

**An Evolutionary Approach to the Study
of Interstate Rivalry**

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Abstract: Recent research on interstate conflict and rivalry has shown that most conflict occurs between long-time rival countries, and has used enduring rivalries to test propositions on arms races, deterrence, and power transitions. Yet most of this research has focused on the dynamics of already-established rivalry; little is known about how adversaries become long-term rivals. The present effort attempts to account for the origins of rivalry with an evolutionary model of interstate rivalry that treats rivalry as a dynamic process, evolving out of interactions between two adversaries. Empirical analyses reveal that the context of recent relations between two adversaries has a great influence on their conflict behavior, particularly on their probability of engaging in further conflict along the path toward or away from enduring rivalry. As two adversaries accumulate a longer history of conflict, their rivalry relationship tends to become "locked in" or entrenched, with future conflict becoming increasingly difficult to avoid; specific characteristics of their past confrontations can hasten or reverse this movement toward rivalry. This paper concludes by discussing the implications of this evolutionary model for the understanding of rivalry, conflict, and world politics more generally.

INTRODUCTION¹

The tensions and crises of the Cold War between the United States and the Soviet Union dominated world headlines for four decades, much like the series of crises and wars between France, Germany, and the other European great powers had done in past times. Antagonism between Israel, Egypt, and Syria and between India and Pakistan has spawned numerous crises and wars since World War II, and such enemies as Greece and Turkey or Argentina and Chile have become involved in dozens of crises since the nineteenth century. Potential new rivalries have also arisen in the 1990s, led by warfare in the former Yugoslavia and tensions between former Soviet republics. Despite the recent ending of rivalries ranging from the Cold War to Ecuador and Peru, many prominent rivalries continue without interruption, and there is little reason to believe that the emergence of new rivalries can be prevented.

The research described here studies the interactions that lead nation-states down the path to militarized interstate rivalry. Some dyads, or pairs of states, are able to manage or settle their contentious issues peacefully. Other dyads engage in one or several militarized confrontations, but manage to resolve their differences relatively quickly. Finally, some adversaries -- such as Israel and Syria or the United States and the Soviet Union -- engage in frequent confrontations over an extended period of time, producing a situation that is often termed "enduring rivalry." I seek to determine why different dyads reach such different outcomes, with some avoiding militarized conflict altogether and some reaching the level of full-fledged enduring rivalry.

This research begins by examining the meaning and importance of the "rivalry" concept. After reviewing existing approaches to the study of rivalry, I offer an evolutionary model of how the relationship between two adversaries moves toward or away from rivalry over time, emphasizing the changing context of their relations and the influence of both past events and the prospect of future interaction. Quantitative analyses of this evolutionary framework are discussed, indicating its ability to account for movement toward rivalry as well as for other dimensions of world politics. I conclude by discussing the contributions of this evolutionary framework and some of the implications for future research.

The Meaning of Rivalry

At the most basic level, the concept of "rivalry" denotes a longstanding, competitive relationship between two or more actors. More precise conceptualizations offered by scholars

who have studied rivalry or related concepts such as "enmity" or "protracted conflict" highlight three central elements in rivalry: competition between the same set of adversaries, the perception of threat and hostility by each side, and a temporal dimension reflecting the impact of past interactions and the expectation of future interactions (e.g., Finlay, et al. 1967; Feste 1982; Azar, et al. 1978; Brecher 1984; Bennett 1993; Vasquez 1993; Goertz and Diehl 1993; Wayman 1996). A full-fledged "enduring rivalry" thus requires (1) that two adversaries engage in a competitive relationship over one or more stakes that they view as important, (2) that each perceives that the other has hostile intentions and poses a significant security threat, and (3) that the competitive relationship has lasted for a substantial period of time and is expected to last into the foreseeable future.

Most political science applications of "rivalry" and related concepts have focused on what might be termed "enduring, militarized, interstate rivalries," or rivalries between two nation-states that involve frequent militarized confrontations and that last for long periods of time. Yet the rivalry concept has a much broader range of potential applications than this one very specific usage. Economic rivalries between states can easily be seen as involving competition over economic policies or markets, generating perceptions of severe hostility and threats to each side's (economic) security, and lasting for substantial periods of time with the expectation of continued competition in the future. The United States and Japan appear to have fit this description during the 1970s and 1980s, although with little expectation that this economic rivalry would spill over into the military arena. Political, economic, or military rivalries can also be seen between non-state actors, as in relationships between Hutu and Tutsi in Central Africa or between Serb, Croat, Muslim, and Albanian in Bosnia-Herzegovina, Croatia, or Kosovo. Such relationships involve competition over stakes ranging from economic success or political autonomy to survival, can generate severe perceptions of hostility and threats to security, and may last for many decades or longer with the expectation of continued rivalry into the future.

Less severe or advanced forms of rivalry are also possible between the extremes of completely peaceful, uncompetitive relations and enduring rivalry; these lesser forms of rivalry would be lacking in one or more of the dimensions listed above. In such cases, it is always possible that the relationship between the adversaries may change along one of these dimensions, potentially producing movement toward or away from full rivalry. For example, two adversaries

that do not perceive much competition, threat, or hostility from each other could begin to approach rivalry if later events should produce more competitive or hostile relations or greater feelings of threat perception. Many enduring, militarized rivalries were not always hostile or competitive, with their protracted military competition being preceded by a period of peaceful or even cooperative relations. For example, Bolivia and Paraguay had both been independent for decades before their latent territorial claims to the Chaco Boreal region led to the onset of militarized competition in the 1880s, and eventually to full-fledged enduring rivalry.

Along the same lines, two relatively new adversaries that begin to qualify as rivals based on the competitiveness and threat perception dimensions -- perhaps on the basis of an especially bitter war or several recent crises -- could approach enduring rivalry if this adversarial relationship were to last for a longer period of time. It should be noted, though, that movement toward rivalry is not necessarily predetermined or irreversible, and later events may lead actors toward peaceful relations rather than rivalry. If two adversaries are able to resolve some of their disputed issues peacefully or if at least one of them is unwilling to risk militarized conflict, then any threat perception or competitiveness between them may decrease, moving them closer to peaceful relations and thus farther from enduring rivalry.

The Importance of Rivalry

Empirically, the phenomenon of interstate rivalry appears to account for most militarized interstate conflict. The majority of all militarized interstate disputes, violent territorial changes, and interstate wars have been found to occur in the context of either “proto-rivalries” or enduring rivalries, including ten of the twelve most severe international wars in recent history. Confrontations between rivals also appear to be more severe and escalatory than other, non-rivalry confrontations, and enduring rivalries are much more likely than non-rival adversaries to experience war at some point (e.g., Brecher 1984; Brecher and James 1988; Goertz and Diehl 1992; Bennett 1993). On the basis of these observations, enduring rivalry is an important topic to study if we are to understand interstate conflict. If we can understand the processes and dynamics of rivalry, then we should be able to account for most militarized conflict in the modern era, including much of the most dangerous or escalatory conflict.

