Measuring Opportunity and Willingness for Conflict:
A Preliminary Application to Central America and the Caribbean

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This paper begins to address the problems of opportunity and willingness in the empirical study of militarized conflict. We discuss opportunity in terms of the ability to reach another state's capital militarily, and willingness in terms of explicit contention over territorial or other issues. Based on this discussion, we suggest several hypotheses about the relative conflict propensity of dyads involving opportunity, willingness, contiguity, and none of these factors. For now we confine ourselves to a preliminary examination of militarized conflict in Central America and the Caribbean region, although future work will extend these basic analyses to the remainder of the world and will develop more elaborate analyses. We find that our measures of opportunity and willingness are present in the great majority of all militarized conflict in this region, and that they often outperform similar measures such as simple land contiguity that are often used as a proxy for opportunity and/or willingness. We conclude by discussing directions for future research on opportunity and willingness, as well as implications of this line of research for the larger body of research on international conflict.

If we were asked to predict where the next interstate conflict is likely to occur, a good way to start narrowing down our list might involve identifying (1) those countries that *can* attack each other, and (2) those countries with a *reason* for attacking each other. While most scholars would presumably agree that some combination of ability and motive would provide a good place to begin, though, there would be much less agreement on how to define or measure these concepts. Words such as "opportunity" and "willingness" are frequently used by scholars of international relations, but conceptualizing and operationalizing these terms remains difficult.

Despite this difficulty, determining which states might reasonably be expected to become involved in militarized conflict has important implications for empirical research on conflict and war. A typical research strategy is to construct a data file with all dyads, or all "relevant" dyads, in a specified temporal and spatial domain. For each case (typically the dyad-year), the researcher then collects information on various independent variables that are thought to affect the prospects for militarized conflict, such as relative capabilities, alliances, and political regime type. The results of statistical analysis are then thought to indicate the impact of these independent variables on the probability of militarized conflict, at least within the specified spatial-temporal domain.

Unfortunately, there is a very real risk that such a research strategy may be misleading, due to the interpretation of nonevents. In particular, the observation that two specific states did not engage in militarized conflict during the period of study may reflect several very different processes. It may be that the independent variables being studied were responsible for the lack of conflict, and thus that different values on these variables -- perhaps the absence of joint democracy or a formal alliance, or a more even balance of relative capabilities between the states -- might have increased the probability of conflict. It may also be, though, that the two states were extremely unlikely to engage in militarized conflict regardless of the values of these independent variables. They may have been unable to reach each other militarily, and they may have been profoundly unaware of or uninterested in the other's policies and preferences. In short, the observation of a nonevent may be attributable to specific independent variables, to the lack of opportunity for conflict, or to the lack of willingness for conflict.[1]

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[1] There will always be the occasional Iraq-Panama or Argentina-Bulgaria militarized dispute involving attacks on shipping, naval responses to private foreign fishermen that are then protested by the targets' government, or similar issues. Yet such cases are exceedingly rare -- likely

In this paper we begin to address a possible solution to this problem. We attempt to lay out a conceptualize and measure opportunity and willingness so they can be used in empirical studies of interstate conflict (or, potentially, of other types of interactions between states). Although this is still a very preliminary effort, we begin to assess the potential value of our approach for the Central American and Caribbean region. The results appear to be promising, with both the opportunity and willingness measures being closely associated with militarized conflict in this region. We conclude by discussing some of the implications of this work, and some of the most promising directions for future research along these lines.

Conceptualizing Opportunity, Willingness, and "Relevance"

The concepts of opportunity and willingness in the empirical study of interstate conflict are usually traced to Harvey Starr and Benjamin Most (e.g., Starr 1978; Most and Starr 1989), who in turn drew from the work of Harold and Margaret Sprout (e.g., Sprout and Sprout 1969). Starr (1978: 368) defines opportunity as the "possibility of interaction," which he describes as meaning that "interaction exists between individuals of one nation state and those of another so that it is possible for conflicts to arise -- and to arise over values potentially important enough to warrant the utilization of violent coercive action by one or both." Siverson and Starr (1990: 48) elaborate that "this simply means that some activity must be physically, technologically, or intellectually possible." This description is very similar to the Sprouts' notion of "environmental possibilism," and is more concerned with the simple possibility of militarized conflict than with the actual probability of such an outcome. Siverson and Starr measure opportunity for war diffusion by the existence of a contiguous border between two states, which they see as one (but not the only) source of interaction opportunities that could lead to the diffusion of conflict or war.

Starr (1978: 364-365) defines willingness as a construct that is "concerned with the processes and activities that lead men to avail themselves of the opportunities to go to war," and notes that willingness "deals with the motivations and goals of policy makers, and the decision making processes that lead them to choose the 'war' alternative rather than 'no war.'" This is more closely related to the Sprouts' notions of "cognitive behavioralism" and "environmental probabilism," which deal with actors' perceptions of their environment and the probability that they will choose any specific alternative from the menu of what is possible. Siverson and Starr (1990: 50) measure willingness for war diffusion by the existence of a formal military alliance between two states, which indicates "a conscious choice among foreign policy behaviors or policy positions" (in contrast to the geographically fixed nature of a state's neighbors) and thus an indicator of shared policy preferences.

The notions of opportunity and willingness are central to many studies of international conflict. Many studies attempt to use these notions -- at least implicitly, if not using these exact words -- as a case selection mechanism, or a guide to which cases would be appropriate for analysis of a particular hypothesis. Other studies use these notions to identify independent variables for analysis, preferring to include all cases in the analysis and to compare cases that have the opportunity and/or willingness for conflict with cases that do not. We now consider some of the more prominent recent studies to use each approach, before developing and applying our own conceptualization of opportunity and willingness.

"Politically Relevant Dyads"

Some empirical research on international conflict has examined the impact of specific independent variables on the probability of conflict across the entire international system. That is, each pair of countries in the system is considered eligible for militarized conflict, and both independent and dependent variables are collected for the countries in question. For example, Bremer (1993: 235) notes that a long historical period is needed to evaluate the factors that might account for such a rare phenomenon as international conflict. Bremer (1992, 1993) thus tests propositions about the sources of militarized conflict on a population of over 200,000 dyad-years,

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occurring in a fraction of one percent of eligible dyad-years -- and unlikely to be influenced consistently by the independent variables used in typical studies.

representing every annual combination of two different states in the international system from 1816-1965 (excluding cases for which one or more of his independent variables has missing data). Such studies do not limit the population of cases being analyzed based on theoretical notions of opportunity or willingness, preferring to leave such notions to independent variables in the model. For example, although studying all possible dyads, Bremer includes independent variables for contiguity and major power status, both of which are commonly used to identify "relevant" dyads with the opportunity and/or willingness for conflict.

