

Alliance Formation and Conflict Initiation: The Missing Link*

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Existing research on the connection between alliance formation and conflict initiation has explicitly focused on the direct effect of alliances on conflict by including some measure of alliance behavior as an independent variable in models of conflict behavior. Existing research misspecifies the relationship between alliances and conflict, because alliance formation and conflict initiation are shaped by many of the same factors (in particular, regime type and capabilities), and alliance formation decisions are endogenous to conflict initiation decisions. Thus, alliance formation and conflict initiation should be modeled in a system of equations where a set of variables shapes alliance formation and conflict directly, and indirectly affects conflict through the decision to ally. The author estimates a two-equation probit model that accounts for the endogenous nature of alliance formation decisions and, thus, for the indirect effects of variables like regime and power on conflict. Results suggest that the effect of regime on alliance behavior differs across time periods. Finally, the model provides evidence that the total effects of variables like power and regime on conflict are, in fact, mediated by how those variables influence the decision to ally.

Introduction

What is the nature of the relationship between dyadic alliance formation and conflict initiation? Answers to that question in existing research about the alliance–conflict relationship are complicated. One possible reason for the variety among the findings is misspecification of the relationship between alliance formation and conflict,

and, in fact, most scholars agree that the relationship is complex. The literature treats alliances as a potential cause of conflict as if alliances arise from a process largely divorced from the process that leads to conflict. In fact, it is almost certainly the case that the decision to ally and the decision to fight arise from many of the same causal factors. When two states decide to ally, the very things that made them ally also shape the chances they fight, but probably diminish those chances for the very reason that they committed to an alliance. I develop an argument and model linking alliances and conflict in this fashion based on three claims: (1) alliance formation decisions and conflict initiation decisions are not independent of one another, (2) alliance formation and conflict initiation are caused by some of the same

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variables, and (3) those variables exert direct effects on the chances of conflict and indirect effects through the decision to ally. Those claims considered together suggest a different theoretical specification of the relationship between alliance formation and conflict initiation than has been explored previously in the literature and, moreover, suggest that specification can also be linked to a specific econometric technique permitting an empirical test of my theoretical expectations.

Existing research on the alliance–conflict nexus tends to focus on the direct effect of alliances on conflict by the inclusion of some of measure of alliance behavior into empirical models of conflict behavior. Some of that research argues that alliances increase the chances of conflict, and some argues that alliances decrease those chances. Further, there are a number of studies whose findings or implications are indeterminate. After exploring the existing research, I will return to the claims that I have made and argue that accounting exclusively for the direct effects of alliances on conflict mischaracterizes their relationship, since alliance ties and conflict arise from many of the same causes. I argue that the effects of variables like power and regime are complex because they shape alliance formation and, through that process, exert indirect effects on conflict. Thus, a proper econometric specification of the relationship is necessary to account for the total effects of power and regime on conflict behavior.

The Direct Effect of Alliance on Conflict Is Positive

Some of the earliest empirical explorations into the relationship between alliances and conflict uncovered a positive correlation between them (Singer & Small, 1966, 1968). This finding supports the notion that states might form alliances in anticipation of conflict. Further, Bueno de Mesquita's (1981)

expected utility model deduced that allies ought to be more likely to engage in bilateral conflict, because third parties will not intervene and any movement in foreign policy by allies away from one another should increase the initiator's expected utility for conflict. Bueno de Mesquita's (1981) empirical evidence supports that claim, but Ray (1990) provides persuasive evidence that the relationship found by Bueno de Mesquita is sensitive to the exact definition of conflict utilized and the cases included. After revising the data, Ray (1990: 80–82) finds some evidence of a positive correlation between alliance ties and conflict proneness between dyads. However, he is careful to point out that correlation does not equal causation (i.e. the relationship might be spurious). Despite the attractive nature of the 'friends-as-foes' claim, which others noted earlier based on observed evidence (Holsti, Hopmann & Sullivan, 1973; Sabrosky, 1980), Ray (1990) and others (Vasquez, 2000) cast doubt upon it, based on the fact that an initiator's positive expected utility for war is only a necessary condition for conflict to occur, but not a sufficient one. However, other scholars using different sets of cases have uncovered a positive relationship between alliance and participation in conflict (e.g. Levy, 1981, 1983, for great-power dyads; Kim, 1989, for alliance coalitions). Finally, scholars examining the characteristics of alliances themselves have also found a positive relationship between some specific alliance characteristics and an increased risk of conflict (Senese & Vasquez, 2004; Gibler, 1996, 2000; Siverson & King, 1980). Therefore, the findings of several research programs do point to a positive relationship.

The Direct Effect of Alliance on Conflict Is Negative

Among the first pieces of empirical research to assert a negative relationship between

alliance ties and conflict was Bremer's 'Dangerous Dyads' (1992). Bremer presents bivariate results showing a positive relationship between various types of alliances and increasing the chance of conflict between states. However, his multivariate findings indicate that the positive relationship between alliance ties and conflict reverses direction after accounting for contiguity between states. Since then, scholars have regularly controlled for the effect of alliance ties in dyadic models of conflict (recent examples include Reed, 2000; Russett & Oneal, 2001; and Clark & Regan, 2003), and results consistently suggest a negative relationship. Additionally, intuitions about the consequences of alliances based on formal theory (Leeds, 1999; Ritter, 2003) suggest that states form alliances either to provide signals to each other or to overcome the commitment problem. Game-theoretic alliance formation models generally posit that states engage in alliance formation to convey information to other actors, and that increase in available information about potential adversaries ought to decrease their risk of engaging in conflict.¹ These findings are consistent with the following general claim – if alliances are formed to prevent conflict, then the direct effect of alliance on conflict ought to be negative.

Specifying a More Nuanced Relationship Between Alliance and Conflict Willingness

One possible explanation for the divergent expectations and findings in the alliance literature is that scholars have neglected the fact that the processes that produce alliances and conflict are not altogether different. Realism points to a more nuanced relation-

ship in its recognition that both processes might be caused by changes in capabilities and that states can engage in either process as a response to those changes (Waltz, 1979). Likewise, scholars point toward regime as influential both in shaping choices about conflict (Russett, 1993; Maoz & Russett, 1993) and choice about alliances (Lai & Reiter, 2000; Simon & Gartzke, 1996; Siverson & Emmons, 1991). If these and other factors contribute to alliance and conflict decisions, then existing research misspecifies the relationship between alliances and conflict and fails to capture the total effects of the factors that shape both outcomes. The consequences of this type of misspecification can be substantial. Econometrically, this misspecification is a form of omitted variable bias, which violates the assumption of a zero correlation between the independent variables and the error terms. Subsequently, the estimated error term absorbs the effect of the excluded variable (here the factors that shape the alliance formation process), resulting in parameter estimates that are both biased and inconsistent (Long, 1997). Moreover, existing analyses fail to examine the conflict and alliance formation processes jointly, and, therefore, they fail to correctly capture the relationship between the processes. Unnecessarily assuming the alliance formation and conflict processes to be independent not only constrains models in undesirable ways, but also ignores the theoretical opportunity to consider how the decisions to ally and to fight are related. In particular, allying and fighting are both influenced by regime and capabilities. Insofar as regime and capabilities determine alliance formation, their effects on conflict are either exacerbated or ameliorated by the decision to ally. By treating the sources of conflict and alliance formation separately, most research examines only the direct effects of those sources on conflict.