Additionally, many scholars have argued that the context of rivalry differs substantially from non-rivalry contexts (e.g., Vasquez 1993, Thompson 1995; Goertz and Diehl 1993, 1995b),

with very different implications for relations between states. Empirical analyses support this contention, suggesting that repeated crises between the same adversaries are more escalatory and more dangerous than isolated crises (Leng 1983; Huth 1988; Goertz and Diehl 1992). It appears that the history of past relations between two adversaries may affect their subsequent relationship, in which case the historical context may be central to understanding the dynamics that lead to enduring rivalry and the differences between rivalries and other relationships. As Goertz and Diehl (1993, 1995b) suggest, there may be important temporal interdependence between events in rivalries, and traditional studies of conflict behavior that ignore these connections may be deeply flawed.

Beyond their own intrinsic importance, interstate rivalries are seen as possessing characteristics that make them valuable for use in testing other propositions about interstate conflict. In particular, enduring rivalries have frequently been used as a case selection mechanism because of the existence of a conflict of interest between the adversaries and their fairly frequent resort to militarized means to resolve their differences. If an hypothesized factor is to have an important influence on conflict behavior, then that effect should be most pronounced in such a competitive and militarized setting. Conversely, a factor that does not lead to conflict in such a setting would appear unlikely to have much impact on conflict behavior in larger populations of cases including adversaries that may not have noteworthy conflicts of interest or that do not have a history of turning to militarized means over their past disagreements. Examples of research using rivalry as a case selection mechanism include studies of arms races (Diehl 1985), power transitions (Geller 1993, Wayman 1996), and general deterrence (Huth and Russett 1993).

Past research on rivalry, while it has already produced many useful contributions, could be improved through careful study of the origins and evolution of rivalry. Rather than simply noting that rivalries account for a large fraction of all conflict or using rivalries to study additional topics, we could benefit from trying to understanding how these situations come into being. An understanding of the origins of rivalry could prove to be valuable from a policy perspective, as well as from an empirical or theoretical perspective. Throughout the Cold War and its aftermath, academics and policy-makers have offered numerous prescriptions for how to manage or end interstate rivalry, and the Cold War superpowers reached a number of agreements on arms control and confidence-building measures for this purpose. Managing or ending rivalry

is undoubtedly an important topic, but it would also be desirable to understand how to prevent rivalry before it begins. Given the high costs -- military, economic, political, and social -- of interstate rivalries, successfully managing or ending the rivalry should be seen as a second-best solution, behind avoidance or prevention of rivalry in the first place.² Studying the origins of rivalry thus offers the hope that policy-makers would be able to learn from the lessons of previous rivalries -- as well as the lessons of previous disagreements that did not lead to outright rivalry -- in managing their own disagreements short of rivalry, thereby avoiding the tremendous costs and risks involved in rivalrous interstate relationships.

PREVIOUS APPROACHES TO STUDYING RIVALRY

Much rivalry-related writing since World War II has involved historical studies of individual rivalries, typically with little effort to generalize beyond the domain of that single case (e.g., Safran 1969; Ulam 1971). Even the more systematic efforts to generalize about rivalries have tended to overlook the origins of rivalry, generally treating rivalry as an independent variable or a case selection mechanism to be used in studying other phenomena. Studies treating rivalry as a dependent variable -- where the goal is to understand the outbreak or termination of rivalry itself -- have been rare, with the notable exceptions of Bennett's (e.g., 1993, 1998) research on rivalry termination and Goertz and Diehl's (1995a) research on political shocks.

Goertz and Diehl (1995a; see also Goertz and Diehl 1998) offer the only previous study of the origins of rivalry, centered around their "basic rivalry level" or "punctuated equilibrium" model. They suggest that each pair of adversary nation-states has a "basic rivalry level" or BRL around which their relations fluctuate. According to the punctuated equilibrium model, rivalries primarily begin because of the influence of exogenous factors, which determine the BRL for the dyad in question. Goertz and Diehl (1995a) identify political shocks as an important source of rivalry, noting that the dramatic changes represented by shocks can fundamentally alter the processes, relationships, and expectations driving interactions between states. Political shocks thus set the stage for rapid change in interstate relationships, perhaps leading to the outbreak of new rivalries or the termination of ongoing rivalries. Goertz and Diehl focus on shocks at both the nation-state and systemic levels such as national independence and world wars, and find that most rivalries begin within ten years of one or more such shocks.

Consistent with this lack of interest in the origins of rivalry, past definitions and measures of rivalry have generally assumed that the context of rivalry is static, with no noticeable change from the initial outbreak of rivalry to its termination.³ Many such approaches (e.g., Gochman and Maoz 1984; Diehl 1985; Wayman 1996) offer a dichotomous categorization of adversaries as either enduring rivals (adversaries that engage in a certain number of militarized confrontations over a specified length of time) or non-rivals (all other cases); Goertz and Diehl (1992) add the intermediate category of proto-rivalry between "isolated conflict" and full-fledged enduring rivalry. In each case, the entire period of rivalry is treated as equivalent for the purposes of analysis, ignoring the possibility of change in two actors' relationship between the beginning of a new rivalry, the middle of an ongoing rivalry, or the conclusion of the rivalry.⁴ Thus, while Goertz and Diehl (1992) find that the majority of wars of the past two centuries have occurred in the context of rivalry, it is unclear whether most of these wars occur early in the rivalry (and thus contribute to later events in the rivalry), or whether most of them occur after decades of disagreement and frequent confrontations (and thus result from earlier events in the rivalry). A static approach to rivalry simply assumes that there is no difference in context over the course of a rivalry, without testing empirically whether such differences might exist, so the timing of wars in rivalries is seen as irrelevant. Yet the implications for both theory and policy may be very different if the high levels of conflict that appear to characterize rivalry begin immediately, or if these high levels of conflict are only reached after years or decades of confrontation as rivalry develops.

Another shortcoming of static, post hoc identification of rivalries becomes apparent upon considering how to treat adversarial relationships that are ongoing at the time they are being studied. Because such approaches identify rivalries based on the eventual length and severity of their conflictual relationship, the scholar must wait until a number of years and confrontations have passed (the most common definitions require at least six confrontations and twenty years) before two adversaries can be classified as enduring rivals. Then, once this classification is made, all of the earlier relations between those adversaries must be reclassified as having occurred in a context of rivalry instead of a non-rivalrous context -- which has the potential to alter or reverse previous findings from research conducted before the reclassification. Current examples include the budding potential rivalries between Serbia and Croatia or between Armenia and Azerbaijan, which would currently be classified as "isolated conflict" or "proto-rivalries"

because of the recency of their conflict. It is difficult to tell now whether such adversaries will eventually reach the confrontation and duration thresholds to qualify as enduring rivals, and any analyses or prescriptions offered before that classification can be made with certainty run the risk of being changed due to future events.⁵

