

**RELATIVE CAPABILITY, RIVALRY AND THE ESCALATION OF
MILITARIZED INTERSTATE DISPUTES: 1816-1992**

by

MICHAEL A. BLOCK

B.S., The Pennsylvania State University, 1990

M.B.A., Northeastern University, 1996

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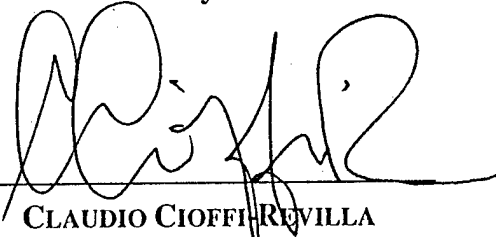
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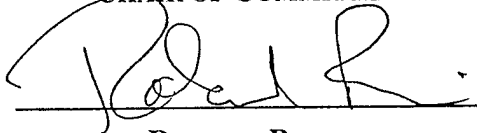
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by



**CLAUDIO CIOFFI REVILLA
CHAIR OF COMMITTEE**



**ROLAND PARIS
COMMITTEE MEMBER**



**MICHAEL LIPSON
COMMITTEE MEMBER**

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Relative Capability, Rivalry and the Escalation of Militarized Interstate Disputes:
1816-1992

Thesis directed by Professor Claudio Cioffi-Revilla

The adage, “to ensure peace, prepare for war”, has generated an enduring debate among scholars and statesmen since classical times. The development and acquisition of weapon systems (preparing for war) affect the way in which rivalries are formed, managed, and ultimately, how rivals fight their wars. But does acquiring new weapons capabilities lead to the escalation of conflicts towards war (ensuring peace)? This thesis presents an exploration into weapons development and military capability in enduring rivalries. By examining the effects of relative capability, along with geographic contiguity, alliance formation, existence of vital issues, and conflict history, a prediction of the possibility of escalation of militarized interstate disputes is made possible. Through detailed logistic regression analysis of the Correlates of War Militarized Interstate Dispute (MID) data set, I show that weapons development has little effect on the escalation of militarized disputes towards war. By contrast, I show that contiguity, conflict history, and the existence of vital issues strongly influence the probability of escalation.

Finally, through a detailed case study, I show that, although the model of predicted escalation is supported statistically in 918 cases of militarized disputes, rivalries do exist which defy the results. I examine the American – Soviet nuclear rivalry from 1946 through 1970. During those 24 years, the two engaged in 32 militarized disputes. Based on their relative capability levels and conflict history, we

should see almost 44% of these disputes escalate toward war. What we see in reality is that none of these 32 disputes have escalated to war, providing fodder for nuclear deterrence proponents.

When one considers the ramifications of interstate conflict, providing a predictive model that explains how and when militarized disputes between enduring rivals escalate to war is imperative. If it is true that weapons development and acquisition prove to have little effect on the escalation of MIDs, the implications for competitive research and development and defense spending are grave indeed. The ability to predict, and hence control the costs of militarized disputes will, indeed, benefit all interstate actors.

DEDICATION

This thesis is dedicated to my family, particularly my parents, Thomas and Deanna, who have always been there for me, and have never ceased to encourage me in my educational pursuits. In addition, this thesis would not have been possible without the love and friendship of Alexis Van Sickle and Nicole Witenstein.

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CHAPTER I

WAR, WEAPONS, AND RIVALRY

INTRODUCTION

This study has a dual purpose, partly theoretical and partly practical. Theoretically, I am interested in seeing how the development and diffusion of weapons technologies affect the course of interstate rivalry, specifically the escalation of Militarized Interstate Disputes (MIDs). A picture is emerging of the process by which nations go from being peaceful rivals to armed combatants. Through this investigation, I hope to add to that picture. Practically speaking, I mean to address the questions of whether arms can be used to manage conflicts, and whether weapons development and acquisition is always provocative or have no effect at all. If it is determined that the latter is the case, perhaps "arms control" as an approach to political reconciliation is misguided policy.

The fundamental question here is whether arms improvements have affected the behavior of two nations involved in a rivalry. Rivalries are long-term competitive interactions between members of the international system. Rivalries are an ancient manifestation of international conflict, and weapons development a key feature of rivalries.¹ They involve a series of moves, some of which may drive the rivalry back toward strained peace, some of which may drive the rivalry toward armed conflict, including war. These moves may include competitive alliance formation, linked

¹ Claudio Cioffi-Revilla, 1998. "The First Rivalries: Comparative International Relations and the Origins of World Politics." Paper prepared for the Annual Meeting of the American Political Science Association, Boston, September 1998.

mobilizations, arms races, disputes, competitive weapons research and development, and finally the initiation of war. Based on moves made by particular states in current and previous years, a prediction of the possibility of militarized dispute escalation between rivals may be made. At one end of the hostility spectrum will be the normal condition of strained peace, at the other, the unusual condition of militarized disputes among rivals.

THE MEANING OF RIVALRY

The term "rivalry" is conventionally used to refer to a set of two or more actors "having the same pretensions and claims" or "striving to reach or obtain something that only one can possess" (Webster's New Collegiate Dictionary). One important distinction between rival and non-rival actors is rivals competition over some stakes or contentious issues. Rivalry, though, seems to include more than simple competition between actors. Kuenne (1989) suggests that rivalry is distinguished from non-rival interaction or competition by the non-anonymity of the actors, or the expectation that one actor's actions will affect its rival non-negligibly. The rival will be able to identify the first actor as the source of this effect, and the rival will react to protect its own interests. In other words, rivalry involves the mutual recognition of actors as rivals and as primary threats to each other's national security.

Applications of the concept of rivalry to international relations have typically focused on a very specific form of rivalry, which might be described as "enduring, militarized, interstate rivalry."² Such a relationship occurs between two or more

² Paul F. Diehl, 1998. *The Dynamics of Enduring Rivalries*. Urbana: University of Illinois Press.

nation-states, involves the frequent resort to militarized force by the adversaries as a means of pursuing their respective interests, and endures for a protracted period of time. Examples of such "enduring rivalries" include the United States and the Soviet Union during the Cold War, Israel and Syria since 1948, and France and Germany for much of the nineteenth and twentieth centuries.

Recent concepts such as interstate rivalry strongly resemble a situation described over four decades ago by Singer (1958):

Threat perception arises out of a situation of armed hostility, in which each body of policy makers assumes that the other entertains aggressive designs; further, each assumes that such designs will be pursued by physical and direct means if estimated gains seem to outweigh estimated losses. Each perceives the other as a threat to its national security, and such perception is a function of both estimated capability and estimated intent.

Such situations are described and characterized by insecurity, suspicion, and hostility in day-to-day relations, which is very similar to more recent descriptions of international enmity, protracted conflict, and enduring rivalry.

Goertz and Diehl (1993) identify three central components underlying the concept of enduring rivalry: competitiveness, time, and threat perception.

Competitiveness means that rivalry involves competition over some scarce good or goods, perhaps intangible, as with political influence, or perhaps more tangible, as with territory or natural resources. There is no limit on the number or mixture of goods or stakes that may be under contention in a rivalry; in fact, few rivalries are limited to a single issue, and many rivalries feature changes over time in the issues of contention. Also, the competition involved in rivalry includes a dimension of hostility, involving the ever-present possibility of the use of military force in this

competition. The temporal component of rivalry, represented in the term "enduring," means that rivalries last for substantial periods of time, often surviving for decades instead of months or years. Finally, the perception of a threat suggests that to be a highly salient enemy, a potential adversary must pose an active threat, meaning that it is viewed as engaging in activities that are immediately threatening and are hostile to one's interests. This does not negate the effect of spatial consistency, which requires that a consistent set of states be involved for a relationship to be classified as a rivalry. If the same states are not involved over the course of the relationship, then it lacks the continuity and the focus on the other adversary that characterize rivalry.

THE IMPORTANCE OF RIVALRY

Rivalry is the most appropriate framework for studying the effect of weapons development and the escalation of Militarized Interstate Disputes. Other approaches to study the effects of weapons development could include:

- (a) the effect of technology on the cost of war;
- (b) the effect of weapons acquisition on the duration and severity of war;
- (c) the effect of improvements on arms races.

