances that specifically allow for limited terms and renegotiation may be of shorter duration, but this may not mean that they are less reliable than other agreements. They may be of limited duration specifically because leaders take advantage of the opportunity to renegotiate their relationship periodically to make it more robust over the long term.

*H9: Alliances signed for a limited term are more likely to end in renegotiation.*

Finally, the value of the military aspects of an agreement themselves can also vary with the design of the alliance. While some alliance agreements require little peacetime coordination, others commit the states to establish sophisticated coordinative machinery for integrated command, new bases, and coordinated defense policy. These alliances involve significantly higher up-front and continuing costs, but also provide greater benefits, both in allowing the states to benefit from economies of scale and in producing a more effective joint fighting force (Lake 1999, Morrow 1994). Once states have invested in costly institutionalization of these

alliances, we believe that their continuing value will make institutionalized alliances particularly lasting and able to adjust to new challenges (Haftendorn, Keohane, and Wallander 1999). Because replacing them with a similarly beneficial new alliance will involve such substantial upfront costs, and because the early investment creates a valuable institution, we believe that alliances that require high levels of peacetime military coordination will be less likely to be abrogated unilaterally.

*H10: Alliances with higher levels of military institutionalization are less likely to end in violation of terms.*

In the next sections we present the research design that we employ to test these hypotheses and report the results of our empirical analyses.

#### IV. CODING ALLIANCE TERMINATION

Identifying the date upon which an alliance is formed is relatively simple. Because by definition an alliance is formed by a written agreement, we can date the beginning of the alliance to the date upon which the agreement is signed by the relevant leaders. Determining the date upon which an alliance officially ends is not always as easy. In the Alliance Treaty Obligations and Provisions (ATOP) data (Leeds et al. 2002), which is the dataset used in this study, the following coding rules were used to identify the end of an alliance.

First, we relied on the official positions of the governments of the member states. If a leader announces that the government abrogates an alliance, chooses not to renew an alliance at its termination date, or no longer recognizes the alliance to be in effect due to what that leader perceives as violations on the other side, we code the alliance as terminated. On the other hand, if the alliance members confirm that they recognize an alliance as continuing in force, we code the alliance as continuing, even if we can point to apparent violations or to conflicts in foreign policy beliefs among the members.<sup>4</sup>

Sometimes, however, we find little or no discussion of an alliance after it has been formed. In these cases, we adopt the following rules: (1) If the alliance has a fixed termination date at which it must be actively renewed to continue in force (rather than continuing as long as there is no notice of non-renewal), we assume it ends at its termination date absent any information regarding prior violation, abrogation, or renewal. (2) If a

clear violation of a major provision of the alliance occurs, we assume it ends with that violation absent any information that the members choose to continue the alliance in spite of the violation. (3) If the member states break diplomatic relations with one another, we assume their alliance ends. (4) If the member states sign a new agreement that encompasses all of the provisions of the existing alliance or is directly in opposition to any of the major provisions of the prior alliance, we assume the prior alliance is terminated with signature of the new alliance.<sup>5</sup> If none of these circumstances have occurred, we code the alliance as continuing in effect.

Especially given the hypotheses we test here, it is important to note that we do not assume that changes in internal leadership or changes in internal political institutions result in an end to existing international commitments. We only terminate alliances with internal political changes when the new government is explicit about a new policy. Thus, while the Soviet government in 1917 declared its abrogation of all Russian alliances, in 1991, the Russian government instead committed to continue all international agreements of the Soviet Union as required by the Vienna Convention on the Succession of States in Respect to Treaties (United Nations 1996: 3).

We are interested not only in when a treaty ends, however, but also how it ends. We identify four primary modes of termination—fulfillment, exogenous loss of independence, violation, and renegotiation. An alliance ends in fulfillment if it terminates at its scheduled expiration date. Alliances tend to end in fulfillment under one of two circumstances—either (1) the goals of the alliance have been accomplished and the *casus foederis* no longer exists, making the alliance moot, or (2) the alliance has declined in value to one or more members, and the members elect to wait until the term of the alliance ends and decline to renew it.

We code alliances as ending due to an exogenous loss of independence if the alliance ends due to the inability of one or more members to conduct an independent foreign policy, and the loss of independence is not attributable to interaction with the ally.<sup>6</sup> Thus, when Poland loses independence due to German invasion in

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<sup>4</sup> For example, even though Kenya does not actively participate in the Somali-Ethiopian war of 1977-78, Ethiopia and Kenya reaffirm support for their mutual defense pact after the war ends, and it continues in effect (Orwa, 1989: 238).

<sup>5</sup> This rule does not preclude the same two states from being members of multiple alliances simultaneously. Unless one agreement specifically states that it supercedes another, we only code new alliances as replacing old alliances if they encompass all the terms of the prior alliance.