Further difficulties with existing approaches to the study of rivalry are highlighted by examining the origins of individual rivalries. For example, the Cold War between the United States and the Soviet Union might be explained by the post hoc approach as the inevitable result of competition between the system's two leading powers or as the result of the political shock of World War II. Goertz and Diehl (1995a) treat the Cold War as an enduring rivalry beginning in 1946, reflecting the beginning of the first militarized dispute between the two superpowers. There is evidence, though, that decision-makers in 1945 or 1946 neither expected nor intended for events to unfold as they did. At the close of World War II, the United States and the Soviet Union had just defeated the Axis powers and were beginning to show signs of disagreement over the post-war order in Europe. Yet there appears to have been little expectation that relations between the superpowers would evolve into a rivalry that engulfed much of the globe for over four decades, and many policy makers (at least in the United States) seemed to expect that the superpowers would be able to work out their differences peacefully. Although some individuals had seen the United States and the Soviet Union as fundamental rivals a decade or more before the war even began, they remained a minority in government for some time after the war, as others tried to resolve or minimize the conflicts of interest between the two states. Consensus on the fundamental and protracted nature of their rivalry was not reached until after the superpowers had engaged in a series of diplomatic and military confrontations over Iran, Turkey, Berlin, and similar issues (e.g., Gaddis 1978; Larson 1995; Leffler and Painter 1994).⁶

If the above characterization of the early Cold War is accurate, then a post hoc approach to rivalry would be inadequate as a research strategy. Treating two adversaries as enduring rivals from the date of their earliest confrontation -- when they do not yet know that they will eventually become frequent adversaries, they may expect a resolution of their differences soon, and they most likely do not yet view each other as primary security threats -- seems likely to produce more misleading research results than a more dynamic approach. A more appropriate strategy, corresponding more closely to the empirical realities, would have to be able to account

for the development over time of each rivalry, incorporating uncertainty and fluctuations in the intensity of rivalry as it evolves. In short, what is needed is an evolutionary approach to rivalry.

THE EVOLUTIONARY APPROACH TO INTERSTATE RIVALRY

Evolution in its most general sense can be described as an unfolding process of change over time. Evolutionary theory in the natural sciences treats systems or populations as changing over time, reaching their particular state at any given point in time through a series of historical changes. The study of evolution, then, focuses on the series of events and processes that lead up to a given state -- whether this state refers to the incremental adaptation of a species through the development of new features, the development of entirely new species, or changes in the balance of species in an environment or of genotypes in a population. Evolutionary trends or processes are not guided by pre-determined outcomes, and may culminate in a wide range of possible end states; outcomes of evolution are thus knowable only in retrospect (Hensel 1998b elaborates on natural science evolutionary concepts and their relevance to militarized conflict and rivalry).

Most research on evolutionary processes comes from such fields as biology, geology, and anthropology, but many of the same concepts are also relevant to the study of interstate conflict and rivalry. Much like the characteristics of species can change over time (either changing the species incrementally or producing entirely new species), relations between nation-state adversaries can be seen as changing over time, reaching their particular state at any given point in time through a series of historical interactions. A variety of possible outcomes exist, ranging from intense interstate rivalry to entirely cooperative and peaceful relations, and the path to the eventual outcome that results is not pre-determined. An evolutionary approach to interstate rivalry, then, is based on the premise that rivalry -- rather than being inevitable or predetermined by structural conditions -- is a dynamic phenomenon and changes over time. The eventual end results of conflictual relationships (whether or not two states become enduring rivals, as well as specific details of their interactions such as the duration or severity of their conflictual relationship) are influenced heavily by interactions along the way, and can not be known with certainty at the start of the process or at any point during the process. Such an approach requires studying the dynamic processes through which adversaries' relations unfold and develop over time, identifying factors that may push the adversaries toward rivalry as well as factors that may help them resolve their differences far short of militarized rivalry.

This evolutionary approach offers important advantages over more traditional approaches to rivalry. Rather than simply treating a lengthy time span of relations between two states as an enduring rivalry, a proto-rivalry, or a non-rivalry -- and reclassifying earlier events each time a new threshold is crossed -- the evolutionary researcher studies the way in which events unfold and relationships evolve over time. Such a strategy can focus on the specific context of relations between two adversaries at any given point in time based on what has already happened between them, rather than classifying adversaries based on the eventual outcome of their relations at some undetermined point in the future.

Rather than waiting several decades to see what the future holds for relations between Serbia and Croatia or Armenia and Azerbaijan, then, an evolutionary approach allows scholars (or policy makers) to ascertain where the adversaries are on the continuum of rivalry at any given point in time. Additionally, there is no risk of having to revise conclusions if later events should lead to the reclassification of a given dispute as having occurred in enduring rivalry; as noted earlier, as many as dozens of potential rivalries and hundreds of militarized disputes may need to be reclassified based on events in the mid- or late 1990s. Instead, the evolutionary approach can offer analyses or prescriptions based on the situation as it stands at any given point in time, along with projections about how it may develop in the future. This is an important advantage of the evolutionary approach, because it allows scholars to understand how rivalry comes about -- and by implication, how conflictual relationships can be managed short of rivalry, something that more traditional approaches are unable to address.

The General Model

The evolutionary approach to militarized conflict and rivalry begins with the existence of conflicts of interest between two or more adversaries over contentious issues; states fight (or negotiate) for a reason (see also Diehl 1992, Vasquez 1993, Hensel 1999). Militarized conflict represents the choice of a particular means for pursuing a state's goals over one or more issues, although other options such as bilateral negotiations or turning to third parties for assistance are also available (and are probably much more commonly used). For overt, militarized conflict to occur between states, policy makers on at least one side must come to believe that militarized conflict is the best or only way to resolve the underlying conflict of interest in their favor.

Relations before militarized conflict form part of the underlying theoretical basis for the evolutionary approach, but are not currently subjected to empirical testing; the primary emphasis is on the role of past conflict behavior in changing the relationship between two militarized adversaries (consistent with the rivalry literature's almost exclusive focus on *militarized rivalries*).⁷ Two types of influences are central to the evolutionary perspective: the general history of past relations between the antagonists (including such factors as the number of past confrontations or the history of past attempts to settle their issues peacefully), and specific details of recent interactions between them (such as the outcome or severity level of recent confrontations, beyond the simple fact of their occurrence). Both types of influences feed into the temporal dimension of rivalry discussed earlier, involving the legacy of past events and expectations about future events. Thus, a history of past conflict -- particularly when the conflicts in question have led to numerous fatalities or perhaps the capture of disputed territory -- can have a negative impact on relations because of the hostility, grievances, and threat perception that are generated (the legacy of the past), as well as increasing the expectation of further conflict in the future.

The evolutionary approach considers these general and specific impacts of past relations to be primary influences on evolution toward or away from enduring rivalry.⁸ The history of past interactions and confrontations can be seen as having a feedback effect on the threat perception and hostility that led to the initial outbreak of armed conflict. As the legacy of past conflict and hostility accumulates, subsequent relations between the adversaries are likely to worsen, and future conflict is likely to become progressively more likely unless the disputants are able to reach some mutually recognized settlement of the contentious issues dividing them. This feedback effect, whereby the legacy of past events comes to drive the adversaries' subsequent relations and expectations about future interactions, represents the effects of evolution in an interstate relationship or rivalry.

