FLORIDA STATE UNIVERSITY

COLLEGE OF SOCIAL SCIENCES AND PUBLIC POLICY

BRING THE PAIN:

THREE ESSAYS ON THE INFLUENCE OF MILITARY CAPABILITIES ON INTERNATIONAL CONFLICT

By

BRIAN BENJAMIN CRISHER

A Dissertation submitted to the
Department of Political Science
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

2015

Brian Benjamin Crisher defended this dissertation on June 25, 2015.
The members of the supervisory committee were:

Mark Souva

Professor Directing Dissertation

Jonathan Grant

University Representative

William Moore

Committee Member

Sean Ehrlich

Committee Member

The Graduate School has verified and approved the above-named committee members, and certifies that the dissertation has been approved in accordance with university requirements.

For Lillian.

ACKNOWLEDGMENTS

First and foremost, I want to thank my wife, Hope, for her unending love and support. I would not be defending my dissertation without her pushing me to apply to doctoral programs. Through two inter-state moves and numerous low points, she has always been there to keep my spirits up. I must also thank the other special lady in my life, my daughter Lillian. Even though Lilly is too young to realize it, her love and warmth has provided both distraction and encouragement throughout this long process.

I would also like to thank my dissertation director, Mark Souva. His seemingly unending patience over the last six years has allowed me to make mistakes and learn from them. Mark has served as a role model of how I should act as a mentor and scholar in the future. I am happy to count Mark not only as my mentor, but also as my co-author and friend.

I would like to thank the rest of my committee as well. I am grateful to Sean Ehrlich, Will Moore, and Jonathan Grant for their service and helpful feedback on my dissertation. I am additionally grateful to Seans encouragement over my first few years in the department as I became acclimated to life as a graduate student at FSU.

Lastly, I owe a great deal of debt to the outstanding support from my family. My mother, Mary, has given me unconditional support throughout my college career and has always been quick with words of wisdom at the low and high points of my career. My in-laws, Tom and Karen Lewis, have been a great source of support throughout this process and have always encouraged me in my endeavors. Likewise, I am grateful to the family and friends who have helped me through this process in their own ways: Anita, Paul, Kaegen, Cora, Kevin, Carl, Andy, Jill, Ryan, Scott, and Kerri.

TABLE OF CONTENTS

List of Tables . . . vii
List of Figures . . . viii
Abstract . . . ix

1 Introduction **1**

2 From a Distance: Naval Power and Non-contiguous Militarized Disputes, 1885-2000 **4**
2.1 Naval Power and International Conflict . . . 6
2.2 Naval Power and Issue Disputes . . . 7
2.3 Naval Power and Distance . . . 9
2.4 Naval Power and Militarized Disputes . . . 11
2.5 Research Design . . . 12
2.5.1 Dependent Variables . . . 12
2.5.2 Primary Independent Variables . . . 13
2.5.3 Control Variables . . . 14
2.6 Empirical Analysis . . . 15
2.6.1 Robustness Analysis . . . 23
2.7 Conclusion . . . 24

3 Inequality Amid Equality: Military Capabilities and Conflict Behavior in Balanced Dyads **26**
3.1 Power Parity, Uncertainty, and Conflict . . . 28
3.2 Research Design . . . 36
3.2.1 Dependent Variables . . . 36
3.2.2 Independent Variables . . . 37
3.3 Empirical Analysis . . . 39
3.4 Uncertainty of Costs versus Uncertainty of Victory . . . 43
3.5 Conclusion . . . 45

4 Victory at all Costs: Understanding Absolute War Outcomes **48**
4.1 Willingness and Absolute Outcomes . . . 49
4.2 Relative Capabilities and Absolute Outcomes . . . 52
4.3 Research Design . . . 55
4.3.1 Dependent Variable . . . 56
4.3.2 Independent Variables . . . 56
4.4 Empirical Analysis . . . 58
4.5 Conclusions . . . 65

5 Conclusion **70**

Appendices

A Chapter 3 Appendix **73**

B Chapter 4 Appendix **78**

References 83

Biographical Sketch 89

LIST OF TABLES

2.1 Naval Power and Hostile Disputes: 1885-2000 16

2.2 Naval Power and Hostile Disputes: Across-Space and Over-Time Effects 21

2.3 Naval Power and Militarized Compellent Threats 23

4.1 Results for Absolute War Outcome 59

4.2 Cross-Tab of Absolute Outcome and Credible Commitment Problems 61

4.3 Mean Probability of an Absolute Outcome for All Wars 67

A.1 Balanced Models: 1946-2001 73

A.2 Interaction Models: 1946-2001 74

A.3 Robustness Checks: Contiguous Models 1946-2001 75

A.4 Robustness Models: Balanced Dyads 0.5-0.6, 1946-2001 76

A.5 Robust Models: All Dyads and Parity (0.5-0.6), 1946-2001 77

B.1 List of Wars with Absolute Outcomes 78

B.2 List of Wars: 1816-2003 78

B.3 List of Wars with Credible Commitment Problems and Outcomes 82

LIST OF FIGURES

2.1 Predicted Probability of Non-contiguous Hostile Dispute 20

3.1 CINC Capabilities of Selected Balanced Dyads. Balanced dyads defined as the dyad having a power ratio score between 0.5-0.6. 30

3.2 Regression Models of Conflict Onset and Escalation among Balanced Dyads: 1946-2000. Confidence intervals set at the 90% level for two-tailed hypotheses. The unit of analysis is relatively balanced politically relevant dyads with standard errors clustered on the dyad. See Appendix A, Table A.1 for full model results. 40

3.3 Predicted Probability of MID Onset and Mutual Force Escalation. Predicted probabilities calculated using simulations with 95% confidence intervals. For this figure, relatively balanced dyads are defined as having a power ratio measure between 0.5 and 0.575. Additionally, the control variables are all set at their appropriate central tendency. Lastly, the x-axis represents the range of dyadic capabilities from the dyads used in the two-stage analysis. 41

3.4 Regression Models of Conflict Onset and Escalation among All Dyads: 1946-2000. Confidence intervals set at the 90% level for two-tailed hypotheses. The unit of analysis is politically relevant dyads with standard errors clustered on the dyad. The figure only shows the *Parity* constituent term and the *Dyadic Power x Parity* interaction term. See Appendix A, Table A.2 for full model results. 44

4.1 Predicted Probability of an Absolute War Outcome 63

4.2 ROC Curve for Model 1 65

ABSTRACT

This dissertation consists of three individual studies that examine the influence of military capabilities on international conflict.

Chapter 2 examines the influence of naval power on non-contiguous hostile disputes. I present a unique argument that links absolute naval power to international conflict through uncertainty of resolve and fears about future threats. Increasing a state's naval power increases the amount of issues they will dispute. Yet these issues are likely to be of low salience. Because the issues are of low salience defenders will be uncertain about the resolve of challengers. Additionally, because of the increase in naval power, defenders will fear future threats. Defenders that fear future threats are more likely to resist coercive threats. As such, defenders have incentives to bargain aggressively against challengers. In this case, we should be more likely to observe military disputes as challengers look to signal their resolve. Utilizing a new data set of naval power, I show that as states acquire naval strength they are more likely to initiate non-contiguous hostile disputes. Additionally, I find that contrary to realist and expected utility theory expectations, relative naval power has little influence on hostile dispute initiation. The findings have implications for the future actions of states whose naval strength is growing.

Chapter 3 examines the influence of military parity on international conflict. Studies of power parity and conflict implicitly assume all balanced dyads are created equal. However, variation exists within the capabilities of the states in these particular dyads. I address the question of what affects the likelihood of conflict onset within relatively balanced dyads. I argue uncertainty – in particular the uncertainty of the expected costs of conflict – determines the likelihood of conflict among these dyads. More uncertainty of costs means a greater likelihood of miscalculation leading to bargaining errors. First, I argue as an opponent's capabilities increase, uncertainty of costs increase and the likelihood of conflict increases. Second, military action serves a purpose in bargaining and can help reduce uncertainty by signaling a state's willingness to inflict and endure costs in order to gain a better settlement. Third, information transmission is likely to be effective only when states have the capability to inflict significant costs. As such, while greater capabilities will lead to a high likelihood of conflict onset, they also lead to a reduced likelihood of conflict escalation. The testing of non-directed dyads from 1946 to 2001 supports the theory's implications.

Chapter 4 examines what influences the likelihood of a war ending with an absolute outcome. Past work has focused on understanding questions about war outcomes in-terms of win, lose, or draw (Slantchev, 2004; Bennett and Stam, 1998; Stam, 1998). Yet little-to-no attention has been paid to understanding why some wars end with one side losing their ability to resist rather than a limited negotiated settlement. Here I present one of the first empirical tests for determining the likelihood of a war ending with an absolute outcome. I argue that two conditions increase the likelihood of a war reaching an absolute outcome. The difficulty and costs involve mean that a state must have the willingness and capabilities to impose such an outcome. Wars where credible commitment concerns are present gives the willingness while asymmetric power gives the capabilities to pursue an absolute outcome. The contribution of this study is to move beyond the questions of limited war outcomes to helping us understand war at its most punishing phase. Such an understanding can help identify which wars have the potential for reaching extremes, allowing the international community to attempt other solutions.