       Another common research strategy is to focus on countries that might be expected to have a reasonable prospect for militarized conflict, or what is often termed politically or militarily "relevant" dyads. For example, Maoz and Russett (1993: 627) argue that the vast majority of dyads are irrelevant for the study of conflict: "The countries comprising them were too far apart and too weak militarily, with few serious interests potentially in conflict, for them plausibly to engage in any militarized diplomatic dispute." They measure "relevance" by the existence of a shared border between two states or by major power status for at least one of them, reasoning that major powers have the capability to interact with any country and that minor powers should at least have this capability with regard to their immediate neighbors. This measure of relevance allows Maoz and Russett to exclude all but about twelve percent of the possible dyad-years in their period of study, while still including three-fourths of all militarized conflict in this period.

       Similarly, Weede (1976: 396) argues that dyads only acquire "political-military relevance" if they share a border, at least one is a major power, or there is a latent territorial conflict between them: "Only in this relatively small subset of dyads is there a possibility for irreconcilable conflicts of interest to arise and create a substantial risk of war. Elsewhere, the risk of war should be zero or at least come close to zero." Under the arguments of Weede and of Maoz and Russett, it would likely be misleading to study all dyads, because such a study would include many cases where no conflict is likely to occur for any reason -- regardless of the values of the independent variables being studied.

       Beyond the use of "relevant" dyads as a case selection mechanism, which essentially proclaims "relevance" by assumption based on past research, several studies have attempted to determine empirically just how relevant these dyads are. Weede (1989), for example, finds that militarized conflict is very closely related to political-military relevance. During the 1962-1976 period of his study, fifty of 299 dyads that meet his definition of relevance engaged in at least one militarized dispute (17 percent), compared to eleven of 3022 dyads that are not classified as relevant (0.004 percent). Similarly, Bremer (1992, 1993) finds that both contiguity and major power status are powerful predictors of militarized conflict involvement, and Siverson and Starr (1990) find that almost all cases of war diffusion involve at least one "treatment" of opportunity or willingness. That is, 86 of their 94 cases of war diffusion involve the spread of war to a state that shares a border or an alliance with at least one state already involved in the war, and the probability of war diffusion generally increases with the number of treatments (i.e., the number of borders and/or alliances shared with belligerents).

       Based on these studies, it seems clear that "relevance" -- measured primarily by geographic contiguity and by major power status -- greatly increases the probability of militarized conflict.[2] Even where these studies do not directly mention Starr and Most, the Sprouts, or opportunity and willingness, the theoretical logic that leads them to select cases based on relevance -- or to include independent variables related to relevance -- generally involves language that is strikingly similar to opportunity and willingness, emphasizing that "irrelevant" dyads are too far apart, too weak, or share few interests or interactions that might plausibly lead to conflict.

Reconceptualizing Opportunity and Willingness

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[2] It must be noted, of course, that "relevance" is not a true necessary condition for conflict. Eleven of the 61 conflictual dyads in Weede's (1989) study do not meet his criteria for relevance, Maoz and Russett note that about one-fourth of all militarized disputes occur between "irrelevant" adversaries, and Siverson and Starr find eight cases of war diffusion to a state sharing neither a border nor an alliance with any current war participant.

We propose a somewhat different conception of opportunity and willingness from that used by Starr and Most, Weede, Maoz and Russett, and others employing "relevant" dyads. Our conception begins with the assumption that militarized conflict, along with most other forms of relations between nation-states, occurs for a reason (Hensel 2000; Hensel and Tures 1997). That is, rather than occurring by random chance or in response to systemic imperatives, the threat or use of military force is a specific policy option that is chosen by leaders on at least one side in pursuit of goals on one or more contentious issues. Additionally, force is not the only option that is available; states contending over issues may also employ bilateral negotiations, or may turn to third parties for binding or non-binding assistance in managing or settling their issues.

In our conception, then, two states' willingness to choose militarized conflict rather than other settlement mechanisms is influenced heavily by the nature of their contentious issues. That is, states contending over issues that are seen as highly salient are more likely to choose force than states contending over less salient issues (or states that do not have any regular interaction over any issues). Opportunity, then, forms the backdrop that allows states to employ force against other states. States do not fight merely because they can interact with each other, or because their military forces can reach the territory or capital of the other. Simply having the opportunity for conflict is thus highly unlikely to lead to militarized conflict in the absence of one or more contentious issues that could motivate states to choose militarized means. With that said, though, simply having the willingness for conflict is also unlikely to lead to conflict in the absence of the capability to engage in conflict.

A particularly relevant way to conceptualize opportunity involves the ability for one state's military forces to reach the other's capital. The most common measure of opportunity in the existing literature -- both in Starr and Most's explicit applications of the opportunity and willingness concepts and in applications of political-military relevance -- is the existence of a opportunity for most countries in the world (leaving aside the question of major powers' capabilities to project their forces globally); even most relatively weak countries' forces should be able to deploy across a direct land border. Yet simply sharing a border does not guarantee the ability to deploy one's forces against the other state. As Lemke (1995) points out, terrain can be impassable even where simple distances appear to allow interaction. Particularly before paved roads, railroads, and air transport become available in the areas in question, many mountainous, swampy, or desert borders are essentially impossible for organized military forces to cross effectively. Additionally, even if the border itself can be reached or crossed, this reachability may be essentially meaningless unless the state's forces can enter the opponent's territory deeply enough to threaten the capital city. For geographically large targets such as Brazil, Russia, or China, the ability to cross several miles into the target territory is of little military value in attempting to achieve one's goals if the Russian or Chinese capital and most of the population lie thousands of miles away.[3]

This leads to the expectation of a rank ordering of conflict propensity based on opportunity and willingness for conflict. Conflict should be least likely -- indeed, almost impossible -- when neither opportunity nor willingness is present. States in this condition have neither the ability to reach each other militarily, nor any real motivation for pursuing conflict against each other.[4]

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[3] Critics might argue that if a country fights over territorial issues, it may wish to seek control over the land in question rather than devoting its resources to the capture of another's capital; the ultimate goal is land rather than control of another state's government. But the latter provides a better means toward achieving one's territorial aims. Capturing the opponent's base of operations debilitates their ability fight, putting them at the mercy of the claimant. They are more likely to place a higher premium on the return of their capital, rather than the maintaining a land parcel. Holding territory also does not guarantee that the opponent will not fail to push the initiator off the land in the next battle. Furthermore, this general conception of opportunity and willingness is meant to be relevant to more than just territorial issues, so we prefer both conceptualizations and measures that are generalizable rather than issue-specific.