It is important to note that rivalry, once established, is likely to become entrenched in domestic politics (for more details see Hensel 1996, 1998a, 1998b). Once rivalry becomes established, national security policy tends to become highly salient in the rivals' domestic policies. Rivalry can also produce a widely shared domestic consensus on the seriousness of the external threat posed by the rival, which can then influence many domestic political choices and outcomes. When an external rivalry becomes prominent, military spending tends to increase,

and many domestic programs can be either shortchanged or adapted to serve more strategic purposes. Individuals and groups that stand to benefit the most from rivalry, such as groups associated with military production and hawkish political candidates, can then see their political position reinforced. Each of these elements can help to prolong an ongoing rivalry, and to discourage or undercut attempts to end an ongoing rivalry. In short, domestic politics seem likely both to be affected by rivalry, and to exert an important degree of influence on foreign policy-making in rivalry situations.

Specific Evolutionary Hypotheses

Having delineated the basic outlines of an evolutionary approach to interstate conflict and rivalry, I now examine specific expectations of the evolutionary approach. These expectations concern both the nature of conflict behavior (i.e., whether or not conflict behavior changes over time) and attempts to account for this conflict behavior (including any changes that might be observed). This is consistent with natural science research on evolution since Darwin, which has had the dual goals of both establishing that evolution occurs (the "fact of evolution") and accounting for the observed changes (the "mechanisms of evolution").

General Rivalry Context. One important element of an evolutionary approach is the expectation that relations between two adversaries -- particularly conflictual relations like the outbreak or escalation of militarized conflict -- are influenced by the rivalry context, or the general history of past conflict between the same adversaries. In a relationship where the adversaries have been actively engaged in confronting each other for many years, they are likely to have developed certain expectations about each other, and these expectations are likely to affect actions taken toward that adversary in the future. On the other hand, in a relationship that has not previously been marked by the frequent resort to militarized means in the past, the adversaries are unlikely to have developed the same type of expectations about each other's likely future behavior. As a result, the evolutionary approach suggests that (*ceteris paribus*) adversaries with a longer history of conflict will be more likely to engage in renewed conflict in the near future, because of their accumulation of hostility and grievances through their past history of conflict.

Specific Dispute Characteristics. Beyond the general effects of the rivalry context, the evolutionary approach suggests an important role for specific characteristics of past conflict between two adversaries. While a longer history of conflict should generally make relations more conflictual, *ceteris paribus*, specific details of these past confrontations are expected to make later relations either more or less conflictual than we would expect based on the number of confrontations alone. Jervis (1976) suggests that the lessons that statesmen learn from history help to shape their images of the former adversary and their interpretation of subsequent events. Research by Leng (1983), Maoz (1984), Huth (1988), and Hensel (1994) has subsequently suggested that the outcome of a previous militarized confrontation can be an important source of such learning with regard to recurrent interstate conflict.

The outcome of a previous confrontation can alter the status quo ante regarding the adversaries' contentious issues, perhaps leading to a crusade to recoup one's losses through renewed conflict in the future, and can affect each side's expectations regarding the other's likely future behavior. For example, the most stable situations should be those following decisive outcomes (in which there is a clear winner and a clear loser in the dispute) and compromises (in which the two adversaries end the dispute by a negotiated agreement). Where neither of these conditions applies -- i.e., after indecisive, stalemated outcomes -- future conflict is expected to be more likely. In such disputes, neither side was able to produce the desired changes in the status quo, neither was defeated and rendered unable or unwilling to mount another serious challenge, and no mutually satisfactory settlement was reached to resolve the two sides' differences.

The severity levels of recent confrontations also seem likely to affect subsequent relations. If a confrontation reaches a high level of escalation, the involved nations may need to rearm or replace the loss of much of their military hardware. They may also develop an aversion to war (often referred to as 'war-weariness' or 'negative reinforcement') -- or even a fear of the risks of war, for disputes that did not escalate to war but were seen as having come close -- that will lead them to hesitate before seeking to initiate another confrontation (see, e.g., Levy and Morgan 1984). For all of these reasons, disputes that reached higher levels of escalation are expected to reduce the likelihood of conflict in their aftermath.

Issues at Stake. Beyond characteristics of the last confrontation between two adversaries, characteristics of the disagreements dividing the adversaries are also important to an

evolutionary conception of rivalry. As noted earlier, the evolutionary model sees conflict as occurring for a reason, and the specific issues or stakes in a given conflict can be seen as an important factor contributing to the course and consequences of that conflict (Gochman and Leng 1983; Vasquez 1993; Hensel 1999). With regard to recurrent conflict and rivalry, the issues that are at stake in a confrontation between two adversaries are expected to play an important role in shaping the way that the actors relate to each other, learn from their previous interactions with each other, and develop expectations about the future. Disagreement over stakes that are considered to be highly salient might be expected to lead the relevant policy-makers to adopt a more suspicious or more hostile stance toward their adversary, because the risks or costs of losing the disputed stakes to the enemy might be too great. In contrast, more trivial stakes might more easily be ignored by policy-makers, regardless of the outcome or severity levels of past disputes. An evolutionary approach would suggest that conflict is more likely when highly salient issues (such as territory)⁹ have been involved in recent conflict than when only less salient issues have been involved.

Adversary Characteristics. Even in the presence of long histories of conflict, dangerous outcomes or severity levels in recent confrontations, and threats to highly salient issues, two adversaries need not turn continually to militarized conflict to resolve their differences. Characteristics of the adversaries may help to exacerbate or ameliorate tensions between them in such a way that militarized conflict may be very likely or almost unthinkable. While characteristics of two adversaries are not central parts of an evolutionary model of conflict and rivalry, they are likely to set important constraints on the dynamic processes of evolution discussed earlier, and are thus important to consider in evolutionary analyses.

In particular, adversaries that are both established political democracies are more likely than other pairs of adversaries to resolve their differences without the resort to militarized conflict or -- especially -- war (e.g., Maoz and Abdolali 1989; Russett 1993), and adversaries that are more unevenly matched in relative capabilities are less likely than more evenly matched adversaries to resort to force (e.g., Kugler and Lemke 1996).¹⁰ It might be expected that democracies are more likely to settle their disagreements peacefully without the desire to use military force and that uneven adversaries are more likely to see the weaker side give in to its adversary without the need for force, while relatively even adversaries that are not both

democratic are much more likely to choose militarized options in pursuit of their goals. Furthermore, once two adversaries have identified each other as competitors, their interactions can help to increase the likelihood of overt conflict between them if they engage in threatening behavior such as rapid military buildups, particularly if the weaker adversary rapidly approaches the stronger one in relative capabilities (e.g., Vasquez 1993; Geller 1993; Wayman 1996).

EMPIRICAL EVALUATION

This paper's analyses are conducted on the population of militarized interstate disputes and rivalries from 1816-1992, using data from the Correlates of War (COW) Project.¹¹ The analyses are limited to disputes and rivalries involving dyads in which the two adversaries are contiguous or in which one or both adversaries is a major power. This limitation is meant to avoid the potential problem of studying cases with great differences in interaction opportunities or conflict propensity, such as might be the case with non-major power dyads involving actors separated by great geographic distances.

