

Maintenance Processes in International Rivalries

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Abstract

Few rivalries ever develop into the most dangerous, enduring kind. Once they do, however, those rivalries are hard to dislodge. We explored the process of rivalry maintenance, largely from the perspective of the punctuated equilibrium model of rivalries this is contrasted to the work on “repeated conflicts.” We explore 1166 rivalries across the period 1816-1992. Our analysis makes three significant contributions or improvements over the repeated conflict literature: (1) a more theoretically informed and methodologically sound specification of “at risk” years, (2) a demonstration that the rivalry context as a whole, not just the most recent dispute, matters in predicting future disputes, and (3) rivalry maintenance processes vary over the life-cycle of rivalries.

Maintenance Processes in International Rivalries

As the study of enduring and other international rivalries has become prominent over the last decade, much of the attention has been devoted to understanding the termination of those competitions (e.g., Colaresi, 2001; Bennett, 1998), perhaps stimulated by the end of the Cold War. Some works have also begun to address the origins of rivalries (e.g., Stinnett and Diehl, 2001; Maoz and Mor, 1996). Yet considerably less attention has been focused on what happens in between those two endpoints. Specifically, little research has been done on rivalry maintenance processes, or the conditions that keep rivalries going.

If one examines data on the duration of rivalries from Diehl and Goertz (2000), over three-fourths of nascent rivalries die out quickly, lasting only a few years and involving only one or two militarized confrontations. Similarly, only approximately 5% of all rivalries develop into full-blown enduring rivalries. Yet once established, such rivalries last an average of 40+plus years¹ and involve a large number of conflict events. The continuation of rivalries involves significant costs to their participants. States must devote great attention to intelligence, planning, and other policy making for the rivalry, often to the exclusion of other concerns. Participating in an enduring rivalry also means transferring many resources to defense concerns, including maintaining larger standing armies and purchasing and/or building weaponry, as well as other military-related costs. Furthermore, rivalry continuation involves opportunity costs stemming from the loss of trade and other cooperative activities with one's rival and its allies. Thus, maintaining a rivalry seems to swim against the tide of "normal" international relations behavior. This paper is therefore dedicated to understanding the conditions that keep rivalries going, even in the face of incentives to terminate them.

There is a significant literature on “repeated conflicts,” focusing on the conditions that lead one militarized confrontation to be followed by another. Yet such studies ignore the rivalry context as an influence, focusing only on what happened in the most recent military confrontation. Furthermore, such studies examine the possibility of new crises or disputes many years (sometimes over a hundred) after the rivalry has ended, thereby introducing significant methodological distortions into their analyses. We explicitly contrast our rivalry approach with the repeated conflicts literature, demonstrating empirically that the latter has limited explanatory capability once one accounts for rivalry context factors.

We posit two general kinds of rivalry maintenance processes, both of which emphasize the *failure* of governments to end the rivalry. This is very different from the traditional conception in which analysts start from the perspective that some factor(s) must be present to keep rivalry going rather than assuming stasis of conflict as a starting point. We begin with the expectation that an ongoing rivalry sets the tone for the two rival states, and that rivalry context is an important influence on rivalry maintenance. One rivalry maintenance process is via the failure of realpolitik policies to achieve victory. A rivalry can end if from one side prevails, presumably through superiority (in capability) in disputes and war. In this form, the rivalry ends because the weaker side realizes that it cannot attain its goals and renounces the pursuit of further militarized conflict. Nevertheless, power preponderance and victory in disputes does not seem to end many rivalries. For example, it is relatively rare (roughly 25 percent of all disputes and wars) for one side to prevail (Jones, Bremer, and Singer, 1996). Even in those cases in which one side has prevailed, success does not necessarily prevent the losing side from starting another dispute or war. Indeed, it may even be seen as the cause of the next

dispute, as was the case with the 1967 Arab-Israeli war, which is followed quite soon by the War of Attrition and then the 1973 Yom Kippur War.

The second rivalry maintenance process is via the failure of conflict management attempts. Instead of using power politics strategies, governments may resort to negotiation and compromise to deal with their differences. Formally or informally, rivals bargain with one another, and third parties frequently get involved in various ways in order to end the rivalry. For example, one reason why rivalries between democracies may be shorter (Hensel, Goertz, and Diehl, 2000) is that they are more likely to resort to negotiation, mediation, and compromise (Dixon, 1994; Dixon and Senese, 2002).

Our exploration is not merely understanding how rivalries end, but looking at the problem from other direction – why they don't -- and the theoretical and empirical explanations change accordingly. In this initial exploration, we concentrate on the first process -- the failure of realpolitik; we address the second concern – failure of conflict management -- only indirectly through consideration of joint democracy effects. In exploring the puzzle, we look at 1166 rivalries across the period 1816-1992. To begin, however, we review the various empirical evidence and theoretical arguments for why rivalries might persist.

The Literature on Rivalry Maintenance

What keeps rivalries going? Few studies have been devoted directly to this question, but there are a number of theoretical approaches that provides insights into the answer.

Gartzke and Simon (1999) have mostly clearly challenged the idea that there is any sort of dependency between militarized conflict in dyads. Clearly, if militarized disputes are independent events, then the whole idea of rivalry maintenance is moot.

Nevertheless, the research that has directly or indirectly examined their claim without exception (that we are aware of) finds very strong dependency between disputes. All of these studies (Hensel 1994; 2001; Colesari and Thompson 2002a; Crescenzi and Enterline 2001) find very significant correlations between “rivalry variables” and the current dispute. These studies typically use some measure of previous disputes (or crises) to examine the dispute linkage question. In all cases these variables are among the most influential of the model. Similarly, conflict studies that use the Beck, Katz, and Tucker (1998) “peace-years spline” also implicitly test hypotheses about dispute linkage; these spline variables are the elapsed time since the previous dispute. Again, almost without exception, these variables are quite significant.

Several studies have sought to provide a general overview of rivalry maintenance by considering their “duration dependence:” that is, whether rivalries increasingly likely to end over time. Bennett (1998) has argued that the longer a rivalry is in existence, the more likely it is to terminate (positive duration dependence). He acknowledges, however, that he can as yet provide no explanation for this effect. Similarly, Cioffi-Revilla (1998) finds that rivalries are unstable, with an increasing tendency to end in their latter stages. He speculates that the propensity for termination may be a generational change in leaders, the effectiveness of deterrence, or the impact of balance of power -- although none of these explanations are directly tested. Moreover, the issue of substantively interpreting time dependency from models of failure time processes (i.e. duration-type models) can be tenuous. As Box-Steffensmeier and Jones (2003) note, “duration dependency” is highly sensitive to the type of distribution function specified (for example, an exponential *has* to yield a conclusion of no time dependency) as well as the covariates theorized to influence the survival of a rivalry. Still, the implications of

these findings are that at some juncture enduring rivalries swim against the tide and survive even while there are pressures against continuation. Of course, this raises the question of what exactly the sources of those pressures are.

“Repeated Conflicts”

Among the most prominent recent studies in international conflict are those concerned with what might be called “repeated conflicts.” All of these are concerns with the connection between conflict events, although the term rivalry is not used. Some of these studies (e.g., Grieco, 2001; see also Box-Steffensmeier and Zorn, 2002) look at the likelihood that a given crisis or confrontation will be followed by another similar conflict event. Other studies (e.g., Werner, 1999; Senese and Quackenbush, 2003) explore the “duration of peace” following the conclusion of a particular military confrontation; peace is said to end when another military confrontation ensues. Both kinds of studies are fundamentally focused on how conflict continues (or not) between the same pair of states.