¹ This is consistent with work by Reed (2003) that suggests that the information provided by bilateral trade ties between states leads dyads with more substantial trade ties to have a decreased risk of fighting one another.

The argument I propose is unique insofar as it includes elements from the bargaining literature and contemporary research on the uncertainty-reducing signals sent by alliance formation. A lack of information about relative capabilities is a crucial factor in predicting conflict behavior (Reiter, 2003), but the formation of an alliance provides crucial information to the alliance partners about each other's capabilities and preferences (Bearce, Flanagan & Floros, 2006; Ritter, 2003). In fact, the formation of an alliance ought to mediate uncertainty between the alliance partners surrounding both power and preferences. Because both power and preferences, and the uncertainty surrounding them, are known to be related to conflictual behavior (Vasquez, 2000; Russett & Oneal, 2001), the formation of an alliance provides revised information about alliance partners that was otherwise unavailable, and its absence could have increased conflict propensity between the partners. Thus, the type of information that states seek and receive when they form alliances is the same information that shapes conflict behavior between states, and, therefore, the decisions about both of those processes are linked. This link between the conflict and alliance processes not only suggests a more complex relationship than initially posited in the literature, but also supports the exploration of different econometric techniques that can account for the complexity of the alliance–conflict relationship. In the coming sections, I discuss the claims in the extant literature about the sources of alliance formation and the sources of conflict. I then join those explanations in an empirical model designed to capture the total effects of those causal variables.

Claims About Alliance Formation

The relationship between military capacity and alliance behavior has been explored in

several ways, such as examining the relationship between major powers and alliance formation (Levy, 1981, 1983), how changes in power across alliances shape conflict (Kim, 1989), and how changes in power might lead to alliance termination (Leeds, 2003; Leeds & Savun, 2004; Morrow, 1991). Not only do capability levels convey information about the value that a state adds to an alliance, but they also help states to develop expectations of the utility of the alliance in the event that it is challenged.² Relative capability levels inform potential members about the benefits that accrue from alliance formation. We might consider relative capabilities as being related to the trade-offs that states might make to join alliances. As one state becomes increasingly preponderant within the alliance, the other state may be unwisely relying upon its partner for its military capacity, suggesting it is incurring greater domestic security risks as it trades personal/internal security for allied security. Thus, as one state becomes more preponderant relative to the other, alliances should be less likely to form, since states should prefer attaining security gains from alignment rather than developing security dependencies through alignment. Moreover, since states with equal levels of capacity have greater uncertainty regarding unobserved military capacity (Bueno de Mesquita, Morrow & Zorick, 1997), the formation of an alliance between them is a method through which each can obtain reliable information about the other's actual military capabilities.

H1: As relative capabilities increase (toward preponderance), the chances that the dyad forms an alliance decreases.

While the literature is in relative agreement about how capabilities shape alliance formation, there is little consensus on the

² Studies on alliance reliability are consistent with that claim (Leeds, Long & Mitchell, 2000; Leeds et al., 2002; Sabrosky, 1980).

role of regime in the decision to ally.³ Signaling arguments developed in the past decade suggest that pairs of states with jointly similar regimes have a different capacity to understand and interpret the signals sent to each other (Fearon, 1994; Schultz, 2001; Werner, 2000) because of how democratic institutions shape beliefs about credibility. States that share regime type similarity have some convergent interests *ex ante* as they are subject to the same domestic constraints that shape their capacity to engage in either alliance formation or conflict behavior.⁴ Thus, I posit that states with similar regimes (i.e. autocratic dyads or democratic dyads) are more likely to form alliances than are dissimilar pairs of states.

H2: Joint democracy increases willingness to form alliances.

H3: Joint autocracy increases willingness to form alliances.

Finally, I consider the influence of common interests on the willingness of states to ally. One measure of common interests is the number of rivals that a dyad shares. Rivals represent consistent threats to security, and to the extent that states have common rivals, they have common interests with respect to security issues and should be more willing to ally with one another. The prevalent alliance blocs that operated throughout the Cold War (NATO and the Warsaw Pact)

³ Siverson & Emmons (1991) provide support for the idea that democracies ally in numbers higher than expected by chance. Simon & Gartzke (1996) analyze the same data and conclude that there is little correlation between alliance dyads and regime type. However, Lemke (2001) finds fault with their argument. Lai & Reiter (2000) find evidence of the flocking phenomenon only after 1945, while the opposites-attract phenomenon existed mainly before 1945. Readers should keep in mind that the proportion of democracies in the state system has steadily increased over time, which may be a partial explanation for the divisiveness in the literature.

⁴ For examples of domestic constraints (on cooperation), see Putnam (1988) and Milner (1997); and (on conflict), see Bueno de Mesquita et al. (1999, 2003).

provide anecdotal evidence that states may ally with partners with whom they share some rivals. Moreover, Kim (1989) finds that alliance blocs often give rise to rival alliance blocs, which increases the chances of conflict occurring.

H4: As the number of rivals that a dyad shares increases, the dyad's willingness to ally will increase.

I have discussed the existing claims within the literature and suggested some hypothetical expectations about the influence of regime type and relative capabilities on alliance formation. Moreover, since alliance formation shapes conflict behavior, the total effect of regime type and capabilities on conflict behavior is composed of their direct effects in the conflict equation plus their indirect effects from the alliance equation, which can only be known if the processes are examined jointly. Thus, previous research has failed to account for the total effects of regime and relative capabilities on conflict behavior because of the misspecified relationship between alliances and conflict. The following section presents a series of total-effect propositions about the effect of relative capabilities and regime type on conflict behavior, given that those factors also shape the chances that a pair of states form an alliance.

Conflict: Expectations of Total Effects

The conflict literature is well developed and reasonably unified regarding a set of factors held to shape the chances of states fighting one another. This section will briefly develop expectations regarding regime, power, and major-power status. The bulk of this section, however, will focus on developing expectations about how those factors will influence the likelihood of conflict, given that they also shape the chances that states ally.

The democratic peace literature (Russett, 1993; Maoz & Russett, 1993) suggests that pairs of democracies behave more peacefully in pairs than do other pairs of states. There is also some limited evidence of an autocratic peace as well (Raknerud & Hegre, 1997; Peceny, Beer & Sanchez-Terry, 2002⁵), suggesting that dyads composed of autocracies are less conflict prone as well. Thus, I expect that the direct effect of joint democracy (or joint autocracy) will be to decrease the chances that a dyad engages in conflict. I expect the direct effect of dyads with at least one major power to increase the chances that a dyad engages in conflict (Bremer, 1992, 2000), because major powers have both global interests and capacity, increasing the chances that their interests collide with those of other states. Finally, within the dyad, each state's assessment of its need to fight and its chances of winning a conflict are shaped by relative capabilities. I argue that increasing parity between states will increase their willingness to fight (the chances of conflict), while increasing preponderance by one state within the dyad reduces the likelihood of conflict between a pair of states. Thus, the direct effect of relative capabilities (moving from parity to preponderance) is to decrease the chances of a dyad engaging in conflict (Clark & Regan, 2003). Most existing research can capture only those direct effects; however, the model of conflict behavior that I present allows me to uncover the total effects of some variables of interest. Before specifying my expectations regarding the total effects, I will discuss the importance of accounting for the influence of distance between states as an important factor that shapes interstate behavior.