I believe the study of rivalry offers advantages over other approaches for several reasons. First, rivalry allows one to consider how the relative capability of a state, through weapons development and acquisition, might come to have an effect over time. Second, the study of rivalry and the escalation of their disputes show how weapons technology improvements are related to other variables, i.e., to other choices available to rivals. That leads to the following questions: Will disputes escalate when

the relative capabilities of rivals are disproportionate? How do alliance ties or geographic concerns effect the decisions of escalating conflict?

Finally, the effects of weapons improvement should be most pronounced in relations between rivals. Weapons improvements should have their main effect through the balance of preemption and defense. Two nations that normally have nothing to fear from one another may discount the danger or possibility of preemption, even if they have by chance become involved in a dispute. Two nations with a history of hostility, however, will be alert to the preemptive or defensive advantages new weapons technology may offer.

EMPIRICAL IMPORTANCE OF RIVALRY

Empirically, the phenomenon of interstate rivalry is an important source or facilitator of international conflict. International relations scholars have begun in the last 15 years to study enduring interstate rivalries in a systematic fashion (Gochman and Maoz 1984; Geller 1993; Goertz and Diehl 1992, 1993; Huth and Russett 1993). These scholars have confirmed the prominence of so-called enduring rival dyads in the ranks of states involved in international conflict. Goertz and Diehl (1992) and Gochman and Maoz (1984), for example, find that the vast majority (around 80 percent) of all militarized interstate disputes, violent territorial changes, and interstate wars occurred in the context of either "proto-rivalries" or enduring rivalries.

Confrontations occurring in a context of rivalry have also tended to be more severe and escalatory than non-rival confrontations. Crises between rivals tend to begin with more violent "crisis triggers," tend to feature more escalatory "crisis

management techniques,” and are less likely to see effective intervention of conflict management by external actors (Brecher and James 1988). Disputes between rivals tend to reach higher levels of escalation or severity than disputes between non-rivals, and territorial changes involving rivals are three times as likely to involve large-scale violence as transfers of territory between non-rivals (Goertz and Diehl 1992).

Disputes between rivals are also more likely to escalate to the level of full-scale interstate war at some point of their relationship (Goertz and Diehl 1992). In fact, ten of the twelve most severe international wars in recent history started out as wars between long-time rivals.

On the basis of these observations, then, enduring rivalry is certainly an important topic in the study of interstate conflict. Rivalries are extremely dangerous, accounting for a disproportionate fraction of all interstate conflict (in the form of violent territorial changes, militarized disputes, or war), and rivals tend to exhibit more escalatory conflict behaviors than non-rivals. By studying the effects of weapons development and acquisition on rivalry, we can hope to understand the conflict behavior between rival states.

THEORETICAL IMPORTANCE OF RIVALRY: ALMOST ALL WARS ORIGINATE FROM RIVALRIES

The theoretical importance of studying weapon innovations and its effects on rivalries stems partly from the empirical importance, as discussed above. Because rivalries are so deadly and so conflict-prone, and because they account for such a large proportion of all interstate conflict and war, an adequate understanding of the

processes of interstate conflict would be aided enormously by being able to understand the processes of conflict between rival states. At the most basic level, rivalries offer a relatively small set of cases in which there is an important conflict of interest between the adversaries and a relatively high risk of conflict occurring at any given point in time. Such a set of cases offers an ideal population on which to test propositions about various sources of interstate conflict more generally, because of the relatively high proportion of years involving militarized conflict in the context of rivalry (Goertz and Diehl 1993). Beyond any general value of rivalries as a set of cases for testing other propositions, there are a number of other important theoretical reasons for the study of weapon development and acquisition and rivalry, including foreign policy making, existing explanations of conflict (i.e., arms races), and the study of interstate conflict.

POLICY IMPORTANCE OF RIVALRY: EARLY WARNING & CONFLICT MANAGEMENT

During the period covered by the Cold War and its aftermath, we have seen no shortage of academics and policy-makers offering prescriptions for how to manage or end interstate rivalry, or at least to minimize its risks. The United States and the Soviet Union reached a number of agreements during the Cold War meant to further these ends, such as agreements on arms control or confidence building measures. Managing or ending rivalry is undoubtedly an important topic, but it also seems important to understand the course rivalries take, and by implication, to be able to prevent rivalry before it has begun, rather than seeking to understand how to manage rivalry. Given the high military, economic, political and social costs of interstate

rivalries, particularly ones of global scope, successfully managing or ending rivalry can be seen as the second best solution. Outright avoidance of rivalry in the first place, short of the crises, wars, and social and economic costs that result from rivalry, would seem to be even more desirable. By examining the course rivalries take, and the decisions leaders must make when faced with rivalry, we might be able to discover the causes of such situations. By studying the impact of technology development and weapons acquisition on those decisions, we may be able to influence foreign policy away from arms control to rivalry end.

Before we can show the effects, or lack there of effects that weapon improvements may have, a clearer picture of rivalry is needed. So, my approach will be to construct a picture of rivalry. One that shows the choices available to leaders throughout the stages of a rivalry, and the relative values of those choices and factors that may drive one choice over another. Next I must show how or how not relative capability or weapons developments and acquisitions may effect rivals' decisions when faced with aggression.

CHAPTER II

A PLAN OF RESEARCH

Although weapons improvements might affect relations between allies or even between all states in the international system, a nation's adversaries have the most to fear from its advances. Hence, if there is an effect, it will be most pronounced in relations between nations that have begun competition in the areas already described. I restrict the temporal domain to the period in which technology began to effect the sheer balance of forces as the determining feature of capability: 1816 to 1992. I do not attempt to delve deeply into every dyadic militarized dispute that has occurred since 1816, but do concentrate on examples of militarized disputes involving enduring rivals for further study. This down-selection will allow me to check the cases that should most directly register the effects of relative capabilities, alliance ties, geographic contiguity and conflict history.

Once the rivalries have been selected, I will trace their path along several dimensions:

- (a) the nation's military capability (or relative capability between rivals)
- (b) the nation's alliance commitments;
- (c) the existence of geographic contiguity between rivals ;
- (d) the conflict history between rivals;
- (e) the existence of vital issues of contention between disputants;
- (f) the process of escalation of rival militarized disputes.

Weapons development might affect behavior in all of these categories, but it will be assumed that its main effect will be on the nation's military capability. For the

moment the leading hypothesis seems to be that the more offensive the state of technology, the higher the level of hostility likely to be encountered³. The more defensive the overall configuration of forces, the lower level of hostility. Individual innovations probably will not have an immediate effect on the course of the rivalry, so there is no point in using an interrupted time-series to see if particular weapons have had an immediate effect. Rather to construct variables that capture the relative military capabilities of rival nations at particular points in history and predict the possibility of dispute escalation would prove to be more valuable. Changes in weapons capability or weapons type will be reflected in these variables, either making the balance more or less favorable to escalatory responses to acts of aggression.

Militarized interstate disputes between enduring rivals are the main units of observation, with the escalation of these disputes by the target of aggression the dependent variable. The independent variables include dimensions of competition between rivals. Relative capability (specifically Correlates of War capability indicator scores) is used in lieu of detailed historical data on military capabilities for each rival nation within the temporal constraints of this study. Although this drastically simplifies the ability to conduct regression analysis, it limits the fidelity gained through the results. Other variables include whether or not vital issues exist between the disputants, geographic contiguity, existence of alliance ties between rivals, and the effects of conflict history. It will be assumed these variables contain both cumulative and incremental effects on dispute escalation.

³ See Jervis, Robert, 1978. "Cooperation Under the Security Dilemma," *World Politics* 30, 2: 188.

The change in a nation's alliance bonds has some bearing on its foreign policy behavior, but what may have more bearing is whether the nation with whom the dispute is with is an ally as well as a rival. What is needed is the marginal cost of new expenditures and the marginal utility of extra alliances, but one cannot determine this until the overall availability of these resources and alternatives are known.