CHAPTER 1

INTRODUCTION

Typically in studies of bargaining and international conflict, a state's power is viewed as a combination of their military might, economic might, and total population. In the quantitative studies of the determinants of international conflict, these factors are combined to create a state's Composite Index of National Capabilities (CINC) (Singer, Bremer and Stuckey, 1972). States with high CINC scores are considered powerful and are more likely to initiate militarized disputes. Missing from the story is a better understanding of how specific military capabilities can influence international conflict. Current developments in Southeast Asia show that naval power is again coming to prominence in international relations. As China, Japan, and India continue to develop their naval forces there are concerns about what this may mean for future conflict.

Chapter 2 examines the relationship between naval power and hostile disputes. I show that while naval power is unlikely to influence conflict between neighbors, it can influence conflict between non-contiguous states. Increasing a state's naval power will allow them to become involved in a greater variety of non-contiguous disputes. Yet these disputes are likely to be of low salience for the challengers. As such, defender's will have uncertainty about a challenger's resolve to actually carry out their threat. Furthermore, defenders that find themselves at the end of a coercive threat from a naval power will fear the likelihood of future threats should they give the challenger what they desire. This gives defenders an incentive to bargain more aggressively against challengers. The combination of uncertainty of a challenger's resolve and a defender's fear about future threat mean that defenders will be less amicable to non-contiguous coercive threats. In this situation, a challenger is more likely to initiate a hostile dispute to signal their willingness to pursue conflict. The implications for current disputes in the South China Sea are not promising. As China continues to develop their naval power, it is likely that China will become involved in more non-contiguous disputes and may resort to more uses of force.

In Chapter 3 I examine another common finding in the international conflict literature – that conflict is more likely to occur between states of equal power. An inherent assumption of these

studies, and indeed conflict studies in general, is that all balanced dyads are created equal. Yet there is a great deal of variation in pairs of states with equal power. Non-military power like Puerto Rico and the Dominican Republic have relatively equal power while states like China and Russia also have relatively equal power. This variation has an influence on bargaining and conflict. I find that balanced dyads involving militarily powerful states are more likely to experience low level conflict as there will be uncertainty about the expected costs of conflict. Yet the initiation of a militarized dispute will transmit enough information for the states to avoid escalation to costly war. Conversely, balanced dyads involving militarily weak states are less likely to experience low level conflict as there will be less certainty about the expected costs of conflict. But, in this instance escalation is more likely to occur if there is a militarized dispute because weak states have greater difficulty in sending information through military actions. As such, as the United States and China begin to equalize militarily, we should expect more militarized disputes to occur. While there should be an increase in disputes, these disputes are unlikely to escalate to full-scale conflict.

Finally, one of the enduring lessons from Blainey (1988) is that theories of international conflict must explain why conflicts end in addition to explaining why conflicts begin. Scholars have begun to take insights from the bargaining model to explain war outcomes (Slantchev, 2004; Sullivan, 2007; Reiter, 2009). Yet these studies focus on understanding the negotiated settlements that end limited wars. This is understandable as nearly 75% of wars end with a negotiated settlement. The remaining 25% of wars end with an absolute outcome – meaning either state collapse or an imposed regime change. These absolute wars represent war at its most punishing. I argue that we can utilize the bargaining model to help us gain a better understanding of when these outcomes might be observed. In particular, two factors must be present for an absolute outcome. First, the war must involve credible commitment problems. Credible commitment problems give states the incentive to keep fighting even if the war is going poorly. If a combatant does not believe their opponent will honor agreements, there is no reason to stop fighting. Second, imposing absolute outcomes are costly and difficult. To sweep away an opponent's forces requires a clear advantage in military capabilities. As such, asymmetry in terms of military capabilities gives states the actual ability to pursue an absolute outcome. What this means is that conflicts involving credible commitment problems and an asymmetrical power distribution have a high likelihood of ending with an absolute outcome. The good news is that there are solutions other than absolute outcomes

to credible commitment concerns. The international community, therefore, can step-in to conflict with a high likelihood of an absolute outcome to avoid the devastating costs of these wars.

The three chapters examine a variety of topics. Yet at the heart of each chapter is how military power is influencing international conflict. All of the chapters contribute to the study of international conflict. Chapter 2 provides the first comprehensive data set on naval power for use in quantitative analyses. The data set covers naval power from 1865-2011 and covers all states with appreciable naval power. Additionally, Chapter 2 provides the first comprehensive analysis of naval power on militarized disputes. While it makes intuitive sense that naval power somehow plays a role in influencing on the likelihood of conflict, we still need to empirically test the intuition to gain a better understanding as to how this influence operates. Chapter 3 provides the first empirical test of the conflict behavior of relatively balanced dyads. The findings of the chapter highlight that scholars must think differently about what parity represents when discussing power and conflict. Second, the chapter not only discusses the likelihood of conflict onset among relatively balanced dyads, it also offers expectations about the likelihood of conflict reciprocation. Finally, Chapter 4 provides the first list of wars that experience an absolute outcome. Chapter 4 also provides the first empirical test of the factors that increase the likelihood of an absolute outcome.

The following three chapters examine the theoretical arguments and results for each of the studies. Finally, Chapter 5 offers some observations and thoughts about future studies.

CHAPTER 2

FROM A DISTANCE: NAVAL POWER AND NON-CONTIGUOUS MILITARIZED DISPUTES, 1885-2000

Does an increase in naval power increase the likelihood of international conflict? Traditional realist explanations would argue that increasing relative naval power increases the likelihood of international conflict. Because of anarchy, relatively powerful states can take advantage of their naval advantage to initiate disputes and enhance their security. I argue, however, rather than relative power, increases in absolute naval power increases the likelihood of international conflict. Here I present a unique argument that links absolute naval power to international conflict through uncertainty of resolve and fears about future threats.

I argue that increasing naval power increases the range of issues over which a state could challenge other states. Yet most of these issues will be of low salience for the challenger. State A challenges State B over a low salience issue policy. How aggressively does State B bargain with State A? State B's strategy will be determined in part by their beliefs in the resolve of State A. Because the issues are likely to be of low salience, State B will be uncertain about State A's resolve. Uncertainty of State A's resolve can increase the likelihood of State B making a mistake leading to bargaining failure and an increased likelihood of observing a militarized dispute.

Yet defenders (State B) have an additional incentive to push back against challengers (State A) in these circumstances. If defenders fear giving in will lead to future threats, they will worry about gaining a reputation for giving in easily. Such a reputation increases the likelihood of future threats (Sechser, 2010, 642). As such, when defenders fear future threats, they will be less likely to give into coercive threats. This increases the likelihood that challengers will need to back their threats up with the use of force.

Sechser (2010, 642) argues that anything that decreases the likelihood of a future threat will make a defender more likely to give into coercive threats. One factor he identifies is distance. Projecting power over great distances is difficult (Boulding, 1963; Bueno de Mesquita, 1981). The

difficulty of power projection makes future challenges less likely. We would expect distance to have a greater influence on non-contiguous threats. This makes sense as distance should matter little for disputes between neighbors. An implication from Sechser (2010, 644), then, is that targets of a non-contiguous coercive threat will be more likely to give in because they will not fear future challenges.

Yet I argue that Sechser (2010) misses a crucial aspect of power projection - naval capabilities. States with naval power will be better able to project power over distances. In particular, as states increase their naval power they increase their opportunities to challenge non-contiguous states. So, while distance decreases the likelihood of future threats for non-naval powers, the nature of naval power makes future threats more likely.

Therefore, naval power influences the likelihood of international conflict through two ways. First, naval power allows one to challenge non-contiguous states over low salience issues. The low salience of the issues makes it difficult to bargain with challengers as defenders will doubt the resolve of challengers to fight over low salience issues. Second, the nature of naval power allows states to initiate future non-contiguous challenges. As the fear of future threats increase for defenders, they are less likely to give into coercive threats. Because of low salience and fear of future threats, increasing naval power leads to an increase in the likelihood of non-contiguous international conflict.

This chapter is a timely contribution to the conflict literature as the post-WWII global decline in naval power the Cold War rivalry between the US and USSR notwithstanding is coming to an end. The post-Cold War era has witnessed the birth of new naval powers (China and India), the resurgence of an old naval power (Japan), and the continued dominance of the world's most powerful navy (USA). With the launching of a new class of nuclear attack submarines and only a few years away from launching a new class of super carriers, the US will retain its position as master and commander of the sea for the foreseeable future. While European naval powers continue their decline in stature, the game is afoot in the Far East. The Indian navy is now arguably more powerful than the British navy with the domestic production of an aircraft carrier and multiple nuclear submarines underway. The Chinese navy now possesses an aircraft carrier along with another rumored to be in domestic production. Last but not least, the Japanese Self-Defense navy

has grown into a major force and signaled their potential return to major power status by launching their first carrier warship since World War II.[1]

A significant contribution of this study is to give potential insight to the future actions of a growing Chinese navy eying the resolution of numerous territorial claims in the East and South China Sea. While numerous states are expanding their naval footprints, foreign policy analysts are primarily focused on the Middle Kingdom and their drive towards acquiring significant surface and sub-surface naval forces. The results from this chapter suggest that not only should we see China more involved in non-contiguous disputes, but that we should also see an increase in China needing to resort to using force. If this is the case, we can expect international politics to become more disconcerting as China asserts power away from its borders.