⁵ Reiter & Stam (2003) re-analyze their models using directed dyad data, and their results suggest that some of the findings of Peceny, Beer & Sanchez-Terry (2002) change after accounting for which state initiated the conflict.

Accounting for the Distance Between States

Opportunities for states that are willing to interact cooperatively or conflictually are shaped by the interaction possibilities for states (Most & Starr, 1989). Proximity between states influences the number of interactions they are likely to have; it may also help to consolidate common interests or exacerbate disputes.⁶ Gibler (1996, 2000) points out that a number of alliances actually involve territorial settlement and that territorial settlement causes unusually pacifistic alliances. Thus, contiguity does supply a constant opportunity for alliance formation as well as for conflict. On average, states that are close to each other are more likely to ally because of constant opportunity, so contiguity should increase a dyad's willingness to ally, while increasing distance between them should decrease their willingness to ally.⁷ Since contiguity provides constant interaction opportunities for states, I expect it to increase a dyad's willingness to engage in conflict as well. Since the direct effects of some of the factors of interest in both alliance behavior and conflict behavior have been discussed, I will discuss the total effects of some of those same factors of interest on conflict behavior, because the total effects need not be the same as the direct effects.

Total Effect of Relative Capabilities on Conflict

The dyadic distribution of power is influential in the formation of alliances and in the onset of conflict. States at parity are more likely to form alliances than are states with divergent capabilities, and states at parity are

⁶ Geographical proximity plays an important role in interstate wars (Bremer, 1992, 2000; Vasquez, 1993), yet Bremer (1992) found that the relationship between alliances and war disappears when contiguity is added, and, therefore, proximity plays a key role in state behavior.

⁷ However, major powers may not be subject to distance concerns because they are more likely to ally regardless of distance, since they can project their capabilities and, in turn, their interests (Levy, 1983).

more likely to fight one another. That states at parity are more likely to fight is the finding most common in the literature on power and conflict. However, when two states with similar capabilities ally, the chances they will fight should decline, given the very fact that they allied. Thus, alliance formation may well mediate the effect of parity on conflict. Put another way, while parity might make states more likely to fight, their fighting is conditional on whether or not they form an alliance. Investing in an alliance makes fighting that new ally less attractive and thus reduces the chances of conflict.

That states at parity are less likely to fight because they are allies might provide a partial explanation for why the empirical findings on the distribution of power and conflict are somewhat mixed. Because the effect of power parity on conflict is mediated in dyads that ally, models that test only the direct effect of capabilities on conflict, without accounting for these indirect effects of power on alliance formation, might misestimate the chances of conflict. The total effect of power parity on conflict depends on whether or not states ally. If states do not ally, then traditional models regressing conflict on an alliance variable and a power variable probably estimate the effect of power correctly. On the other hand, for states that do ally, those models overestimate the effect of parity on conflict, when they fail to account for the indirect effect of parity on conflict through the formation of an alliance. The total effect of parity on conflict, given alliance formation, should be negative. Contrast this to the traditional expectation in much of the literature that parity will have a positive effect on the chances of conflict. Thus, I expect as follows:

Total Effect of Capabilities: Parity will have a negative total effect on the probability of conflict.

Total Effect of Regime Type on Conflict

Just as the effects of power on conflict might be mediated by the decision to ally, so might the effects of regime similarity. The total effect of joint democracy on conflict is actually positive when those democracies are allied. On its face, this result seems counter-intuitive but actually makes sense considering the rarity of conflict and the particular rarity of conflict among democracies. Democratic pairs are more likely to ally and less likely to fight, yet when they do ally, they have greater contact over shared interests than otherwise and thus have more opportunity to disagree. Stein (1990) suggests that pairs of states need both complementary and conflictual interests, so that states have something to formalize their cooperation around. Democratic conflict may be extraordinarily rare, as the democratic peace literature demonstrates, but this finding suggests that the few times democracies actually do fight might well be because of their close quarters as alliance partners. Democracy might keep them at peace, but allying might make them quarrel.

Total Effect of Joint Democracy on Conflict:

Joint democracy will have a positive total effect on conflict.

The total effect of joint autocracy on conflict ought to be positive as well. Autocratic pairs of states are more likely to ally with one another and less likely to fight each other. However, similar to their democratic counterparts, once autocratic states are allied, they also have more opportunities to disagree with each other. Despite the negative direct effect of alliance formation on conflict, the total effect of joint autocracy is positive with respect to conflict behavior, because joint autocracy positively shapes alliance formation and its effect on conflict behavior⁸ is magnified by its positive

⁸ There is uncertainty as to the direction of the direct effect of joint autocracy on conflict, as dissension exists within the literature.

influence on alliance formation. Thus, alliance formation mediates the relationship between regime similarity and conflict behavior.

Total Effect of Joint Autocracy on Conflict:

Joint autocracy will have a positive total effect on conflict.

The expected total effect of regime and relative capabilities on conflict behavior is different from the expected direct effect of regime and relative power on conflict behavior for two reasons. First, alliance formation is shaped by regime and relative capabilities as well, and, thus, the total marginal effect must account for the influence of this indirect effect. Second, the direct effects of alliance formation on conflict behavior is negative. Thus, empirical models that exclusively account for the direct effects of regime and relative capabilities on conflict behavior are not only misspecifying the alliance–conflict relationship, but, more importantly, could lead to incorrect inferences about the effects of those crucial variables on conflict. In the following section, I suggest how this revised alliance–conflict relationship can be examined using an empirical model.

Integrating Expectations into an Empirical Model

Thus far, I have made the claim that alliance formation affects conflict but in an unusual way; the factors that affect conflict also shape alliance formation and, thus, exert direct and indirect effects on the chances of conflict. This claim implies that alliance formation is endogenous to the variables generally held to influence the likelihood of conflict, so decisions about conflict initiation originate from within the process of alliance formation. Thus, alliance formation is an explanatory variable shaping a dyad's willingness to fight and, in addition, is a dependent

variable arising from the same explanatory variables that influence conflict. Therefore, it makes sense to estimate the equations predicting conflict and alliance formation simultaneously.

Both of the outcome variables for these processes are binary responses, suggesting a pair of seemingly unrelated probit equations with correlated errors in a recursive system is appropriate. Greene (2003: 715) specifies the bivariate probit model⁹ below:

$$\begin{aligned} \text{Prob } [y_1 = 1, y_2 = 1 | X_1, X_2] \\ = \Phi_2(X_1' \beta_1 + \gamma y_2, X_2' \beta_2, \rho) \end{aligned} \quad (1)$$

The second dependent variable (y_2) appears on the right-hand side of the first equation, making the model recursive. Since this model is a full-information maximum likelihood specification, it allows for all possible combinations of the dependent variables (conflict [$y_1 = 1$], alliance [$y_2 = 1$];¹⁰ conflict [$y_1 = 1$], no alliance [$y_2 = 0$]; no conflict [$y_1 = 0$], alliance [$y_2 = 1$]; no conflict [$y_1 = 0$], no alliance [$y_2 = 0$]) as opposed to the censored probit (see Reed, 2000) or other Heckman-style (selection) models where inclusion in the y_2 equation is dependent upon y_1 being observed.¹¹ These errors are assumed to be distributed bivariate normal (Φ_2) and rho (ρ) measures; 'the correlation between the disturbances of the equations, the omitted factors' (Greene, 2003: 717).