Initially, I will provide an analysis of the likelihood of militarized disputes escalating between rivals. The statistical model being proposed does not describe or predict the course of the rivalry so much as predict the possibility that a particular militarized dispute between enduring rivals will escalate beyond the initial act of aggression. It would not try to predict when nations take alliances, increase military capabilities, or initiate disputes, but would instead say how hostilities between disputants may escalate to war based on the changes and levels of each. I will then examine a case study in which we are likely to see such escalation between enduring rivals, yet it simply does not happen: the American-Soviet nuclear rivalry from 1946 through 1970.

The technological choices each nation has made will result in a particular balance of offense to defense along several dimensions. This balance should, along with the other variables, provide a composite indicator of military capability. It might be, for example, that speed of attack is far more important than the state of fortifications in predicting the levels of hostility. If one combined these into one overall ratio of offense to defense, the effect might be washed out by all the other variables. Keeping them separate should allow one to see which dimensions have had an effect across time, although it might not tell whether particular dimensions had

effects in individual circumstances. Due to the unfathomable task of coding 918 militarized interstate disputes across 176 years, I will try to capture the effect of weapons development and acquisition with one composite variable, the Correlates of War capability indicator (CINC) values.

Due to the importance of offensive and defensive weapon systems in a nation's force structure for the development of CINC scores, a more detailed theoretical analysis of the dimensions of offense and defense follows.

THE DIMENSIONS OF OFFENSE AND DEFENSE

When a weapon is introduced, it will bring with it various physical characteristics. Its potential for attack, defense, or deterrence will depend on the degree to which it has these qualities and how these qualities are related to the properties of the system it will have to face. A purely preemptive weapon is fast, sufficiently powerful to destroy other weapons though not necessarily powerful enough to destroy large civilian targets. It must be accurate enough to deliver pinpoint attacks or at least destroy the weapons without societal damage, although it will be weak on the dimension of defensive capabilities.

Purely defensive weapons would lack the characteristics of offensive weapon systems, but would be strong in detection, stopping attacks against targets other than themselves, and in concealing themselves from attack. Deterring weapons are fast and have tremendous firepower, but in general lack accuracy and the ability of self-defense. Ability to be concealed from attack is crucial, but early detection is

irrelevant so long as the attacking weapons have no chance of destroying the weapons of deterrence.⁴

Most weapons will not fall clearly into one category or another. They will instead possess characteristics that may make them both offensive and defensive. Many weapon systems do not possess all the characteristics listed above, but still have impressive effects. Indeed, a weapon with multiple applications and roles can have a profound impact on the strategic situation, if only because the side who possesses this weapon will have a distinct advantage over its rival(s).

One problem that seems to arise is whether to speak of individual weapons or a total force concept of a nation state. The answer is somewhere in between. Not all weapons that a nation possesses are relevant in all arenas, but individual weapon systems do not make for a preemptive or defensive situation. Some weapons are highly defensive when used in combination with other systems, while highly offensive with others.⁵ If attention to the context of weapons applications is called for, this does not deter the goals of this research. Further examination is needed into the weapon systems that a nation would call on first in the event it was to fight a war, and then coding these on their offensive and defensive characteristics. This exceeds the realm of this thesis.

All nations in World War II had tanks and airplanes, but they differed radically in the way those systems were employed and the governing doctrines used to guide

⁴ For more in-depth look at deterrence by denial and deterrence by punishment see Glenn H. Snyder, 1977. *Deterrence and Defense: A Theoretical Introduction. American Defense Policy*. 4th ed.

them. Hence, one could say that the dominant weapon systems used by the Germans were tanks and airplanes used in coordinated attacks. The French, on the other hand, used infantry in static positions with armor and aircraft in support. Each nation made a number of strategic choices on how to deploy these systems. The Germans emphasized the speed and range of their dive-bombers, the French in their construction of defensive fortifications. These would show up in the construction of overall weapons capabilities.

THE RIVALRIES

The existence of a militarized rivalry is indicated by the occurrence of militarized disputes as defined by the COW MID data set.⁶ Disputes that occur within 10-15 years of each other are considered to be part of the "same rivalry." A dispute is considered part of the same rivalry if it involves the same two states and occurs within eleven years of the first dispute of the sequence, twelve years after the second dispute, and up to 15 years after the fifth dispute.⁷ This is consistent with extant definitions of enduring rivalries and the notion that after a rivalry is well established; it needs fewer disputes in order to sustain its existence.

⁵ Radar is neither intrinsically offensive or defensive in nature. When used in combination with an anti-ballistic missile (ABM) system, it provides a distinct defensive characteristic. When used in combination with an F-117 stealth fighter/bomber, its offensive capabilities are brought to light.

⁶ Singer, J. David, and Melvin Small. *Correlates Of War Project: International And Civil War Data, 1816-1992*. Ann Arbor: University of Michigan Press.

⁷ Paul F. Diehl, *Enduring rivalry dataset developed for Correlates of War MID Version 2.10*. (<http://www.pol.uiuc.edu/faculty/diehl/er.html>)

TABLE 2.1
Enduring Rivalries and Militarized Disputes

ASSUMPTIONS

Although much maligned in recent years, the "Realpolitik" perspective on world politics has considerable merit as a framework for the current study. This outlook has been particularly inadequate in describing international economic relations and the policies of developing nations.⁸ Nevertheless, it has been the most successful research tradition to date in specifying the conditions and motivations that underlie interstate war. The "power politics" conception of national behavior may be inappropriate for some countries, but seems most valid when applied to enduring rivals, which are the primary focus of this study. Rivals have interests outside their own borders and consequently, part of their ability to satisfy those interests is attributable to their pursuit and maintenance of power.

For the purposes of this thesis, the basic premise of the "realist" view are retained to analyze the impact that weapons acquisition has on the escalation of militarized interstate disputes. Nations are posited to have two sets of goals: the maintenance of their own security and the expansion of their power beyond that required for security (Morgenthau, 1960). Power is both a means and an end in itself for nation states. "Realpolitik" provides only the general framework for the study of state behavior. To specify testable propositions about military acquisitions and war, an additional set of assumptions are needed.

The first assumption is that each nation has a centralized decision making structure. Normally this simplification might be highly suspect in that many actors influence foreign policy decisions. Decisions to go to war are usually made by a

⁸ For a critique of the "Realpolitik," see Keohane and Nye (1977).

nation's leadership, rather than by any parliamentary body of that nation. Even in a democracy, a pluralist model poorly explains crisis decision-making. The decision for rapid military buildup cannot be fully accounted for by bureaucratic factors. Large changes in military personnel or hardware are not the product of incrementalism, but a designed policy by the leadership of a country. Although the concept of a unitary decision-making structure may be called into question in a number of instances, it seems most applicable when it is used to study decisions regarding militarized disputes and weapons development.

Assigning a nation a single uniform decision-making character should not imply that its decisions are fully rational. "Full rationality" stipulates that given a problem, all possible alternative solutions are considered, and the cost and effectiveness of each is known. A decision-maker then selects the alternative that maximizes his nation's benefit (Allison and Zelikow, 1999).

"Full rationality" is an ideal type divorced from the reality of foreign policy-making. Nations have neither the resources nor the time to weigh all the elements of a problem. The fact that nations do not always opt for the wisest policy does not imply the other extreme, that nations' behavior are primarily random. As described by Bueno de Mesquita (1981) the initiator of a dispute wins a far greater number of times than would be predicted by chance. This implies that disputatious behavior and war are the products of a conscious choice by one or more of the participants. The success rate of dispute initiators implies that they have a good estimate of the likelihood of a favorable outcome prior to the initiation, but the fact that initiators do not win all disputes shows that these estimates are far from perfect.

Rather than "full rationality" or irrationality, I will assume that nations and their leaders exhibit "limited rationality" in making their security decisions. Limited rationality could be defined as sensitivity to costs. National leaders look at the environment around them and consider the costs associated with a finite set of policy alternatives. The cost calculations made by leaders are necessarily crude, reflecting the limited time and resources available in the decision-making context. Subtle cost-benefit differences may not be apparent, but gross differences can be understood.