[4] It is always possible that a leader could choose to initiate or provoke conflict for reasons not directly related to issues, such as the so-called diversionary motivation for war (Levy 1989). Yet

Conflict should be somewhat more likely where only opportunity is present, simply because these states can reach each other militarily, although they generally lack a plausible motivation for conflict. The next most likely category should be cases where only willingness is present, because these states have a reason to fight -- even if by an objective measure they would appear to have difficulty actually bringing their military forces to bear against the other. Finally, conflict should be most likely where both opportunity and willingness are present. While this is by no means an expectation that all such cases will produce militarized conflict, since numerous other policy options are available to manage or settle disputed issues, conflict should be much more likely to be chosen when both the motivation and the means are present.

This discussion suggests the following hypotheses:

Hypothesis 1: *Militarized interstate conflict is more likely in dyads where the willingness to engage in conflict exists than in dyads lacking this willingness.*

Hypothesis 2: *Militarized interstate conflict is more likely in dyads where the opportunity for conflict exists than in dyads lacking this opportunity.*

Hypothesis 3: *Militarized interstate conflict is more likely in dyads where at least one state can reach the other's capital than in merely contiguous dyads, and most likely in dyads where each state can reach the other's capital.*

Measuring Opportunity and Willingness

If our general approach to opportunity and willingness is to be of any value, we must be able to measure these concepts in a non-tautological way. If willingness -- in the form of contentious issues -- is always assumed to be present in militarized disputes, or if willingness is measured after the outbreak of militarized conflict, then the concept has no real meaning. What is needed is some *a priori* theoretical discussion of which issues are important, along with a systematic measurement of this willingness that is analytically distinct from studies of conflict. For example, issue-related variables are available in the Correlates of War (COW) project's Militarized Interstate Dispute data set, the ICB project's crisis data set, and Holsti's (1991) war data. Yet these variables are only collected after the outbreak of militarized conflict, and there is no corresponding list of issues that do not lead to conflict which could be used to help study the impact of issues on the initial outbreak of conflict.

Similarly, opportunity would be a meaningless concept if we simply assumed its presence or if we waited until the outbreak of conflict to measure it. What is needed is some a priori theoretical discussion of which states can plausibly be expected to reach each other militarily, along with a way to measure this opportunity that is analytically distinct from data on militarized conflict. We now consider how to measure both willingness and opportunity in theoretically meaningful, non-tautological fashion.

Willingness: Territorial Claims

The literature on contentious issues has generally emphasized territorial issues as the most salient issues, and little systematic work has been done on non-territorial issues (Diehl 1991; Vasquez 1993, 1995; Hensel 1996, 2000; Huth 1996). As a result, and because the systematic data that are needed for this type of study are only available for territorial issues right now, we measure willingness for conflict by the presence of territorial claims. Obviously, territory does not represent the only issue that state's fight over. States have also clashed over regimes, policies,

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even in these cases, we would expect that the specific target chosen for the diversionary action should be chosen for a reason. A leader who initiates conflict against random opponents is unlikely to be seen as an effective leader; diversionary motivations would appear more likely to succeed when the leader can point to a plausible threat from the opponent, which should be easier to do for an opponent that is widely known to oppose the state's interests on one or more issues.

ethnic concerns, maritime issues, and numerous others; Holsti (1991) identifies over twenty issues that have led to war in recent centuries. Furthermore, not all wars have a territorial component, though Vasquez (1993) notes that many of the other disputed issues are "territory-related." Yet given the prominence of territorial issues in the existing body of systematic issue-based research, as well as the availability of systematic data for territorial but not other types of issues, we must be limited to territory in this study -- although we plan to extend this to additional issue types in the future.

A territorial claim occurs when "official representatives of the government of at least one state… lay explicit claim to territory being occupied, administered, or claimed by at least one other state (Hensel and Reed, 1997: 5). Claims are included the first year such an explicit claim is made, and are considered ongoing as long as one or both sides maintain this claim (i.e., until the two sides agree on the question of sovereignty over the territory, or until the claim is dropped by the challenger). Appendix I lists all territorial claims identified by the ICOW project in the region of Central America and the Caribbean (see Hensel 2000 for more details).

Opportunity: Ability To "Reach" Another's Capital

To analyze which countries can reach each other, scholars have traditionally focused their analyses on those cases where the opportunity exists for states to militarily interact producing the concept of relevant dyads.[5] Many of these measures would include dyads with little chance of mustering the necessary power to fight their opponent. Even some contiguous dyads lack a realistic chance to engage in conflict. Consider the case of Brazil and Colombia, which have shared a direct land border since independence. What may appear proximate by a simple map may not be the case once distance is calculated and topography is considered. For Brazil to reach Bogotá, its armies would have to trek through the Amazon jungle and the Andes. Any survivors would be spent, serving as easy pickings for well-entrenched and rested Colombians. And for Colombia to reach and conquer the heavily populated Brazilian coast borders on the impossible side of the continuum, given the combination of power disparity and distance. Such considerations lead Lemke (1995: 24) to consider the Brazilian-Colombia dyad as "irrelevant," despite the shared boundary.[6]

Borrowing from work done by Lemke (1995), we use a measure of reach which gauges whether an attacker can overcome potential geographic impediments to reach a target's capital city.

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[5] Prior coding of such pairs involved collecting information on all contiguous states or dyads where at least one of the countries is a major power (Weede, 1976). Even the concept of contiguity has been the subject of some debate; Starr and Most (1976) broaden interaction-prone entities by including sea contiguity based upon dyads separated by narrow waterways seemingly possible to traverse. Thompson (1973) even suggests that middle-ranking powers should be included with their major power counterparts as participants in dyads.[5] Even the concept of opportunity to interact has been broadened to incorporate all dyads within a given region (Bueno de Mesquita, 1981).

[6] To determine if reliance on contiguity leads us to "overpredict" peace years, we analyze all dyads where more than 20 years have passed since the last militarized interstate dispute. In doing so, we check to see if (a) any dyads of peace are between contiguous states incapable of reaching each other, and (b) how many cases of peace exist where only one side has the reach to initiate a dispute. In doing so, we found that among the 11 dyads which have not experience a dispute in more than 20 years, two of them (Costa Rica-Panama from 1922 to 1987 and Colombia-Panama from 1921 to 1992) cannot reach each other. We also found that in three other peace dyads, only one side was able to reach another state's capital. These include Guatemala-Mexico (72 peace years from 1886 to 1958), Honduras-El Salvador (47 peace years from1922-1968) and Costa Rica-Nicaragua (22 peace years from 1956 to 1977). Therefore, in several dyads where peace is observed for an extensive period of time, both or one of the countries cannot reach another state's capital. Whereas a theory may conclude that peace is a function of shared regime type, power dynamics, or mutual interests, the absence of conflict may be produced by an absence of ability to capture another's capital.