Measurement

Previous empirical work on rivalry has determined the rivalry context in a post hoc manner. That is, if a given dyad ultimately meets the criteria for enduring rivalry, then all of that dyad's disputes are classified as having occurred in the context of enduring rivalry. The evolutionary approach rejects such post hoc classifications, instead measuring the rivalry context at any given point in time by the history of conflict between the disputants *at that point in time*, rather than their ultimate stage of rivalry (if their ultimate stage can even be known). Specifically, the rivalry context is measured by the number of recent militarized interstate disputes (Jones, et al. 1996) between two adversaries.¹² The period from the outbreak of the first dispute between two adversaries to the outbreak of their third dispute (if the dyad actually engages in as many as three disputes) is classified as the "early phase" of a rivalry relationship. The period from the outbreak of the third dispute in a dyad to the outbreak of the sixth (if there is a sixth) is classified as the "intermediate phase" of a rivalry relationship, and any confrontations after the fifth are classified as occurring in the "advanced phase" of a rivalry. Each of these stages of rivalry is subject to a fifteen-year temporal limitation on the gaps between disputes; that

is, the stage of rivalry is considered to have ended after a span of at least fifteen years since the previous dispute.¹³

This evolutionary conception of early, intermediate, and advanced phases of rivalry is roughly analogous to the breakpoints between Goertz and Diehl's categories of isolated conflict, proto-rivalry, and enduring rivalry, except that the evolutionary approach allows for changes of context within a given rivalry rather than coding the entire relationship based on the eventual rivalry status. A relationship that Goertz and Diehl would classify as "isolated conflict" never advances past the early stage of rivalry in this evolutionary classification, but more severe forms of rivalry must pass through several phases. What Goertz and Diehl classify as a "proto-rivalry" thus begins in the early stage of a rivalry relationship, where it remains for the adversaries' first two confrontations, after which point their subsequent relations are classified as occurring in the intermediate phase of rivalry relations. Similarly, an "enduring rivalry" includes time in both the early and intermediate phases of the rivalry relationship before the adversaries engage in a sixth militarized confrontation and their subsequent relations are classified as occurring in the advanced phase.

[Place Table 1 about here]

Table 1 presents the frequency of militarized disputes within rivalries from both the evolutionary and post hoc perspectives. A total of 2427 dyadic militarized disputes have occurred within contiguous or major power dyads, including 696 in isolated conflict dyads (28.8 percent), 588 in eventual proto-rivalries (24.2 percent), and 1143 in eventual enduring rivalries (47.1 percent). Whereas the post hoc approach classifies all 1143 disputes within enduring rivalries as occurring in identical rivalry contexts, though, the evolutionary approach distinguishes between the different phases. A total of 682 of the 1143 disputes within eventual enduring rivalries – over one half of the total for enduring rivalries and one fourth of the total data set -- occur in the advanced phase, while 186 occur in the early phase (the first two disputes) and 275 occur in the intermediate phase (the third through fifth).

Rivalry Context and Conflict Behavior

The first empirical analysis involves the effects of a dyad's current rivalry context on the recurrence of militarized conflict. The recurrence of militarized conflict is a central component of rivalry; rivalry (at least in the enduring, militarized sense) can not meaningfully be said to

exist if militarized conflict does not recur often enough. These analyses are context-specific, in order to determine whether conflict behavior changes over time with the buildup of a longer history of militarized conflict. The evolutionary approach would suggest that, *ceteris paribus*, recurrent conflict should be much more likely in the intermediate or, especially, advanced phases than in the early phase.¹⁴ This must be contrasted with post hoc approaches to rivalry, which assume that the rivalry context does not change noticeably from the beginning of a rivalry to its ending and thus see no need to look for changes in conflict behavior.

[Place Table 2 about here]

The results strongly support the evolutionary expectation that the likelihood of conflict recurrence will increase with the accumulation of a longer history of conflict. Table 2 depicts the probability that a given militarized dispute will be followed by another dispute between the same adversaries within fifteen years. Approximately half of all conflict occurring in the early phase of a rivalry is followed by another confrontation (54.1 percent), while disputes occurring in the intermediate phase of rivalry have a 71.1 percent chance overall of being followed by renewed conflict and disputes in the advanced phase are almost certain to experience recurrence (89.0 percent).¹⁵ These differences between rivalry phases are highly significant ($X^2 = 246.62$, 2 d.f., $p < .001$). These results offer considerable support for the adage that "conflict begets conflict," in the sense that the likelihood of future conflict increases with the history of past conflict. Rivalry almost seems to become self-perpetuating, with the legacy of the past exerting an increasingly important influence on present or future relations as the adversaries advance further along the scale of proto- and enduring rivalry. These findings suggest that the rivalry context makes a great difference, and that analyses that ignore the changing context of relations between two adversaries are likely to leave out an important dimension of conflict behavior.

Accounting for the Evolution of Rivalry

Having established that the context of rivalry changes in predictable ways and with predictable effects, it is important to account for changes in this context. Table 3 presents the results of a logistic regression analysis of dispute recurrence, with a dependent variable indicating whether or not two adversaries engaged in a militarized interstate dispute during the dyad-year in question (for more details on measurement see Hensel 1996). The analysis includes annual observations beginning with the year after the beginning of rivalry (the initial militarized

dispute in the rivalry must have ended to allow measurement of the rivalry context), and continuing until fifteen years after the end of the final dispute in the rivalry (because a new dispute in this period would prolong the rivalry relationship).

[Place Table 3 about here]

The analysis in Table 3 is an aggregated analysis of dispute recurrence, including cases from all three phases of rivalry. This aggregated model produces a significant improvement in overall model fit when compared to the null model ($X^2 = 347.12$, $p < .001$), thus contributing significantly to our understanding of the processes of dispute recurrence and the evolution of rivalry. Almost all of the variables in the model produce effects that are statistically significant and in the expected direction. Thus, as expected, conflict occurring in the intermediate and advanced phases of a rivalry is more likely to lead to the outbreak of recurrent conflict in a given dyad-year, relative to disputes occurring in the early phase of a rivalry relationship. In terms of substantive importance rather than statistical significance, the odds ratios in the final column indicate that the odds of dispute recurrence are 1.345 times greater in the intermediate rivalry phase, and nearly three times as great (2.808) in the advanced phase.¹⁶

Both decisive outcomes and compromise outcomes in militarized disputes significantly decrease the likelihood of future conflict in their aftermath relative to stalemates, as suggested earlier. Substantively, decisive and compromise outcomes have odds ratios of 0.642 and 0.599, indicating that conflict recurrence in a given dyad-year after either outcome type is over one-third less likely. Dispute severity does not seem to have had much of a systematic impact on conflict recurrence. As expected, contention over territorial issues significantly increases the probability of future conflict relative to contention over less salient issues ($X^2 = 48.82$, $p < .001$). This effect is also important substantively; contention over territorial issues nearly doubles the odds of recurrent conflict, as indicated by the odds ratio of 1.749.