A final assumption is that peaceful resolution of conflict requires a high level of trust to be present in a relationship. Nations must have some reason to believe that their rivals will not violate any settlement, formal or informal. The absence of trust erects a barrier to the conclusion of any agreement and may make war a more desirable alternative in pursuing one's objectives. This trust can be represented in the choices a nation or its rival makes concerning the nature of its force posture. This leads to the differences between offensive and defensive weapon systems.

CHAPTER III

RIVALRY AND THE ESCALATION OF MILITARIZED DISPUTES

This chapter is devoted to formulating and testing hypotheses regarding the responses employed by targets of militarized aggression. In many respects the analysis is based on stimulus-response notions of escalation. Using the Correlates of War MID data set, I look for factors that will help predict whether the target of a militarized act of aggression chooses to counter with an escalatory response. The data sample represents an incredibly large spatial domain, in terms of the number of disputes among enduring rivals analyzed. Six variables are chosen from the more extensive literature on militarized interstate conflict. These variables are all prevalent in existing theory and research related to the causes of interstate war and thus should play an important role in the escalation of lower forms of interstate conflict.

RELATIVE CAPABILITY

If at all possible, I would have liked to develop a new variable that effectively measures the military capability of each nation within this study for every year of militarized dispute, taking into account the balance of offensive and defensive weapons systems. It was physically impossible to develop such a measure. A suitable substitute exists within the expansive databases of Correlates of War project. Each nation is given a relative capability indicator or CINC score. To develop a relative capability value between an initiator and a target, one must only divide the two nations CINC scores. Theoretically this would give a good indicator of the

strength of the target to the initiator and vice versa. But despite the theoretical importance placed on relative capability, variables that have measured the relative capability between states have not performed well in predicting whether or not those states will go to war. Bremer (1992), for example, examines the relationship between relative capability and the likelihood that a given dyad will go to war in a given year. He finds only a very weak relationship, although preponderance is shown to have a slight dampening effect on the likelihood of war in a given dyad.

This result, however, is not so surprising when we consider the fact that each interstate war is preceded, in one form or another, by a less-severe dispute. When a dispute initially arises between two states, it should be the case that relative capability affects the decision of each rival to either continue or discontinue the pursuit of its goals because each contemplates the costs of doing battle with the other. Once the decision to pursue the goal is made and each disputant has taken relative capability into account, the effect of relative capability on further escalation of the dispute towards war should weaken. In other words, relative capability may exert a strong influence during the early stages of a dispute, but as the dispute escalates, its influence should weaken.

The question then is not whether relative capability affects the likelihood that a war will arise between two rivals, but rather, given a dispute between rivals, whether relative capability affects the likelihood that the dispute will escalate. The answer to this latter question should be yes, and the relationship between relative capability and dispute escalation, it would seem, should be positive -- stronger states should be more willing to escalate disputes than weaker ones. Stronger states are

both better able to inflict costs on their opponents, and at the same time better able to withstand cost inflicted on them by their opponents. Thus, it would seem, *ceteris paribus*, escalation is cheaper for states that are relatively stronger than their opponents. Following this line of reasoning, the hypothesis that will be tested regarding relative capability and targets' responses in disputes is:

The greater the military capability of the target relative to the initiator, the more likely the target's response will be at least as severe as the initial act.

Fearon (1994) shows that selection-bias effects may explain the inconclusive results pertaining to relative capability and escalation/war. Fearon's formal model of interstate crises suggests that relative capability between the challenger and target of a dispute may be systematically related to the issue at stake. Specifically, challengers will challenge much stronger states over only unimportant issues, i.e., issues over which that much stronger state is unlikely to respond or unlikely to escalate the conflict. Fearon's model suggests that an inverse relationship, rather than the positive one posited here, may exist between the relative strength of the target state, and the severity of that state's response.

ISSUE IMPORTANCE

It has been posited that disputes involving issues of territory or regime survival are more likely to escalate to war than disputes over "less important" issues. This is consistent with studies of interstate conflict that discuss how the issues at

stake affect the willingness of leaders to go to war. The implicit assumption behind the presumed correlation between vital issues and outcomes centers on how vital issues influence the intra-dispute behavior of states. In disputes over vital issues, leaders should be much more willing to risk escalation to war. Therefore, they should be less hesitant to employ initiatives that might provoke the other side, opting instead, to undertake actions aimed quickly settling the dispute in their own favor through decisive action. Alternatively, they may choose to employ strong actions aimed at forcing the other state to back down. In either case, states should be more likely to resort to force when they perceive that the issues at stake are vital (Goertz and Diehl, 1992; Gochman and Leng, 1983). I will test the following hypothesis:

Targets will be more likely to respond with at least as much hostility as the challenger's act when the issue in dispute is of vital importance (territory or government/political regime survival).

CONTIGUITY

A variable is also included to account for the impact of geographical proximity on dispute escalation. Several studies find support for the conflict engendering qualities of contiguity (e.g., Bremer 1992; Diehl 1985; Russett 1993). Siverson and Starr (1991) conceptualize contiguity as a factor furnishing possible combatants with the opportunity to fight because of their proximity. States may choose not to fight, or escalate once hostilities have begun, but the geographical proximity of contiguous states provides a setting attractive to conflict. The

mobilization of troops and equipment, along with the development of strategy on unfamiliar terrain, serves as a deterrent to noncontiguous disputes evolving to higher levels. Simply put, war costs tend to be lower with contiguity. States are less constrained for participation when the venue of combat is geographically proximate. In addition, contiguity might impact regime type through a process of diffusion, whereby geographically proximate states tend to have similar internal governing structures.

To determine whether dispute antagonists are geographically proximate to one another, the Correlates of War contiguity data set is used. The data set includes five types of state-to-state contiguity: contiguous by land, or separated by 12, 24, 150, or 400 miles or less of water. The analyses below use a simplified version of this set, classifying dyads that are contiguous by land or separated by 150 miles or less of water as contiguous, and all other dyads as not contiguous. Therefore, I hypothesize that:

The probability that a response to an initial act of aggression will be at least as severe as the initial act will be greater if the two states involved are contiguous to one another.

I will also include an interaction term that denotes the presence of both a vital issue at stake and contiguity in a dispute.

ENDURING RIVALRY AND CONFLICT HISTORY

Recent literature on interstate conflict suggests that enduring rivals, or pairs of states that fight each other frequently, behave differently during their conflicts than pairs of states that seldom come into dispute.⁹ There are two distinguishable veins in the literature on this point. The first argues that past conflicts between states simply make them more hostile towards one another. Brecher and James (1988) show that protracted conflicts tend to be more violent than non-protracted conflicts. The second vein argues that past success or failure in a dispute with the same adversary alters a state's behavior. Hensel and Diehl (1994) find that past non-response and failure to achieve a successful outcome combine to increase the likelihood that a state will not respond in subsequent disputes with the same adversary.

I find the notion captured by the first vein of literature more compelling than the second because it is more general. The second vein unnecessarily restricts the effect of the past dispute involvement by requiring the target to have lost the previous dispute with the initiator in order for the past encounter to alter the target's behavior in the current dispute. It may be that what matters most is not the outcome of a past dispute, but the fact that there was a past dispute. If this is true, we should see a difference in disputant's behavior based on the length of time between the past and current dispute. Specifically, states that come into conflict with one another often should be more likely to respond to each other's aggression more severely. As

⁹ See Russell J. Leng, 1995. *Interstate Crisis Behavior, 1816-1980: Realism versus Reciprocity*. New York: Cambridge University Press.

Vasquez (1993, p. 185) suggests, persistent confrontation can make rivals feel that force is the only way to resolve contentious issues.

It seems likely that the relationship between past dispute involvement between rivals and responses to aggression would be non-linear. Consider two states involved in a dispute when their most recent previous dispute occurred six months ago versus ten years ago. In the former case, ill feelings are likely to be left over from the previous conflict whereas the latter case the ill feeling will have dramatically decreased. The argument here is that after a certain length of time, any increase in hostility that could be attributed to the presence of a past dispute should fade away. My hypothesis regarding conflict history and rivals is thus:

Targets will be more likely to offer escalatory responses in disputes with enduring rivals with which they combat frequently.