We also focus on dyads where the countries involved have a motive to fight each other. Such an indicator incorporates "issues" which have arisen between states that would convince one country of the need to actually deploy one's troops against another country. To evaluate the efficacy of such opportunities and motives to produce conflict, we analyze wars and disputes in Central America and the Caribbean to see if reachability and issues are associated with the presence of such militarized interactions.

Scholars treat geography as a facilitating condition for conflict. Those that have the opportunity for interaction have a greater probability for doing so. As Lemke (1995: 24) notes, the "ability to overcome the 'tyranny of distance' and move resources into other countries allows the leaders of a state to go to war with others....the distance between a state and other states conditions the ability of a state to go to a war, or at least conditions the identity of who the potential opponents can be." To identify which countries can interact with each other, Lemke (1995) utilizes Bueno de Mesquita's (1981) measure of Boulding's (1962) loss of strength gradient.[7] Such an equation is not static either. Bueno de Mesquita accounts for changes in travel technology by assuming difference speeds for military crafts depending upon the time period.[8] But here, the similarities between Bueno de Mesquita's formula and Lemke's arguments end. Lemke (1995) argues that such mileage assumptions do not account for the difficulties associated with traversing certain terrain. His measures take into account such geographic effects.[9] Finally, Bueno de Mesquita considers "reach" to be a function of a state's ability to come into contact with any portion of another country. But Lemke's (1995: 26) measure of relevance is coded based upon the ability of an attacker to reach the target's capital city. For the military campaign to be successful, one must be able to neutralize the warmaking capabilities of its opponent; capturing the headquarters of one's enemy is the most effective means of doing so.

Furthermore, Lemke (1995: 26-27) notes that when a country expends more than 50 percent of its power in the process of reaching its opponent's capital, the target lies beyond its geographic zone of relevance. The rationale is that in the process of spending more than half of one's power on a foreign adventure is not worth the cost to the target. Such a significant decline in power would not only leave an aggressor prone to defeat in the event of a counterattack by enemy in question, but vulnerable to other predatory states in the region. At least half of one's capabilities should be held in reserve to either defeat or deter potential opponents.

The does not necessarily assume that "opportunity" is a two-way street. Lemke (1995) codes the dyads as directed relevant dyads, indicating those cases where one country (state A) can reach another. If state B cannot reciprocate, the measure indicates only that state A can attack. For

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[7] This is stated in the formula Adjusted Power = Power raised to the exponent log[(miles/miles per day) +(10-e)]. The rationale behind this formula is that as a country projects its power a certain distance, its share of power monotonically decreases. The adjusted power that Bueno de Mesquita conceptualizes is a country's share of the total systemic power. The 10-e part of the equation represents the decline of power relative to the number of days associated with the military campaign.

[8] From 1816 to 1918, a country's forces 250 miles per day. The number increases to 375 miles per day (between 1919-1945) and 500 miles a day (1945-).

[9] Whether hacking through dense jungle overgrowth or climbing mountain peaks, 250 miles per day seems impossible for man or machine. To assess the rate at which a country can project its power, Lemke (1995:26) uses Bueno de Mesquita's mileage numbers when roads, railways or navigable rivers are available for an attacker to use. Additionally, if a country owns a "ship-of-the line" (Modelski and Thompson, 1988), it is able to cross seas of some distance and attack at the speeds Bueno de Mesquita utilizes (Lemke, 1996: 84-85). Relying on data gathered from South American explorers, Lemke (1995: 26; 1996: 85-86) finds that one averages eight miles per day moving through rain forest, ten miles a day through very mountainous regions, twenty miles per day over less mountainous areas, and thirty miles a day over open territory. Bueno de Mesquita's mileage measures also assume all countries possess the necessary technology to travel and transport at those speeds. Lemke (1995) recommends increased rigor in coding technical capabilities when assessing the loss of strength gradient between nations.

example, Lemke notes that while Chile is capable of attacking and defeating Bolivia from 1865 onward, Bolivia is unable to reciprocate until 1975.

In collecting such data, Lemke (1995) analyzes the relevant neighborhoods of all South American states. In this project, we attempt to construct a measure of relevance for Central America and the Caribbean regions. Such a measure incorporates much of the methods advanced by Bueno de Mesquita and Lemke, with several key exceptions. Some changes have been made due to data constraints, while others serve to possibly improve how relevant neighborhoods are ascertained in future studies of relevant dyads.

To construct a measure of directed relevant dyads for Central America and the Caribbean, we employ many elements of Lemke's (1995) formula for determining which states can interact with each other, with some modifications due to data limitations and constraints. Whereas Lemke uses a country's share of capabilities for the South American region (in terms of total resources), data limitations lead us to construct a similar measure, but using only military personnel numbers. Given the considerably shorter distances between capitals in Central America, we feel this is a reasonable alteration to make, whereas a country like Argentina attempting to cross thousands of miles to Venezuela would need figures of its total power concentration. First, we calculate a country's share of military personnel in the Central American and Caribbean region. Second, we raise that value with an exponent representing Bueno de Mesquita's (1981) loss of strength gradient. To construct this, we use Lemke's (1995) mileage factors for South American countries (utilizing *Goode's World Atlas* data on topography and local flora) and Bueno de Mesquita's (1981) ship, road and railroad speeds. Data on ships, roads and railroads is taken from *Conway's All The World's Fighting Ships* (volumes from the 1860s to the 1980s), *The Pan American Highway System* (Organization of American States, 1969) and *Geography: Southern Lands* (Barrows, Parker and Parker, 1934) for roads and railroads. To meet Lemke's (1996) and Modelski and Thompson's (1988) "Ship-of-the-Line" criteria for cross-water interaction, we add countries possessing crafts of heavy cruiser strength and greater (battleships, aircraft carriers, etc.) as well as naval transport capacity. Such ships must possess the ability to ferry significant troop or support (tank or cavalry) which would assist an attacker in capturing an opponent's capital across a sizable distance of water. For each state in the region, Appendix II lists all states that share a direct land border and all states that its forces can reach militarily.

Research Design

To test whether opportunity and willingness improve the likelihood of conflict, we assess the connection between these factors and conflict. Additionally, we test to see whether our measure of reach does a better job of accounting for conflict than conventional measures of opportunity.

Dependent Variable: Militarized Conflict

To indicate whether conflict is present, we use a variety of measures of conflict, in order to assess our measures as robustly as possible; a single conflict measure might produce misleading results due to idiosyncrasies in the coding of that particular measure. Full-scale interstate wars follow the traditional definition of Small and Singer (1982), involving sustained combat between the regular forces of at least two nation-states that produce at least one thousand battle deaths. Among lesser forms of conflict, militarized disputes are taken from version 2.10 of the COW militarized interstate dispute dataset (Jones, Bremer and Singer, 1996), which includes all cases of threats, displays or uses of militarized force. Interstate crises are measured using the international crisis dataset (Brecher and Wilkenfeld, 1997). Foreign overt military interventions are included if they are present in Tillema's (1997) updated foreign overt military intervention dataset.