On the one hand, studies of repeated conflict provide a number of suggestive findings. The absence of a settlement (Senese and Quackenbush, 2003) or the occurrence of a stalemate (Grieco, 2001) in a confrontation decrease the period of peace or increase the likelihood of another military conflict between the same parties; Werner’s (1999) findings are less clear on this point. Each of those studies also suggests that military capabilities are important in generating future conflict. Democracy might also be important, although the dyadic effects (Senese and Quackenbush, 2003) may be different than monadic ones (Grieco, 2001).

Although studies of repeated conflicts have a number of desirable attributes, they also have some serious flaws. First, such studies ignore the rivalry context under which decisions to use military force again (or not) are taken. These studies typically consider

only the characteristics of one confrontation to predict the onset of another such conflict. Yet, is it reasonable to predict future US-USSR relations after the U-2 incident by reference to only that incident and not the superpower rivalry as a whole? Surely, some characteristics of that single confrontation are important (and below we argue that stalemates are critical), but these cannot be paramount to the exclusion of the relevant history of the two states. Thus, these studies are myopic in identifying past influences on present or future behavior. Hensel (1999) provides some empirical evidence to support this contention. His study of recurring conflict behavior also is heavily focused on events in the most recent dispute. Nevertheless, he introduces variables to measure the conflict history of the two states, defined as their rivalry phase. Not only are these factors significant in predicting the onset of new disputes (new disputes are more likely later in the rivalry), but the effect of the other variables (e.g., previous outcome, previous dispute issues) also change depending on the rivalry phase.

Secondly, and symmetrically, studies of repeated conflict look too far into the future for possible instances of renewed conflict. Typically, these studies examine the period following the original conflict for evidence of renewed hostility. The preferred method is event history or hazard analysis. Yet only data availability limit the length of the period examined. Accordingly, in some cases, the authors look up to 127 years (see Werner, 1999) after the original dispute to see if another conflict occurs. This is well after any rivalry has ended and realistically any chance of further conflict is past. It is the equivalent of examining politically irrelevant dyads to see if conflict occurs. Most often, not surprisingly, such conflict does not reoccur. If it does years later, the connection between the original dispute and the new confrontation years later is tenuous at best. This can have a pernicious effect on the statistical analysis. The waiting times for the

next dispute (typically the dependent variable in these analyses) are wildly overestimated. Furthermore, the characteristics of the last dispute in a rivalry sequence are heavily over-weighted, sometimes getting well over 100 observations added to the pool of years studied.

By examining rivalries, which better account for dyadic history and have endpoints, we avoid the worst of these two problems. We also test for non-proportional hazard effects, something only recently appearing in the repeated conflicts literature. Below, we construct different measures of our key variables according to the repeated conflicts approach and our own rivalry approach, and then proceed to test them against one another.

Rivalry Specific Studies

Specific rivalry analyses offer insights into what keeps them going, although the empirical verification of such claims is often indirect and confined to a small number of cases. Maoz and Mor (2002) see rivalry continuing as long as at least one side is dissatisfied and has the capability to challenge the status quo. This suggests that one of the keys to understanding rivalry continuation lies in the outcomes of the initial confrontations of the two rivals. If one side has superior capabilities and is able to impose an asymmetrical outcome, the rivalry may end because the weaker side is unable to continue the competition. This means that rivalry maintenance may occur when disputes produce indeterminate outcomes that leave one or more parties dissatisfied. This is perhaps why they observe many instances of “Deadlock” in the early stages of enduring rivalries. This is also consistent with Stinnett and Diehl’s (2001) finding that stalemate outcomes in initial disputes are good predictors of enduring rivalry development (see also Hensel, 1999 for the role of stalemates in the evolution of

rivalries). Yet if the preferences of the rivals change (and a regime change as well as a dramatic victory can facilitate this), the result can also be the termination of a rivalry. Thus, divergent preferences (or at least the perception of them) can also drive rivalry continuation. Maoz and Mor (2002) find some support for these notions among a handful of Middle East rivalries.

McGinnis and Williams (2001) merge a rational actor model with an organizational behavior one to account for the dynamics of the US-Soviet rivalry. They contend that the rivals do not react to one another in some sort of Richardsonian process. Rather, a rivalry is sustained by an underlying process by which the rivalry becomes institutionalized. That process is rooted in the belief systems of the participants, who come to view their opponent in hostile terms. Bureaucracies and planning based on those belief systems become ingrained and are hard to change as expectations harden. Public opinion is also a factor that supports continuation of the rivalry, as it constrains decision makers. Their argument appears to work better for the United States and perhaps democratic states in general than for the Soviet Union. The empirical tests don't necessarily validate the underlying argument about actor beliefs about the rivalry, although the empirical findings do not provide disconfirming evidence either.

Punctuated Equilibrium and Rivalry Maintenance

An Overview of the Model

The punctuated equilibrium model of rivalries (Diehl and Goertz, 2000; see also Cioffi-Revilla, 1998) starts with a longitudinal view of international relations, which does not atomize disputes and wars and rip them from their historical context. Roughly there are three phases in the maturation of a rivalry. In the onset phase, the rivalry begins following a "political shock," a dramatic change endogenous to one or both of the rivals

(e.g., regime change) or to the international environment as a whole (e.g., aftermath of a world war). The punctuated equilibrium model is not very specific as to the other conditions that prompt the initiation of rivalries, although it suggests that structural factors (e.g., power distributions, issues in dispute) are more important than the behavioral attributes of the first confrontations between the two states. During this initial phase, the rivals either resolve the disputes relatively quickly or patterns of hostility “lock-in,” with the consequence that the rivalry becomes enduring. Following the “lock-in” phase is one of “stasis,” in which hostile interactions persist between the rivals with some regularity or consistency. It is not until another political shock (although only a necessary condition) arises that enduring rivalries end, and they do so abruptly.

Underlying the punctuated equilibrium model and the connection between the lock-in and stasis phases of the rivalry is an organizational, policy model of decision-making. The punctuated equilibrium model envisions repeated conflicts as a consequence of governments locking into conflict policies of various sorts. Hence, within a policy model of international conflict, initial policy decisions are crucial because they shape future decisions in powerful ways. When faced with a problem, organizations and governments (which we consider as organizations) generally try to devise a policy to deal with it. Internally, the policy model has future and past dimensions. A policy is a commitment -- implicit or explicit -- to act in a certain way in the future. The concept of “precedent” is key in looking backwards. Hence, historical actions provide reasons to act the same way in the present. Nevertheless, the government is constrained to follow preestablished policy. Precedent also works in the forward sense. Because governments use reasoning based on precedent and because they are concerned with consistency, they hesitate to take what are good choices in the present if they set bad precedents for future

situations. This conception is largely consistent with that of McGinnis and Williams (2001), who argue that belief systems and bureaucratic policies harden over time in a rivalry, making rivalry behavior (such as arms races) hard to dislodge. Similarly, Leng (2000) indicates that the belief systems of leaders are critical in crisis behavior, and these systems are largely defined by prior disputes and crises. Over time, the external rivalry becomes entrenched in the domestic politics of the two rival states (Hensel, 1999). The inertia character of governments thus supports the basic punctuated equilibrium framework, with its emphasis on stasis most of the time.