ALLIANCE

The importance of alliances in interstate relations has been demonstrated many times. In the present context, inclusion of an alliance term is appropriate because of its plausible relation to militarized conflict. A traditional notion of alliances leads one to believe that aligned states will escalate their conflicts less frequently than non-aligned pairs. In order to distinguish dispute dyads that are allied from those that are not, I use the Correlates of War formal alliance data (Small and Singer, 1969). The separation of alliances into the categories of mutual defense pacts, neutrality agreements, and ententes is not utilized. Instead, all three are lumped into a

general alliance category. This coding decision accurately captures whether or not pairs of states have committed to mutual agreements with one another. Each dispute dyad is coded as to whether or not the two states were linked in an alliance in the year prior to the dispute onset. The alliance hypothesis is:

The presence of an alliance between two states should decrease the likelihood that the target will escalate the dispute in response to the initial act.

DATA AND MEASUREMENT

The existence of a militarized rivalry is indicated by the occurrence of militarized disputes as defined by the Correlates of War MID data set. Disputes that occur within 10-15 years of each other are considered to be part of the "same rivalry." A dispute is considered part of the same rivalry if it involves the same two states and occurs within eleven years of the first dispute of the sequence, twelve years after the second dispute, or up to 15 years after the fifth dispute. This is consistent with the extant definition of enduring rivalries and the notion that after a rivalry is well established; it needs fewer disputes in order to sustain its existence. The list of rivalries, which includes all rivalries from very short to enduring ones, was generated from version 2.10 of the Correlates of War Militarized Interstate Dispute (MID) data set, combined with Paul Diehl's Enduring Rivalry (ER) dataset.¹⁰ The general assumption is that all states on one side of a multilateral dispute have a rivalry with all

¹⁰ Paul F. Diehl, Enduring rivalry dataset developed for Correlates of War MID Version 2.10. (<http://www.pol.uiuc.edu/faculty/diehl/er.html>)

states on the other side; nevertheless, this is not always the case. Dyadic disputes were eliminated where the opposing states were not involved in the same dispute at the same time (e.g., non-overlapping participation). Also eliminated were the dyads in which the two states had very little contact with one another, generally those involved in one of the two world wars. This led to 51 "enduring rivalries," or prolonged militarized competition between the same pair of states, involving six or more militarized disputes over a period of twenty years. These 51 rivalries were involved in 918 militarized disputes. The independent variables are described below.

RELATIVE CAPABILITY

The hypothesis involves whether the target's strength relative to the initiator's influences the type of response employed by the target. To examine this I employ the Correlates of War capability indicator measures or CINC scores. The ratio for the target's relative capability is gained by dividing its CINC score by the CINC score of the initiator.

CONTIGUITY

Contiguity suggests that a state is more likely to respond aggressively to a militarized action from a state which shares a common border. The dummy variable is coded 1 when the initial act comes from a bordering state and 0 otherwise.

ISSUE IMPORTANCE

As argued earlier, disputes involving issues of territory or regime survival are more likely to escalate to war than disputes over "less important" issues. Using post-hoc analysis, a dummy variable is coded 1 if the militarized dispute between rivals involves an issue of extreme importance. It is coded 0 for all other disputes.

ALLIANCE

In order to determine if allied states are less likely to escalate disputes against each other, I add a dichotomous variable coded 1 when the dispute involves allies and 0 when it does not.

CONFLICT HISTORY

To capture the effect of conflict history among rivals, I measured the time lag since the two were last involved on opposite sides of a militarized dispute. As argued earlier, the effect of past dispute interaction is likely to be non-linear. In the early years after a dispute between rivals, hostilities may remain strong. However, after a certain length of time, the effect of the hostility associated with a past dispute should fade. To capture this diminishing effect of conflict history, the following declining exponential function is employed to modify the indicator, which will range after the transformation between 0 and 1:

$$\text{conflict history} = e^{(-\text{years}/10)}$$

where years is the value of the original conflict history available. Dividing by 10 in the denominator of the exponent acts to diminish the effect of the original variable by

1/3 after ten years. Thus, the variable captures the theoretical notion that the effect of past dispute interaction is strong in the early years after a dispute, but declines fairly rapidly after a period of ten years.¹¹

ESCALATORY RESPONSE

The dependent variable in the analysis that follows is the target's first response in each MID. It is a dichotomous variable coded 0 when the target's response is less severe than the initiator's aggression and coded 1 when the target's response is at least as severe as the initial act. The 0 category also includes those cases in which the target does not respond militarily to the act of the aggressor. Severity is determined by using threat, display, and use of force categorization. There are 553 cases where the target's response is less severe and 365 cases where that response is at least as severe as the initiator's act.

¹¹ This variable was created using 1, 5, 15, and 20 years as cutoff points. While the indicator is statistically significant regardless of the cutoff value, the results show that 10 years maximizes the number of cases the model correctly predicts. A simple linear version of this indicator was not statistically significant.

CHAPTER IV

RESULTS

A multivariate binary logistic regression model was used to examine the relationships between the independent variables and the dependent variable - the probability of the target's escalation in a Militarized Interstate Dispute (MID). The results are shown in Table 4.1.

TABLE 4.1
LOGIT Regression Analysis of Targets' Escalation to Acts of Aggression by Initiators
(1 = At Least as Severe, 0 = Less Severe) (N = 918)

<i>Variable</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>X²</i>	<i>Significance</i>
Constant	-1.2813	.2540	25.449	.0000
Relative Capability	-1.0001	.1006	19.022	.2700
Vital Issue	1.2376	.2327	28.294	.0000
Contiguity	.8516	.1529	31.019	.0000
Vital Issue/Contiguity	-.2646	.2647	.999	.1588
Conflict History	.3537	.1485	5.672	.0086
Alliance	.1352	.1361	1.046	.1533
Log Likelihood (null model)	-1125.65			
Log Likelihood (full model)	-1012.34			
Chi-Squared	226.62			
Significance	p < .001 (6 d.f.)			
N	918			
	<i>Predicted Response</i>			
	<i>Less Severe (Row %)</i>	<i>More Severe (Row %)</i>	<i>Total</i>	
<i>Actual Response</i>				
Less Severe	443 (81%)	110 (19%)	553	
More Severe	172 (47%)	193 (53%)	365	
Total	615	303	918	

The logit results presented above show that the chi-squared generated by the full model are sufficiently high to reject the null hypothesis that the slopes of all the independent variables are 0. Thus the variables included in the model significantly improve our ability to predict targets' responses in this sample of MIDs. Although the model significantly improves our ability to predict the outcome variable, we must ask to what degree each does so. Table 4.1 shows that the model used in this analysis predicts a respectable 69.3% of target's responses correctly. The model accurately predicts 443 of the 553 cases (81%) where the target's response was less severe than the initial act and 193 of the 365 cases (53%) where the response was more severe than the initial act of aggression. Thus, in correctly predicting 636 (443 + 193) out 918 cases, we get 69.3% predictability.

In Table 4.1, the variables *vital issue* and *contiguity* are significant beyond the 0.05 threshold (even 0.01), with *relative capability* resulting insignificant. I will now provide a closer examination of all the variables within the logit results.

First, the results of the *conflict history* variable show that targets are more likely to escalate in disputes against enduring rivals. This is consistent with

theoretical notions and empirical findings pertaining to the volatility of recurrent, protracted conflicts (Brecher and James, 1988, Goertz and Diehl, 1993).