The chapter proceeds as follows. First, I explore the relationship between naval power and international conflict. Second, I explain how naval power influences the type of issues at the center of disputes. Third, I offer a theory of how naval power increases the fear of future threats for defenders due to the nature of naval power. Fourth, I test the implications on all dyads from 1885-2000 and discuss the results. Finally, I offer some observations and conclusions about the findings.

2.1 Naval Power and International Conflict

Different schools of thought have differing opinions on how military power influences international conflict. For realism, what matters is relative power (Waltz, 1979; Mearsheimer, 2001). States want to increase their military power to help achieve security (Waltz, 1979). Yet more importantly states seek security through increasing their relative power. In other words, states want to be more powerful than their rivals.

For realists, conflict occurs when there is an imbalance of power (Waltz, 1979, 102). Because the international system is anarchic, states will use their power to eliminate their weaker rivals and accrue more power and security. War between states of equal power will be less likely as states do not want to take the risk of losing. Hence, states develop military power or align with other states to stave off attack from stronger states.

[1] Officially, the ship 22DDH is classified as a helicopter-destroyer. Yet her 27,000 ton fully loaded displacement is larger than some aircraft carriers. The 22DDH is a helicopter carrier in all but name.

From realism's focus on relative power, we can understand how naval power should influence international conflict. If naval power matters, it should matter when there is an imbalance of naval power. In other words, a state should be more likely to initiate a militarized dispute when they are a relatively strong naval power. States with naval power should be more likely to use naval power, but primarily against weak naval powers.

The expected utility school of thought has similar expectations. States are more likely to initiate a militarized dispute when the benefits of doing so outweigh the costs of conflict (Bueno de Mesquita, 1981, 43). For the expected utility school of thought the likelihood of victory plays a key role in calculating utility. As the probability of victory increases, the expected utility of conflict increases and we should be more likely to observe a militarized dispute.

Again, relative power is crucial. Relatively strong states are more likely to win a conflict against a relatively weak state (Reiter and Stam, 2002; Stam, 1998). So, much like with the realist school, as a state becomes relatively stronger, the expected utility of conflict increases, which increases the likelihood of conflict. Therefore, when attempting to understand the influence of naval power on conflict, we would expect that relative naval power would increase the likelihood of observing a militarized dispute.

A third school of thought stems from the bargaining model of conflict. Fearon (1995, 381) argues that there are three types of bargaining failures that cause conflict – private information, credible commitment problems, and issue indivisibilities.[2] The commitment problem refers to a belief in the inability to honor agreements in the future as power shifts and private information refers to uncertainty about dyadic balance of power or resolve (i.e., willingness to fight). I argue that naval power increases the uncertainty of resolve as naval power allows a state to challenge non-contiguous opponents over a greater range of issues.

2.2 Naval Power and Issue Disputes

Naval power opens up the range of issues for states to attempt to influence. For instance, naval power allowed the British Empire to become involved in numerous issues abroad including taking a leading role in the abolishment of slavery in the nineteenth century. More recently, the naval might of the US has allowed her to engage in regime changes thousands of miles away from home in Iraq,

[2] Although Powell (2006) argues that issue indivisibilities are just a special case of commitment problems.

Afghanistan, and Libya. Additionally, naval power has allowed the French to launch Operation Chammal with the goal of attacking Islamic State militants in Iraq. In short, naval power gives states a greater amount of opportunities to influence a wide-range of issues through military might.

Because of the nature of naval power, we would expect that expansion of opportunities to use force will occur primarily among non-contiguous states. After all, one only needs land forces to attack neighbors. As such, naval power should be of greater use for projecting one's influence abroad. I argue, though, that on average the issues involved in non-contiguous disputes are of less salience than the issues involved in contiguous disputes. High salience issues typically involve disputes over things such as the survival of the state or the integrity of a state's territorial borders (Holsti, 1991; Vasquez, 1995). This line of thinking has been confirmed by the Issues Correlates of War (ICOW) project. When it comes to specific issues, territorial disputes are more likely to lead to escalated conflicts than maritime or river disputes (Hensel, 1996, 2001). The ICOW project also shows that territorial disputes are more likely to lead to more instances of failed peace negotiations (Hensel and Thyne, 2008). Yet I expect that non-contiguous disputes will be less likely to deal with such contentious issues. For instance, for primarily economic reasons the French and British utilized naval power to take over the Suez Canal. Humanitarian reasons motivated Australia to use her naval power to intervene into the East Timor crisis in 1999. Lastly, Cold War geopolitical concerns persuaded the US to use her naval power to get involved in the policies and regimes of Central and South American countries. What these incidents have in common is that they are disputes over relatively low salience issues.

While naval power opens up the range of non-contiguous issues for naval powers to become involved in, these are precisely the type of disputes where resolve will play a key role. A state should not find it difficult to signal their resolve when their survival is at stake. For instance, there was little doubt that Saddam Hussein would fight to protect his Iraqi regime in 2003. Yet for the states seeking to engage in regime change - the US and Allies - one can argue they would find it more difficult to signal resolve. Lake (2011, 31) argues that up until the actual invasion of Iraq, there was doubt about the willingness of the Coalition to sustain an invasion.

In other words, the low salience of issues in non-contiguous disputes makes it more difficult for challengers to signal resolve.[3] The actions of the defender will be influenced about their beliefs

[3]This is not to say that all non-contiguous disputes will be of low salience. For instance, it would be hard to argue that the various non-contiguous conflicts in WWII were of low salience. Yet in Iraq 2003, one could argue that the

about the challenger's resolve (Morrow, 1985; Fearon, 1994). If they believe State A is of high resolve, the costs of conflict are low for State A and State B is better off treading lightly (Powell, 1999). If State B believes State A is of low resolve, then State B can bargain more aggressively over the issue in dispute. With highly salient issues, there will be little doubt that the challenger is resolved. Yet because most non-contiguous issues will be of relatively low salience there will be doubt about the challenger's resolve. This means that there is uncertainty about the challenger's resolve. Uncertainty of a challenger's resolve increases the likelihood that a defender bargains too aggressively with a challenger (Kydd, 2003). As the defender continues to bargain aggressively, there is a higher likelihood of a challenger using force in order to signal resolve. Therefore, we should be more likely to observe non-contiguous militarized disputes over low salience issues.

2.3 Naval Power and Distance

The nature of naval power means that states increase their likelihood of hostile disputes with non-contiguous states. While above I argue that these disputes are likely to be over low salience issues, another factor plays a role in the dispute - distance. This is not a novel insight as Boulding (1963) discusses the importance of distance's role in conflict processes. The basic idea is that projecting military power over great distances is inherently difficult. The further away one gets from their power base, the less effective their power is due to logistical difficulties. Bueno de Mesquita (1981, 104–107) incorporated distance into his discussions on the utility of war to show how distance can decrease the expected utility of fighting. Yet importantly, these arguments about power decay bring doubt about relative power. Because of power decay, states cannot bring their full military might to bear over long-distances, which in turns decreases their relative power and incentives for launching a militarized dispute. I argue, however, that while distance can decrease the likelihood of future threats (Sechser, 2010), naval power can mitigate this influence of distance.

A recent argument has been made that distance influences credible commitment problems. The commitment problem refers to belief in the inability to honor agreements in the future as factors such military power and domestic regimes shift (Powell, 2006). Sechser (2010, 642) argues that states concerned about the future possibility of militarized threats are less likely to give into

dispute was of relatively low salience for the US. The US was facing neither the potential loss of sovereignty nor the loss of territory. As such, while I am not arguing the US felt what they were disputing was unimportant, rather that the issues were of relatively low salience.

compellent threats. In particular, states fear being seen as an easy target for compellent threats as their inability to deter challengers will encourage additional threats in the future. For Sechser, weak states will be particularly fearful of gaining a reputation for giving in easily. The fear of such a reputation means that weak states will be less likely to give into threats from strong states. In other words, because relatively strong states cannot credibly commitment to avoiding future threats, weaker states have an incentive to be more obstinate. The implication from Sechser's argument is that any factor that decreases the likelihood of future threats should increase the likelihood of targets giving into challenger demands.

One such factor is distance. As distance increases, the likelihood of future threats should decrease because of the difficulty of projecting power. Because of the difficulty in projecting power a challenger should be less likely to issue another threat in the future. For Sechser (2010, 644) this means that as distance increases, targets will be more likely to give into compellent threats. Because targets are more likely to give into compellent threats there is an implication that we should be less likely to observe militarized disputes.

Yet Sechser's argument is missing a key factor. The influence of distance can in some ways be mitigated by naval power. Naval capabilities are precisely the type of resources a state needs to project power against non-contiguous states. As the naval power of states increase, they should be more likely to issue challenges in the future because they possess the requisite capabilities. In other words, while distance may decrease the fear of future threats when a defender is dealing with a weak naval power, there is an increase in fear of future threats when dealing with a challenger with significant naval power.