The Process of Rivalry Maintenance

Other approaches to rivalry emphasize - although to different degrees - the fundamental difference between the behaviors of states *once they are in a rivalry* from the causes of the rivalry. Given our focus on rivalry *maintenance*, we take as *given* that a rivalry exists. We do not deny the importance of how dyads “select themselves” in rivalries (Lemke and Reed, 2001), but the vast majority of militarized confrontations occur between states that are already in a rivalry, short- or long-term (Diehl and Goertz, 2000). Contrast this with the usual cross-sectional view of international conflict. The implicit assumption is that dyads are at peace and that various factors or events *produce* conflict. This is analogous to the punctuated equilibrium view of what happens before a rivalry starts. Almost inherent in the cross-sectional research design is the theoretical goal of explaining what causes conflicts. This can be seen by the contrast group, which is basically a combination of states at peace with states that have an ongoing rivalry but who are not currently experiencing actual military conflict. The hidden theoretical and methodological assumption is that non-active rivalries are the same as peaceful dyads. The punctuated equilibrium model is in fundamental disagreement with this assumption.

In our approach, we assume that a rivalry exists, and that the issues at stake that could lead, or already have, to the use of military force to resolve them are present. Thus, instead of the movement from peace to militarized dispute as in the cross-sectional view, we already have a relationship characterized by overt military actions. Colaresi and Thompson (2002b) demonstrate that behavior within a rivalry is very different than if the states were not already in a rivalry; that is, rivalry context matters. Therefore, the question is not how states get from peace to war, but how they stay in a militarized conflict.

Within the punctuated equilibrium framework, we see two mechanisms by which states can escape a rivalry. As much of the literature on territory and conflict demonstrates, disputes do not just go away; active steps by governments must be taken to resolve them. The first is possible within the early stages of the rivalry, before inertia processes have locked in. States may adopt realpolitik strategies and attempt to settle the dispute by prevailing over their opponents. This is consistent with Maoz and Mor's (2002) argument that rivalries can end when one side is superior in capabilities and the other side cannot challenge the status quo, even if it is dissatisfied. The initial occurrence of a militarized dispute is a signal that realpolitik mechanisms are being tried. Our expectation is that such a strategy is sometimes effective, with one side defeating the other. Indeed, this may reflect why some authors (Rasler and Thompson, 2000) find few extended rivalries between states of disparate capabilities, and indeed do not conceive of them as rivalries at all (Thompson, 1995). Yet we know that few militarized disputes end with one side prevailing (Jones, Bremer, and Singer, 1996), suggesting the realist strategies may be a relatively inefficient mechanism to escape from rivalries. Similarly, Maoz and Mor (2002) found that the "Deadlock" game was quite common early in

enduring rivalries, suggesting that coercive strategies are not always effective.

A natural move for many governments is to use power and military force to prevail over the adversary and “resolve” the conflict through victory. In this perspective, the outcome of the dispute becomes a crucial factor that links the current (t_1) dispute to the future ones (t_2). If the realpolitik policy works, then we should see frequent success as an outcome of disputes and a very reduced likelihood of future ones. Previous analyses (Jones, Bremer, and Singer, 1996), examined the outcomes of militarized disputes, in particular the stalemate and prevail ones. One test then of our rivalry maintenance framework is the extent to which realpolitik succeeds or fails. We consider that a stalemate outcome is a failure of realpolitik, while prevailing in a dispute can be regarded as a success. Two important results from those analyses in the present context are that (1) stalemate is the overwhelmingly most common outcome of a militarized dispute (approximately 2/3 of the time) and (2) power preponderance is not correlated with the outcome (i.e., power preponderance does not produce victories).

We propose that stalemate outcomes to militarized disputes signal, or are an indicator of, the failure of realpolitik to end the conflict. Stalemates indicate that realpolitik has been tried (given that a dispute occurred), but it has not succeeded and thus the rivalry is ongoing. The failure of realpolitik in a militarized dispute maintains the rivalry in its previous state (or worse). Such failure has downstream consequences. The first is that it is often much harder to resort to the other option for ending the rivalry: negotiation and compromise. Even real concessions may be viewed as insincere or even hostile by states in a rivalry with one another (Colaresi and Thompson, 2002a). The use of realpolitik, even though it fails, strengthens the hands of the hardliners on both sides. Although we have described stalemate outcomes as indicative of “failures,” they are not

necessarily large ones. Dramatic failure - such as losing a war - might lead to major policy changes (often because leadership also changes), but minor failures rarely set the stage for policy change. For example, realists can always argue that not enough power and force was used. In fact, dissatisfaction with the outcomes of past confrontations leads states to adopt more coercive bargaining strategies in the future (Leng, 2000)

Stalemate plays two roles in our framework. The first, as discussed above, is that it signals that the rivalry is ongoing. The second is that stalemates have also a role in rivalry maintenance. The use of realpolitik mechanisms is neither cost nor risk-free. Resort to military force and its failure are likely to generate more disputes down the road. Indeed, this comports well with the previous findings of Maoz (1983), Hensel (1994), and Greico (2001) that stalemate outcomes increase the likelihood of future conflicts between the same pairs of states. Given the data and the state of theory we are currently unable to disentangle these two aspects of stalemate outcomes. Yet it may well be that in practice they are very closely tied to each other.

Thus, we see military force as one way to deal with serious problems between countries. Sometimes the disputes issues are resolved via the victory of one side, as illustrated by the outcome of World War II. Yet we also know that decisive victories can have the effect of strengthening some rivalries, such as the Arab-Israeli War of 1967. Thus, our first mechanism for rivalry maintenance is the *failure* of realpolitik strategies to end the conflict.

A second mechanism for rivalry maintenance is the *failure* of conflict management. Although we do not address this mechanism empirically in the paper, except as related to some notions of the democratic peace, we briefly note it here for theoretical purposes. That is, efforts at direct negotiation and third party facilitation are

unsuccessful at producing long-term change in the rivalry relationship (e.g., resolving the disputed issues) even as they may ameliorate the most hostile manifestations of the rivalry (e.g., prevent escalation to war, etc.). Conflict management may be present early in the rivalry such that states reach accommodation before many confrontations take place.

Why might conflict management fail in some rivalries, whereas be relatively successful in others? Early in a rivalry, conflict generating policies as well as conflict management ones can be implanted. Depending on how the issues in dispute are handled, conflict management at the early stage can become conflict resolution (that is, the rivalry ends in the nascent stage). Yet some issues are inherently more difficult to resolve than others. Tir and Diehl (2002) find that enduring rivalries are disproportionately composed of disputes over territorial issues. We know from past conflict research that territorial issues are the most conflict prone and often are difficult to resolve. Indeed, Vasquez (2003) argues that when states resort to military force over territory, a highly salient concern, they are less willing to compromise and repeated stalemates are the likely outcomes. Hensel (1994) also finds that territorial issues are associated with recurring conflict.

Expectations

Based on the punctuated equilibrium model and extant research findings on international conflict, we have a number of specific expectations about empirical patterns in international rivalries. We have identified roughly three different sets of factors that may facilitate the rivalry maintenance process: characteristics of the last dispute, longer term or rivalry context factors, and traditional conflict influences.