<sup>6</sup> We use the Correlates of War State System Membership list, available at <http://cow2.la.psu.edu>, to identify states that lose independence, and thus, control over their foreign policies.

1939, its alliance with Britain ends; this is an example of exogenous alliance termination caused by Poland's inability to continue to conduct an independent foreign policy. When Austria loses independence due to the German *Anschluss* in 1938, Austria's external alliances end as well. The alliance between Germany and Austria is coded as ending in abrogation; Germany violated the terms of the agreement. Austria's alliance with Hungary and Italy, however, is coded as ending due to exogenous loss of independence.

Many alliances, however, do not end at their scheduled termination dates nor due to exogenous forces. They end when leaders decide to break their commitments or to replace the existing alliance with a new agreement. We code an alliance as ending in violation of terms if (1) a major provision is violated or (2) the alliance is abrogated before its scheduled termination. We code an alliance as ending in renegotiation if it is (1) amended substantially such that the primary alliance obligations have changed; or (2) replaced by a new military cooperation agreement between the same states with different primary alliance obligations.<sup>7</sup> The set of alliances that end in either violation of terms or renegotiation are the alliances that we refer to as experiencing premature terminations. What they share in common is that they end due to an active decision by one or more leaders to change existing policy commitments; these are the decisions we explore in this study.

## V. RESEARCH DESIGN, ANALYSIS TECHNIQUES, AND EMPIRICAL RESULTS

We test our hypotheses on a sample of bilateral alliances formed between 1816 and 1989. Because testing our hypotheses requires some information about the content and design of the alliance agreement as well as information about how the alliance ends, we rely on the Alliance Treaty Obligations and Provisions dataset, version 3.0 (Leeds et al. 2002).<sup>8</sup> We exclude alliances formed after 1989 because an extremely small percentage of these alliances terminated prior to 2001, when our dataset ends. Since multilateral alliances may have different termination dates for different members, we have decided to begin by evaluating our arguments only with respect to bilateral alliances. We exclude any alliances that include members never recognized by the Correlates of War project as members of the international system from the sample due to lack of information

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<sup>7</sup> The primary alliance obligations are the actions the members are required to take in the event of military conflict—any combination of defensive military cooperation, offensive military cooperation, neutrality, and consultation—and the conditions under which they are required to act. Cases in which amendment or a new agreement continue the same primary obligations unchanged (and only change membership or institutional features of the agreement) are coded as censored for the purpose of our analyses.

<sup>8</sup> ATOP data are available at <http://atop.rice.edu>.



on many independent variables. Finally, we exclude all alliances that have only nonaggression provisions and do not include promises of defensive support, offensive support, neutrality in the event of conflict, or consultation in the event of military crisis. Because pure nonaggression pacts require no active coordination, we believe their formation and termination are governed by different processes, specifically those predicting the duration of peace (e.g., Werner 1999). After excluding multilateral alliances, alliances including non-system members, and pure nonaggression pacts, we are left with 304 alliances to evaluate.<sup>9</sup>

We analyze each alliance as a whole rather than examining decisions of each member independently. Since our sample is made up of bilateral alliances only, alliances terminate upon the withdrawal of either member, and as a practical matter, it is very difficult to determine who is responsible for the conditions leading to abrogation since both sides have an incentive to blame their former ally for the failure of the alliance. Since we define renegotiation as a mutual decision, it would be impossible to study renegotiation at the level of the alliance member without accounting for the interdependence of the decisions of the two members. Thus, we analyze time to termination by violation (by either member) or to renegotiation (by both members) for the alliance as a whole.

Of the 304 alliance cases, 47 are fulfilled, 33 end due to exogenous loss of independence, 105 end through violation of terms, 75 end in renegotiation, and 44 are right-censored (see Table 1).<sup>10</sup> This means that 180 (59%) of the alliances in our sample experience a premature termination. As Table 1 shows, the mean duration of alliances in the sample (excluding the censored cases) is 3389 days, or 9.3 years.<sup>11</sup> Notably, alliances ending when their purposes are fulfilled rather than by an active decision of leaders have the shortest average duration. This evidence suggests that alliance duration is not a good proxy for the reliability of commitments.

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<sup>9</sup> 16 of the alliances included in our sample are formally amended to include substantial changes in their terms. In these cases, we code the initial agreement as either censored or renegotiated (depending on whether the amendments change the primary alliance obligations) and a new agreement beginning for the purpose of this analysis. Thus, our sample includes 285 distinct alliances, and 19 additional “alliance phases” representing the second or third stages of the 16 renegotiated agreements.

<sup>10</sup> Our 44 right-censored cases include 27 alliances that remain in effect at the conclusion of our study period, December 31, 2001, and 17 alliances that were replaced by new alliances with the same primary obligations. We include only alliances formed during the time period of our study, so there are no left-censored cases.