These effects of the rivalry context and of issues hold up even after controlling for other factors that might be expected to restrain or exacerbate conflict. Adversaries that are relatively evenly matched in capabilities are significantly more likely to experience recurrent conflict; the odds of dispute recurrence are 1.3 times greater for a dyad in military parity than for a dyad marked by a greater imbalance in capabilities. Beyond the impact of static relative capabilities, shifts in relative capabilities have a positive and significant influence on the likelihood of dispute recurrence, although this effect is not very large substantively. Finally, adversaries that are more

democratic have a lower likelihood of recurrent conflict than dyads in which one or both adversary is non-democratic, consistent with a large and growing body of research.

The general rivalry context is measured in Table 3 with dummy variables indicating years in the intermediate or advanced rivalry phases, which should identify differences in conflict behavior related to the rivalry phase. Additional analyses are used to examine conflict behavior in each rivalry phase separately, in order to determine whether patterns or relationships involving other variables also change over time. These analyses indicate that few of the overall patterns change dramatically, although several factors become more or less important in individual rivalry phases than in the aggregated analyses (for more detail see Hensel 1996: 106-110). The impact of both decisive and compromise outcomes and of contention over territorial issues remains in the same direction and becomes more important in later rivalry phases, in terms of both statistical and substantive significance. Past dispute severity levels never have any type of significant effect, regardless of the rivalry phase examined or the specific measure of dispute severity that is used. The impact of adversary characteristics varies across rivalry phases, with military parity producing its strongest results in the intermediate phase and weakest results in the early phase and capability shifts producing significant results in the early phase but much weaker results in the intermediate and advanced phases. Dyadic democracy remains consistently significant in all three phases, although the statistical significance level decreases somewhat (from the .001 to .01 to .05 levels) and the marginal impact increases slightly in more advanced phases.

[Place Table 4 about here]

Importantly, though, the baseline probability of dispute recurrence increases substantially in more advanced rivalry phases. Table 4 reports the probabilities of recurrence in each rivalry phase when all variables in the model are held at their mean, in the most peaceful situation (following a decisive outcome over a non-territorial issue), and in the most conflictual situation (following a stalemate outcome over territorial issues). The average situation in the intermediate rivalry phase turns out to be nearly as conflictual as the most dangerous situation in the early phase, and the average situation in the advanced phase is even more conflictual than the most dangerous situation in the early or intermediate phases. These results indicate that there is an important trend of increasing conflict in later phases, with the probability of recurrence

increasing substantially regardless of the previous dispute outcome or the adversaries' characteristics.

These results together indicate that both the general evolutionary context of rivalry and the specific characteristics of the most recent confrontation exert a significant influence on the likelihood and timing of future conflict, even when considering additional background factors. Almost all of the evolutionary approach's hypotheses are supported, with the lone exception of dispute severity, which produces very weak results in the expected direction (but far from either statistical or substantive significance). It seems clear from these analyses that conflict behavior shows considerable evolution over time, and that the resulting changes are consistent with the expectations of the evolutionary approach.

CONCLUSIONS AND IMPLICATIONS

The purpose of this research has been to study the origins of enduring, militarized, interstate rivalry from an evolutionary perspective. I began by discussing the meaning and importance of rivalry. I then reviewed existing approaches to the study of rivalry and proposed an alternative model of rivalry as a dynamic, evolutionary process, emphasizing the changing context of interstate relations as two adversaries approach full-fledged rivalry. Empirical analyses then examined the context of rivalry, addressing both the question of whether or not militarized interstate conflict behavior shows evidence of evolution and the task of accounting for this evolution.

The results of this paper's analyses demonstrate the importance of the changing context of interstate relations over time. Previous research has shown that significant differences exist between the conflict behavior of rivals and the conflict behavior of non-rival adversaries. The research summarized in this paper has gone a step further by showing that there are also important differences in conflict behavior within enduring rivalries, with relations generally becoming increasingly conflictual over time. As a given pair of adversaries engages in more frequent militarized conflict and thus moves closer to full-fledged enduring rivalry, the adversaries become increasingly likely to engage in further militarized conflict in the future, and they are likely to do so sooner. Additionally, the likelihood of dispute recurrence is affected in the expected ways by evolutionary factors related to both the general context of relations and

specific characteristics of recent conflict, and these basic results largely held up across the different phases of rivalry.

These results strongly support the study of rivalry through an evolutionary approach that explicitly studies changes in the context of rivalry over time and that emphasizes the legacy of past events. They also suggest a number of important implications for research and for policy. First, because relations between rivals become increasingly conflictual as the adversaries build up a longer history of conflict, it appears to be important for leaders and for interested third parties to attempt to resolve conflicts of interest early enough to avoid full-fledged enduring rivalry. By the time two adversaries reach the advanced phase of rivalry, it is very difficult for them to break out of the momentum that the rivalry has created. Leaders should be careful to plan for the future beyond the end of an ongoing confrontation, lest they find themselves trapped in spirals of conflict and rivalry that neither side desired. Even if relations between adversaries are likely to become more suspicious or more hostile as their history of conflict lengthens, it is at exactly this point in an interstate relationship where greater care must be taken to avoid the specter of even greater dangers in the future.

These findings can also tell us something useful about how rivalry tends to start and evolve, which has implications for some more specific ways in which decision-makers can work to avoid rivalry or to manage their conflict at lower levels short of full-scale enduring rivalry. The results presented in this paper indicate that the recurrence of militarized conflict is a common phenomenon, with around two-thirds of all of the confrontations in the study being followed by another dispute between the same adversaries within fifteen years. Additionally, the likelihood of recurrence increases over time with the accumulation of a longer history of conflict, and characteristics of past confrontations affect the likelihood and timing of later conflict. Even after controlling for the impact of situational factors such as dyadic democracy and relative military capabilities, then, interactions between the adversaries have an important influence on the likelihood of recurrent conflict or, eventually, rivalry. This suggests that two adversaries' leaders may have an important degree of control over their own destinies, unlike the suggestion by more post hoc approaches to rivalry that rivalry is essentially predestined or "locked in" from the very beginning. As a result, there is hope that enlightened decision making can be used to help resolve disputed issues, whether in the course of a militarized confrontation (as in the compromise outcomes examined in Table 3) or perhaps in its aftermath. Less optimistically, it

also appears likely that belligerent leadership may hasten the arrival or continuation of rivalry, if one or both adversaries insist on achieving their goals at all costs (including the continued threat or use of force).

The results summarized here also suggest a number of implications for future research, several of which have already begun as part of the overall evolutionary research program. To begin with, the general evolutionary model presented here has been refined and extended with a more explicit focus on contentious issues and on domestic politics than has been done here (Hensel 1998a, 1998b, 1999). Rather than treating two potential rival states as unitary actors, the extended model revolves around changes in the domestic political context on each side. At the onset of a potential rivalry relationship, domestic political actors besides the leader are unlikely to exert a great influence on foreign policy decision making, allowing a leader to pursue his or her preferred policies with regard to the adversary. As a longer history of conflict accumulates, though, the issues at stake in the potential rivalry are likely to take on greater salience for domestic political actors. Legislatures or other actors within government are more likely to play a more active role in formulating and implementing policies involving the rivalry, increasing the strength and importance of the "policy ratification" constraint. Furthermore, the leader's performance vis-a-vis the rival is likely to be more important to his or her evaluation by the "selectorate," with unsatisfactory performance in the rivalry likely leading to pressure for change. This change could take two forms, consistent with natural-science notions of evolution for a species facing an important environmental challenge. Much like a threatened species may undergo adaptation, producing some type of change in the species to help it cope with the changing environment, a leader could choose to adapt his or her policies to cope with the changing rivalry (and with the domestic political environment's response to this rivalry). Alternatively, much like a threatened species may be "selected out" if adaptation does not occur (or if inappropriate adaptation occurs), a leader that fails to adapt to the changing international and domestic environment is likely to be "selected out" and replaced with an alternative leader whose preferred policies are more in line with the environment.