The recursive bivariate probit model is consistent with the theoretical story that I have explored. It allows the simultaneous estimation of both processes (conflict initiation and alliance formation) arising from

⁹ This model is implemented in Stata 8.0 using the 'biprobit' command.

¹⁰ States do engage in both behaviors in the same time period. In 1936, Ecuador and Peru signed a treaty demarcating their border and, in December of the same year, they began a conflict over that border (Simmons, 1999).

¹¹ Thus, while this is a simultaneous equation model, it is not a selection model.

some of the same independent variables, regime type and relative capabilities in particular. Moreover, it allows for the inclusion of the influence of alliance formation on a dyad's probability of conflict. The empirical model where y_1 is a binary indicator of conflict initiation and y_2 is a binary indicator of alliance formation is¹²

$$P(\text{conflict initiation}) = \alpha - \beta_1 \text{ relative capabilities} - \beta_2 \text{ joint democracy} - \beta_3 \text{ joint autocracy} + \beta_4 \text{ contiguity} + \beta_5 \text{ major powers} - \gamma_2 \text{ alliance formation} + \varepsilon_i$$

$$P(\text{alliance formation}) = \alpha - \beta_1 \text{ relative capabilities} + \beta_2 \text{ joint democracy} + \beta_3 \text{ joint autocracy} - \beta_4 \text{ log of distance} + \beta_5 \text{ contiguity} + \beta_6 \text{ shared rivals} + \varepsilon_i$$

It is important to notice that alliance formation appears in both equations, as an independent variable in the first and a dependent variable in the second. This econometric structure captures the endogenous nature of the alliance variable, avoids simultaneity problems, and will allow me to examine the direct, indirect, and total effects of power and regime on conflict behavior (Greene, 2003: 716).¹³ This empirical structure is a very close representation of the theoretical claim that capabilities and regime shape conflict behavior both directly and indirectly, through the choice to ally.

Data and Methods

The data used in this analysis came from a variety of sources. The unit of analysis is

non-directed politically relevant dyads by year from 1816 until 2000.¹⁴ The dependent variables are coded dichotomously; a 1 when an alliance is formed¹⁵ or conflict is initiated¹⁶ based on the Correlates of War (COW) Alliance dataset (v.3.0) (Gibler & Sarkees, 2004) and the Militarized Interstate Dispute dataset (v.3.0), respectively. Most of the independent variables were generated using EUGene (v.3.04) (Bennett & Stam, 2000). Variables generated from EUGene include capabilities, distance, democracy, autocracy, major-power status, alliance indicators, and conflict initiation, while the shared-rivalry data are computed from data provided by Stinnett & Diehl (2001).

Relative capabilities are based on COW CINC scores (Singer, Bremer & Stuckey, 1972) and represent the ratio of the stronger state in the dyad to the combined capabilities of the two; the variable ranges from .5 (parity) to 1 (preponderance). Distance is calculated using the distance between national capitals. If two states share a border, they are coded 0; otherwise the inter-capital distance is calculated. This work uses the natural logarithm of distance in an attempt to normalize the measure, and if the distance between states is zero, then the variable is coded 0. Major-power dyads are coded 1 if either state in the dyad is a major power during the given year according to the COW list of major powers. Finally, shared-rivalry

¹⁴ In order to maximize the number of observations, I set the contiguity level to 5 so that dyads included in the sample may have 151–400 miles of land or ocean separating them, resulting in 94,163 possible politically relevant dyad years.

¹⁵ Alliance formation is scored 1 when a new alliance is formed or a different alliance is formed from the previous alliance. The data do not differentiate between renewed or new alliances of the same type as the previous alliance. Moreover, this variable accounts for any type of new alliance – here, I do not differentiate between alliance types, though that is an interesting project for the future.

¹⁶ Conflict initiation is scored 1 when both states in the dyad engage in a militarized interstate dispute where the hostility levels for both states are greater than 3.

¹² I also account for temporal dependence among the observations through the use of time splines (Beck, Katz & Tucker, 1998).

¹³ Bivariate probit models, like this one, have been employed previously in the US politics literature; see specifically Zorn (2002) but also Martin & Wollbrecht (2000).

data were computed from rivalry data provided by Stinnett & Diehl (2001), and this variable is the sum of the number of shared rivals for a dyad in a given year. This variable ranges from 0 to 9, with a mean equal to .03 and a standard deviation of .26.

Democracy and autocracy come from the Polity III data merged in EUGene (Jaggers & Gurr, 1995). Democracy is scored on a scale from 0 to 10, with 10 being the highest score for democracy. The autocracy value is scored on a scale of 0 to 10; it is a measure of the extent that the political institutions are closed in a state.¹⁷

Results

Table I reports a single probit model of conflict initiation including alliance formation as an independent variable. This model is, on the whole, representative of existing empirical models¹⁸ in the conflict literature, and the estimated relationships are consistent with those commonly reported in that literature.

The effect of alliance formation on conflict is negative and insignificant in the single-equation probit model, and the direction of the coefficient is consistent with that portion of the literature reporting allies are less likely to fight. As is the case in most empirical work on conflict, the effect of alliances is treated in this model as if it arises exogenously and as if the other variables

(power, regime, etc.) exert simple, direct effects on the chances of conflict. The implicit assumption this model (and those like it in the literature) makes is that alliance decisions are exogenous to conflict and to the other anticipated causes of conflict. The two-equation models reported next explicitly relax that assumption.

The second column of Table I reports estimates for a simultaneously estimated, seemingly unrelated, bivariate probit model, to enable me to evaluate the extent to which alliance formation and conflict onset are related, though I do not posit a direct relationship between the two behaviors (since alliance formation is omitted from the conflict equation). The estimates in the conflict equation are consistent with my expectations and with the single-equation probit model of conflict; joint democracy and joint autocracy decrease the chances that states fight, while major-power dyads have an increased willingness to fight. The significance of ρ suggests that the omitted factors between these two processes are different from zero, some evidence that this model is underspecified. To remedy at least part of the underspecification, I estimate a model including alliance formation in the conflict equation. In doing so, I fully relax the exogeneity assumption and allow alliance formation to have a direct effect on conflict and for the variables that influence both alliance formation and conflict to exert more complex direct and indirect effects.

Bivariate Probit Model 2 reports parameter estimates for a model which accounts for the recursive or endogenous nature of the relationship between alliance formation and conflict willingness decisions. These results suggest that alliance formation decisions decrease dyadic willingness to engage in conflict when accounting for the endogenous nature of those decisions. This finding suggests that states that form alliances with one another are indeed less likely to fight

¹⁷ In general, any country with a democracy score greater than 6 is considered a democracy, both institutionally and with regard to personal liberties and participation. Similarly, any country with an autocracy score greater than 6 is considered a full autocracy.