Characteristics of the Last Dispute. For the characteristics of the dispute, we focus centrally on its outcome. Stalemates should be associated with the onset of new disputes, signifying that the issues or factors driving the rivalry have not been resolved. In contrast, when one side prevails in a dispute, our expectation is that rivalry continuation is less likely. Victory may resolve the rivalry or at least deter the losing side from pressing its demands further with military force. Such logic is consistent with *realpolitik*. Still, the outcome least likely to promote future conflict would seem to be compromises. This is largely because both rivals are satisfied, to some degree, with the outcome and therefore one might presume that the particular confrontation and perhaps the rivalry in general have been resolved. A full explication of this logic is given in the previous section. Unlike the factors below, we believe that outcome of the last dispute is relevant, sometimes to the exclusion of longer-term rivalry factors. The immediate outcome of a dispute can alter or reinforce previous patterns of conflict behavior between rivals. For example, if a dispute settlement does produce a resolution of issues, the rivalry could end and thereby wipe away years of hostile interactions.

We also examine two other factors associated with the most recent dispute in the rivalry sequence. We do this largely to test the “repeated conflicts” literature against our rivalry approach, rather than with an expectation that these will be important influences on rivalry maintenance. The war-weariness hypothesis suggests that the high cost of wars will lead states to resist involvement in future wars and avoid serious confrontations that carry with them the risk of escalation. In this evolutionary model, Hensel (1999) also cites a possible negative effect on repeated conflict from high severity conflicts. Thus, war in a rivalry could have the effect of ending the rivalry or at least inhibiting its continuance.

As the duration and severity of conflict between rivals increases, one might expect that rivalries will demonstrate weariness and the likelihood of another conflict is less likely. Nevertheless, the punctuated equilibrium model makes a different prediction; the severity of the previous dispute should have no impact on rivalry maintenance. The punctuated equilibrium model posits that rivalries have a “basic rivalry level” (Diehl and Goertz, 2000), such that disputes share similarities, especially in severity, across time. Variations in the basic rivalry level with respect to severity and other dispute dimensions tend to be idiosyncratic to the individual dispute without much effect on the rivalry as a whole. Rivalries may have basic rivalry levels at either very high or very low levels (or anything in-between). Furthermore, individual wars are found at the beginning, middle, and ends of rivalries and don’t necessarily affect rivalry maintenance, or at least their high level of severity per se has no impact. In earlier analyses, Diehl and Goertz (2000) found no systematic pattern (e.g., rising or declining) in the severity of disputes over rivalries. Thus, although we include a severity variable in our analyses, we expect that it will not be significantly associated with rivalry maintenance.

Rivalries may develop and be sustained by one or several contentious issues. Yet a consistent finding has been that territorial disputes generate more violent conflict than other, less salient issues (e.g., quest for a regime change in your rival’s state). Enduring rivalries also disproportionately involve territorial issues (Tir and Diehl, 2002). Such rivalries are more likely to continue because rivals are less willing to accept compromise solutions and indeed the set of compromise outcomes for the competing preferences may be empty. We test the expectation that if the most recent dispute in the rivalry was about territory, then the rivalry is more likely to continue in the future. Although this factor may be significant, we anticipate that its impact will be less than the contextualized issue

variable below. That is, we expect whether the rivalry as a whole has been about territory (or not) to be more important in rivalry maintenance than whether only the most recent dispute has been.

Rivalry Context Factors. A second set of expectations coalesces around the idea that context affects rivalry dynamics. In effect, this means that we consider the history or life-cycle of the rivalry (Crescenzi and Enterline, 2001) and assess its impact on rivalry maintenance. One key component is the “age” of the rivalry. The punctuated equilibrium model posits that rivalries lock in relatively quickly to their dominant patterns. Following that lock-in period, rivalries are hard to dislodge. Indeed as rivals interact repeatedly in a hostile fashion over time, conflict generating policies and attitudes become more embedded in rival state governments and societies. These serve to provide an impetus for continuing the rivalry or at least to resist counter pressures for the rivalry to be managed or terminated (McGinnis and Williams, 2001). The age of a rivalry has two different dimensions. One is merely the passage of time. The longer a rivalry has been in existence, the more it has influenced different governments, regimes, and generations within a state. Yet acclimation to being in rivalry is more than just a function of time. Frequent conflict interactions provide ample opportunity for policies and attitudes to be adjusted to hostile interactions; several confrontations in a narrow time frame may be equivalent to a few decades of less frequent conflict interactions. Thus, a second element of rivalry age is the number of conflict interactions between the rivals. Our hypothesis is that as a rivalry ages, the likelihood of rivalry continuation increases. This is a classic expectation of negative duration dependence – a rivalry is less likely to end the older it gets.

Beyond the age of a rivalry, we also take two previously articulated variables, conflict severity and territorial issues, and “contextualize” them. Thus, we examine the severity history, or the average severity of conflict across the whole rivalry to date. Similarly, we look at the extent to which the rivalry as a whole at any given point in time has been fought over territorial issues. Again, we anticipate that rivalries with a higher percentage of territorial disputes will be more likely to continue into the future. Our general expectation is that these two contextualized measures will have a greater impact on dispute reoccurrence than the variables that tap only the most recent dispute.

Traditional Factors. A third set of influences on rivalry maintenance derives from standard analyses and logics in international conflict research. In some sense, these factors are additional causal factors or controls that supplement that other factors noted above. Most notable in that literature has been the influence of democracy on conflict behavior. We suspect that democracy will have a reduced (though perhaps still significant) impact on rivalry maintenance as compared to its impact on other violent conflict behavior. Recall that we are assuming that a rivalry exists, and relatively few rivalries involve two democratic states (Hensel, Goertz, and Diehl, 2000). Thus, joint democracy has already had some significant impact on keeping states out of violent interactions (Kinsella and Russett, 2002). Indirectly, joint democracy is related to our concern with conflict management. Democratic states have a better track record of resolving disputes between themselves (Dixon, 1993) than other pairs of states. Thus, our second mechanism of rivalry maintenance – the failure of conflict management – is likely negatively correlated with joint democracy. Nevertheless, if a rivalry has occurred in a democratic dyad, this means that the democratic peace has in some sense already failed. While democracy can mitigate the noxious effects of rivalry (Cornwell and

Colaresi, 2002), we hypothesize that its negative effect on rivalry maintenance will be less than its impact on keeping dyads out of rivalry altogether. That is, joint democracy is likely to have a stronger effect on rivalry prevention than its absence has on rivalry maintenance (Reed and Clark, 2002).

A second traditional factor is the capability or power distribution between the two rivals. The most common finding in studies of international conflict is that power parity is associated with a higher likelihood of conflict (e.g., Russett and Oneal, 2001). Yet a majority of rivalries involve asymmetric dyads (Diehl and Goertz, 2000). We can see a similar sort of logic at work with the capability distribution as with the democratic peace. If an asymmetric dyad does find itself in a rivalry then in some sense deterrence from power superiority has failed. Indeed, when they compare “one-crisis” rivalries with multiple crisis rivalries, Colaresi and Thompson (2002b) find the capability ratio to be significant, but its substantive effect small (hazard ratio of .90; in their analysis of crises versus non-crisis dyads, the capability variable is not significant at all). Hence, here too we expect to see a modest positive – if not zero -- impact of power symmetry on rivalry maintenance.