This argument does contradict the implications of Sechser (2010). Sechser argues that distance should reduce the probability of a challenger making future threats because of the difficulty of projecting power. Yet I argue that naval power helps a state overcome the limitations of distance. Because states fear gaining a reputation for giving in easily when there is a fear of future threats, there are clear incentives for a target to take a more hard line approach to bargaining with a non-contiguous opponent. If a defender is less likely to give into compellent threats there will be an increase in the likelihood of observing militarized disputes.

2.4 Naval Power and Militarized Disputes

Given the above arguments, we can begin to see how naval power can influence conflict. Naval power influences conflict by increasing the likelihood of states becoming more involved with non-contiguous disputes. I argue that the relative low salience of these disputes creates uncertainty about a challenger's resolve for defenders. In addition, because defenders fear that more threats could occur in the future with challengers possessing naval power, there is an increased incentive for defenders to not give into to compellent threats. As such, increasing a state's naval power allows them to become involved in more low salience issues and increases the likelihood they initiate non-contiguous militarized disputes. Specifically, I hypothesize that:

> Non-contiguous Crisher Hypothesis (H1): As the absolute naval power of a potential challenger increases, they are more likely to initiate a non-contiguous hostile dispute.

Hypothesis 1 says nothing about relative power. The causal mechanism from hypothesis 1 is that naval power increases the likelihood of conflict through low salience non-contiguous issues and defender's fears of future threats. Yet the realist and expected utility schools of thoughts have clear expectations about the relationship between naval power and militarized disputes. States with a relative naval advantage should be more likely to initiate militarized disputes than states without a relative advantage. The influence of distance should be immaterial in this context. Hence, there should be a positive influence of relative power on conflict. As such, I hypothesize that:

> Realist and Expected Utility Hypothesis (H2): The naval dyadic balance of power will have positive and statistically significant influence on the likelihood of hostile initiations regardless of contiguity.

For contiguous dyads, naval power should have little influence on the likelihood of observing a hostile dispute. The nature of naval power is that it allows states to fight away from their borders. In other words, while naval power is an effective power projection capability, it is not an effective means of bullying one's neighbors. For contiguous disputes, land power is more likely to have an influence on hostile disputes. The primary reasoning behind this expectation is that states have multiple military options for threatening contiguous states. Here, land and air forces can back up a threat of force even absent any naval capabilities. Additionally, when states share borders, there should be less uncertainty about either the dyadic balance of power or resolve. As such, I expect no

statistically significant difference between states with naval power and states without naval power when it comes to the initiation of threats. I hypothesize that:

> Contiguous Crisher Hypothesis (H3): In contiguous dyads, increasing a potential initiator's naval power - absolute or relative - will have no statistical influence on the likelihood of a hostile militarized dispute.

2.5 Research Design

The unit of analysis for this chapter is the directed-dyad year. Temporally, the analysis spans from 1885 to 2000.[4] Spatially, all non-landlocked states and potential initiators with some naval strength are included.

2.5.1 Dependent Variables

The primary dependent variable for this chapter is hostile disputes. Two different measures of hostile disputes are used. The first measure comes from the Correlates of War project and Militarized Interstate Disputes (MID). A MID is defined as an event "in which the threat, display or use of military force short of war by one member state is explicitly directed toward the government, official representatives, official forces, property, or territory of another state" (Jones, Bremer and Singer, 1996, 168). However, I am interested in MIDs where there was more than just the threat of force. As such, *Hostile MID* equals 1 when there was at least a demonstration of force and zero otherwise.[5]

The second measure utilizes the MID location (MIDLOC) data set (Braithwaite, 2010) to create a non-contiguous measure of hostile MIDs. The MIDLOC provides the location of where the actual MIDs took place.[6] Using this data, we can create an accurate measure of whether a hostile MID was truly non-contiguous. As such, *Non-contiguous Hostile MID* equals 1 when there was at least a non-contiguous demonstration of force and zero otherwise.

An alternative way to distinguish between contiguous and non-contiguous MIDs would be to run models selecting on whether the directed-dyad was contiguous or non-contiguous the dependent variable created from the MID data. The problem with this method is that the MID data does

[4] The data set was created using the EUGene program (version 3.204) (Bennett and Stam, 2000)

[5] More specifically, when mzhost1 is greater than 2.

[6] It should be noted that the MIDLOC does not provide data for every MID. When the necessary data is lacking, locations for a given MID is coded based on the original COW measures of contiguity.

not note where the MID took place. For instance, in 2000 it appears as if Yugoslavia is initiating numerous non-contiguous MIDs against the NATO allies. Yet these MIDs primary took place along the borders of Yugoslavia. Therefore, these MIDs are not truly non-contiguous initiations. Utilizing the MIDLOC data helps mitigate this issue. This also means that running a full model with an interaction between naval power and contiguity is problematic. As such, the models will be run selecting on contiguous (using the MID data) and non-contiguous dyads (using the MIDLOC data) separately.

2.5.2 Primary Independent Variables

There are multiple independent variables to focus our attention on. The first independent variable allows us to differentiate between contiguous and non-contiguous militarized threats. Using data from the Correlates of War project, *Contiguity* equals one when a two states in a dyad share a border or are separated by less than 24 miles of water (Stinnett and Gochman, 2002). Typically, in conflict studies scholars define contiguity with a more expansive definition allowing states to be considered contiguous by being separated by less than 150 or even 400 miles. Here I argue that projecting power even over limited nautical distances is far from easy. For instance, the US and Cuba are only separated by roughly 90 miles and most quantitative analyses would consider the directed dyads of Cuba-US and US-Cuba to be contiguous. Yet while there is little doubt as to the US's ability to militarily reach Cuba it is doubtful whether the reverse is true. Hence, I use a more demanding definition of contiguity.

Above, I argue that the crucial military capability to consider when examining power projection beyond one's immediate neighbors is naval power. As such, I have two variables that capture this particular capability. First, *Ln Naval Tonnage* captures the natural log of the total tonnage of a state's fighting naval forces. Tonnage is logged as there is a diminishing return for naval power. In other words, increasing the US's total tonnage should have less of an influence on hostile disputes than increasing the tonnage of Argentina. Taken from Crisher and Souva (2014), the data captures the overall size of a state's naval forces that could be used for offensive purposes beyond one's borders.[7] I include *Ln Tonnage A* as a measure of the potential initiator's naval forces and *Ln Tonnage B* as a measure of the potential target's naval forces.

[7]For instance, while the dataset includes tonnage for smaller ships such as frigates, it does not include data on patrol boats or missile boats.

Additionally, the realist and expected utility schools of thought argue that relative naval power will play a key role in hostile disputes. As such, I include a measure of relative dyadic naval power. *Naval Ratio* equals the potential initiator's share of dyadic naval power. The variable ranges from zero to one with zero representing an initiator with no naval strength and one representing an initiator controlling all of the dyadic naval power.

2.5.3 Control Variables

I also include a number of control variables typically seen in quantitative conflict studies.[8] Two variables measure the domestic institutions of both states in the dyad. Selectorate theory argues that domestic institutions can play a key role in determining the foreign policy decisions of states (Bueno de Mesquita et al., 1999, 2003). In particular, the size of state's winning coalition - those whose support is necessary for a leader to retain power - influences the actions of leaders. To account for this, *Winning Coalition A* measures the size of the potential initiator's winning coalition while *Winning Coalition B* measures the size of the potential target's winning coalition. Because of the findings surrounding the democratic peace, the winning coalition variables are interacted prior to their inclusion into the analysis (Maoz and Russett, 1993; Russett and Oneal, 2001; Gelpi and Grieco, 2008).

Another variable is included to control for economic based explanations for conflict. States more dependent upon another state for trade are less likely to initiate a dispute out of fear of upsetting their trade partner (Oneal and Russett, 1997). A state's trade dependency is calculated as State A's total imports and exports to State B, divided by State A's gross domestic product and vice versa. As such, the variable *Dependency A* represents State A's dependency on State B and *Dependency B* represents State B's dependency on State A. The trade data is taken from Oneal and Russett (2005).[9]

Two other variables measure the relations between the dyadic members. *Alliance* is a binary variable that equals one when the two states share an alliance and zero otherwise (Gibler, 2009). The second variable, *Alliance Portfolio*, is a broader measure of foreign policy preference similarity. I use the unweighted similarity of the two states' alliance portfolios (Signorino and Ritter, 1999).

[8] With the exception of the trade data discussed below, all control variables were generated in EUGene program (version 3.204) (Bennett and Stam, 2000).

[9] The trade data only goes back to 1885, hence the regression analysis begins in 1885.

Lastly, I include a variable measuring the distance between states. Specifically, *Ln Distance* measures the natural log of the distance between the two states' capitols.

To control for any temporal dependence in the models, a peace years variable measuring the amount of time since the last hostile dispute and three cubic splines are included in the models (Beck, Katz and Tucker, 1998).