¹⁸ This model differs from Bremer's (1992) model in its exclusion of economic advancement and militarization as well as its inclusion of cases from 1966 to 2000. This model varies from Clark & Regan's (2003) conflict willingness model in its exclusion of dyadic trade. Finally, this model differs from the models that Russett & Oneal (2001) report in its exclusion of trade dependence and international organization membership as well as the number of cases before 1886.

Table I. Probit and Bivariate Probit Estimates

	<i>Single probit</i>	<i>Bivariate probit 1</i>	<i>Bivariate probit 2</i>
<i>Conflict willingness equation</i>			
Relative capabilities	-0.845* (.094)	-0.867* (.094)	-0.885* (.093)
Contiguity	0.353* (.030)	0.351* (.030)	0.391* (.030)
Joint democracy	-0.517* (.066)	-0.514* (.066)	-0.514* (.065)
Joint autocracy	-0.071* (.037)	-0.071* (.037)	-0.039 (.036)
Major-power dyad	0.501* (.051)	0.460* (.050)	0.533* (.051)
Alliance formation	-0.010 (.056)	-	-0.548* (.091)
Constant	-0.240* (.095)	-0.179* (.095)	-0.112* (.095)
<i>Alliance formation equation</i>			
Relative capabilities	-	-0.910 (.073)	-0.916* (.073)
Log of distance	-	-0.532* (.018)	-0.518* (.019)
Contiguity	-	-3.608* (.133)	-3.508* (.135)
Joint democracy	-	-0.101* (.039)	-0.098* (.039)
Joint autocracy	-	0.124* (.025)	0.120* (.025)
Sum of shared rivals	-	0.335* (.025)	0.302* (.027)
Constant	-	4.228* (.148)	4.136* (.150)
N	92,079	92,079	92,079
Chi-square (df)	3,250.45* (10)	9,372.99* (19)	9,786.82* (20)
Log-likelihood	-5,814.26	-14,972.13	-14,937.11
ρ	-	0.210* (.029)	0.442* (.045)
Base probability	0.00397	NA	0.00081

* $p < .01$.

Robust standard errors are reported in parentheses.

All models estimated with Beck, Katz & Tucker (1998) controls for temporal dependence.

each other, once we account for (1) the direct effect that alliance formation has on conflict propensity, (2) the simultaneous nature of the decisions, and (3) the link between the two processes. A log-likelihood test of the bivariate probit models using the chi-square

distribution results in a score of 70,¹⁹ exceeding the value needed for significance (for 1 df) at the .01 level and suggesting that the second bivariate probit model is the better model.

¹⁹ LLR tests = $-2((-14972.135) - (-14937.111)) = 70.048$.

But the direct effects are only part of the story and are the part that has been explored in the literature for some time. The indirect effects of the variables in the alliance formation equation not only represent the sources of alliance formation, but also influence the chances of conflict *through* their effects on alliance formation. The estimates in the alliance formation equation indicate that autocrats are more likely to ally and that democrats are less likely to ally. This effect of joint democracy is inconsistent with my expectations but is consistent with Simon & Gartzke's (1996) claim that there is little correlation between regime type and alliance dyads. Table II, however, provides a more nuanced picture of the relationship between regime type and alliance formation behavior across time.

Table II reports bivariate probit estimates comparing the pre-1945 time period to the years between 1945 and 2000.²⁰ Interestingly, a comparison of the results for joint democracy suggests that democracies were less likely to ally before 1945 but more likely to do so after 1945, despite the aggregate effect reported in Table I (Bivariate Probit 2) being negative. Moreover, the results for joint autocracy are similar, as joint autocracy increased willingness to ally before 1945 and decreased willingness to ally after 1945. Taken together, these results indicate that joint regime type significantly influences alliance formation but does so differently across time periods. These results provide support for Lai & Reiter's (2000) claim that democracies do flock after 1945 but, contrary to their results, these results also suggest that autocracies flocked before 1945. Moreover, across the bivariate probit models reported in both Tables I and II, joint regime type uniformly decreases a dyad's chances for conflict. While the joint democracy results

are consistent with my expectations and the democratic peace research program, the findings for joint autocracy further contribute to the research on a potential autocratic peace²¹ as well.

I also report base probabilities for the models from Table II which include the effect of regime similarity. The base probability of both outcomes (alliance formation and conflict initiation) being observed in a given year when a dyad is composed of democratic states is about 2 in 10,000 before 1945, and it decreases to about 1 in a million after 1945. The same relationship is observed for jointly autocratic dyads, where chances go from 5 in 10,000 pre-1945 to 3 in a million post-1945. The base probability, for democratic dyads, of a pair of states forming an alliance and not engaging in conflict is about 7 in 100 before 1945 and actually decreases to about 4 in 100 after 1945, whereas for autocratic dyads the chances of alliance formation and peace before 1945 are about 4%, and they increase after 1945 to about 10%. Those probabilities suggest that states are far more likely to ally and be at peace in any given year than ally and fight each other. The risk of allying and fighting was far higher for jointly similar dyads before 1945 than in the modern era. Moreover, jointly autocratic dyads, for the most part, appear to be twice as likely (or more) to engage in those interstate behaviors relative to jointly democratic dyads. Finally, the magnitude of the coefficient on alliance formation is larger in the post-1945 time period, suggesting that the pacifying effects of alliance formation within the dyad are different, depending upon the time domain.

As is the case in most non-linear models, these coefficients allow us to evaluate only direction and statistical significance, rather

²⁰ I thank an anonymous reviewer for suggesting disaggregating the time domain.

²¹ That the effect of joint autocracy on conflict behavior loses significance across time periods provides some insight as to why the effect of joint autocracy exhibits instability in other models of conflict behavior.

Table II. Bivariate Probit Estimate Comparisons, 1816–1944 and 1945–2000

	1816–1944	1945–2000
<i>Conflict willingness equation</i>		
Relative capabilities	-0.695* (.146)	-0.839* (.116)
Contiguity	0.224* (.042)	0.622* (.041)
Joint democracy	-0.665* (.117)	-0.233* (.073)
Joint autocracy	-0.128* (.059)	-0.022 (.043)
Major-power dyad	0.442* (.062)	0.451* (.099)
Alliance formation	-0.220* (.083)	-1.750* (.127)
Constant	-0.090* (.144)	-0.423* (.120)
<i>Alliance formation equation</i>		
Relative capabilities	-1.200* (.110)	-0.487* (.115)
Log of distance	-0.519* (.025)	-0.313* (.031)
Contiguity	-3.306* (.175)	-2.102* (.246)
<i>Joint democracy</i>	-0.327* (.066)	0.210* (.041)
<i>Joint autocracy</i>	0.164* (.037)	-0.078* (.046)
Sum of shared rivals	0.274* (.034)	0.109* (.078)
Constant	4.851* (.203)	1.252* (.259)
N	36,570	55,509
Chi-square (df)	5,978.65* (20)	2,756.07* (20)
Log-likelihood	-7,018.4512	-6,384.5347
ρ	0.290* (.050)	0.787* (.037)
Base probability P(1,1) (Jt. dem. = 1)	0.00016	0.0000010
Base probability P(1,1) (Jt. aut. = 1)	0.00051	0.0000029
Base probability P(0,1) [†] (Jt. dem. = 1)	0.067	0.041
Base probability P(0,1) [†] (Jt. aut. = 1)	0.036	0.106

* $p < .01$.[†] where P(0,1) is the base probability of forming an alliance and not fighting.