Spatial-Temporal Domain

To test the connection between our measures of opportunity and willingness with the presence of conflict, we focus on the Central American and Caribbean region from 1816 to 1992. The region is relatively small compared to Africa or Asia, offering a reasonable testing ground for

our preliminary approach to opportunity and willingness. Many states in this region have been independent for a century or more, although there are also some newer states in the Caribbean (as well as Belize). Some of the nations in this region --particularly in the Caribbean -- are separated by water rather than by land, allowing us to assess the impact of naval force projection capabilities. There is also wide variation in the capabilities of states in the region, ranging from a potential regional hegemon (Mexico) to small states that may lack even the ability to reach their neighbors militarily, providing a test of whether or not a lack of reach may inhibit disputes across boundaries. With regard to our measure of willingness, the region has also witnessed a number of territorial claims, some of which were resolved a century ago or more and some of which are still ongoing.

In short, there is great variation in the Central American and Caribbean region, which should provide a good test site for our arguments. Nonetheless, we must emphasize that this is a very preliminary project, and in future work we plan to extend it to the remainder of the Western Hemisphere and eventually the world. Indeed, one of the potential contributions of this paper is that we have collected military reach data for a new region of the world. Doug Lemke has already collected similar data for South America, Africa, the Middle East, and the Far East, which will allow for the rapid extension of this project to the rest of the world. Similarly, ICOW territorial claims data has already been collected for the entire Western Hemisphere, along with preliminary data on Europe and the Middle East, and data collection for Africa and Asia is currently ongoing.

Methodology

We run several sets of analyses to begin assessing our measures of opportunity and willingness. We begin with the simple relationship between each measure and militarized conflict, by investigating how many wars, disputes, crises and interventions occur in dyads where at least one country can reach the other, as well as whether the actor that is coded as the conflict initiator is capable of reaching its opponent. We also compare them to conventional measures of contiguity, to determine which indicator does a better job of accounting for conflict.

In the second set of tests, we construct a dataset of all dyads in the spatial-temporal domain. From this population of 19,320 dyad-years, we draw a random sample (five percent) of all dyads, then run a logistic regression to assess the connection between reach and conflict, as measured by the presence of a militarized interstate dispute. In addition to noting the strength of the connection and the percentage of cases correctly predicted by military reach, we compare the results to conventional measures of contiguity.

In the third set of tests, we focus on all 38 territorial claim dyads in Central America and the Caribbean, to determine which can reach each other, and which have experienced a militarized interstate dispute. We also test to determine how many of these dyads with an ongoing territorial claim are contiguous. In a related test, we explore how many of these territorial claims have produced a war and how many dyads include a situation where both countries can reach each other. These numbers are evaluated in comparison to how many wars involved dyads with a shared boundary (non-colonial borders).

Results

Opportunity

Among the seven dyads involving an interstate war in the Central American and Caribbean region, six involve cases where at least one of the states can "reach" the other state's capital. In five of these cases, the country coded by COW as the initiator was able to reach the target state's capital. These five cases which conformed to expectations also represent the only cases where both sides suffered in excess of 1,000 casualties. The two cases that did not behave as hypothesized do not represent actual interstate wars per se; rather, these are dyads that engaged in militarized disputes during ongoing interstate wars, but in which the two states in question are not considered by the COW project to have engaged in full-scale war against each other.[10]   Therefore,

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10 These two conflicts include the 1885 conflict between Mexico and Guatemala, and hostilities between Guatemala and Nicaragua in the 1906 Central American War. In the former, Mexico is

our hypothesis correctly predicts all five cases of full-scale war involvement, although missing several war-related militarized disputes. Would the conventional criteria for relevant dyads (contiguity or major power dyads) perform better than our coding of opportunity? Six of the seven dyads involving a war are also between contiguous states, so both measures are roughly equal in their ability to account for conflict in Central America and the Caribbean.[11]

When analyzing all 75 militarized interstate disputes short of war in Central America and the Caribbean, we find that 78.6 percent are between states that can reach each other.[12] Using the politically relevant dyads formula of contiguity, we find that only 72 percent of the dyads are considered relevant. Of the 59 cases of disputes among dyads within reach of each other, 81.3 percent (or 64 percent of all dispute dyad cases) of these are initiated by a country capable of reaching the other state's capital.

Neither indicator of opportunity does a particularly good job of accounting for international crises. Using our formula for reachability, we are only able to predict 20 of 39 crises in Central America and the Caribbean (or 51.2 percent of all cases). However, the politically relevant dyad measure does not perform any better; in fact, only 41 percent of these Central American and Caribbean crises involve contiguous states.[4]

Both measures of opportunity do a much better job of determining whether a country decides to intervene in the internal affairs of another country. We find that in 18 of 20 cases, an intervention occurs between states where at least one is capable of reaching the other state's capital. Yet all of these same cases are between contiguous states, giving us the same prediction rate as the politically relevant dyad measure (90 percent). We also find that in 16 of these 18 cases, the initiator is able to reach the target state's capital, lending some support to the third hypothesis.[13]

We also run a series of assessments to determine the connection between reach and conflict in a random sample, as well as whether our measure of opportunity would do a better job of "predicting" conflict than measures of contiguity would. The connection between the independent variable "reach" and the presence of militarized interstate disputes is somewhat strong among the 966 cases in our random sample. The relationship is positive and statistically significant at the .01 level. The chi-square value is also strong, showing a significant relationship at the .001 level. But

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capable of reaching Guatemala in 1885, but Guatemala (coded as the initiator) could not reach Mexico City. Guatemala suffered 1,000 casualties in the fighting (primarily with El Salvador) while Mexico, who sided with El Salvador, is coded as providing a display of force. In the 1906 case, neither Guatemala nor Nicaragua was capable of reaching each other's capital. Most of the fighting however, took place between Guatemala, Honduras and El Salvador. Guatemala suffered over 1,000 casualties, while Nicaragua's participation in this war is limited to a display of force.

[11] It should be noted that if we expand the dataset to include those conflicts where the United States participated, the conventional measure of relevant dyads would miss a conflict that our model would account for. The United States also participated in the 1885 conflict with Guatemala (on the side of El Salvador) and is coded as having made a display of force. Since the Correlates of War project does not code the United States as a major power, the conventional measure of "relevance" would miss this case. But using our data, we find Guatemala in the range of the United States in 1885. We will examine the role of the United States when expanding analysis of relevance to North America.