Research Design

Rivalries and Disputes

In order to test the predictions made by the punctuated equilibrium model, we first need a population of rivalries on which to conduct the analysis. We use a set of international rivalries identified by Diehl and Goertz (2000), comprised of 1166 militarized rivalries over the period 1816-1992. The data are constructed from the Correlates of War Project Militarized Dispute (MID) data (Jones, Bremer, and Singer 1996).

Our focus is whether or not a dispute occurs between rivals in a given year or not. We include data on censored rivalries, rivalries that are ongoing according to our coding rules as of 31 December 1992. The unit of analysis therefore is the rivalry year, as we examine whether a dispute between the rivals reoccurred in a given year or not. We look at each year of the rivalry beginning with the year of the first dispute until 11-15 years after the last dispute. As with cancer, we can consider the patient “at risk” for years following the end of the last dispute, in our case 11-15 years depending on how severe the rivalry was. This represents a period in which we cannot yet certify that the rivalry has ended (see coding rules for rivalries in Diehl and Goertz, 2000).² As noted above, the repeated conflicts literature implicitly assumes that a dyad is “at risk” forever after it has had one dispute. The assumption of perpetual risk has enormous consequences if any lagged variables are used because the last dispute in the rivalry will provide the lagged value for the next, and potentially, long string of zeros. This puts tremendous empirical weight (via the large N) on the last dispute in a rivalry. Because the rivalry framework provides theoretical guidance in constructing the data---that is, providing a basis to determine the appropriate risk period for “dyads”--- we assume that the dyad is at risk for 11-15 years after the last dispute.³

Much of the methodological literature on event history that uses the Russett and Oneal (2001) dataset has ignored the rivalry literature and its implications for analyzing disputes; indeed, the analyses are conducted without an overarching theoretical framework. Within the rivalry literature a major distinction is made between the causes or origins of a rivalry versus evolution of behavior in a rivalry. For example, Box-Steffensmeier and Zorn (2001; 2002) do separate analyses for the time to the first dispute and then repeated disputes after that (until 1992). Not surprisingly given that these are

quite different phenomena (origins of rivalry versus evolution), parameter estimates differ significantly (see also, Lemke and Reed, 2001, who have an equation that selects rivalry and another for conflict within a rivalry). In this paper we *only* look at the evolution of rivalry. Our population is one of rivalries (short or long-term). Thus, we do not look at factors that might cause the first dispute. Although we agree with Box-Steffensmeier and Zorn (2001; 2002) that there are significant differences between analyzing the first dispute and all the following ones, this is a natural consequence of thinking of repeated disputes in terms of rivalries. Similarly, because we know rivalries end we do not keep dyads at risk for decades after the last dispute as is standard practice in the repeated dispute literature.

Previous Dispute Characteristics

The first set of characteristics that we posit will affect rivalry maintenance are those related to the previous dispute in the rivalry sequence. That is, the characteristics of a dispute will influence the likelihood that another dispute will occur. Our central concern is with the outcome of that dispute. We turn to the COW militarized dispute data set (Jones, Bremer, and Singer, 1996). The COW data set provides information on what is referred to there as the “outcome” of the dispute. This variable has nine categories of dispute outcomes: (1) Victory for Side A, (2) Victory for side B, (3) Yield by side A, (4) Yield by side B, (5) Stalemate, (6) Compromise, (7) Released, (8) Unclear, and (9) Missing.

One way to think about this scheme is in reference to the number of satisfied parties in each of these categories. Compromise usually indicates that both sides achieved some goals and are relatively happy. Victories, as well as the two categories of yield, indicate that one party is reasonably content with the outcome while the

loser/yielder is not. Stalemate signifies that neither side is especially satisfied with the results. To the extent that there is a clear initiator and target, the target maybe more content, but a stalemate indicates that it has not permanently pushed back the challenge. Similarly, with the relatively special category of released (exclusively for fishing boat and related seizures), this rarely indicates that the underlying reasons for the seizure have been successfully dealt with.

We collapse these outcomes into three basic categories, according to the number of satisfied parties⁴:

Stalemate -- no satisfied parties – stalemates and released

Victory -- one satisfied party -- victories or yields

Compromise -- two satisfied parties, -- compromises

In the analysis, compromises become the referent category, and therefore there are dichotomous variables for stalemates and victories respectively.

A second characteristic of the previous dispute is its severity. For analyses of severity, we adopt the Diehl and Goertz (2000) approach, which scales severity roughly on a 0-200 scale based on the “level of hostility” exhibited by both states in the dispute and the number of fatalities in the confrontation. We look at the severity score for the most recent dispute at any given point in time. Similarly, we also look at the issues in contention as a third characteristic of that most recent dispute. We consider whether the previous dispute involved territorial issues or not. If one or both sides in the dispute were seeking a territorial revision, then the dispute is coded as being about territory. All other issues are collapsed into a referent dichotomous category.

Rivalry Context Factors

Looking beyond the characteristics of the most recent dispute, we also argue that the rivalry context itself will influence whether a rivalry persists or not. One contextual factor is the “age” of the rivalry. We measure this in two different ways. The first is the age of the rivalry measured in number of disputes -- disputes in the rivalry previous to the year under scrutiny. Another measure of rivalry age is the duration of the rivalry in years. This is measured from the beginning of the first dispute between the rivals to the current year.

Above, we looked at the characteristics of the most recent dispute. Yet, we want to measure rivalry context with a broader horizon and look farther back in the rivalry, beyond the most recent dispute to the rivalry history as a whole. Accordingly, we construct severity and territorial issue indicators for the whole rivalry. Thus, one indicator is the percentage of previous territorial disputes in the rivalry at any given point in time; thus, if at time t , a rivalry has experienced four disputes and two are over territory, the variable is coded as 50%. Similarly, we calculate the average severity score for the all the previous disputes in the rivalry at any given point in time.

Traditional Factors

The third set of factors possibly affecting rivalry maintenance are those typically found in standard treatments of international conflict: national capabilities and regime type. For analyses of capability, we examine both pure military capability as well as an economic measure of capability, relying on data from the Correlates of War Project (Singer, Bremer, and Stuckey, 1972). We use military personnel and military expenditure indicators to signify military capabilities. Economic capabilities are represented by the COW economic indicator -- energy consumption; which is strongly

correlated with various demographic, military, and other economic indicators, providing a basis for assessing the strength of the state. In our statistical analyses, we take the logged values of these two indicators to minimize the impact of extreme values, and to reflect the expectation that the marginal effects of capability decline as preponderance increases. Because we are dealing with dyads, we take a simple ratio of the indicator concerned, for the last year of the dispute, in which the largest value of the dyad is put into the numerator. This means that all relative capability indicators have a minimum of 1.00.

Democracy is measured using the Polity 4 scale of -10 (authoritarian) to +10 (democracy). We adopted the standard “weakest link” approach (Dixon, 1993) in measuring dyadic democracy. Thus, we took the lower of the regime type scores in the dyad. A dyad was coded as democratic if the least democratic rival received a score of 7 or greater on this scale.⁵

Methods of Analysis and Controls for Duration Dependence

The dependent variable is whether or not there is a dispute at a given point in time or not,⁶ and we employ a series of event history models (Box-Steffensmeier and Jones, 2003; see also Beck, Katz, and Tucker 1998). Given that our data are discretized duration data, we applied a logit model with a duration dependency parameter. The standard errors reported in the models are robust standard errors to account for the temporal clustering of data across rivalries. In addition to the logit duration models, we also estimated several Cox models. The results from the two models were nearly identical. In order to account for duration dependence, we included a variable (logwaiting) that was measured as the natural log of the waiting times. Ignoring duration dependency in the logit discrete-time duration is equivalent to assuming an exponential

distribution for the waiting times (Box-Steffensmeier and Jones, 2003); hence, this covariate is included to account for any dependency across the waiting times. Several functional forms were tested, including a locally weighted scatterplot smoother (lowess); however, likelihood ratio tests indicated that duration dependency treated as a natural log function fit the data best.