Robust standard errors are reported in parentheses.

All models estimated with Beck, Katz & Tucker (1998) controls for temporal dependence.

than the total effects these variables exert on the chances of interstate conflict. The total effects essentially comprise the chances of

conflict given the effects of variables in both equations. I computed in Table III total marginal effects (Christofides, Stengos &

Swindinsky, 1997) for the two variables of principal interest: capabilities and joint regime.

Table III reports marginal effects of changes in capabilities and regime on the likelihood of dyadic conflict. Total marginal effects for the bivariate probit model account for the direct effect of a variable of interest, as well as the indirect effect of that variable through the endogenous variable (here, alliance formation), using the joint probabilities on the chances of conflict. For a continuous variable such as relative capabilities that appears in both equations, the total marginal effect is the sum of the direct and the indirect effects and will 'account for the direct effect of a change in that variable on the probability that y_1 [conflict] equals one, and . . . the indirect effect of the change in this variable on the probability that y_2 [alliance formation] equals 1 in the equation which, in turn, affects the probability that y_1 equals one' (Greene, 1998: 298). Thus, the total marginal effect of changes in relative capabilities²² on the probability of dyadic conflict initiation is -0.002 , suggesting that, as relative capabilities move toward preponderance, the marginal effect on the chances of a dyad engaging in conflict are reduced by about .2%. However, the total marginal effect of an increase in relative capabilities on reducing the chances for conflict for a dyad at parity is much larger, about .5%, and that negative effect diminishes as one state becomes increasingly preponderant in the dyad. This lends support to the work of Bueno de Mesquita, Morrow & Zorick (1997), who suggest that the effect of increased capabilities is much more to consequential conflict behavior when states are at parity. These reported total marginal effects are consistent with the total effect expectation for relative capabilities previously outlined.

²² Relative capabilities are set at their mean, which is .89.

For dichotomous variables (like the joint regime variables), the total effect accounts for the marginal effect when the variable equals 1, minus the marginal effect when the variable equals 0. The joint regime variables and the major-power variable all have positive marginal effects,²³ ranging from .4 to .9. Thus, when a dyad is jointly democratic, its chances of conflict are increased by about 58% relative to the base probability of conflict for a mixed regime dyad, which is equal to chances of about 8 in 10,000. The marginal effect of being a major-power dyad is to increase the chances of conflict by about 44% relative to the base probability of conflict. The total marginal effects reported for regime similarity are consistent with my expectations and point to the critical consequences of accounting for only the direct effect of regime on conflict.

For the endogenous variable, alliance formation, the total marginal effect of the formation of an alliance between a pair of states is to decrease their chances for conflict by about .4%. This provides support for the claim that the effect of alliances on conflict ought to be negative. Moreover, this finding provides support for the claim that alliances do cause pacifistic behavior between the signatories and, thus, provides an answer to the research question posited in this article. The connection between dyadic alliance formation and conflict initiation is negative.

Finally, I also compute marginal effects for joint democracy and joint autocracy based on the disaggregated models reported

²³ Some readers may be wondering why the marginal effect of joint democracy on the likelihood of conflict initiation is positive even though the coefficients for joint democracy in both equations are negative. This is because the marginal effect when democracy equals 1 is the sum of the alliance formation ($X'_2\beta_2$)s minus the product of ρ multiplied by the sum of the conflict initiation ($X'_1\beta_1$)s. The product of ρ multiplied by the sum of the conflict initiation ($X'_1\beta_1$) is positive and larger than the negatively signed sum of the alliance formation ($X'_2\beta_2$), resulting in a positive marginal effect on the chances of conflict initiation when joint democracy equals 1.

Table III. Marginal Effects of Selected Variables on the Likelihood of Dyadic Conflict Initiation Using Bivariate Probit Model 2 (from Table I)

	<i>Direct effect</i>	<i>Plus</i>	<i>Indirect effect</i>	<i>Total effect</i>	<i>Percentage change</i>
Continuous variables					
Relative capabilities (mean)	-0.0024	+	0.0000	-0.0024	-0.2450
Power parity (.5)	-0.0043	+	-0.0009	-0.0051	-0.5140
Power preponderance (.99)	-0.0010	+	-0.0002	-0.0012	-0.1180
Endogenous variable					
Alliance formation	when $y_2 = 1$ 0.0008	Minus -	when $y_2 = 0$ 0.0046	-0.0038	-0.3788
Dichotomous variables					
	when $x = 1$	Minus	when $x = 0$		
Joint democracy	0.5855	-	0.0008	0.5847	58.467
Joint autocracy	0.5885	-	0.0008	0.5877	58.765
Major-power dyad	0.4407	-	0.0008	0.4399	43.986
(From Table II)					
Joint democracy before 1945	0.2145	-	0.0001	0.2144	21.443
Joint democracy after 1945	0.9873	-	0.000001	0.9873	98.728
Joint autocracy before 1945	0.3249	-	0.0010	0.3239	32.390
Joint autocracy after 1945	0.9625	-	0.000003	0.9625	96.245
Base probability of both alliance formation and conflict initiation (P(1,1))					=.000808

in Table II. While the marginal effects for all of the regime variables are positive, the magnitude of the effects is much larger in the recent era. The marginal effect of jointly similar regime type appears to increase the base probability of alliance and conflict by about 20–30% in the pre-1945 era, while the effect for the post-1945 era is about three times as large.²⁴ While these percentages are large in magnitude, they are evaluated relative to increasing the base probability of both alliance formation and conflict for both periods (reported at the bottom of Table II), which is vanishingly small from a likelihood of single digits in the hundreds-of-thousands (to the millions in the post-1945 period). These marginal effects suggest that, despite

negative direct effects for some dichotomous variables of interest, the total marginal effect can still increase the risk of conflict occurring between states, because marginal effects are computed using all of the estimated parameters in the model, so that the sign on the sum of the $(X'\beta)$ s may not retain the direction of the estimated coefficient.

With reference to the hypothetical expectations, nearly all of the variables perform as expected, aside from the notable exception for joint democracy. I discussed the potential explanations for the unexpected result for joint democracy by disaggregating the time domain and showing a change in the direction of the variable across time. Thus, overall, the results reported here are consistent with my expectations for both the hypotheses and total effects. Perhaps the best evidence that previous research misspecifies the relationship between alliance formation and conflict

²⁴ The total effect for joint democracy (and joint autocracy) reported above in this table falls between the range of the total effects reported from the disaggregated time period.

initiation is that the indeterminate relationship in the single probit model is corrected (to negative) when the relationship is more appropriately specified by accounting for all of the combinations of possible outcomes, via the seemingly unrelated bivariate probit model that estimates both processes simultaneously. Additionally, evidence of the potential consequences of that misspecification appear when one compares the total marginal effects for the variables of interest (reported in Table III) to the direct effect expectations specified in the single probit model of conflict. Finally, these results also lend support to Levy's claim that 'there are clearly a variety of plausible theoretical linkages between alliances and war (or peace)' (Levy, 1981: 584), and the results suggest that the connection between alliance formation and conflict initiation does depend upon the specification of the relationship and method of empirical analysis, as well as the time period under analysis.