[12] Twelve of the dispute dyads involve the conflict between the OECS (and the Americans) against Grenada and Cuba in 1983. If we eliminate this one conflict between island states incapable of reach each other, our formula for relevance accounts for 93.7 percent of all militarized interstate disputes short of war in Central America and the Caribbean.

[13] In both cases, Guatemala intervenes in the internal affairs of Mexico (between 1982 and 1983 and again in 1984), even though the Mexican capital lies outside the reach of Guatemala's military strength. Both are coded by Tillema (1997) as involving "commando raids," yet no conventional ground operations. Neither is conducted with the permission of the Mexican government; both involve cross-border pursuit of insurgents from the Guatemalan civil war.

the reach variable does not account for very much of the unexplained variance, as evidenced by the .128 r-square value. The reach model, however, does account for 83 percent of all cases.

Does the indicator for reach do a better job of "predicting" conflict than contiguity? It depends upon what measure of contiguity is employed. If we adopt the strict definition of contiguity (shared borders), then both contiguity and reach account for five of the seven Central American and Caribbean disputes in the random sample. But the parameter for shared borders produces only seven "false alarms," or cases where contiguity exists yet no conflict occurs. In 159 cases in our random sample, a country could reach another, yet no dispute occurred. A check of the prediction rates indicates that the shared boundaries measure of contiguity accounts for 90.8 percent of all cases.

The contiguity measure can also be disaggregated into five levels of proximity based upon distance. All seven militarized interstate disputes in our random sample fall into at least one of these categories. But there are also more false alarms: in 286 cases, dyads were contiguous, yet no conflict occurred. This measure only correctly accounted for 70.4 percent of all cases.

Willingness

We also conduct assessments to determine whether, in the presence of willingness to fight, the opportunity makes conflict more likely. The reach variable does a fairly good job of predicting conflict; of the 26 territorial claim dyads which experienced at least one militarized interstate dispute, 22 can reach each other. In all territorial claims in Central America and the Caribbean, 66% are in the correct categories. Such strong results are tempered by the finding that a measure of contiguity performs just as well.[14]

To determine the connection between conflict escalation and cases where both sides can reach each other's capital, I tested both variables in the sample of Central American and Caribbean territorial claims dyads. Here, we find some support for hypothesis 3; 30 of the 38 claim dyads (79 percent) are in the hypothesized categories. This is a ten percent improvement over the ability of shared borders to account for war.[15]

Due to time constraints, we were unable to examine the separate impact of willingness on conflict, as well as the effect of the interaction between both willingness and opportunity on wars and disputes. In future research, we will examine the connection between territorial claims and conflict among all Central American and Caribbean dyads, as well as the combination of territorial claims and reach upon wars and disputes.

Discussion

In the introduction, we cited the need to develop a dataset of countries where war is likely to occur, winnowing down the existing population of dyads to a more manageable set designed to increase our chances of accounting for conflict. Such measures should do a better job of accounting for conflict than measures previously advanced by scholars.

The first part of the goal has been met. We have constructed a measure of reach which indicates the best opportunity for one side to engage in a conflict with another country. In tests designed to account for a variety of conflicts (wars, disputes, crises and interventions) in a given region (Central America and the Caribbean), our measure of reach accounted for more than 75 percent of all of these conflicts in three of the four dependent variables. In a random sample, the explanatory variable reach displayed a statistically significant relationship with the presence of

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[14] When controlling for territorial claims involving American participation, the results for both variables (reach and contiguity) are also roughly similar, although the percentage of correctly predicted drops to 58 percent. Neither Chi-square value is statistically significant at the .05 level.
[15] Neither chi-square value (comparing observed values to what would be expected given the presence of these variables in the system) is statistically significant; the "both reach" variable just missing statistical significance. When controlling for territorial claim dyads that include the United States, the "both reach" variable still accounts for over 70 percent of all cases, while shared borders accounts for only 54 percent of all territorial claims not in this sample that do not include the United States.

disputes, accounting for 83 percent of all conflicts in this sample. After these preliminary tests, we can state that such a measure of reach exists which does a relatively good job of providing a connection between opportunity and conflict. We also have a measure of willingness in the form of the ICOW territorial claims. In preliminary assessments, we find that among cases where willingness is present, opportunity plays a role in producing conflict over these land-based issues. The independent variable "reach" does a fairly good job of accounting for conflict in the context of territorial disagreements, equaling contiguity's ability to predict conflict. The measure of reach does a much better job of predicting cases where territorial claims produce war, easily surpassing the scores for the variable "shared borders," even when controlling for cases involving the United States.

Do our measures of opportunity and willingness outperform existing measures for these factors? In the case of the latter, we have an indicator that can finally be used to assess whether territory leads to conflict. Previous studies could only note that many wars seem to involve territory, or that territorial disputes escalate to war at greater rates than other issue conflicts. Now we have a measure of willingness which can actually produce the outcome "no conflict," offering a meaningful assessment of the link between willingness and the dependent variable conflict without selecting on the dependent variable.

As for comparing our measure of opportunity to those that exist in the literature (shared borders and the five level measure of contiguity), the results depend upon which measure of contiguity is employed. A variable for shared borders provides a seven percent improvement in accurately accounting for conflict. But when we compare our reach variable to the disaggregated five-level measure of contiguity, the results are different. This broader measure of contiguity does not produce any missed alarms (cases where no conflict is expected, but a dispute occurs), but only accounts for only 70 percent of all conflicts, less than the 83 percent rate of conflicts accounted for by our reach measure.

When we attempt to determine whether shared borders would account for more conflicts than our reach measure, the latter does a better job of accounting for conflict. The reach variable outperformed the contiguity variable "shared borders" in accounting for all four types of conflict (wars, disputes, crises and interventions).

Given the mixed results of the tests, we could engage in endless debate over which measure of "relevance" is best for scholars to use. It is up to researchers to ultimately decide how to capture the opportunity for interstate conflict, but a few words should be noted concerning the pros and cons of each approach. The indicator for shared borders is relatively easy to calculate and yields the highest "prediction" score in accounting for conflicts in our random sample of all Central American and Caribbean dyads. Its logic revolves around the notion that if a state can step over its boundaries, it can act against another state. But this measure suffers from the argument that just because a state is located in close proximity to another state, it can bring its forces to bear against an opponent. States with adjoining borders in some hinterlands would be hard pressed to conduct military operations against one another. Such an indicator also assumes that minor powers can not interact with any state unless the two share a boundary, ignoring the impact of regional powers and states in near proximity with the military might to traverse a limited distance. Such shortcomings allowed the reach variable to account for more of the four conflict cases (wars, etc.) than the shared borders variable.