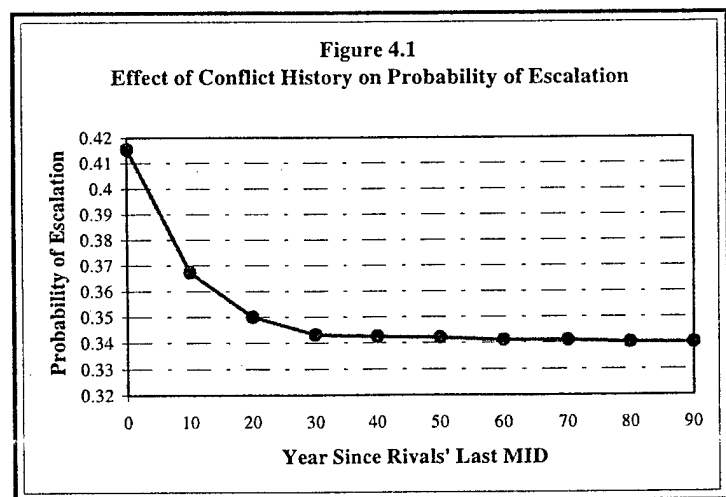
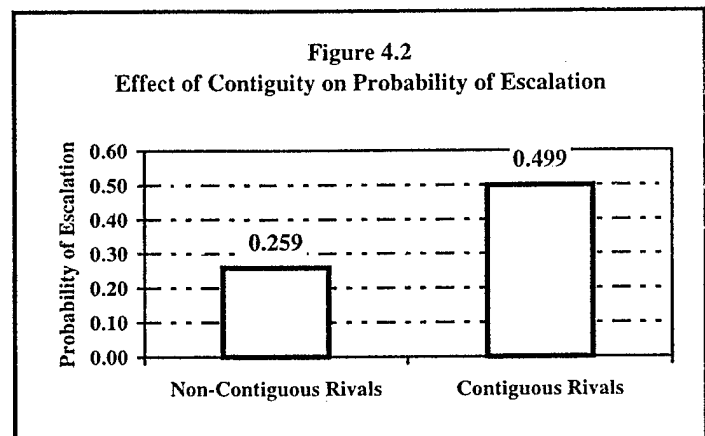


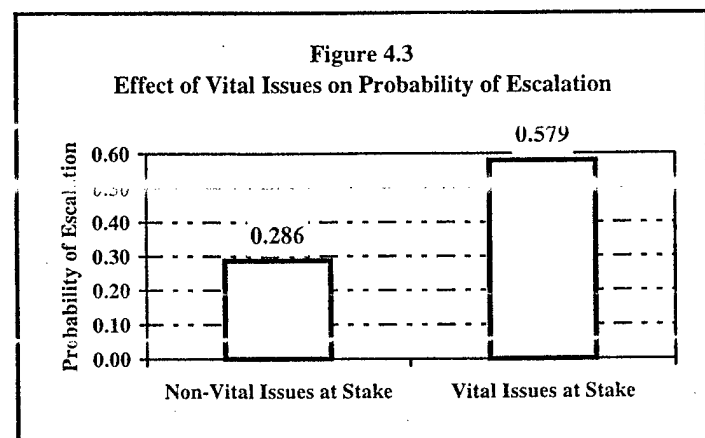
Figure 4.1 shows that a dispute between two rivals that have not been involved on opposite sides of a MID in the last 90 years, experiences an escalatory response by the target with a probability of 0.34 (while holding all other variables at their mean values). If those same two rivals are involved in another dispute within the same year, the probability of an escalatory response jumps to 0.41. These results suggest that the mere presence of past conflict affects rivals' behavior in subsequent disputes with that same rival. But if you consider that 100 years of peace makes such a small impact on probabilities, the effect the effect of conflict history is small.

The hypotheses regarding the effects of vital issues and contiguity are both individually supported in the logit regression results, but the hypothesis regarding their interaction was not. Figure 4.2 shows that contiguous states are twice as likely than non-



contiguous states to offer an escalatory response to aggression. Figure 4.3 shows that targets of aggression are over twice as likely to make an escalatory response when vital issues are involved versus when non-vital issues are at stake.

The fact that the interaction between these two variables is insignificant reveals that targets



are no more or less likely to escalate when both these conditions are present versus when only one condition is present.

Rationalist theory, including the work of non-realists such as Buena de Mesquita, posits that the decision to engage in militarized conflict with a rival is partly the function of the degree to which a state's decision-maker believes that the state can be successful in a militarized struggle with its adversary. However, no significant relationship between the target's relative capability to the initiator's and the probability of dispute escalation was found in these analyses. Although statistically insignificant, the coefficient of the relative capability variable is negative. This suggests that strong states may be less likely to offer escalatory responses than weaker states. Given these results, further investigation into this phenomenon seems prudent.

There are 351 disputes in the sample in which the target of aggression is stronger than the aggressor. Table 4.2 shows the number of disputes involving vital issues for the various levels of target strength relative to initiator. Of the 217 disputes in which the target was less than five times as strong (yet still stronger) as the initiator, nearly $\frac{3}{4}$ (74%) involve vital issues. In the 30 disputes in which the target is over 50 times as strong as the initiator, only 13% involve vital issues. The difference between these proportions is significant beyond the 0.001 threshold ($z = 5.00$). This suggests evidence of the strategic behavior on the part of dispute initiators as suggested by Fearon.¹²

¹² James D. Fearon, 1994. "Domestic Political Audiences and the Escalation of International Disputes." *The American Political Science Review* 88, 3, (Sept): 577-592.

TABLE 4.2
Target to Initiator Relative Capability and Presence of Vital Issues in MIDs
(N = 351)

<i>Targets Power Advantage</i>	<i>Vital Issues at Stake</i>		<i>Total</i>
	<i>No (Row %)</i>	<i>Yes (Row %)</i>	
Less Than 5 Times as Strong	153 (74%)	64 (26%)	217
Between 5 and 10 Times as Strong	31 (59%)	22 (41%)	53
Between 10 and 50 Times as Strong	43 (71%)	18 (29%)	61
Greater Than 50 Times as Strong	26 (87%)	4 (13%)	30

Z = 5.00, prob < .001

It is not the case that an alliance between the disputants lowers the likelihood that the target will respond with less hostility. There is a possibility that selection effect may be at work here. Since allies share many interests, few disputes rise to the level of militarization required for inclusion in the MID data set. If true, then disputes between allies that are included in the MID data set would be so serious as to make escalation highly likely. Still, we might not be surprised to find a non-negative relationship between alliance and a target's hostility, suggesting that disputes between allies escalate during the early stages, but fail to escalate to war. In fact, the current regression results show an insignificant, but positive relationship between alliance and target's responses.

Table 4.3 shows the extent to which vital issues are at stake in disputes between allies. Of the 184 disputes between allies, 65 (37%) involve vital issues. Of the 734 disputes between unallied states, 250 (34%) involve vital issues. The difference between these proportions is not statistically significant. The following finding remains, an alliance between disputants makes them less likely to go to war, but no more or less likely to escalate disputes in the early stages. It appears that the

effect of alliance changes over the course of a enduring disputes, such that during later stages of disputes, the alliance effects are more pronounced allowing disputants to avoid large-scale hostilities, even though the alliance does not prevent escalation of the dispute altogether.