Conclusions

This project sought to determine whether alliances cause pacifistic behavior among the signatories, and, as such, it represents a first take at analyzing the influence of alliance formation on other interstate behaviors²⁵ by examining dyadic alliance and conflict behavior. The results reported here provide evidence that the effects of alliance on conflict behavior may be misestimated or subject to bias, if both the alliance formation process and its effect on conflict initiation are omitted from our predictive models of conflict initiation.²⁶ The effect of alliance

formation in the single probit model was indeterminate. However, linking the decision processes and positing a direct effect between them results in a negative relationship between alliance formation and dyadic willingness to engage in conflict. Thus, the missing link in existing research on the relationship between alliance formation and conflict initiation is the interconnection between these decisionmaking processes, as they are both shaped by regime and power, as well as a properly specified econometric technique to capture the theoretical argument. Moreover, these results also provide more evidence to suggest that the influence of regime type on alliance formation may be dependent upon the years analyzed.

Further, the total marginal effects for regime and power are shaped by all of the estimated parameters as well as the correlation between the error terms of each equation. The result of methodologically incorporating these claims is positive and substantial total marginal effects on the probability of dyadic conflict initiation for several important variables such as regime similarity. Thus, the connection between alliance formation and conflict initiation is sensitive to the specification of the relationship. And the marginal effects of power and regime type are reactive to both the sum of the individual equation ($X'\beta$)s and the direction of ρ , suggesting that the interactive nature of the processes is not transparent. Moreover, it also suggests that alliance behavior cannot be accurately 'controlled' for in single probit models of conflict behavior by accounting for only the direct effects of alliances, regime type, and power, since the total marginal effects of regime are in the opposite direction to the direct effects. Furthermore, I acknowledge the possibility of a direct relationship between conflict initiation and alliance formation in the same period, though I do not explore the direct effect of conflict initiation on alliance

²⁵ Gowa (1994) investigates the direct effect of alliance participation on bilateral trade behavior between signatories. However, she does not account for the simultaneous nature of the processes.

²⁶ A web appendix to this article (available at <http://www.prio.no/jpr/datasets> and <http://bingweb.binghamton.edu/~akimbal1>) replicates table A5.1 from Russett & Oneal (2001) and finds support for the claim that these processes ought to be examined together.

formation here, because my claim is about the direct relationship between alliance formation and conflict initiation and the simultaneous nature of those decision processes. It is a direction for future research. Additionally, it is possible that the type of alliance signed by states shapes conflict behavior (Bremer, 1992), and, while this project does not differentiate between alliance type (e.g. defense pact, offense pact, non-aggression pact, etc.), that is a project that can be pursued in the future. Finally, the results of these analyses suggest that alliance formation increases pacifistic behavior between signatories, refuting the claims of Bueno de Mesquita (1981), while supporting the arguments posed by formal theory suggesting that the costs incurred through alliance formation ought to deter states from engaging in a costly conflict with one another.

References

- Bearce, David H.; Kristen M. Flanagan & Katharine M. Floros, 2006. 'Alliances, Internal Information, and Military Conflict Among Member States', *International Organization* 60(3): in press.
- Beck, Nathaniel; Jonathan N. Katz & Richard Tucker, 1998. 'Taking Time Seriously in Binary Time-Series-Cross-Section Analysis', *American Journal of Political Science* 42(4): 1260-1288.
- Bennett, D. Scott & Allan Stam, 2000. 'EUGene: A Conceptual Manual', *International Interactions* 26(2): 179-204.
- Bremer, Stuart, 1992. 'Dangerous Dyads: Conditions Affecting the Likelihood of Interstate War, 1816-1965', *Journal of Conflict Resolution* 36(2): 309-341.
- Bremer, Stuart, 2000. 'Who Fights Whom, When, Where, and Why?', in John A. Vasquez, ed., *What Do We Know About War?* New York: Rowman & Littlefield (23-37).
- Bueno de Mesquita, Bruce, 1981. *The War Trap*. New Haven, CT: Yale University Press.
- Bueno de Mesquita, Bruce; James D. Morrow & Ethan R. Zorick, 1997. 'Capabilities, Perception, and Escalation', *American Political Science Review* 91(1): 15-27.
- Bueno de Mesquita, Bruce; James D. Morrow, Randolph M. Siverson & Alastair Smith, 1999. 'An Institutional Explanation of the Democratic Peace', *American Political Science Review* 93(4): 791-807.
- Bueno de Mesquita, Bruce; Alastair Smith, Randolph M. Siverson & James D. Morrow, 2003. *The Logic of Political Survival*. Cambridge, MA: MIT Press.
- Christofides, Louis N.; Thansis Stengos & Robert Swindinsky, 1997. 'On the Calculation of Marginal Effects in the Bivariate Probit Model', *Economics Letters* 54(2): 203-208.
- Clark, David H. & Patrick M. Regan, 2003. 'Opportunities to Fight: A Statistical Technique for Modeling Unobservable Phenomena', *Journal of Conflict Resolution* 47(1): 94-115.
- Fearon, James D., 1994. 'Domestic Political Audiences and the Escalation of International Disputes', *American Political Science Review* 90(3): 715-735.
- Gibler, Douglas M., 1996. 'Alliances That Never Balance: The Territorial Settlement Treaty', *Conflict Management and Peace Science* 16(2): 75-97.
- Gibler, Douglas M., 2000. 'Alliances: Why Some Cause War and Why Others Cause Peace', in John A. Vasquez, ed., *What Do We Know About War?* New York: Rowman & Littlefield (145-165).
- Gibler, Douglas M. & Meredith Reid Sarkees, 2004. 'Measuring Alliances: The Correlates of War Formal Interstate Alliance Dataset, 1816-2000', *Journal of Peace Research* 41(2): 211-222.
- Gowa, Joanne, 1994. *Allies, Adversaries, and International Trade*. Princeton, NJ: Princeton University Press.
- Greene, William H., 1998. 'Gender Economics Courses in Liberal Arts Colleges: Further Results', *Journal of Economic Education* 29(4): 291-300.
- Greene, William H., 2003. *Econometric Analysis*, 5th edn. Upper Saddle River, NJ: Prentice Hall.
- Holsti, Ole; Terrence Hopmann & John D. Sullivan, 1973. *Unity and Disintegration in*