<sup>11</sup> For alliances with missing termination or formation days, we coded the 15<sup>th</sup> of the month. No alliances have missing formation or termination months or years.

We are interested in explaining why alliances last as long as they do, and so duration analysis provides an appropriate set of tools for building our empirical models. However, we are interested not only in the timing of alliance termination but also, and more importantly, in how alliances terminate: first, whether they end by active decisions of leaders before their scheduled termination, and second whether they end via violation or renegotiation. One approach that analyzes the duration of events when the event of interest may terminate via more than one possible mode is the “competing risks” model (David and Moeschberger 1978, Chung, Schmidt, and Witte 1991). Competing risks analysis is a version of duration analysis in which there are several different “risks” of failure, one for each termination mode. Further, these “risks” can be governed by different stochastic processes and/or be conditioned on different systematic influences. Thus, competing risks analysis allows us to distinguish the effects of a covariate on the timing of one type of failure from its effect on the timing of other types of failures.

We assume that for each alliance, there is at any given time some risk that the alliance will terminate in any one of the four possible ways we have defined— fulfillment, exogenous loss of independence, violation/abrogation, or renegotiation. We also assume that the hazard associated with each of the different risks is independent of that of the other risks, conditional on the effects of the independent variables. This independence assumption allows us to estimate separate duration models for each mode of alliance termination, while treating terminations due to the other modes as censored.<sup>12</sup>

We estimate three separate models. The first one is a combined risk model of premature alliance termination, which estimates the risk that alliances end in either abrogation or renegotiation while treating all alliances that leave the sample without experiencing premature termination (those that end due to fulfillment or exogenous loss of independence) as censored. We have a number of hypotheses, specifically those about changes in the conditions supporting the alliance, that link specific independent variables to leader decisions to end an existing alliance, but that do not address whether the relationship is likely to continue on new terms. These independent variables should increase the hazard of both violation and renegotiation, which may serve

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<sup>12</sup> We specify the competing risks model in a latent variable framework (Diermeier and Stevenson 1999, Box-Steffensmeier and Jones 2004: 168-169). This approach assumes each risk is associated with an unobserved latent variable that we can think of as the risk of failure by that mode. Once one mode of termination is

as substitutes for one another. We imagine, for instance, that those leaders for whom the value of an alliance has declined and who have reason to consider abrogation are in a particularly strong position to convince an ally to renegotiate the primary alliance obligations. We include factors that should affect the likelihood of either violation or renegotiation as control variables in this first model.

Then we estimate separate models for each of the two premature termination modes—one for violation/abrogation and one for renegotiation, in each case treating terminations by any other mode as censored. We include in these models the factors identified as affecting the probability of premature termination in general, but we are able to analyze the differential effects of some of our independent variables on the probability that an alliance is abrogated and the probability that it is replaced by a new agreement between the parties with different obligations, thus testing our remaining hypotheses. We include these variables in both models—the model of violation and the model of renegotiation—based on our belief that factors that affect the likelihood of one may have an implicit impact on the other. Factors that lead to renegotiation may make violation less likely—the ability to negotiate a more favorable agreement should decrease the likelihood of violation. On the other hand, renegotiation may be particularly likely when at least one partner has a credible threat to abandon the alliance without agreement on new terms; this would suggest that factors that are positively related to violation might also be positively related to renegotiation.

The next step in building the models is to specify the distribution governing the risk-specific hazard rates. Box-Steffensmeier and Jones (2004: 188) argue that modeling strategies that do not specify the shape of the baseline hazard rates should be preferred to ones that impose restrictions on the shape of the hazard. We follow their advice and adopt a semi-parametric approach to avoid making potentially untenable distributional assumptions about the shape of the hazard. The Cox proportional hazard model allows us to specify the effect of the covariates on each risk type parametrically while keeping the distribution of the baseline hazard unspecified.<sup>13</sup>

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experienced, the observation exits the risk set and is no longer at risk of experiencing the remaining modes of failure-- only the shortest failure time is observed.

<sup>13</sup> We tested for proportionality following the method developed by Grambsch and Therneau (1994). We calculated scaled Schoenfeld residuals for each covariate. We detect no systematic pattern between the residuals of each covariate and the survival time for the premature termination and violation models. For the renegotiation model, three variables (changes in domestic political institutions, democratic members, and alliances requiring

Because some of our hypotheses are about changes over time, we must be able to measure our independent variables at many points during the history of an alliance. This requires us to include time-varying covariates in our analysis. Our time varying covariates are measured annually, and thus we assemble a dataset in which the alliance-year is the unit of analysis.<sup>14</sup> Due to availability of data for our independent variables, our analysis covers the years 1816-2001.<sup>15</sup>

Our first set of independent variables measures changes in four of the factors that we have identified as crucial to the value of alliances— international power, domestic institutional structure, external threat, and formation of new outside alliances by alliance members. Our test of the hypotheses linking each of these independent variables to alliance termination treats alliances that end in fulfillment or due to exogenous loss of independence as equivalent to censored cases, and combines cases of violation/abrogation and renegotiation to evaluate the effects of changes on decisions to terminate an existing alliance prior to its planned end date.