A promising direction for future research involves more comprehensive analyses of the origins of rivalries. The analyses reported here have emphasized the role of evolutionary factors while controlling for the impact of background conditions such as dyadic democracy and military parity. It would be worthwhile to consider factors directly related to Goertz and Diehl's

"basic rivalry level" (BRL) or "punctuated equilibrium" approach, though, in order to produce a more decisive comparative test of the evolutionary approach. Such comparative testing is difficult because the BRL approach does not identify specific sources of militarized conflict or rivalry beyond political shocks, but Sowers and Hensel (1997) and Hensel and Sowers (1998) attempt to identify testable factors that are thought to contribute to BRLs. Their results indicate that several BRL-type factors appear to contribute to the development of rivalry in systematic ways, but that evolutionary factors remain quite significant even after controlling for these apparent sources of basic rivalry levels.

The analyses discussed here have centered around the recurrence of militarized conflict, but other dimensions of world politics can also be examined from an evolutionary perspective. Additional analyses in Hensel (1996) search for evidence of evolution in conflict severity levels, and find limited support for the expectation that militarized conflict becomes more severe later in rivalries. Conflict severity increases significantly from the early phase to the intermediate phase in eventual proto-rivalries, although there is no statistically significant trend in severity levels for eventual enduring rivalries. Hensel and McLaughlin (1996) and Sowers and Hensel (1997) attempt to account for these changing patterns of conflict severity, and find significant results for both evolutionary factors (involving both the general context of relations and specific details of past conflict) and other factors (such as the impact of political shocks).

It is also desirable to extend the evolutionary approach to non-militarized dimensions of world politics. As noted earlier, the underlying model behind the evolutionary approach sees conflict as beginning over some type of contentious issue(s), and sees militarized conflict as only one of several options available to decision makers. The general logic of the evolutionary approach focuses on the general context and specific details of past relations, both of which have been limited to militarized dimensions in past research, but which could in principle also include non-militarized dimensions. Recent data collection by the Issue Correlates of War (ICOW) project has begun to allow the expansion of the evolutionary model to non-militarized dimensions of world politics. The ICOW project is currently in the process of collecting systematic data on all territorial claims in the past two centuries, including both claims that have led to militarized conflict and those that have not, and including data on peaceful (bilateral or third party) attempts to settle these claims. This data collection -- and planned future ICOW collection of data on additional issue types once the territorial claims data set is completed --

allows the identification of potential rivals before the outbreak of their first militarized confrontation, which has not previously been possible with either the evolutionary approach or its competitors.

ICOW data will also allow the use of non-militarized evolutionary independent variables, focusing on the general context of relations between two states in both militarized and peaceful senses. Hensel (1999), for example, uses the number of recent peaceful settlement attempts between territorial claimants to indicate the general diplomatic context of their relations, supplemented by specific details such as the success of past settlement attempts (such as the number of attempts that failed to produce agreement and the number of agreements that were not ratified or implemented by both participants). Such measures allow a much broader perspective on the context of relations between two states than has been possible with the focus on militarized conflict that has characterized all systematic research on rivalry, whether from an evolutionary or other perspective. The ICOW data also allows for additional analyses of the impact of evolutionary factors, offering further extensions of the general approach beyond the militarized dependent variables that have also characterized past research on rivalry. Hensel (1999), for example, examines the impact of both the peaceful and militarized context on a variety of dependent variables ranging from the outbreak of militarized conflict to attempts to settle a territorial claim peacefully through bilateral negotiations or submission of the claim to binding or non-binding third party assistance. The results of these analyses indicate that past interactions (in both the peaceful and militarized senses) have a very important influence on subsequent attempts to manage issues (using both peaceful and militarized means), which is very consistent with the evolutionary approach developed here.

In short, the evolutionary approach appears to offer a number of contributions to our understanding of world politics, in both militarized and other arenas. This general approach offers theoretical and empirical advantages over previous approaches to the study of rivalry. The context of an interstate relationship at the time that a militarized confrontation occurs exerts an important impact on conflict behavior within that confrontation, as well as on subsequent relations between the adversaries. Factors identified by the evolutionary approach are associated with the recurrence and severity of militarized conflict, as well as with peaceful attempts to settle contentious issues. It is to be hoped that future work will continue to develop the evolutionary approach theoretically and empirically, in order to determine the extent of its possible

contributions to the study of both militarized conflict or rivalry and world politics more generally.

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Table 1: Militarized Dispute Frequency in Interstate Rivalries

Eventual Rivalry Type	Rivalry Phase at Time of Dispute	Number of Disputes
Isolated Conflict	Early Phase	696 (28.76%)
	Intermediate Phase	254
	<i>Total</i>	588 (24.2%)
Enduring Rivalry	Early Phase	186
	Intermediate Phase	275
	Advanced Phase	682
	<i>Total</i>	1143 (47.1%)
All Types	Early Phase	1216 (50.1%)
	Intermediate Phase	529 (21.8%)
	Advanced Phase	682 (28.1%)
	<i>Total</i>	2427

Table 2: Militarized Dispute Recurrence in Evolving Rivalries

Rivalry Phase	Followed by Recurrent Dispute	No Later Dispute in Rivalry	Total
Early Phase	658 (54.1%)	558	1216
Intermediate Phase	376 (71.1%)	153	529
Advanced Phase	607 (89.0%)	75	682
<i>Total</i>	<i>1641 (67.6%)</i>	<i>786</i>	<i>2427</i>

$X^2 = 246.62$ (2 d.f., $p < .001$)

Table 3: Logistic Regression Analysis of Militarized Dispute Recurrence

Variable	Est. (S.E.)	X ² (p)	Odds Ratio
Intercept	- 2.34 (0.06)	--- ---	
Intermediate Phase	0.30 (0.08)	12.85 (.001)	1.345
Advanced Phase	1.03 (0.08)	164.36 (.001)	2.808
Decisive Outcome	- 0.44 (0.11)	16.50 (.001)	0.642
Compromise	- 0.51 (0.13)	15.33 (.001)	0.599
Dispute Severity	- 0.02 (0.02)	2.33 (.13)	0.976
Territorial Issues	0.56 (0.08)	48.82 (.001)	1.749
Military Parity	0.26 (0.09)	8.05 (.01)	1.299
Capability Shift	0.04 (0.01)	8.00 (.01)	1.039
Dyadic Democracy	- 0.04 (0.01)	33.95 (.001)	0.960