2.6 Empirical Analysis

Prior to turning towards the regression results, a first look at the data can tell us whether our endeavors to better understand non-contiguous militarized disputes are even worthwhile. The dataset identifies 1,252 hostile MIDs for dyads where the potential initiator has some naval power. Of these, 623 are classified as non-contiguous - or roughly 50%. Additionally, among initiators with no naval power, non-contiguous disputes only represent 17% of the identified disputes (105 disputes). This justifies attempting to distinguish between contiguous and non-contiguous disputes rather than pooling all disputes into a single analysis.

Table 2.1 shows the regression results for the models testing the hypotheses. Model 1 tests the base model on all dyads from 1885-2000. From hypothesis 1, I expect *Ln Tonnage A* to be positive and statistically significant. This is indeed the case. Increasing a potential initiator's naval power increases the likelihood of a hostile MID.

What about the dyadic naval balance of power? Realism and expected utility theory argue states with a naval power advantage will be more likely to take advantage of this power. As such, hypothesis 2 posits that the dyadic naval balance of power will have a positive and statistically significant influence on noncontiguous conflict. Looking at the *Naval Ratio* in Model 1, we see this is not the case. The results suggest that the focus on only relative power misses the role of absolute naval power can have on militarized disputes.

Model 2 runs the same model but selecting only on non-contiguous dyads.[10] In other words, we want a better understanding of naval power's influence on non-contiguous conflicts. The results

[10]Note that for the non-contiguous models, the dependent variable used the measure of non-contiguous hostile MID initiation created from the MIDLOC data.

Table 2.1: Naval Power and Hostile Disputes: 1885-2000

	Model 1 All dyads	Model 2 Non Contig	Model 3 Contiguous	Model 4 Major Ships	Model 5 Major Powers	Model 6 Minor Powers	Model 7 Noncontig Interaction
Ln Tonnage A	0.295***	0.586***	0.027		0.385**	0.449***	-0.725*
	(0.04)	(0.05)	(0.04)		(0.13)	(0.07)	(0.30)
Ln Tonnage B	0.137***	0.155***	0.079***		0.108***	0.233***	0.163***
	(0.02)	(0.02)	(0.02)		(0.03)	(0.03)	(0.02)
Naval Ratio	-0.160	-0.071	0.486	-0.550	0.354	0.873	3.918*
	(0.31)	(0.39)	(0.40)	(0.30)	(0.77)	(0.48)	(1.86)
Major Ships A				0.085***			
				(0.01)			
Major Ships B				0.059***			
				(0.02)			
LnTonA x Distance							0.171***
							(0.04)
Ratio x Distance							-0.522*
							(0.24)
Ln Distance	-0.630***	-0.961***	0.001	-1.130***	-0.768***	-1.066***	-2.64
	(0.09)	(0.09)	(0.13)	(0.08)	(0.14)	(0.10)	(0.464)
Contiguity	1.983***						
	(0.21)						
Winning Coalition A	-0.101	0.208	-0.370	1.245	-0.697	-0.412	0.040
	(0.41)	(0.70)	(0.46)	(0.82)	(1.01)	(0.68)	(0.68)
Winning Coalition B	0.531	1.077	-0.317	1.402	0.540	0.885	0.960
	(0.44)	(0.72)	(0.53)	(0.91)	(1.17)	(0.66)	(0.69)
CoalitionA x CoalitionB	-1.586**	-2.320**	0.324	-2.449*	-2.329	-1.148	-2.108**
	(0.57)	(0.84)	(0.75)	(1.01)	(1.24)	(0.89)	(0.81)
Allies	-0.082	-0.281	-0.194	-0.018	-0.050	-0.472	-0.356
	(0.16)	(0.22)	(0.14)	(0.26)	(0.34)	(0.34)	(0.23)
Alliance Portfolio	-0.813*	-0.689	-0.085	-1.215*	-2.007**	0.953	-0.307
	(0.33)	(0.44)	(0.45)	(0.49)	(0.75)	(0.75)	(0.44)
Dependency A	0.475	0.972***	-2.581	0.674***	17.630	0.862***	0.893***
	(0.34)	(0.11)	(4.62)	(0.10)	(14.93)	(0.14)	(0.11)
Dependency B	-2.073	0.231	-8.411	0.729*	0.246	0.181	0.406
	(2.14)	(0.54)	(5.58)	(0.35)	(0.80)	(0.50)	(0.40)
Hostile Peace Years	-0.285***		-0.270***				
	(0.02)		(0.03)				
Noncontig Hostile Peace Years		-0.281***		-0.304***	-0.387***	-0.199***	-0.282***
		(0.04)		(0.04)	(0.08)	(0.05)	(0.04)
Constant	-2.130*	-4.009***	-1.981*	4.187***	-0.895	-4.361**	8.608*
	(0.93)	(1.20)	(1.01)	(1.14)	(2.21)	(1.52)	(3.52)
N	342864	332445	10419	332445	28050	304395	332445

* $p \leq 5\%$, ** $p \leq 1\%$, and *** $p \leq 0.1\%$ for two-tailed tests.
Standard errors clustered on the dyad. Estimates for the three cubic splines not shown.

from Model 2 confirm those of Model 1. Initiators with naval power are more likely to initiate a hostile dispute. Interestingly, when controlling for the aggregate size of each actor's naval strength, relative naval power is having no statistically significant influence on the likelihood of a hostile non-contiguous MID. This gives us more confidence in hypotheses 1 and casts doubt on hypothesis 2.

Finally, to test hypothesis 3, Model 3 runs a model selecting only on contiguous dyads. Model 3 allows us to understand how naval power influences relationships between neighbors. Hypothesis 3 argues that naval power should have no influence in this context as relationships between neighbors is likely to be dominated by land armies rather than sea-based capabilities. The results of Model 3 shows naval power is having no influence on the likelihood of a hostile MID. Neither the absolute measures nor relative measure of naval power is having a statistically significant influence on the likelihood of a hostile dispute. As such, we fail to reject hypothesis 3.

To get a better sense of the substantive significance of these findings, we turn to simulations (King, Tomz and Wittenberg, 2000). Using Clarify, simulations were ran from Model 2 using various scenarios of naval strength. To check the substantive significance of the findings, I calculated a first-difference in the likelihood of hostile dispute initiation when moving from the mean logged-tonnage (3.4) to two standard deviations about the mean (13.4). This resulted in nearly a staggering 62,000% statistically significant increase in the likelihood of a noncontiguous hostile MID initiation. However, the first-difference represents an increase in tonnage from essentially 0 to about 600,000 tons.

For a more realistic scenario, I calculated a first-difference for a dyad involving China and Japan where China increases naval tonnage by 100,000 tons.[11] In this case the logged-tonnage increases from 13 to 13.21. As we would expect with a logged variable of interest, the increase in the likelihood of a hostile MID initiation in this scenario is a statistically significant 14%. While a 14% increase is not as eye-catching, we must remember we are dealing with rare events. As such, even a 14% increase in the likelihood of a hostile MID initiation is substantively significant.

To get a better sense of the importance of the launching of major power projection ships, such as the *Liaoning*[12], I reran Model 2 with a new measure of the primary variable of interest. Rather than using the logged-tonnage, I define naval power in terms of the major power projection ships

[11] Using naval data for China and Japan from 2011.

[12] The *Liaoning* is the roughly 60,000 ton Chinese aircraft carrier purchased from Ukraine in 1998.

of the given era. The argument could be made that the primary form of naval power projection comes from either battleships (pre-WWII) or aircraft carriers (post-WWII).[13] As such, *Major Ships* equals the count of a state's battleships and major carriers in a given year.[14]

Model 4 in Table 2.1 shows the results of the new model. As expected, the primary results hold. Increasing the number of a major ships an aggressor possesses has a positive and statistically significant increase in the likelihood of a hostile MID initiation. To further explore these findings the sample was split into major and non-major naval powers. Using the measure of major ships from Model 4, Model 6 looks at the influence of tonnage on hostile conflict for non-major naval powers (no major ships). This model shows the same results as the previous models. Even for non-major naval powers, increasing naval strength has a positive influence on the likelihood of noncontiguous conflict. Here increasing the tonnage of a non-major naval power by 60,000 tons (roughly the size of the *Liaoning*) increases the likelihood of a non-hostile conflict by 30%.

Model 6 is significant as we tend to relate noncontiguous uses of force with major powers. Yet it is possible for non-major powers to extend their military reach beyond their border. For instance, in 1999 naval power allowed Australia to intervene in the conflict in Indonesia without possessing an aircraft carrier. Additionally, a large navy has allowed the Soviet Union to be active in numerous noncontiguous disputes despite the lack of a major aircraft carrier for most of the Cold War.[15]

The findings give additional credence to the first difference calculated for the scenario of China increasing her navy by 100,000 tons and hostile conflict with Japan. The 14% increase in the likelihood of hostile for that dyad was not a result of major naval powers driving the results. In other words, the findings from Model 2 are not the results of bias from including major naval powers such as the US.

Model 5 shows that increasing the size of even major naval powers can have a positive influence on the likelihood of non-contiguous conflict. The primary results from Model 2 are holding even in

[13] Fordham (2011) notes that the US is more likely to initiate a conflict when their number of aircraft carriers increases.

[14] Here, major aircraft carriers includes fleet carriers (roughly greater than 20,000 tons) and super carriers (roughly greater than 50,000 tons). As such, it will exclude carriers such as the Italian carrier *Garibaldi* as it displaces less than 20,000 tons.