To operationalize changes in international power, we use the Correlates of War (CoW) Composite Indicator of National Capabilities (CINC) (Singer 1988). This composite score records the proportion of the total international power in the system (measured based on six components) held by a given state in a given year. It therefore captures the relative position of the member states in comparison to all other states in the system.<sup>16</sup> We measure the proportional change in the international power of each member state since the time the alliance was formed by dividing the current year's CoW CINC score by the score at the time of alliance formation for each member state. If the international power of the state has changed more than 10% between alliance formation and the year of the observation, we code a dummy variable 1 indicating a significant change

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peacetime military coordination) violate the proportionality hazard assumption. Following the advice of Box-Steffensmeier, Reiter, and Zorn (2003), we re-estimated the renegotiation model with the interactions of these variables with time and found no differences in the results. We also estimated a Cox model with gamma distributed frailties to detect the possible presence of unit-level heterogeneity and were able to rule out the existence of unobserved heterogeneity in our models.

<sup>14</sup> Both Morrow (1991) and Bennett (1997) break the duration of each alliance into a string of five-year periods. Since annual data are available on the relevant covariates, we see no need for further aggregation.

<sup>15</sup> We used the EUGene data generation program (version 3.04) to assemble some of our independent variables (Bennett and Stam, 2000).

<sup>16</sup> A relative measure is advantageous for our purposes for two reasons. First, since alliances are designed to provide security against other states in the system, what is most relevant to alliance decisions is the relative status of the members in comparison to potential adversaries. Second, it is easy to compare values of this measure over time; there is no need to adjust for inflation or population changes.

in international power. If either of the states has experienced a power change of more than 10% since alliance formation, we code the alliance as experiencing a significant change in international power.<sup>17</sup>

We use the Polity 4 dataset to measure changes in the internal policymaking processes of states (Marshall and Jaggers 2002). The Polity 4 dataset provides annual data on a variety of institutional characteristics of states in two composite scores— an 11 point democracy scale and an 11 point autocracy scale. We compare each alliance member’s democracy and autocracy scores during each year of the alliance to their scores at the time of alliance formation. For the present analysis, if either of the two alliance members has experienced at least a 2 point change in domestic institutional structure, we code the alliance as experiencing a change in internal political processes.<sup>18</sup>

Operationalizing external threat is a challenge for scholars of international relations doing large N analyses. Most commonly, scholars identify threats based either on power relations alone, or based on observed dispute behavior. Bennett (1997), for instance, identifies potentially threatening states as those that the state in question has had past militarized interstate disputes with. Since alliances deter disputes, however, the absence of observed disputes with a state during the term of an alliance is not an appropriate indicator of the reduction of threat (Leeds 2003). Some alliance agreements specify a target state in their text; this certainly provides information about the potential threat that motivated the states to form an alliance (Leeds et al. 2002). The majority of alliances, however, make no mention of a source of threat in their agreement texts; only 30% of the cases in our sample (90 of 304) specifically mention one or more states as threats in their alliance texts.

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<sup>17</sup> The threshold of 10% is arbitrarily chosen, and thus we tested other thresholds to determine whether our inferences are sensitive to the threshold chosen. We tested thresholds ranging from 5% to 30% and did not find any differences in the inferences drawn regarding the relationship between changes in international power and premature alliance termination. Given that we need to record change in the capabilities of either member, it is difficult to use a continuous measure, and the robustness of our dummy variable results to different thresholds convinces us that this choice is reasonable.

<sup>18</sup> We use Polity 4d to code the authority characteristics of the state at the time of alliance formation or termination if a change in authority characteristics happens within the year. We code cases of foreign interruption and interregnum (-66 and -77 in the polity data) as zero, indicating no institutions with either democratic or autocratic authority characteristics. We code the democracy and autocracy scores of states in transition (-88 in the polity data) as missing. We tested a measure that records changes of at least one point on the democracy or autocracy scale and a measure that requires changes of at least three points on the democracy or autocracy scale as well and found no changes in the interpretation of our results in either case.