Likelihood ratio (null model):6636.83
Likelihood ratio (full model): 6289.71
Improvement: 347.12
Significance: p < .001
(9 d.f.)
N: 8345

Table 4: Probabilities of Dispute Recurrence across Rivalry Phases

Situation	Probability of Dispute Recurrence	Change in Probability
A. Early Phase Only		
Decisive Outcome, Non-territorial Issue, Other Variables at Mean	.078	- .022
All Variables at Mean	.099	N/A
Stalemate Outcome, Territorial Issue, Other Variables at Mean	.146	+ .046
B. Intermediate Phase Only		
Decisive Outcome, Non-territorial Issue, Other Variables at Mean	.066	- .062
All Variables at Mean	.128	N/A
Stalemate Outcome, Territorial Issue, Other Variables at Mean	.234	+ .106
C. Advanced Phase Only		
Decisive Outcome, Non-territorial Issue, Other Variables at Mean	.178	- .084
All Variables at Mean	.262	N/A
Stalemate Outcome, Territorial Issue, Other Variables at Mean	.442	+ .179

Notes

¹ This article summarizes Paul R. Hensel (1996), *The Evolution of Interstate Rivalry* (Ph.D. dissertation, University of Illinois at Urbana-Champaign). This dissertation received the Walter Isard Award for the best dissertation in peace science completed during the period 1994-1996.

² A similar observation has been made in the study of deterrence: as useful as it may be to manage deterrence confrontations without producing escalation to war, it would be even better to prevent the deterrence confrontation from arising in the first place (e.g., Morgan 1983; Huth and Russett 1993).

³ Even Goertz and Diehl's (1995a) analysis of shocks and rivalry onset employs a static approach, because of their expectation that rivalries "lock in" quickly after the occurrence of a shock, with little subsequent variation in conflict behavior until the rivalry ends (very likely due to another political shock several decades later).

⁴ A partial exception is the work of Bennett (1998) on enduring rivalry termination, which excludes the first twenty years of each rivalry from analysis. This is a methodological rather than theoretical decision, though, as the definition that Bennett uses requires a duration of at least twenty years before a relationship can qualify as an enduring rivalry -- meaning that rivalry termination could not have happened in those first twenty years, or else the dyad would never have entered into Bennett's analyses to begin with.

⁵ Indeed, one-fourth of the conflictual relationships since 1816 (241 of 1184) -- accounting for 422 militarized disputes -- ended soon enough before the 1992 end of the current militarized dispute data that another confrontation in the 1990s would prolong the relationship, perhaps eventually culminating in enduring rivalry. These 241 relationships and their 422 militarized disputes represent a substantial portion of the total since 1816, indicating a great threat to analyses using a post hoc measurement that might change based on later events. The risk is even greater for the 51 potential rivalries -- 39 cases of isolated conflict and 12 proto-rivalries -- for which even one more militarized dispute in the next fifteen years would lead to reclassification as proto-rivalries and enduring rivalries, respectively.

⁶ The US-Soviet Cold War rivalry did not reach its sixth militarized dispute until 1956, and did not qualify under the twenty-year threshold until the beginning of the twenty-ninth dispute in 1966. Under a post hoc approach to rivalry, all twenty-nine disputes and all twenty years of confrontation would have to be reclassified upon reaching this threshold in 1966, with potentially severe consequences for quantitative analyses of conflict behavior or rivalry.

⁷ Recent work on the management of territorial claims is beginning to examine relationships before they have resorted to militarized conflict, as well as those that end without ever seeing militarized conflict. Given the evolutionary model described in this paper and elsewhere by the author, empirical testing of an evolutionary model before the initial outbreak of militarized conflict requires both the identification of cases with contentious issues that may or may not lead to militarized action, and the identification of forms of interaction over these issues besides militarized conflict. Both requirements are now being met with data from the Issue Correlates of War (ICOW) project identifying all territorial claims since 1816 and all attempts to manage these claims peacefully through bilateral negotiations or either binding or non-binding third party assistance (Hensel 1999).

⁸ Of course, this evolutionary approach should not be seen as arguing that characteristics of the adversaries are irrelevant, or that past interactions or the current context of relations are the only

factors that matter in interstate conflict. Rather, these evolutionary influences are seen as important in addition to other factors such as the characteristics of the adversaries themselves.

⁹ Territory has been described as perhaps the most salient type of issue, and empirical evidence has supported this argument (e.g., Vasquez 1993; Hensel 1999).

¹⁰ Several scholars (e.g., Vasquez 1993) have argued that rivalry simply can not occur between unequal adversaries. While I would not go as far as some by requiring relative parity in my definition of rivalry, I certainly agree with much of the reasoning and expect that rivalry between unequals will be a fairly rare phenomenon.

¹¹ Each dispute is broken down into its dyadic component parts, to allow dyadic-level analyses of conflict and rivalry; multiparty disputes are thus treated here as separate cases for each dyad that took part in the dispute.

¹² When another militarized dispute occurs shortly after the conclusion of an earlier dispute between the same adversaries, it can be regarded as continuing an ongoing conflictual relationship. I employ a fifteen-year cutoff, consistent with past research on recurrent conflict and rivalry. Conflict occurring more than fifteen years after the conclusion of the previous dispute, then, is considered to represent the start of a new rivalry.

¹³ It should be noted that the evolutionary approach also considers a rivalry to be ongoing at any time during which a new militarized dispute would extend the rivalry, regardless of whether post hoc data analysis indicates that future conflict did or did not occur. For analyses of dispute recurrence, then, the period of rivalry is not considered to end until fifteen years have passed without the outbreak of another militarized dispute. It is important to include these fifteen years in analyses of rivalry behavior even for cases that we know (post hoc) ended without renewed conflict, because something – which may include characteristics of the adversaries, specific details of their most recent conflict, or something else – helped prevent the recurrence of militarized conflict during this time. Excluding this fifteen-year period from analysis would provide a distorted picture of the sources of conflict behavior.

¹⁴ It must be emphasized that this analysis is not tautological, because the determination of rivalry context is based solely on past conflict behavior. The "early phase" in Table 2 thus includes all 1216 disputes in the early phase of any rivalry type, some of which lead to recurrent conflict (and perhaps to proto- or enduring rivalry) and some of which do not; all that is known in advance is that the dispute in question is the first or second dispute in a given conflictual relationship. This is an important difference from post hoc measures of rivalry, which focus on the total number of militarized disputes in a period of rivalry -- rendering analyses such as this impossible, because there is no opportunity for variation in context over the course of a rivalry and we already know by definition whether or not there will be recurrent conflict.

¹⁵ Additional analyses reveal that subsequent conflict is likely to occur sooner in the intermediate and (especially) advanced rivalry phases. This result holds whether or not the time until recurrent conflict is censored at fifteen years, and whether or not observations that did not experience recurrent conflict are excluded from analysis.

¹⁶ An alternative model was examined, in which the dummy variables representing the rivalry phases were replaced by a continuous measure of the number of confrontations between the adversaries up to a given point in time. The continuous indicator of past dispute history was highly significant, and none of the other variables in the equation experienced any change in the direction or significance of their effects.