The expanded version of contiguity (five levels) does a better job accounting for conflicts than any other indicator of opportunity, producing the fewest number of missed alarms. But this variable also had the lowest prediction score of any of the indicators of opportunity. Scholars who want a measure including all conflicts might conclude that this is the best measure. But there are even some disputes (Argentina vs. Iraq during the Persian Gulf War, Brazil vs. Germany in World War II) that the five-level contiguity measure cannot account for. Unless one looks at all dyads, we will not be able to account for all conflicts. Recognizing this point -- and noting that roughly one-fourth of all militarized disputes occur outside of the traditional "relevant dyads" -- Bennett and Stam (2000: 456-457) choose to run their analyses both for relevant dyads and for all possible dyads. Perhaps not surprisingly, Bennett and Stam's results turn out to be stronger in the analysis

limited to relevant dyads than in the larger analysis of all dyads. Nonetheless, they raise an important point that scholars would do well to consider.

The reach indicator not only provides the best balance of accounting for all conflicts and "prediction rates" but provides the best explanation for opportunity. It tells a story of why a country might be able to fight another, rather than offering a blanket assumption that all and only all shared borders have the opportunity for battles, or all nearby states can somehow fight. It even provides a good explanation for who might be the likely initiator in a conflict, a test which performed fairly well in accounting for who initiated the war, dispute or intervention. Granted, some might be uncomfortable with the strict guidelines for what must be reached (the opposing side's capital). In a territorial dispute, for example, doesn't someone merely need to hold the disputed lands? But both sides to any territorial contention are aware that possession might not always be nine-tenths of the law. A claimant might need to capture the opponent's capital to force him or her to relinquish the contested real estate in exchange for peace or vacating the territory.

Future Directions

Our analysis of the factors shaping the opportunity and willingness to engage in conflict is only beginning. In future studies, we plan to include some additional improvements designed to improve our ability to operationalize the concepts, as well as providing stronger tests of the associations between our indicators and conflict. We conclude by discussing some of the possible directions for future research in this area.

To begin, our measurement of opportunity here has been somewhat simplistic, and we plan to expand it in the future. To fully capture the impact of reach, several improvements may be necessary. First, reach will be calculated annually, not by decade, to provide more precision in measurement. Second, Bueno de Mesquita's (1981) equation should be evaluated to determine if it can incorporate a measure which shows a decrease in power over time, as a country's forces move further from their capital. Such a measure would resemble a "decay" model mathematicians use to determine decomposition rates of radioactive materials over time. Third, any measures of reach could take into account whether Country A must cross an ally (Country C) while trying to conquer Country B, which would improve A's ability to reach its enemy. We can assume that if C is neutral or an enemy, it does not represent a passable barrier.

Another improvement in our ability to account for conflict would be capturing cases where noncontiguous countries, lacking naval capabilities to move beyond their coasts, manage to engage in conflict. Examples include the Inter-American Peacekeeping Force in the Dominican Republic's 1965-1966 Civil War and the Organization of East Caribbean States (OECS) intervention in Grenada in 1983, as well as the Cuban involvement in Africa in the 1970s.[16]

With regard to willingness, the preliminary assessment presented in this paper has treated all territorial claims as equal. In reality, there is a great deal of variation in the characteristics of claims, ranging from claims to small and essentially worthless tracts of land to claims involving territory that is large, includes both sides' ethnic or religious identity groups, contains valuable resources such as oil, and commands an invaluable strategic position. The ICOW territorial claims data set measures such characteristics of each claim; future versions of this project will incorporate these characteristics in measuring the willingness of the claimant states to threaten or use military force over their territorial claims.

Over the longer term, we also intend to expand our analysis of willingness to other types of issues beyond territory. The ICOW project has recently received a grant from the National Science Foundation to collect comparable data on freshwater issues (such as the management of cross-

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[16] One possible means of incorporating this involves including a "piggy-back" effect from a major power ally, such as the United States. But most Central American and Caribbean nations have an alliance with the United States (the 1947 Rio Pact). A better means of narrowing this down might be in the context of an organization's (with a major power ally) declaration of hostility. In other words, if the organization declares war and a member (or invited nation) is capable of transporting others across the tyranny of distance. This would allow us to include the states in the IAPF and OECS actions.

border rivers) and maritime issues (such as disagreements over fishing zones). Once these data sets have been collected, we plan to incorporate them in our measures of willingness. This will offer a much more complete understanding of states' willingness to use conflict to resolve additional issues beyond territory, and will allow us to compare the effects of different issue types on this willingness.

Due to time limitations, we have remained limited to univariate analyses of the connections between opportunity, willingness, or contiguity and militarized conflict. So far we have not tested any interactive hypotheses about the combined impact of opportunity and willingness, nor have we employed any control variables in our preliminary analyses. We plan to run a variety of new tests to address both of these limitations, which will allow us to determine if an interactive term (opportunity * willingness) does a better job of predicting conflict than other factors and to determine the extent to which our results might be driven or biased by extraneous factors. Finally, this study only focuses on a single region (Central America and the Caribbean). One of our next steps will be to expand the study to additional regions, using military reach data for South America, Africa, the Middle East, and the Far East that has been collected by Doug Lemke as well as ICOW territorial claims data for the remainder of the world.

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Table 1: Conflicts Among States Which Can Reach Each Other, Or Are Contiguous

	Wars	Disputes	Crises	Interventions
Reach	71.4%	78.6%	51.2%	90%
Contiguity	85.7%	72%	41%	90%

Table 2. The Impact Of Reach On Conflict In A Random Sample of All Central American and Caribbean Dyads, 1816-1992

-2 Log Likelihood Ratio: 82.93   N=966
R-Square: .128   Chi-Square Statistic: 10.21***

	Coefficient	Standard Error
Reach	2.53	0.8412**
Constant	-5.99	0.708***

Table 3. The Impact of Reach on the Presence of Disputes in a Random Sample of all Central American and Caribbean Dyads, 1816-1992

	Dispute		
	No	Yes	Total
Reach No	800	2	802
Yes	159	5	164
Total	959	7	966

X_2 = 14.832***   Correctly Predicted: 83%

Table 4. The Impact of Shared Borders on the Presence of Disputes in a Random Sample of all Central American and Caribbean Dyads, 1816-1992

	Dispute		
	No	Yes	Total
Shared No	872	2	802
Borders Yes	87	5	164
Total	959	7	966

X_2 = 31.359***   Correctly Predicted: 90.8%

Table 5. The Impact of Contiguity on the Presence of Disputes in a Random Sample of all Central American and Caribbean Dyads, 1816-1992