Years of studies predicting international conflict, however, have given us quite a bit of information about which dyads are most likely to engage in militarized conflict (see, for instance, Bremer 1992, Russett and Oneal 2001). We know that most conflicts involve either major powers or contiguous states. Unless states have a great deal of international power, they are unlikely to be able to project force effectively over long distances. Maoz (1996), therefore defines a state's politically relevant international environment (PRIE) as the set of states that it might reasonably expect conflict with, operationally its neighbors and global powers. Within the politically relevant international environment, however, some states have friendly relations, and others do not. Threat is a function not only of capabilities, but also of goals and intentions (e.g., Singer 1958, Walt 1987). We know, again from years of conflict studies, that states that share general foreign policy orientations are less likely to engage in military conflict. We employ the S score, developed by Signorino and Ritter (1999), to identify states with similar foreign policy orientations. Finally, we make the assumption that states are not threatened by states that they share alliances with.<sup>19</sup>

Thus, for each alliance member for each year, we identify the set of states that make up its "threat environment"—this is the set of all states in its PRIE with whom it does not share an alliance, and with whom its S score is below the population median.<sup>20</sup> We then sum the capabilities of all the states in its threat environment using the CoW CINC scores—this is our annual measure of a state's level of external threat. Importantly, the measure includes information both about power and about foreign policy orientation. An outside state can become less threatening by becoming weaker, or by changing its orientation to be closer in line to the foreign policy preferences of the alliance member. To determine changes in external threat since alliance formation for an alliance member, we divide the current year's level of external threat by the level of external threat faced by the state in the year the alliance was formed. If the external threat faced by either state

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<sup>19</sup> We thank Zeev Maoz for suggesting a similar measure.

<sup>20</sup> We use the global unweighted S score obtained from the EUGene computer program (Bennett and Stam, 2000). To identify the threshold for friendly vs. unfriendly states, we calculate the median S score for all politically relevant dyads from 1816 to 2000, which is 0.775. States that share an S score with the member state below 0.775 in the given year are included in the threat environment. While the median S score does vary over time as the foreign policy differences among states increase and decrease in the international environment, we see no systematic pattern of change in the median S over time related, for instance, to the size of the international system. We use the ATOP data to determine which states share alliances. Since S scores are unavailable for 2001, our variable measuring change in external threat is missing for 2001.

has decreased more than 30%, we code a dummy variable indicating that the alliance has experienced a decrease in external threat.<sup>21</sup>

Finally, we code a dummy variable one in any alliance-year in which either of the alliance members forms a new alliance with an outside state. We use the ATOP data to code new alliance formation (Leeds et al. 2002).

Our next set of variables measures characteristics of the member states. We hypothesize that alliances including democratic states and alliances between states of different power statuses are less likely to end in violation of terms. We also include these variables as controls in the model of premature termination and in our model of renegotiation.

We operationalize democracy using the Polity 4 data (Marshall and Jaggers 2002). We code as democratic any state that scores a six or higher on the composite democracy scale, and then create a trichotomous variable that is coded zero if neither of the member states are democracies, one if one of the member states is a democracy, and two if both of the member states are democratic. Notably, almost all states that begin their alliances as democracies remain democracies throughout the life of the alliance. Member states are only coded democratic for this variable if they are democracies when they form their alliance and continue to be democratic in the year of observation. Of the alliances in our sample, 7% are jointly democratic and 29% include one democracy. The remaining alliances are among non-democratic states.

Our variable representing power asymmetry within an alliance is based upon the Correlates of War project designations of major power states (Small and Singer 1982). We code a dummy variable one for all alliances that are formed between one major power and one minor power, and zero for all alliances that are formed by two major powers or two minor powers. 47% of the alliances in our sample involve states of different power statuses.

The final set of independent variables captures aspects of the alliance itself. Some of these variables should affect the probability that an alliance ends in abrogation, and some should affect the likelihood that it is

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<sup>21</sup>We tested thresholds ranging from 10% to 50%, and while the standard errors are lowest at 30%, the sign of the coefficient does not vary, and changing the threshold value for this variable does not affect the interpretation of any other variables in the analysis. We chose a reasonably high threshold because threat levels seem to be highly volatile— at low thresholds the majority of our cases are coded as experiencing a change.

successfully renegotiated. Thus, we include these design variables as controls in the premature termination model and test our hypotheses in models of violation and renegotiation independently. All of these variables are coded based on data available in the ATOP dataset (Leeds et al. 2002).