Empirical Results

Waiting Times

As a first step, we consider the average length and distribution of dispute waiting times across different rivalries.⁷ We do this not only to describe the focus of our analysis, but also to contrast our approach with that of the repeated conflicts literature. Of particular interest is how *short* the inter-dispute waiting times are across the rivalries. For these data, the average waiting time even after accounting for the “at risk” years following the last dispute is about 4 years, while the median waiting time is about 3.5 years. Yet because these statistics are based on inclusion of the 10-15 year “at-risk” period, statistics describing the central tendency of the waiting times will be inflated by inclusion of these years. Therefore, it is instructive to also consider the average and median waiting times for the data excluding these additional “at risk” years. In this case, the average waiting time between disputes is a little less than 2 years, while the median waiting time is about *half a year*.

Disputes occur in rapid-fire succession and hence the interval between them is short, typically on the order of one year or less. Indeed, for some rivalries such as between the United States and the Soviet Union during the cold war, it was not unusual for the rivals to be engaged in several confrontations simultaneously. We can contrast these basic empirical facts with the assumptions made in the repeated conflicts literature

noted earlier. Specifically, consider perhaps the most careful methodological treatment in that literature -- Box-Steffensmeier and Zorn's (2002) analysis. They conduct separate analyses on two subpopulations, which are created based on the median waiting time of 14 years. De facto, what they have done is to divide the Russett and Oneal (2001) dataset into two groups. The first group consists of roughly the data we analyze here. The second group, with waiting times of greater than 14 years combine two different populations: those politically relevant dyads that have no disputes and those rivalries that have ended. From the rivalry point of view, this second group is one of apples and oranges: dyads that have ended their rivalries are not the same as dyads that have never had a rivalry. In addition, the "perpetual risk" assumption, which has no theoretical basis, leads to the calculation of waiting times that are most likely "too" long. Moreover, in the analysis of binary duration data (as is done here; see also Beck, Katz, and Tucker [1998]), the perpetual risk assumption has the deleterious effect of spuriously increasing the number of "nonevent" periods (i.e. the "zeroes") relative to the event occurrences (i.e. the "ones").

Influences on Rivalry Maintenance

Model 1 in Table 1 presents the results of an analysis in which we can both see the impact of previous disputes on the occurrence of future disputes and the rivalry history as a whole. Key to the rivalry maintenance perspective is the role of stalemates in prolonging rivalries. A stalemate outcome is a significant predictor of rivalry maintenance and the sign is positive, indicating a stalemate in a dispute reduces significantly the time until the next military confrontation. We have argued that stalemates are one sign of the failure of realpolitik; it makes intuitive sense that a stalemate in a conflict is followed by another dispute. In fact, victory is no guarantee that

the rivalry will end or moderate. The victory variable is not significant, which means it is not different from the baseline “compromise” outcome. In terms of rivalry maintenance, there is no difference between compromise and victory in terms of the reduction in the risk for occurrence of a future dispute.

(Table 1 about here)

Box-Steffensmeier, Reiter, and Zorn (2003) discuss the importance thinking about non-proportional hazards in event history analysis. Inductively they look for non-proportional hazards for all variables by interacting them with time. They find that the stalemate variable seems to be most susceptible to this effect and devote special analysis to it. As part of the rivalry approach we are sensitive to, and indeed expect, dynamic effects over time. To test for this, we included an interaction term with the log of the waiting time. In Table 1 the main effect of stalemate (.32) must be interpreted along with the interaction with time (.10). The main effect gives us the impact of a stalemate when the interaction term is zero (i.e., after one year, the log of zero). Yet, the impact of a stalemate as well as its significance vary depending on the log of the waiting time. Plotting out of the standard errors allows us to learn where the real effect of stalemates “kick in.” When the waiting times between disputes are highly compressed (i.e. occurring in rapid fire succession and where $\log(t) < -.90$), the impact a stalemate has on subsequent disputes is negligible. Given that there are many conflicts with waiting times of only a few days, the effect of the waiting time variable “swamps” the substantive effect of the stalemate variable. The interaction term allows us to get some leverage on this problem and patterns indicate that stalemates are strongly related to future dispute occurrences, but only after the waiting time has stretched out a little bit (after a year or so). Substantively, this makes sense as it takes decision makers a period of time to

reevaluate strategies and plan their next moves following a confrontation. Disputes that almost immediately follow the end of a previous confrontation likely have had their origins in a policy process that predated that termination, and therefore would not be influenced by the outcome, whatever it might be.⁸

Several variables in the model tap into the historical dimension of the rivalry, some beyond the most recent dispute. Both the rivalry and "repeated conflict" perspective posit linkages between disputes. The repeated conflict approach implies that the recent history matters, the rivalry approach (and particularly the punctuated equilibrium view of rivalries) suggests that the total history of the rivalry matters. There are two sets of variables that contrast the repeated conflict versus the rivalry approach. The first deals with the importance of territory in producing future disputes. Model 1 shows that there is no dependence between whether the previous dispute was about territory and future disputes. If we consider how important territory is in the history of the rivalry, however, it has a massive impact on the occurrence of future disputes. Hence, it is much more a question if the rivalry is about territory than if the last dispute happened to be fought over that issue or not.

The second set of variables deals with the severity of the previous dispute versus the general severity of the whole previous rivalry history. The severity of the previous dispute increases the hazard of a dispute reoccurring. In many rivalries, a loss in war incites it to continue the conflict, rather than signaling that its realpolitik strategies are costly and ineffective. For example, repeated defeats in wars (1948, 1956, 1967) only emboldened Arab states to continue their rivalry with Israel. This result is the opposite of what might be expected from the repeated conflicts literature. In contrast, the weariness effect only appears when the average severity of the rivalry is considered. A high severity

rivalry may have its disputes spread out more than in low severity rivalries, suggesting that rivals have a limited “carrying capacity” for dealing with violent conflict (Diehl and Goertz, 2000). Beyond illustrating the importance of looking at the rivalry history, an important aspect of our analysis is the difference between short-term (i.e., previous dispute) and longer-term rivalry context effects. Here we see an example where they work in opposite directions.

Other rivalry contextual variables are also significant as well. If we view the life cycle of the rivalry in terms of the number of previous disputes, the longer the rivalry the *shorter* the more likely the occurrence of another dispute. Instead of conflict weariness, well-institutionalized rivalries (as suggested by the punctuated equilibrium approach) produce disputes in faster succession than shorter-term ones (of course, this is somewhat mitigated if those conflicts are severe). The other rivalry context variable, rivalry duration, indicates that as the rivalry is older in calendar time, the time until the next dispute actually increases. Well-established rivalries, well engrained in society and government policy through generations, may need less reinforcement to maintain themselves than those less established. We also note, not surprisingly, democracy has a pacifying effect on rivalries, delaying the timing of the next militarized conflict.