		Dispute		
		No	Yes	Total
Contiguity	1	87	5	92
	2	1	0	1
	3	16	0	16
	4	66	2	68
	5	116	0	116
	No	673	0	673
	No	959	7	966

$X_2 = 38.9$***   Correctly Predicted: 70.4%

Table 6. The Impact of Reach on the Presence of Disputes during Central American/Caribbean Territorial Claims, 1816-1992

		Dispute		
		No	Yes	Total
Reach	No	3	4	7
	Yes	9	22	31
Total		12	26	38

$X_2 = $ 0.505   Correctly Predicted: 66%

Table 7. The Impact of Contiguity on the Presence of Disputes during Central American/Caribbean Territorial Claims, 1816-1992

		Dispute		
		No	Yes	Total
Contiguity	No	3	4	7
	Yes	9	22	31
Total		12	26	38

$X_2 = $ 0.505   Correctly Predicted: 66%

Table 8. The Impact of Joint Dyadic Reach on the Presence of Wars During Central American/Caribbean Territorial Claims, 1816-1992

	War		
	No	Yes	Total
Both Reach No	28	4	32
Yes	4	2	6
Total	32	6	38

$X_2 =$ 1.649   Correctly Predicted: 79%

Table 9. The Impact of Shared Borders on the Presence of Wars During Central American/Caribbean Territorial Claims, 1816-1992

	War		
	No	Yes	Total
Shared No	22	10	32
Borders Yes	2	4	6
Total	24	14	38

$X_2 =$ 2.72   Correctly Predicted: 69%

$* = <.05; ** = <.01; *** = < .001$

Appendix I: Territorial Claims in Central America and the Caribbean

Claim	Claimants	Years
Cuba	USA - Spain	1848-1898
Isla de Pinos	USA - Cuba	1909-1925
Guantánamo Bay	Cuba - USA	1960-
Navassa Island	Haiti - USA	1859-1914, 1935-
Môle St. Nicholas	USA - Haiti	1889-1915
Samaná Bay	USA - Dominican Rep.	1894-1904
Virgin Islands	USA - Denmark	1865-1917
Río Massacre	Haiti - Dom. Rep.	1894-1915, 1935-1935
Quita Sueño-Roncador-Serraña	Colombia - USA	1890-1972
	Nicaragua - USA	1900-1928
	Nicaragua - Colombia	1900-1928, 1967-
	Honduras - USA	1899-1928
	Honduras - Colombia	1899-1928
San Andrés y Providencia	Nicaragua - Colombia	1900-1930, 1979-
Clipperton Island	Mexico - France	1897-1934
Río Hondo	Mexico - UK	1831-1897
Chiapas	Guatemala - Mexico	1868-1882
Belize	Guatemala - UK	1868-1981
	Guatemala - Belize	1981-
Ranguana-Sapodilla	Belize - Guatemala	1981-
	Honduras - Belize	1981-
	Honduras - Guatemala	1981-
Mosquitia	Colombia - UK	1831-1848
	UK - Nicaragua	1900-1905
Río Motagua	Honduras - Guatemala	1899-1933
Cordillera Monte Cristo	Guatemala - El Salvador	1935-1938
Bolsones	El Salvador - Honduras	1899-1992
Gulf of Fonseca	Honduras - El Salvador	1899-
	Nicaragua - Honduras	1900-
	El Salvador - Nicaragua	1900-
Teotecacinte	Nicaragua - Honduras	1900-1961
Swan Islands	Honduras - USA	1921-1972
Mangles (Corn) Islands	Nicaragua - USA	1965-1971
Río San Juan	Nicaragua - Costa Rica	1920-1940
Río Sixaola y Río Coto	Costa Rica - Panama	1920-1941
Juradó	Panama - Colombia	1920-1924
Canal Zone	USA - Colombia	1899-1922
	Panama - USA	1920-1979

Appendix II: "Relevant" Dyads in Central America and the Caribbean

State	Potential Target	Contiguous	Reachable
Bahamas	---	---	---
Cuba	---	---	---
Haiti	Dom. Rep.	1894-1914, 1934-	1890-1915, 1940-
Dominican Rep.	Haiti	1894-1914, 1934-	1940-
	Cuba	---	1947-
	Venezuela	---	1947-
	Jamaica	---	1962-
	Trinidad & Tobago	---	1962-
	Grenada	---	1974-
Jamaica	---	---	---
Trinidad & Tobago	---	---	---
Barbados	---	---	---
Dominica	---	---	---
Grenada	---	---	---
St. Lucia	---	---	---
St. Vincent & Gren.	---	---	---
Antigua & Barbuda	---	---	---
St. Kitts & Nevis	---	---	---
Mexico	Cuba	---	1920-
	Haiti	---	1920-
	Dom. Rep.	---	1920-
	Jamaica	---	1962-
	Trinidad & Tobago	---	1962-
	Grenada	---	1974-
	Belize	1981-	1981-
	Guatemala	1868-	1875-
	Honduras	---	1900-
	El Salvador	---	1875-
	Nicaragua	---	1900-1930, 1970-
	Costa Rica	---	1920-
	Colombia	---	1920-
	Venezuela	---	1920-
Belize	Mexico	1981-	---
	Guatemala	1981-	---
Guatemala	Mexico	1868-	---
	Belize	1981-	---
	Honduras	1899-	1900-
	El Salvador	1875-	1875-
Honduras	Guatemala	1899-	1900-
	El Salvador	1899-	---
	Nicaragua	1900-	1940-
El Salvador	Guatemala	1875-	1875-
	Honduras	1899-	1900-
Nicaragua	Honduras	1900-	1900-
	Costa Rica	1920-	1920-
Costa Rica	Nicaragua	1920-	1940-1950
	Panama	1920-	---
Panama	Costa Rica	1920-	1970-
	Colombia	1920-	---
Colombia	Panama	1920-	---
	Venezuela	1841-	1865-

Venezuela			
	Cuba	---	1950-
	Haiti	---	1947-
	Dom. Rep.	---	1947-
	Jamaica	---	1962-
	Trinidad & Tobago	---	1962-
	Grenada	---	1974-
	Belize	---	1981-
	Guatemala	---	1947-
	Honduras	---	1947-
	Nicaragua	---	1947-
	Costa Rica	---	1947-
	Panama	---	1947-
	Panama	---	1947-
	Colombia	1841-	1865-

Notes:
• Contiguity reflects direct contiguity across a land/river border, and is taken from the COW Contiguity data set.
• Reachability reflects the ability for the state's military forces to reach the capital city of the potential target state, and is measured by the authors as described in the paper.
• Both contiguity and reachability are limited to years in which both states are members of the COW interstate system, and are limited to dyads composed of two states that are both considered Central American or Caribbean (thus excluding Mexico-UK through Belize, for example).