First, we code a dummy variable representing whether the alliance agreement includes provisions requiring cooperation in non-military areas. 47% of the alliances in our sample include promises of non-military cooperation in addition to alliance obligations; 53% do not. Second, we code a dummy variable representing whether the alliance was formally ratified through constitutionally defined processes. While 76% of the alliances in our sample are created through such formal treaties, the other 24% were created through less formal written documents— for instance, executive agreements and exchanges of diplomatic notes. Third, we code a dummy variable representing whether the written alliance agreement specifies its duration in force. 70% of the alliances in our sample provided for a specific term limit or for conditions under which the alliance could be terminated. The other 30% either specify that the alliance is a commitment of indefinite duration or do not discuss the term of the agreement. Finally, we consider provisions in the alliance for formal military institutionalization. Based on a variety of provisions included in the ATOP data, Leeds and Anac (2005) create a trichotomous variable that captures the extent to which the allies commit to peacetime coordination to improve their gains from cooperation and their ability to be an effective joint fighting force. We adopt the Leeds and Anac (2005) coding, and in our sample, 18% of the alliances are highly institutionalized, 15% include a moderate level of peacetime military coordination, and 67% do not include explicit provisions for peacetime military coordination.

The empirical results of the analysis of the effect of these factors on the probability of premature alliance termination, termination by violation/abrogation, and termination by renegotiation appear in Table 2. The great majority of our hypotheses are supported.<sup>22</sup>

As we predicted, changes in international power, changes in domestic political institutions, decreases in external threat, and formations of new alliances with outside states are all associated with an increased risk of premature alliance termination, both statistically and substantively. To facilitate substantive interpretation of the coefficients, we report percentage changes in the risk of premature alliance termination with a change in



each of the dummy variables from zero to one, holding all else constant. Change in either member's military capabilities increases the hazard rate of premature termination by 88%. Change in the domestic political institutions of either member is associated with a 53% increase in the hazard rate. When the external threat faced by either member decreases, the hazard rate of premature termination increases by 62%.<sup>23</sup> When an alliance member forms a new outside alliance, the hazard of premature termination increases by 226%.<sup>24</sup> Hypotheses 1-4 receive strong support in this empirical analysis.

While we include our other variables of interest in the analysis of premature termination as controls, our hypotheses regarding these variables are more refined, and thus, we will discuss their effects on the probability of termination by violation/abrogation and by renegotiation separately. Hypotheses 5 and 6 state that alliances involving democratic states and alliances involving states with different power statuses should be less likely to end in violation of terms. In column 2 of Table 3, we report results of our analysis of the probability that alliances end in violation, and find support for both of these hypotheses. The risk of violation decreases by 55% when the alliance members are democracies, and by a similar proportion (59%) when the alliance involves one major power and one minor power.

Most of our hypotheses about the design of alliances are also supported. Hypothesis 7 states that agreements involving linkage to non-military issues are less likely to be abrogated. This hypothesis is supported; including linkage to other issues reduces the risk of termination by violation by 62%. Hypotheses 8a and 8b concerned the formalization of alliances in treaties requiring domestic ratification. We expected that more formal agreements would be less prone both to termination by violation and by renegotiation. Only hypothesis 8b is supported. Treaties are less likely to be renegotiated, but are no more nor less likely to be abrogated than alliances formed through less formal written instruments. Agreements that provide specific term limits and windows for renegotiation, however, are much more likely to end in renegotiation. The hazard

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<sup>22</sup> We conducted a number of robustness checks that are described in a web appendix to this article.

<sup>23</sup> The statistical significance of this coefficient is sensitive to the threshold value chosen. While at other thresholds the sign of the coefficient remains positive and the interpretation of other variables in the model is unaffected, the coefficient does not reach standard levels of statistical significance. Given that we view this measure of change in external threat as quite approximate and probably very noisy, we believe this result does provide some support for our hypothesis, despite its volatility and its smaller substantive effect.

<sup>24</sup> This very strong substantive effect is probably misleading. While we believe the availability of alternative partners does influence alliance termination, we recognize that some states are motivated to find new

rate of termination via renegotiation increases by 168% if an alliance provides specific term limits. As hypothesis 9 predicted, when leaders build flexibility into their agreements, they are more likely to end their alliances through the creation of a new, mutually agreed upon relationship.

Hypothesis 10, however, receives no support in our analysis. We expected that alliances that require substantial peacetime military cooperation would be less prone to ending in abrogation, but instead we find a statistically significant *increase* in the hazard rate of termination by violation attributable to this variable. While seemingly counterintuitive, this is commensurate with a similar finding by Leeds and Anac (2005) that alliances requiring peacetime military coordination are associated with higher rates of violation of provisions when alliances are invoked by war. While we have no clear explanation for this relationship, it is possible that some treaties that require high levels of coordination fall victim to disputes over these provisions very quickly and may be more prone to violation before they are fully operative.<sup>25</sup>

Comparing the impact of the independent variables across the three models is quite interesting. Similar factors predict violation/abrogation and premature termination in general. Our set of independent variables is much less successful at predicting renegotiation, however. While we suspected that violation and renegotiation might serve as substitutes for one another in the sense that leaders facing conditions conducive to abrogation may be in a strong position to demand renegotiation of alliance terms, it seems that those factors that predict violation are often not strongly correlated with renegotiation. We suspect that this is due to greater heterogeneity in the motivations and conditions conducive to renegotiation.<sup>26</sup> This deserves more study in the future, perhaps also involving examination of renegotiation of other features of agreements, for instance, membership size and institutional structure, which are beyond the scope of the current article.