- International Alliances: Comparative Studies*. New York: Wiley.
- Jagers, Keith & Ted R. Gurr, 1995. 'Tracking Democracy's Third Wave with the Polity III Data', *Journal of Peace Research* 32(4): 469–482.
- Kim, Woosang, 1989. 'Power, Alliance, and Major Wars, 1816–1975', *Journal of Conflict Resolution* 33(2): 255–273.
- Lai, Brian & Dan Reiter, 2000. 'Democracy, Political Similarity, and International Alliances', *Journal of Conflict Resolution* 44(2): 203–227.
- Leeds, Brett Ashley, 1999. 'Domestic Political Institutions, Credible Commitments, and International Cooperation', *American Journal of Political Science* 43(4): 979–1002.
- Leeds, Brett Ashley, 2003. 'Alliance Reliability in Times of War: Explaining State Decisions to Violate Treaties', *International Organization* 57(4): 801–827.
- Leeds, Brett Ashley & Burcu Savun, 2004. 'The Way We Were: Explaining Decisions to Terminate Alliances', paper presented at the Annual Meeting of the Midwest Political Science Association, Chicago, IL, 15–18 April (http://archive.allacademic.com/publication/getfile.php?file=docs/mpsa_proceeding/2004-04-13/25107/mpsa_proceeding_25107.pdf&PHPSESSID=a48f456ad4cccbf29e32baa21ef66106).
- Leeds, Brett Ashley; Andrew G. Long & Sara McLaughlin Mitchell, 2000. 'Reevaluating Alliance Reliability: Specific Threats, Specific Promises', *Journal of Conflict Resolution* 44(5): 686–699.
- Leeds, Brett Ashley; Jeffrey M. Ritter, Sara McLaughlin Mitchell & Andrew G. Long, 2002. 'Alliance Treaty Obligations and Provisions, 1815–1944', *International Interactions* 28(3): 237–260.
- Lemke, Douglas, 2001. 'Measuring the Similarity of States', paper presented at the annual meeting of the American Political Science Association, San Francisco, CA, 30 August–2 September.
- Levy, Jack S., 1981. 'Alliance Formation and War Behavior: An Analysis of the Great Powers, 1495–1975', *Journal of Conflict Resolution* 24(4): 581–613.
- Levy, Jack S., 1983. *War in the Modern Great Power System, 1495–1975*. Lexington, KY: University Press of Kentucky.
- Long, J. Scott, 1997. *Regression Models for Categorical and Limited Dependent Variables*. Thousand Oaks, CA: Sage.
- Maoz, Zeev & Bruce Russett, 1993. 'Normative and Structural Causes of Peace', *American Political Science Review* 87(3): 624–638.
- Martin, Andrew D. & Christina Wolbrecht, 2000. 'Partisanship and Pre-Floor Behavior: The Equal Rights and School Prayer Amendments', *Political Research Quarterly* 53(4): 711–730.
- Milner, Helen, 1997. *Interests, Institutions, and Information: Domestic Politics and International Relations*. Princeton, NJ: Princeton University Press.
- Morrow, James D., 1991. 'Alliances and Asymmetry: An Alternative to the Capability Aggregation Model of Alliances', *American Journal of Political Science* 35(4): 904–933.
- Most, Benjamin A. & Harvey Starr, 1989. *Inquiry, Logic, and International Politics*. Columbia, SC: University of South Carolina Press.
- Peceny, Mark; Caroline C. Beer & Shannon Sanchez-Terry, 2002. 'Dictatorial Peace?', *American Political Science Review* 96(1): 15–26.
- Putnam, Robert D., 1988. 'Diplomacy and Domestic Politics: The Logic of Two-Level Games', *International Organization* 42 (Summer): 427–460.
- Raknerud, Arvid & Håvard Hegre, 1997. 'The Hazard of War', *Journal of Peace Research* 34(4): 385–404.
- Ray, James Lee, 1990. 'Friends as Foes: International Conflict and Wars Between Formal Allies', in Charles Gochman & Alan Sabrosky, eds, *Prisoners of War? Nation-States in the Modern Era*. Lexington, MA: Lexington (73–92).
- Reed, William, 2000. 'A Unified Statistical Model of Conflict Onset and Escalation', *American Journal of Political Science* 44(1): 84–93.
- Reed, William, 2003. 'Information & Economic Interdependence', *Journal of Conflict Resolution* 47(1): 65–71.
- Reiter, Dan, 2003. 'Exploring the Bargaining

- Model of War,' *Perspectives on Politics* 1(1): 27–43.
- Reiter, Dan & Allan C. Stam, 2003. 'Identifying the Culprit: Democracy, Dictatorship, and Dispute Initiation', *American Political Science Review* 97 (May): 333–337.
- Ritter, Jeffrey, 2003. 'A Signaling Theory Model Approach to Alliance Politics', paper presented at the Annual Meeting of the International Studies Association, Portland, OR, 25 February–1 March.
- Russett, Bruce, 1993. *Grasping the Democratic Peace: Principles for a Post-Cold War World*. Princeton, NJ: Princeton University Press.
- Russett, Bruce & John Oneal, 2001. *Triangulating Peace: Democracy, Interdependence, and International Organizations*. New York: Norton.
- Sabrosky, Alan Ned, 1980. 'Interstate Alliances: Their Reliability and the Expansion of War', in J. David Singer, ed., *The Correlates of War II: Testing Some Realpolitik Models*. New York: Free Press (161–198).
- Schultz, Kenneth A., 2001. *Democracy and Coercive Diplomacy*. Cambridge, MA: Cambridge University Press.
- Senese, Paul & John A. Vasquez, 2004. 'Alliances, Territorial Disputes, and the Probability of War: Testing for Interactions', in Paul F. Diehl, ed., *The Scourge of War: New Extensions on an Old Problem*. Ann Arbor, MI: University of Michigan Press (189–221).
- Simmons, Beth A., 1999. 'Territorial Disputes and Their Resolution: The Case of Ecuador and Peru', *Peaceworks Papers* 27. Washington, DC: United States Institute of Peace (<http://www.usip.org/pubs/peaceworks/pwks27.html>).
- Simon, Michael W. & Erik Gartzke, 1996. 'Political System Similarity and the Choice of Allies: Do Democracies Flock Together or Do Opposites Attract?', *Journal of Conflict Resolution* 40(4): 617–635.
- Singer, J. David & Melvin Small, 1966. 'National Alliance Commitments and War Involvement, 1815–1945', *Peace Research Society (International) Papers* 5: 109–140.
- Singer, J. David & Melvin Small, 1968. 'Alliance Aggregation and the Onset of War, 1915–1945', in J. David Singer, ed., *Quantitative International Politics: Insights and Evidence*. New York: Free Press (247–288).
- Singer, J. David; Stuart Bremer & John Stuckey, 1972. 'Capability, Uncertainty, and Major Power War, 1820–1965', in Bruce Russett, ed., *Peace, War, and Numbers*. New York: Sage (19–48).
- Siverson, Randolph M. & Juliann Emmons, 1991. 'Birds of a Feather: Democratic Political Systems and Alliance Choices in the Twentieth Century', *Journal of Conflict Resolution* 35(2): 285–306.
- Siverson, Randolph M. & Joel King, 1980. 'Attributes of National Alliance Membership and War Participation', *American Journal of Political Science* 24 (February): 1–15.
- Stein, Arthur A., 1990. *Why Nations Cooperate?* Ithaca, NY: Cornell University Press.
- Stinnett, Douglas & Paul F. Diehl, 2001. 'The Path(s) to Rivalry: Behavioral and Structural Explanations of Rivalry Development', *Journal of Politics* 63(3): 717–740.
- Vasquez, John A., 1993. *The War Puzzle*. Cambridge, MA: Cambridge University Press.
- Vasquez, John A., ed., 2000. *What Do We Know About War?* New York: Rowman & Littlefield.
- Waltz, Kenneth N., 1979. *Theory of International Politics*. New York: McGraw Hill.
- Werner, Suzanne, 2000. 'The Effects of Political Similarity on the Onset of Militarized Disputes, 1816–1985', *Political Research Quarterly* 53(2): 343–374.
- Zorn, Christopher, 2002. 'US Government Litigation Strategies in the Federal Appellate Courts', *Political Research Quarterly* 55(1): 145–166.

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