[15] The *Admiral Kuznetsov* was not commissioned until 1990. Although classified by the Russians as a heavy aircraft-carrying missile cruiser, the *Kuznetsov* is designated as an aircraft carrier in the West. The *Kuznetsov* was intended to serve as the lead ship of a new class of major warships. Yet she was the only ship completed and her sister ship, the *Varyag*, was sold to the Chinese by Ukraine to become the *Liaoning*. The Kiev class of carriers used by the Soviets for most of the Cold War were primarily intended to support submarine and other surface operations rather than serve as a power projection capability.

Model 5. Yet as we might expect, increasing the naval tonnage for major naval powers has less of an influence than a similar increase for minor naval powers. For instance, the same 60,000 ton increase in tonnage for major naval powers only results in 23% increase in the likelihood of non-contiguous. This still represents a substantively significant influence on conflict, but a more muted influence.

We can get a better sense of this relationship visually. The graph on the right in Figure 2.1 shows the influence of tonnage on the predicted probability of a non-contiguous hostile MID for non-major naval powers. As can be seen in the graph, the initial increase in the size of a non-major powers navy can have a dramatic increase in the likelihood of hostile conflict as tonnage increases from just above zero (3.1) to around 66,000 tons (11.1). This confirms visually the predicted probabilities calculated from the Clarify simulations. Such an increase in tonnage is not out of the realm of possibility for a state looking to increase their naval power over the course of a few years. The figures underscore that increases in naval strength for non-major naval powers can give them an incentive to use their capabilities for hostile purposes.

Model 5 shows how similar increases influence major naval powers (those with major ships). While there is a positive and significant influence of tonnage on hostile MID initiation, its influence is less dramatic. The graph on the left in Figure 2.1 shows this relationship visually. Increasing the tonnage of major naval powers does have an increase in the likelihood of a non-contiguous dispute. Yet the influence is more muted, as we would expect from a logged variable.

These findings suggest that the bargaining failures caused by distance have a greater influence on non-major powers. This makes a great deal of sense. States who already possess power projection capabilities (battleships or aircraft carriers) will have an easier time signaling their willingness to engage in noncontiguous conflict. On the other hand, non-major naval powers will find it more difficult to project resolve in non-contiguous disputes. As such, states that increase their naval capabilities may have more confidence in their ability to project power. Yet without the primary power projection capability of the day, defenders may doubt the willingness of aggressors to make good on their threats.

While Table 2.1 does show compelling evidence about the influence of naval power on non-contiguous hostile disputes, one may wonder about the over-time influence of naval power on conflict. Yet in a time-series cross-sectional analysis, it is difficult to distinguish between across-space and over-time effects (Zorn, 2001, 434–437). To see if there are appreciable across-space and

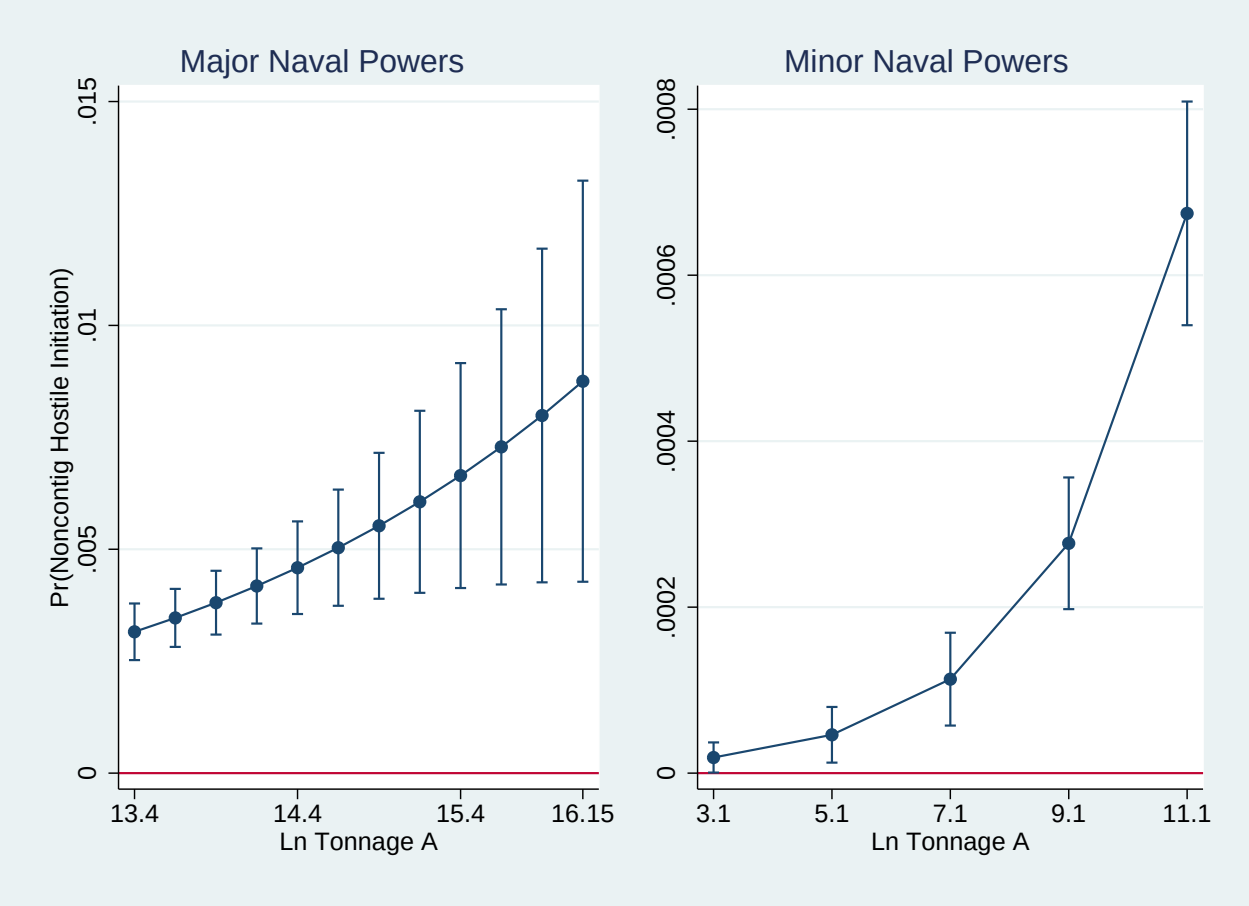

Figure 2.1: Predicted Probability of Non-contiguous Hostile Dispute

over-time effects of naval power on non-contiguous hostile MIDs, an analysis was run using the suggestions from Zorn (2001).

In Table 2.2, Model 8 tests for across-space and over-time effects on non-contiguous dyads. The across-space effects are created by taking the mean of naval tonnage for each respective dyad. The over-time effects are created by subtracting the dyad mean of naval tonnage from the current measure of naval tonnage. The across-space variables will show the influence of naval power between dyads while the over-time variables will show the influence of naval power within dyads.

Table 2.2: Naval Power and Hostile Disputes: Across-Space and Over-Time Effects

	Model 8
	Non-Contiguous Hostile MIDs 1885–2000
Across Space LnTonA	0.589***
	(0.06)
Across Space LnTonB	0.152***
	(0.03)
Over Time LnTonA	0.544***
	(0.10)
Over Time LnTonB	0.156***
	(0.04)
Across Space Ratio	-0.206
	(0.52)
Over Time Ratio	0.368
	(0.83)
Winning Coalition A	0.223
	(0.68)
Winning Coalition B	1.068
	(0.73)
CoalitionA x CoalitionB	-2.321**
	(0.84)
Ln Distance	-0.960***
	(0.09)
Allies	-0.285
	(0.22)
Alliance Portfolio	-0.699
	(0.44)
Dependency A	0.937***
	(0.15)
Dependency B	0.225
	(0.52)
Noncontiguous Peace Years	-0.280***
	(0.04)
Constant	-3.903**
	(1.25)
N	332445

* $p \leq 5\%$, ** $p \leq 1\%$, and *** $p \leq 0.1\%$ for two-tailed tests.
Standard errors clustered on the dyad. Estimates for the three cubic splines not shown.

What Model 8 shows us is that naval power is having a positive and significant influence on noncontiguous hostile MIDs for either type of effect. The *Across Space LnTon A* variable shows that states with more naval power have a higher likelihood of initiating a noncontiguous hostile MID than initiators without naval power. In other words, we should expect states like the US and France to initiate more noncontiguous disputes than states like Mexico and Germany.

Additionally, from Model 8 we see that naval power is having a positive and significant influence on noncontiguous MIDs over-time. The *Overtime LnTon A* variable shows that increasing the naval strength of an initiator within a dyad increases the likelihood of a noncontiguous hostile MID. As such, with China increasing their naval power with the addition of an aircraft carrier, Japan should be concerned about being the target of more aggressive foreign policies.