One could reasonably suspect that some of our empirical results regarding the effects of the design of alliance agreements are the result of selection effects. In other words, it might be that when leaders face

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alliance partners because they wish to terminate a current alliance rather than the other way around. The large substantive effect probably captures both dynamics.

<sup>25</sup> For example, an ambitious 1980 alliance between Syria and Libya, which was intended to involve complete military integration, failed quickly as a result of disagreements over implementation (British Broadcasting Corporation 1980, Tatro 1981).

<sup>26</sup> We separated all the renegotiation cases in which the new agreement involved stronger obligations from those in which the new agreement involved weaker obligations and ran the analysis censoring those cases in which renegotiation produced stronger commitments. While results of analysis of cases in which the renegotiated

certain circumstances, they are more likely to design agreements with particular features, and thus the underlying circumstances rather than the design of the alliance account for our results. For instance, one might expect that alliances featuring provisions for non-military coordination are more common among states with friendlier relations, or that provisions for peacetime military coordination are included in agreements precisely when states are most worried about violation.

We believe that leaders do design agreements rationally and choose those features that help them to overcome predicted impediments to cooperation. We believe they do this because they know these design features will influence their future incentives and have an effect on the ultimate outcomes they are interested in—for instance, the durability of cooperation and the probabilities of abrogation and successful renegotiation. The fact that these design features are not selected randomly, however, does not obviate their effects on outcomes. In fact, if design features do not affect outcomes, the entire rational design of institutions research program must be called into question. With our current research design, it is not possible for us to separate out the impact of the underlying factors that lead leaders to choose the design features we study and the independent effect of these design features on outcomes; such a task would require a theory and empirical model of alliance design, which is well beyond the scope of this article. A first step toward evaluating theories of the design and influence of institutions, however, is to show that these chosen design features have some impact on outcomes, and we see this study as a step in that direction. While there are many remaining questions to evaluate, we are pleased to help bring institutional design features to the forefront of study and debate.

Overall, our empirical analysis is highly supportive of our argument and hypotheses. Changes in power, political institutions, external threat, and new outside alliances formed by alliance members are powerful predictors of decisions to end alliances prematurely. Yet, alliances among democracies and among states of asymmetric power are less likely to be abrogated, and leaders can employ tactics in designing their alliances that make these alliances less prone to violation and more likely to end in successful renegotiation.

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agreement was weaker showed more similarity in dynamics to the violation results, the small number of cases (39) makes us wary of drawing conclusions from this analysis.

Our analysis also shows that many independent variables have differential effects on the probability that an alliance ends in different ways. As a comparison, we conducted analysis of the effects of the same set of independent variables on the probability that an alliance terminates in fulfillment (in other words, ends at its scheduled termination date). Only two of the variables reach conventional levels of statistical significance—change in domestic institutions and provisions for non-military cooperation. This reinforces our view that decisions to terminate alliances prematurely are driven by factors different from those that affect the fulfillment of the alliance purpose. Future scholars analyzing alliance termination must recognize that explaining *how* an alliance terminates is important in addition to predicting *when* it terminates.

## VI. CONCLUSION: IMPLICATIONS AND DIRECTIONS FOR FUTURE RESEARCH

When asked to describe the salient features of the international political system, most observers will point to power concentrations and major alliance relationships. Who is aligned with whom is both highly influential in explaining and predicting international outcomes and entirely within the control of state leaders. Forming and terminating alliances are active choices. Thus, the more we know about how and why leaders make the alliance choices they make, the more understandable and predictable international relations become.

With this broad goal in mind, we set out in this study to account for the choices of leaders to end existing alliances prior to their scheduled termination dates. Starting from the assumptions that leaders form alliances that they expect will provide benefits exceeding their costs and that these expectations will be correct on average (that is to say, rational), we argue that alliance termination should be best explained by changes in factors that affect the value of the alliance. Particularly, changes in international power, changes in internal policymaking processes (which are likely to have an impact on the content of foreign policy), decreases in external threat, and new alliances with outside states should make alliances that were valuable at their initial conditions vulnerable to premature termination. Our empirical analysis supports these contentions. This reassures us that we have identified the key factors that influence the value of military alliances; from studying why alliances end, we have also learned something about why they are formed and maintained.

We go beyond this, though, to develop and test hypotheses about the conditions under which states will choose to abrogate alliances and the conditions under which they are likely to be successful at renegotiating their relationship. According to the evidence we present in this study, democracies tend to avoid

violating the terms of existing agreements. Alliances among states with asymmetric power relations (i.e., alliances between major and minor powers) are also less prone to violation.