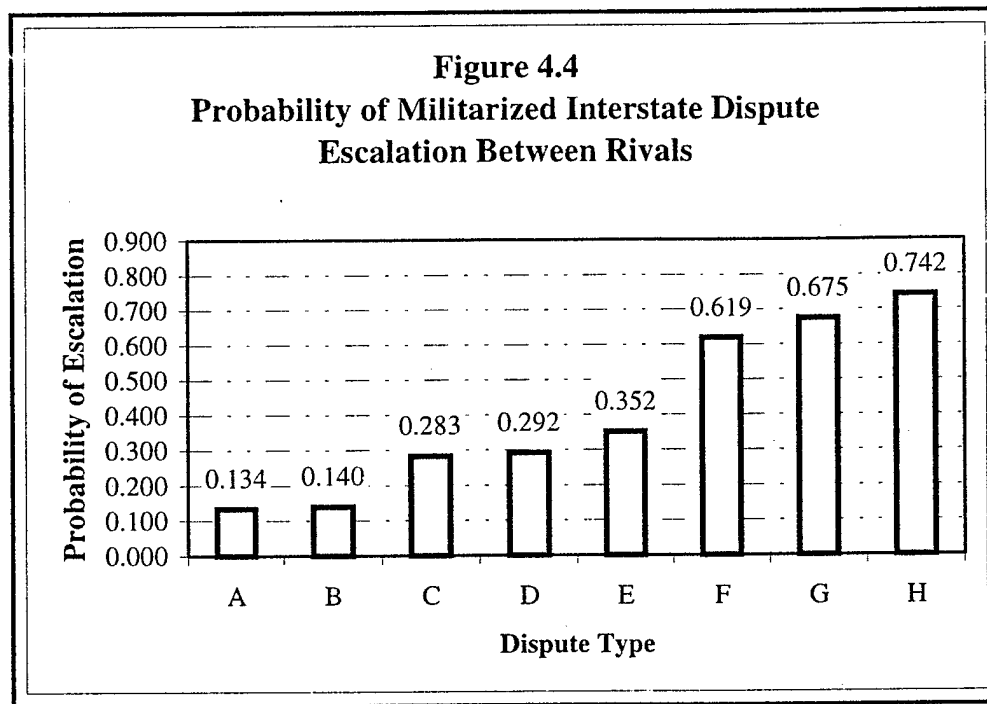
TABLE 4.3
Presence of Vital Issues in Disputes Between Allies
(N = 918)

<i>Alliance</i>	<i>Vital Issue at Stake</i>		<i>Total</i>
	<i>No (Row %)</i>	<i>Yes (Row %)</i>	
No	484 (66%)	250 (34%)	734
Yes	116 (63%)	68 (37%)	184

Z = 1.03

SUMMARY OF ESCALATORY RESPONSE FINDINGS

Figure 4.4 graphically summarizes the results of this analysis of targets' responses to acts of aggression by rivals. It shows seven different types of militarized interstate disputes, defined by the characteristics of the states involved, and the probability that the target in each state will respond to the initial act of force with an escalatory act.



As Table 4.4 shows, Dispute A is one in which the target is militarily superior by 20 times, has not fought the initiator in 35 years, and does not share a border with the initiator of aggression. In addition Dispute A is not about a vital issue and the target and initiator are not allied with each other. This type of dispute is the least likely, of the eight dispute types, to provoke an escalatory response. The probability of escalation is 0.134.

TABLE 4.4
Dispute Type Characteristics

<i>Dispute</i>	<i>Relative Capability Ratio</i>	<i>Conflict History</i>	<i>Vital Issue</i>	<i>Contiguous</i>	<i>Allies</i>	<i>Prob. of Escalatory Response</i>
A	20:1	35	No	No	No	0.134
B	10:1	30	No	No	No	0.140
C	5:1	25	No	Yes	No	0.283
D	2:1	20	No	Yes	No	0.292
E	1:2	15	No	Yes	Yes	0.352
F	1:5	10	Yes	Yes	Yes	0.619
G	1:10	5	Yes	Yes	Yes	0.675
H	1:20	0	Yes	Yes	Yes	0.742

Conversely Dispute H is the most likely to experience an escalatory response to an act of aggression. This type of dispute is characterized by the target being 20 times weaker than the initiator, the two states have been involved in at least one militarized dispute with each other in the past year, and the disputants share a common border. In addition, the issue over which the rivals are disputing is of vital importance and the target and initiator are allied. The probability of this type of dispute escalating beyond the initial act of aggression is 0.742.

The two major jumps in probability should be explained further. As can be seen from Table 4.4, as military capability between disputants reaches levels closer to parity (10:1 to 5:1), conflict history drops from 30 to 25 years, and contiguity is added, the probability of escalation doubles from 0.140 to 0.283. To determine the effects of each variable change on the increased probability, I change the value of each variable of interest from its current value to the value in the previous dispute. While doing this I maintain the values of all the other variables. Through this process, I determined that contiguity accounts for virtually all of the increase in probability in escalation moving from Dispute B to C.

In going from Dispute E to F several changes are apparent. The initiator's military capability increases from two to five times as strong as the target, ten years have gone by since the two last clashed as opposed to 15 years, and the dispute involves a vital issue. This leads to a 57% increase in the probability the dispute will escalate past the initial act of aggression (0.352 to 0.619). Following the same

process as described above, I determined that the large jump in probability from E to F is driven almost entirely by the addition of a vital issue.

In both of these analyses, it is apparent that relative capability and conflict histories have little to do with the probability of a militarized dispute escalating between rivals. Small jumps exist when relative capability ratios change and conflict history shortens, but a majority of the explanation for increased probability of escalation can be attributed to other variables (contiguity and vital issues).

CHAPTER V

WEAPONS DEVELOPMENT AND RIVALRY NON-ESCALATION THE AMERICAN-SOVIET NUCLEAR RACE: 1946 - 1970

Now that we have a model of escalation in place, I show its predictive capabilities in examining in detail the militarized disputes between the United States and the Soviet Union during 24 years of their nuclear rivalry. Before applying the escalation model, a more detailed examination of the origins of the rivalry is necessary.

The years following World War II were remarkably peaceful, without a single instance of war between major powers.¹³ Some have attributed this relatively peaceful state to the existence of nuclear weapons, often overlooking that there are factors in this period that made for peaceful conditions similar to other periods: high power concentrations, stable alliance patterns, paths of mediation, and relatively low levels of military effort. Nuclear weapons may have had an effect, but it has yet to be precisely determined.

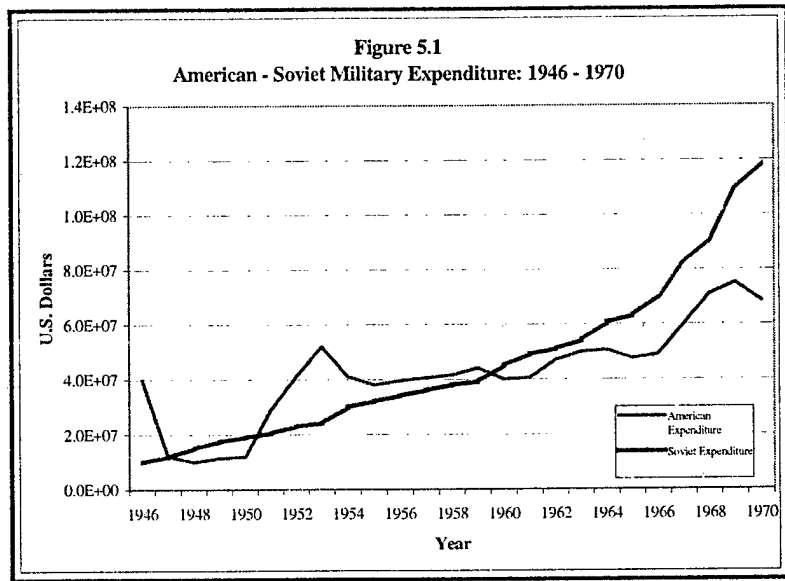
When the United States had a monopoly over the atomic bomb, some leaders felt that its use could blackmail the Russians into cooperative behavior. This overlooked the fact the U.S. arsenal was rather small, the U.S. had only medium range bombers to deliver the weapon, and that the Red Army could have overrun Western Europe without significant resistance. The United States was probably more affected by a complacent sense of its own superiority than the Russians were effected by any sense of inferiority (Herken, 1980). It certainly did not stop the Russians from

blockading Berlin in 1948 or giving the Czech government a significant push toward Communist rule that same year. They did call the former off, but only due to the expense of maintaining the blockade and little chances of stopping the airlift. The fact that the U.S. might attack them with nuclear weapons probably had little effect on Soviet calculations. If they were deterred from actions, it was probably as much from fear of a drawn out conflict along the lines of World War II as from the fear of nuclear weapons.