An interesting finding from the models is the impact of relative naval power on noncontiguous disputes. As with the models in Table 2.1, relative naval power is not playing a significant role. This is the case for either the across-space or the over-time variables. These results show that uncertainty introduced by distance in bargaining is influencing a defender's belief in an aggressor's willingness to project power beyond their borders (i.e., resolve) rather than the incentives created by having a relative power advantage.

What implications do these findings have for a state like China? While China had a large navy, prior to their acquisition of the ex-Soviet carrier *Varyag* they lacked a major power projection capability. Model 4 from Table 2.1 shows that increasing a state's major ship capabilities has a positive influence on the likelihood of non-contiguous hostile disputes. We would expect now that the *Liaoning* is commissioned that China will put their new capability to use. Yet we would expect to see disputes over relatively low salience issues. In other words, China will begin to test their influence over a variety of issues against non-contiguous states. Japan, and others in the South China Sea, should be concerned that they could be target of future Chinese aggression.

Certainly the *Liaoning* will cement China's membership into the league of extraordinary states. But, the launching of additional aircraft carriers may have less of an effect on the likelihood of China becoming embroiled in noncontiguous shooting matches. However, if the *Liaoning* serves as primarily a training ship (as it is currently designated), its service is unlikely to increase the likelihood of China initiating non-contiguous hostile disputes. The launching of a non-training aircraft carrier would certainly increase the likelihood of non-contiguous hostile disputes. In other

words, once China establishes their willingness to use their power projection capabilities they should have an easier time bargaining for favorable negotiations.

Table 2.3: Naval Power and Militarized Compellent Threats

	Model 9
	Noncontig MCT
	1918-2000
Ln Tonnage A	0.485***
	(0.06)
Ln Tonnage B	0.114***
	(0.03)
Naval Ratio	0.792
	(0.66)
Ln Distance	-0.917***
	(0.11)
Contiguity	1.547***
	(0.33)
Winning Coalition A	-0.251
	(0.48)
Winning Coalition B	-0.238
	(0.57)
CoaltionA x CoalitionB	-2.012**
	(0.76)
Allies	0.430
	(0.30)
Alliance Portfolio	-1.631**
	(0.62)
MCT Peace Years	-0.266***
	(0.06)
Constant	-4.007**
	(1.30)
N	377672

* $p \leq 5\%$, ** $p \leq 1\%$, and *** $p \leq 0.1\%$ for two-tailed tests.
Standard errors clustered on the dyad. Estimates for the three cubic splines not shown.

2.6.1 Robustness Analysis

As a robustness check, Model 2 was run with an interaction between distance and naval power. From the theory, it could be argued that even within non-contiguous dyads the amount of distance separating states will have an influence on uncertainty of resolve. In other words, as distance continues to increase the uncertainty of resolve should increase. This means we would expect a positive and significant interaction between distance and naval power within non-contiguous disputes. Distance increases uncertainty of resolve and stronger naval powers will find it necessary to initiate hostile disputes to signal their resolve. Model 7 in Table 2.1 shows the results from the interactive model. The results are quite interesting. The interaction term for state A's naval power and distance is indeed positive and significant. Yet the interaction term for naval ratio and distance

is negative and significant. The results suggest that stronger naval states are more likely to initiate non-contiguous hostile disputes as distance increases, but are less likely to use this power against weak naval states. As such, we see support for the argument regarding the uncertainty of resolve and conflicting evidence for the realist and expected utility school of thought.

As a final robustness check, the models were run with an alternative dependent variable. Rather than examining hostile MIDs, I analyze militarized threats. Militarized threats are defined as a state attempting to alter the status quo through a threat backed with military force. As such, *Militarized Threat* equals one when a state issues a directed threat, and zero otherwise. The data is taken from Sechser (2011) and covers the years 1918-2001.

Models 9 in Table 2.3 shows the results from these models. The model mirrors the results from the previous models. Increasing naval power increases the likelihood of a noncontiguous hostile militarized threat. Yet again we see that the relative influence of naval power is having an insignificant influence. This gives additional credence to the conclusion that distance mainly influences beliefs about resolve rather than the balance of power.

2.7 Conclusion

Naval power is important for understanding international relations. States with significant naval power can influence the decisions of others and deter others from attempting to do the same. In particular, however, naval power's primary role as a power projection capability means that states with naval power will be more likely to attempt to influence non-contiguous states. Additionally, as a state's naval power increases they will begin to attempt to influence low salience issues. Building on the bargaining literature, I have argued that these low salience issues will increase the uncertainty about a challenger's resolve. Defenders will doubt the willingness of challenger's to use their expensive naval resources to pursue low salience issues. Although, I have shown that this story is more nuanced. Major naval powers will have less of an issue projecting resolve. Non-major naval powers, however, will have greater difficulty projecting resolve.

Another part of the story is the defender's fear of future threats. Sechser (2010) argues the fear of future threats can lead defenders to resisting compellent threats of challengers. In the non-contiguous context, distance should decrease the likelihood of future threats and increase the success of compellent threats. Yet I argue that naval capabilities mitigates the influence of distance. In

other words, increasing a state's naval power increases the likelihood of future threats as challengers have the capabilities for multiple threats. As such, I show that increasing naval power increases the likelihood of non-contiguous disputes because of the uncertainty of resolve caused by low salience issues and fears of future threats.

Going forward, the findings suggests that as China slowly inches their way towards the status of major naval power, they may still find it difficult to convince others of their willingness to use their naval power in noncontiguous conflict. Therefore, while the world maintains their focus on the upheavals and numerous conflicts in the Middle East, they should keep a weather eye on the naval developments occurring in South-East Asia.

CHAPTER 3

INEQUALITY AMID EQUALITY: MILITARY CAPABILITIES AND CONFLICT BEHAVIOR IN BALANCED DYADS

Consider two scenarios.[1] In scenario one, the United States and the Soviet Union square off over the placement of nuclear ballistic missiles within Cuba in 1962. In scenario two, tensions between El Salvador and Honduras crescendo following qualifying matches for the 1970 World Cup in 1969. The two scenarios share a common trait – both involve states whose military capabilities are roughly equal. Yet, the two scenarios diverge wildly on their potential for destruction. The Cuban Missile crisis threatened the actors with catastrophic costs while a conflict between El Salvador and Honduras was less likely to experience such costs. As such, scenario one passed with apprehension but no fighting, while scenario two saw the outbreak of the Football War. Here we have two relatively balanced dyads and two different conflict outcomes. How can we explain the conflict behavior of these particular dyads?

Here, I present one of the first theories to explain the variation of conflict activity within relatively balanced dyads. Among scholars there is a growing consensus that in the dyadic framework, parity increases the likelihood of conflict (Blainey, 1988; Bremer, 1992; Oneal and Russett, 1997; Geller, 1993; Kim, 1991; Reed, 2003). Despite the belief that relatively balanced dyads are more prone to conflict than asymmetric dyads, causal explanations remain limited. Reed (2003, 637) offers one possible explanation and argues parity will increase the uncertainty of victory, which increases the likelihood of miscalculations and ultimately conflict. The problem is that uncertainty of victory should be constant among all balanced dyads and yet Reed (2003) argues variation exists in the conflict behavior of balanced dyads. If the probability of victory is constant, something else must explain the variation. Precisely because these dyads are particularly conflict prone, they are deserving of a more in-depth examination of their conflict behavior.

[1]This chapter is derived, in part, from an article published in *International Interactions* on 08 April 2014, available online: http://wwww.tandfonline.com/doi/abs/10.1080/03050629.2014.880700

A potential explanation lies within the aggregate capability of relatively balanced dyads. Reed (2003) and other scholars examining the influence of relative power on conflict implicitly assume all balanced dyads are equal. Yet, the above scenarios highlight this is not the case. There are balanced dyads with superpowers and balanced dyads with minor powers. In other words, there are weak balanced dyads with few military options and strong balanced dyads with a wide range of military options.

Facing states with a wide range of military options, regardless of one's own strength, introduces an additional source of uncertainty for leaders to consider. In particular, an increase in military options for the defender increases the uncertainty of expected costs of conflict for the initiator.[2] Here the expected costs refer to the potential loss of soldiers, equipment, and other material vulnerable to destruction through open combat.

I argue the uncertainty of expected costs rather than the uncertainty of victory plays a crucial role in understanding conflict within these particular dyads. The uncertainty of victory deals with the probability of victory while costs show how expensive that victory is to obtain. A leader can have more or less certainty about their chances of success in conflict yet not know precisely how much it will cost. As the capabilities of any potential opponent increases, the uncertainty about the potential costs also increases. Uncertainty increases because only the opponent knows the level of resources they are willing to commit to a fight. Because costs are uncertain, the precise location of the bargaining range is unclear. This leads to a higher likelihood of miscalculation during bargaining (Reed, 2003). In particular, states underestimating the costs of conflict will bargain more aggressively. As such, states resort to the use force to signal the true costs of victory to an aggressive opponent. Therefore, as the capabilities of an opponent increase, the likelihood of conflict among relatively balanced dyads increases due to a greater likelihood of an opponent miscalculating the expected costs of a conflict.[3]

Yet conflict is a part of the bargaining process and signals information about the costs necessary to achieve an outcome through fighting rather than negotiation (Wagner, 2000, 472). While conflict can help achieve a more positive bargaining outcome, states want to avoid a protracted, costly

[2]Scholars examining uncertainty of costs generally focus on the uncertainty of costs for the defender. In other words, the uncertainty of costs is another way saying uncertainty of resolve of the defender (see Powell (1999, 2004); Fey and Ramsay (2011)).