In the next set of analyses, we include capability variables (economic and military) because these are widely seen to have an impact on the incidence of disputes. We treat these separately because of the large amount of missing data in the COW capability dataset. Clearly these missing data are not randomly distributed among countries, but occur disproportionately in Third World countries and in more distant historical periods. Model 2 in Table 1 indicates that neither economic nor military superiority has an effect on the occurrence of the next dispute. The results for the other

variables in the model remain largely the same even after losing a significant number of the cases and adding the capability variables.

In summary, we have found that there are strong effects from one aspect of the previous dispute (stalemate outcomes) as well as the longer-term rivalry history on rivalry maintenance. With a few exceptions, this is largely consistent with our expectations that rivalry history as a whole has a greater impact than what happened recently in the rivalry.

Rivalry Life-Cycle Analyses

The results above indicate that the age of a rivalry affects rivalry maintenance. Yet those analyses implicitly assumed that the other variables in the model had a constant effect over the course of the rivalry. This is not necessarily the case. Rivalry approaches suggest that not only does the recent and longer history of a rivalry matter, but that we also see distinctive patterns in the standard life cycle of a rivalry (see also Hensel, 1999). Overall we expect that effects of some variables to be stronger in the initial stage of rivalry (1-2 dispute phase). The punctuated equilibrium model argues that many rivalry characteristics are fixed at this first stage. Also, we expect that conflict management effects (e.g., joint democracy) and deterrence effects (e.g., capability superiority) would matter more early in the rivalry. Similarly, with victory and stalemate, we assume that once a rivalry is well-established that there will be less difference in how stalemate and victory produce further conflict than early in the rivalry where stalemate is more likely to establish the rivalry and victory is more likely to end it. This is consistent with the punctuated equilibrium model, which sees stasis factors becoming important following the “lock-in” of the rivalry.

We examine these propositions through a "stratified" analysis of rivalries. We conduct analyses similar to those in the previous section, but with strata corresponding to three phases of the rivalry: infancy (first two disputes), adolescence (third through fifth disputes), and maturity (sixth dispute and beyond). This is consistent with Hensel's (1999) argument that rivalries "evolve" through several stages with different behaviors in different stages. From the rivalry approach (punctuated equilibrium or evolutionary) we expect to see non-proportional hazards. Given our theoretical framework, we examine how this works based on some notions of a rivalry life-cycle.⁹

We drop some variables because they make little sense in these contexts, notably the rivalry duration and dispute order variables, which in the above analyses indicated the age or phase of the rivalry. In addition, we dropped variables, concerning the characteristics of the most recent dispute (i.e., territory and severity) while retaining their contextual counterparts. Our first analyses, reported in Table 2, include all cases (i.e., without the capability variables which introduce so much missing data, although we do discuss below the implications of including those variables).

(Table 2 about here)

Model 1 in Table 2 presents the results for disputes in the earliest stage of rivalry. Stalemates, independent of the waiting time, exercise no impact on maintenance in the early phase of rivalries. Yet, once again, the effect of stalemates is dependent on waiting times between disputes, as indicated by the interaction term (stalemate x waiting). It takes over a year before stalemates are integrated into the rivalry relationship and they generate additional disputes.

Democracy as a conflict management variable has a significant impact early on in rivalries. Even when higher levels of democracy does not head off militarized

confrontations, it is able to mitigate their long term effects and effectively end some rivalries. Severity is negatively associated with rivalry maintenance, suggesting that very severe confrontations at the outset of rivalries may delay the next conflict or even end the competitions. Yet we know that this is far from guaranteed; for example the US-China and the Arab-Israeli rivalries each began with significant wars, and still experienced frequent and extended disputes over a long period of time. Severity is very closely correlated with victory (i.e., one-side is much more likely to prevail in a severe conflict, and low severity conflicts overwhelming end in stalemate). Thus, both conflict management (defined here in surrogate terms as the democratic peace) and realpolitik (severity) lead to a reduced risk of dispute reoccurrence. Territory has a very strong impact on the evolution of rivalries at this early phase, consistent with the many arguments that territory is core to the development of enduring rivalries (Stinnett and Diehl, 2001; Tir and Diehl, 2002).

Models 2 and 3 examine patterns in more advanced stages of rivalry, and we expect that the results will be different than those in Model 1. Model 2 examines what happens in the second phase of rivalry development. Here we have rivalries that have made it past the initial stages, but are not yet enduring rivalries. As hypothesized, stalemates no longer have an impact on rivalry maintenance, even when interacted with waiting time. Similarly, the severity of the rivalry no longer matters either in influencing future disputes. Rivalries have begun to lock-in, and the impact of previous disputes has dissipated. Several influences, however, retain some explanatory value. Democracy still has a pacifying effect. In contrast, territory continues to exacerbate the conflict, suggesting that the underlying issues of the rivalry remain important determinants of future dispute activity.

Model 3 considers those dyads that qualify as enduring rivalries -- the advanced stages of militarized competition. As expected, few of the early influences on rivalry maintenance remain relevant. The outcomes of recent disputes matter little, as almost 80% of disputes in this rivalry phase now end in stalemate. The democracy variable is also no longer important; there are very few long-term rivalries between democracies and its effects are felt earlier in the competition rather than later. Consistent with arguments about the importance of territory, however, we find that rivalries over territory have a much higher risk of producing future disputes and maintaining the rivalry. Thus, the history of territorial conflict, even from the early stages of the rivalry, has a strong and lingering effect in promoting rivalry maintenance despite many subsequent disputes and the significant passage of time.

We repeated the analyses of models 1-3 and included capability variables. Box-Steffensmeier and Zorn (2002) found that the effects of the capability variable change from significantly negative to significantly positive. Box-Steffensmeier and Zorn find (with many others) that capability superiority does have a deterrent effect in preventing disputes from occurring. But once in a rivalry (as with our analyses here) capability superiority should have less impact. This makes sense once one realizes that our population under analysis is one where deterrence in some sense has failed. Indeed, little changes from any of the models in Table 2, and the capability variables are insignificant, for all phases of rivalry. In general, the analyses with capabilities confirm the patterns we found in the more complete data without capabilities.

Conclusion

Few rivalries ever develop into the most dangerous, enduring kind. Once they do, however, those rivalries are hard to dislodge. We explored the process of rivalry

maintenance, largely from the perspective of the punctuated equilibrium model of rivalries. In that model, rivalry stasis occurs after a lock-in stage, representing a failure of realpolitik and conflict management strategies. We argued that stalemates in militarized confrontations are repeating indicators that the rivalry persists and that the forces driving the rivalry are unaltered. Our approach is in direct contrast to the work on “repeated conflicts, “ which look only at the most recent dispute to predict the likelihood of another militarized confrontation occurring between the same pair of states.

We see our analysis as making three significant contributions or improvements over the repeated conflict literature, with important implications for understanding the process of rivalry maintenance. First, we made a significant methodological improvement over the repeated conflict literature. Repeated conflict analyses make a largely a theoretical assumption that once a pair of states experience a dispute, they are perpetually at risk for another confrontation. This leads those scholars to look too far into the future, examining broad swatches of time to ascertain whether another conflict would reoccur between the same pair of states. This is often theoretically unappealing because the connection between conflicts sometimes more than a hundred years apart is frequently tenuous. Methodologically, it introduces significant bias in the waiting time estimates for the event history analyses that are typically conducted. Our rivalry approach provides a theoretical and empirical basis for assessing when rivals remain at risk. Our analysis of waiting times between disputes indicates that the repeated conflicts literature badly overestimates such waiting times; indeed, our analysis reveals that contrary to the impression left by previous studies, we demonstrate that dispute according occur in rapid fashion, roughly between 2 and 4 years apart. Overestimation of the dispute waiting times overweighs the impact of the last dispute in a rivalry sequence. If

we made no other changes to the repeated conflicts approach, our modification of the “at risk” years alone produces more valid results.