Additionally, our study suggests that leaders can take steps to influence the durability of their alliances when they negotiate the provisions of their alliance agreements. Leaders make many design choices when writing agreements that affect their ability to respond to future changes and the resilience of their agreements in the face of changing conditions. By linking military cooperation to cooperation on other issues, leaders can make alliances less prone to abrogation. Including clauses that allow periodic renegotiation after finite terms may encourage the maintenance of the alliance relationship through renegotiation of the alliance terms rather than unilateral abrogation of an agreement no longer suited to current needs. While much remains to be learned about the interactions between conditions conducive to choosing design features and the impact of the design features themselves, our results provide preliminary support for the contention that institutional design affects the stability and outcome of international cooperation; we view this as a positive step in the development of the rational design of institutions research program.

We believe that we have provided a successful empirical model of premature alliance termination that sheds more light on the conditions conducive to maintaining international cooperation in a changing environment and the conditions that make established cooperation vulnerable to abandonment. We have also advanced understanding of the ways that alliances end. Alliance duration is clearly not a good proxy for alliance violation; alliances that end in violation are longer on average than those that are fulfilled.

The next step is to take what we have learned here and use it to improve our models of alliance formation and design. How does recognition of the possibility that the costs and benefits of alliances may change in the future affect the willingness of state leaders to commit to alliances? How does it influence their choices in designing these agreements? Understanding the conditions under which leaders form and end alliances will undoubtedly improve our ability to understand, predict, and ultimately influence the political choices that affect international outcomes.

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**Table 1: Methods of Alliance Termination**  
**Bilateral Alliances Formed 1816-1989**  
**Source: Alliance Treaty Obligations and Provisions (ATOP) Data**

	Fulfillment	Exogenous Loss of Independence	Violation/ Abrogation	Renegotiation	Censored	Total
Number of Cases (% of total)	47 (16%)	33 (11%)	105 (34%)	75 (25%)	44 (15%)	304
Mean Duration in Days (Years)	2900 (7.9)	4071 (11.2)	3227 (8.8)	5237 (14.3)	excluded from calculation	3389 (9.3)

<b>Table 2: Cox Partial Likelihood Estimates for Independent Competing Risks<sup>27</sup></b> (Each cell lists estimated coefficient, followed by associated standard error. <sup>#</sup> Tests of our hypotheses are in bold and include the percentage change in the baseline hazard rate attributable to a change in the independent variable from min. to max.)			
	<b>Premature Termination (Violation or Renegotiation)</b>	<b>Violation/ Abrogation</b>	<b>Renegotiation</b>
Change in International Power Since Alliance Formation	<b>0.632***</b> (0.237) <b>88% increase</b>	0.934*** (0.307)	0.264 (0.363)
Change in Political Institutions Since Alliance Formation	<b>0.428**</b> (0.190) <b>53% increase</b>	0.563** (0.266)	0.143 (0.284)
Decrease in External Threat Since Alliance Formation	<b>0.485***</b> (0.182) <b>62% increase</b>	0.317 (0.245)	0.514* (0.285)
Formation of New Outside Alliance	<b>1.182***</b> (0.171) <b>226% increase</b>	0.782*** (0.209)	1.825*** (0.301)
Democratic Members	-0.571*** (0.202)	<b>-0.787***</b> (0.265) <b>55% decrease</b>	-0.123 (0.321)
Asymmetric Power	-0.776*** (0.184)	<b>-0.891***</b> (0.249) <b>59% decrease</b>	-0.609** (0.274)
Agreement Includes Non-Military Cooperation	-0.385** (0.187)	<b>-0.962***</b> (0.253) <b>62% decrease</b>	0.403 (0.341)
Treaty Requiring Ratification	-0.394 (0.281)	<b>-0.226</b> (0.316) <i>no significant effect</i>	<b>-0.918*</b> (0.545) <b>60% decrease</b>
Agreement Provides for Specific Duration	0.306 (0.243)	-0.028 (0.257)	<b>0.987**</b> (0.494) <b>168% increase</b>
Agreement Requires Peacetime Military Coordination	0.544*** (0.131)	<b>0.702***</b> (0.155) <b>102% increase</b>	0.185 (0.251)
N (alliances)	3878 (289)	3878 (289)	3878 (289)
Log Likelihood	-746	-437	-285

\*p < .10 \*\* p<.05 \*\*\* p < .01

# Robust standard errors are calculated assuming potential non-independence among cases associated with the same alliance.

<sup>27</sup> We adopt the Efron method to deal with the possibility of ties (coterminous event occurrences) in the data (Box-Steffensmeier and Jones 2004: 55).