The Russians did, nevertheless, continue their efforts to build an atomic bomb of their own. They succeeded in 1949, the same year that the North Atlantic Treaty was ratified, that the first Berlin crisis ended, that China was "lost" to the Communists, and that the Americans decided to build a continental air defense system. In previous eras competition was often between several nations over few issues. In this rivalry, the competition was between two rivals in almost every possible arena. The issue areas were to some extent linked, but it was not always clear that any one area of competition had priority over the others. Nuclear weapons were an important aspect of each side's national security and thus received their share of attention. Both sides continued to develop new and better weapon systems. As can be seen in Figures 5.1 and 5.2 the attention paid to each state also included the military expenditures and the levels of military preparedness.¹⁴ It is fairly obvious through the study of these nations' defense budgets that the two nations reacted quickly to budget "ramp-ups" and budget declines. It is, however, difficult to point to

¹³ The Korean War being the only possible exception.

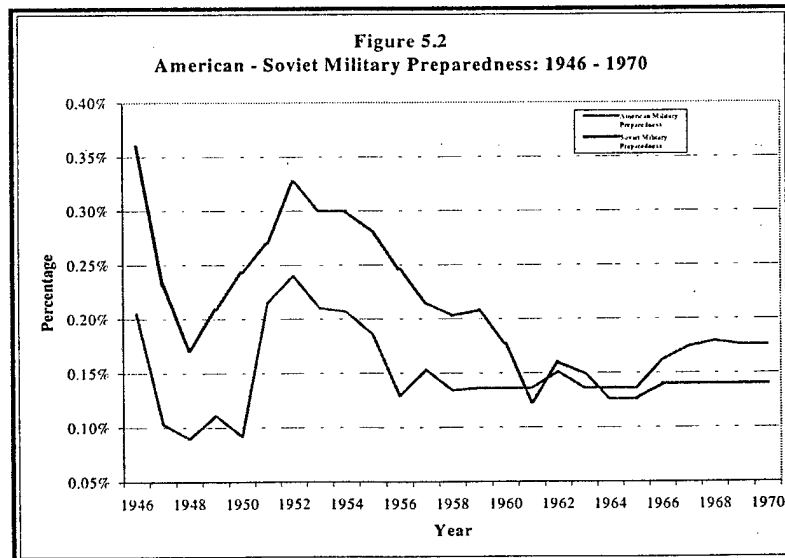
a case in which the dispute behavior of either side was affected by some strategic weapons development one side acquired. This is not to say that the fact both sides have



nuclear weapons has had no effect; it is rather that changes within this weapons type do not seem to have had much effect.

In 32 cases of militarized disputes between the United States and the Soviet Union from 1946 through 1970, relative military capabilities ranged from 2:1 to 1:2 and the conflict history averaged less than a year between MIDs. Based on the probability model

discussed in the previous chapter, we would expect to see almost 44% of these disputes to escalate beyond the initial act of aggression, as seen



¹⁴ Data obtained from William Thomas Lee. *The Estimation of Soviet Defense Expenditures for 1945-1975*. New York: Praeger, 1977; and Center For Defense Information. *U.S. Military Spending: 1945-1996*. Fact Sheet: 1996.

in Table 5.1. In reality, we see almost none escalate beyond the initial act of aggression, with none of the 32 militarized interstate disputes escalating to war.

TABLE 5.1
Probability of Dispute Escalation in American – Soviet Nuclear Rivalry: 1946-1970
(N = 32 MIDs)

<i>Dispute</i>	<i>Relative Capability Ratio</i>	<i>Conflict History</i>	<i>Vital Issue</i>	<i>Contiguous</i>	<i>Allies</i>	<i>Prob. of Escalatory Response</i>
X	2:1 – 1:2	>1	No	No	No	0.437

There is good evidence for believing that nuclear weapons as a class have affected American and Soviet dispute behavior. Most of the actions taken in American-Soviet disputes are very severe: blockades, mobilizations, occupations of territory and seizures. Despite this hostility and despite the strain that competition has sometimes created for both societies, war between these protagonists did not occur. It is abnormal that such hostilities should not lead to war or that such peaceful conditions should stir up so many hostile disputes. Either might be attributed to nuclear weapons, the first because war is so destructive, the second because war is so unlikely. Perhaps the only way to tell is by seeing if similar conditions led to war in previous eras. But although we may know the effect of certain conditions in isolation, the combination since 1945 is rather unique. If there were a dramatic change in the effect in the decision processes of one nation, we might be able to conclude that nuclear weapons have changed the normal course of interstate rivalries. But the effect

is more subtle, we may never be able to find out where the effect of weapons development starts and leaves off.

Whatever other effects the weapons may have had, we do know that the United States seems to have been profoundly shocked at the rapidity of Soviet technical advances. The 1949 explosion of the first Soviet atomic bomb led to a search in the United States for spies who might have leaked the technological secrets. The United States found it impossible to believe that the Soviets could develop such a weapon on their own. The 1954 explosion of a Soviet hydrogen bomb was probably a big factor in the revocation of J. Robert Oppenheimer's security clearance (USAEC, 1954). The launching of Sputnik put Americans in doubt as to their educational systems and provoked a crash program to "catch up" in scientific and technological education. If nothing else, these developments may have contributed to the increased suspicion and hostility of a rivalry that already had more than its normal share of militarized disputes. Hence, the weapons may not have made disputes more hostile, but they kept the conflict interest alive that made disputes possible in the first place. They also created a ready-made excuse for increased armament programs and military preparedness on both sides, thus creating strain as well as hostility.

CHAPTER VI

CONCLUSIONS AND IMPLICATIONS

The first significant finding of this research is that escalatory responses to aggression, contrary to deterrence theorists, substantially increase the likelihood that disputes will produce war. While many theorists have contested the notions of deterrence proponents, this study offers statistical evidence of the degree to which deterrence prescriptions increase the risk of escalation. On average, escalatory responses to aggression increase the probability of war by five times in the sample of militarized interstate disputes between enduring rivals.

Furthermore, given the number of statistically significant variables included in the results of the logit analysis shown in Table 4.1, it appears that choices made by leaders within disputes are fairly predictable. Many variables thought to influence the occurrence of interstate war were successful at predicting leaders' decisions at lower levels of conflict as well, predicting almost 70% of targets' responses to acts of militarized aggression.

A second significant finding of this research is that although escalatory responses to aggression increase the likelihood of war, nuclear deterrence proponents may be correct that the overwhelming factors of mutually assured destruction may limit the escalatory responses in the first place. Hence, without escalatory responses to aggression, disputes between nuclear rivals have never escalated to the point of war.

Third, the results of this analysis indicate that present theories of interstate conflict need to be re-evaluated. Consider the fact that all of the variables included in this analysis are commonly found in the literature on interstate conflict. Of these, a targets' response to aggression by an enduring rival is found to be primarily guided by geographic contiguity, presence of vital issues, and conflict history. As it turns out, the relative capability of the disputants has little impact on the predictability of dispute escalation. This poses significant policy implications for decision makers and weapons developers.

Historical leaders have been slow to see the implications of new weapons systems, regardless of whether they or a rival developed the systems. The usual tendency is to use a new weapon as its predecessors were used and keep existing doctrines in place. The result is usually either a reliance on weapons that are inappropriate to their missions or a misestimation of the costs of military operations. I have shown that weapons development and the increase in military capability has little effect on the probability of a militarized dispute escalating to war. I believe this is due to the lack of understanding shown by leaders throughout history of their strategic situation and the insight into against who they will be fighting.

The United States made several mistakes when faced with an enduring rivalry with the former Soviet Union. The U.S. steadfast conviction that the atomic bomb provided significant leverage over the Soviet Union overlooked two very important facts: first, that the monopoly was bound to be short-lived; second, that the sheer numbers of weapons were not large enough to provide a monopoly on the first place (Herken, 1980). The United States invested in continental air defense systems against

a Russian Air Force that had no capability to reach this continent, invested in anti-ballistic missile (ABM) systems that had no chance of working, and started work on long-range, high-flying bombers that had little chance of penetrating Soviet airspace.

The analysis is fairly conclusive that the increase (or decrease) in a nation's military capability has little effect on the escalation of militarized interstate disputes. This finding could challenge existing assumptions about arms control. It might also discourage efforts to achieve security by spending millions, possibly billions, on the development and acquisition of some new technological breakthrough in weapons systems.

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