Yet, we do more than perform a methodological “fix” to the repeated conflicts literature. Second, and perhaps more importantly, our punctuated equilibrium model posits, with empirical confirmation, that the rivalry context matters in predicting future disputes between the same pairs of states. Repeated conflicts analyses are myopic in looking backward to the history of the relationship between the states under scrutiny. In our initial analyses, a number of rivalry contextual measures (severity, territory, and two measures of age) were significant predictors of rivalry maintenance. The impact of the most recent dispute, as opposed to the history of confrontations as a whole, was insignificant or substantially weaker than the rivalry context measures. Thus, our results indicate, contrary to the repeated conflicts literature, that conflict must be analyzed within its rivalry context, and not merely as a series of discrete events connected only to one other recent event.

Third, most studies of repeated conflicts assume proportional hazards for the effects of its key variables. Our results demonstrate that rivalry maintenance processes vary over the life-cycle of rivalries, and the punctuated equilibrium model provides us with a coherent theoretical framework to understand those effects (something lacking in those few studies that account for non-proportional effects). Outcomes of confrontations matter early in a rivalry, but dissipate quickly in sustaining rivalries. Similarly, pacifying effects on democracy are no longer relevant in the enduring rivalry stage. Only the presence of territorial issues remains a significant influence on rivalry maintenance throughout different rivalry stages, and even then the magnitude of the effect varies over time. In these results, we see the logic of the punctuated equilibrium model and its

emphasis on political shocks. Once a dyad is in the mature phase of the rivalry life-cycle, all the forces point to a continuation of that rivalry. It thus takes some massive change in the domestic or international environment to dislodge the institutional stability built into rivalries at this point in their lives.

In the first part of this paper, we noted that rivalry maintenance is a result of the failure of realpolitik strategies and conflict management. Our analyses focused primarily on the former. At best, we looked at conflict management issues through the imperfect lenses of the democratic peace – there is evidence that democratic states are more likely to be successful in peaceful conflict management. Yet, a future item on the research agenda should be closer scrutiny of conflict management failures. Work on rivalry maintenance might be focused on a broader set of conflict management strategies, including mediation. Such work might also explore the possibility that unsuccessful conflict management not only doesn't end or ameliorate a rivalry, but may actually contribute to its continuation. The failure of conflict management may lead rivals to give up on ending the rivalry and adjust their policies and strategies to the expectation that the rivalry will continue indefinitely, something that might prove to be self-fulfilling.

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Notes

¹ Given that a majority of the enduring rivalries identified by Diehl and Goertz (2000) had not ended by 1992 (the last year of data available), this figure underestimates the true length of the average rivalry given that many of those rivalries continued for years afterward and indeed still remain in place today.

² Because the termination of a rivalry is only known *post hoc*, the excess “at risk” years appended to the end of each rivalry’s duration helps to account for the uncertainty in knowing precisely when a rivalry terminates. Because we cannot precisely say when a rivalry terminates, our decision rule is to treat as terminated, any rivalry that has not engaged in a dispute in a 10 to 15-year window following the last dispute. This decision rule avoids two problems: 1) false precision in determining the termination of a rivalry and 2) the assumption that each dyad is *always* at risk.

³ The dyad-year data generated by EUGene (Bennett and Stam, 2000) proves problematic given our interests. EUGene outputs only the first dispute of the calendar year. This means that it systematically undercounts the number of dispute occurrences. Thus, we add additional observations for a given year if there were additional disputes in that year. This is also important because we are concerned with what happened in previous disputes. A lagged dispute variable, notably whether the previous dispute ended in stalemate or not, will be incorrectly coded by EUGene if it takes only the first dispute in a calendar year.

⁴ We dropped missing and unclear cases from the analysis (approximately 5% of cases)

⁵ Periods of transition, collapse of central political authority, or polity interruption, as identified by Polity, are coded as non-democracies.

⁶ In the statistical models is a binary sequence of zeroes (which denote "peace periods" or periods not in dispute) and ones (which denotes the involvement in a dispute). Because the sum total of the number of 0s and 1s is equal to the total time of the peace spell, the data are equivalent to duration data (i.e. if there are 10 periods of non-dispute activity until a dispute occurs [at time=11]), then we would observe 10 zeroes and then a 1. The binary sequence "sums" to 11 which is identical to the 11 periods underlying the event history.

⁷ Waiting times are measured in years and fractions thereof. One problem is that new disputes sometimes arise before another, ongoing dispute has ended, resulting in so-called "negative" waiting times. There was no way to impute positive times onto negative times. We note that well over 75 percent of the negative duration times were 1 year or less. We decided to code these cases with the minimum positive value, 1/12 of a year or 1 month. With this coding scheme, the mean waiting time is about 4.20 (sd=3.19). There is little significant difference when excluding the negative waiting time cases; the mean is about 4.75 (sd=3.27). We decided to keep these cases in the analyses as the loss of information was greater than whatever limited costs might ensue from imperfect coding.

⁸ This is clearly true for cases involving "negative" waiting times discussed above.

⁹ In contrast, Box-Steffensmeier and Zorn (2002) consider only the first 8 disputes. Yet we know that the vast majority of rivalries end after one or two disputes (so-called isolated conflict), a second group has a more extensive conflict history, but one that ends after 5-20 years, and finally we have enduring rivalries with many disputes and which last decades.

Table 1 Influences on Rivalry Maintenance

Variable	Model 1	Model 2
Stalemate	.32**	.26***
Victory	.04	.10
Dispute Severity	.004*	.003**
Rivalry Severity	-.005**	-.003***
Dispute Territory	-.012	.21
Rivalry Territory	.73*	.45**
Rivalry Duration	.004***	-.008**
Rivalry Order	.06*	.06*
Democracy	-.80*	-.88*
Stalemate x Waiting	.10**	.09***
Economic Capabilities		-.003
Military Capabilities		-.03
Log Waiting	-.80*	-.74*
Constant	-2.55*	-2.31*
Wald X ²	1548.85*	1212.22*
Pseudo R ²	.28	.28
N	15,258	9,862

* significant at .001
 ** significant at .05
 *** significant at .10

* significant at .001
 ** significant at .05
 *** significant at .10

Table 2 Rivalry Life Cycle Analyses

Variable	Model 1 – Phase 1	Model 2 – Phase 2	Model 3 – Phase 3
Stalemate	.21	.28	.41
Victory	.02	-.007	.50
Rivalry Severity	-.002**	-.005	.003
Rivalry Territory	.65*	.55**	.90*
Democracy	-.88**	-1.02**	-.35
Stalemate x Waiting	.19*	.06	.08
Log Waiting	-.81*	-.69*	-.86*
Constant	-2.53*	-2.13*	-2.27*
Wald X ²	711.12*	312.23*	301.69
Pseudo R ²	.17	.22	.32
N	9,653	3,379	2,226