[3]Here I am implicitly utilizing the unitary state assumption. I return to the assumption in the conclusion to highlight potential avenues for future research.

conflict. To help avoid a costly conflict, states must send credible signals. The limited capabilities of weak states limit their ability to send credible signals. Despite a willingness to fight, the limited military resources of weak states constrains their ability to fight and consequently reduces signal credibility (Zagare and Kilgour, 2000). Strong states do not suffer from such problems. Hence, the credible signals from strong balanced dyads will effectively transmit willingness to inflict costs and help reduce the uncertainty about the expected costs of conflict. With additional information, opponents can update their beliefs on the true bargaining range to help foster a negotiated settlement. As such, while relatively stronger dyads are more likely to initiate conflict, they are less likely to experience escalation.

The chapter proceeds as follows. In the next section, I give a brief overview of the traditional approaches to the study of the balance of power and conflict. Then I offer a theory on the influence of capabilities on both conflict onset and escalation. From this theory, I offer a research design to test its implications. The fourth section conducts an empirical analysis and explores their substantive influence. Finally, I discuss the results and offer some conclusions.

3.1 Power Parity, Uncertainty, and Conflict

The precise role of the balance of power and conflict is contentious. Arguments tend to focus on whether power parity or asymmetric power increases the likelihood of conflict. Studies find support for both lines of argument. For instance, Blainey (1988, 144) argues "it is the problem of accurately measuring the relative power of nations which goes far to explain why wars occur." To state the point differently, a disparity in the distribution of power reveals the likeliest winner in war, decreasing the chance of conflict (Organski and Kugler, 1980). However, accurately assessing the true distribution of power becomes more difficult as states begin to achieve parity, which increases the likelihood of misperceiving the true strength of an opponent (Reed, 2003). Here, war will answer all questions relating to relative strength (Blainey, 1988). Other scholars argue states are more selective about the conflicts they enter. More specifically, domestic institutions foster accountability in democracies, and hence these states are more likely to initiate conflict as the balance of power shifts in their favor (Bueno de Mesquita et al., 2003; Anderson and Souva, 2010). In other words, among dyads involving democratic regimes, power asymmetry increases the likelihood of conflict.

Yet another set of scholars believe the precise influence of the balance of power is conditional on the interests at stake. For Slantchev (2011, 177), conflict can occur either when power and interests are balanced, or when the stronger state cares less about the issue at hand. Hwang (2010) offers a slightly different interpretation and argues preferences and the level of conflict condition the balance of power's influence. Lastly, Powell (1999) argues any shift in the distribution of power can influence the likelihood of conflict if the shift affects a dissatisfied state.

Supporting the power parity school of thought, Reed (2003) highlights the link between parity and uncertainty. Anchoring his theoretical story within the information problem (Fearon, 1995), Reed argues dyads at parity cause the greatest information problems. More specifically, as a dyad approaches parity the uncertainty about the power distribution increases making a potential aggressor overestimate its likelihood of victory in a military contest. Because they are too confident of victory, an aggressor asks for more than a defender is willing to give. Hence, uncertainty leads to inefficient bargaining and we are more likely to observe conflict.

Reed's theoretical argument carries an implicit assumption – all relatively balanced dyads are equal in terms of aggregate power. In other words, a balanced dyad involving two Caribbean states is treated the same as a balanced dyad involving two superpowers. Yet, for conflict to occur states need the willingness and capabilities to engage one another. As Reed (2003, 637) notes, resolve can only go so far if states lack an effective military capability to fight. As such, variance in the aggregate capabilities of relatively balanced dyads should play a role in conflict onset.

Figure 3.1 emphasizes the point. It graphically represents seven relatively balanced dyads from the Militarized Interstate Dispute (MID) data set (Ghosn, Palmer and Bremer, 2004).[4] The figure illustrates the Composite Capabilities Index (CINC) score for each state in a respective dyad (Singer, Bremer and Stuckey, 1972). The grouped bars along the y-axis represent a single relatively balanced dyad. Figure 3.1 shows a great deal of variation of capabilities within relatively balanced dyads. For instance, as we move down the y-axis, the capability scores for both states increase, yet the dyad remains balanced. Yet, dyadic explanations of power parity and conflict treat all of these dyads as equal.

[4]Here, relatively balanced dyads are defined as having a power ratio between 0.45 and 0.55. I calculate power ratio as state A's CINC score divided by the sum of state A and B's CINC score. A power ratio closer to 0.5 represents a perfectly balanced dyad.

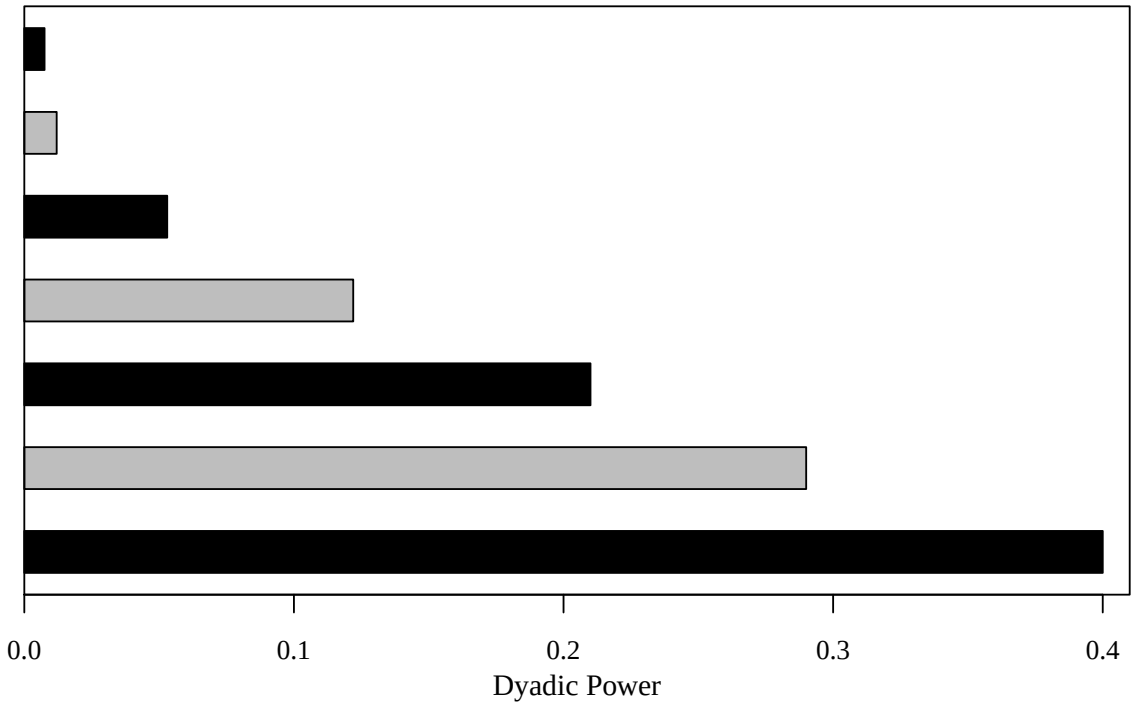

Figure 3.1: CINC Capabilities of Selected Balanced Dyads. Balanced dyads defined as the dyad having a power ratio score between 0.5-0.6.

The inequality within balanced dyads shown in Figure 3.1 can help us explore the conflict behavior of these dyads. While private information can blur the distribution of power, and the likelihood of victory, the capabilities in the dyad can influence an additional bargaining factor – the bargaining range. The bargaining range represents the range of deals (i.e., bargains) along the bargaining space that both actors would prefer to war (Fearon, 1995, 387). The cost of conflict each actor faces determines the size of the bargaining range. As costs increase, the bargaining range will expand, as costs decrease the opposite occurs.

Typically, the costs of war fluctuate with the capabilities of the combatants. On average we would expect a conflict with powerful states to have the greater potential for large costs than conflict involving weak states. Powerful states by definition possess the weapons necessary to efficiently

inflict pain onto an opponent.[5] This is not to say conflicts involving non-major powers cannot generate a significant amount of costs. One needs to look no further than the Iran-Iraq War that began in 1980 for evidence of just such a case. Yet, we should also remember the Iran-Iraq War lasted for eight years – much beyond the normal period of time wars tend to last (Slantchev, 2004). In other words, a majority of the time we would expect wars between powerful states to result in high costs, and wars between weaker states to result in lower costs.

Regarding relatively balanced dyads, I have already noted the capabilities within these dyads vary. As the capabilities and potential costs in relatively balanced dyads fluctuate, so does the bargaining range (Fearon, 1995, 387). Assuming perfect information, increasing capabilities within balanced dyads will expand the bargaining range and decreasing capabilities will have the opposite effect. As the bargaining range and expected costs of conflict changes, the likelihood of conflict also changes. Hence, the relationship between capabilities and costs may help explain the Reed (2003) finding of variance in the conflict behavior of dyads at parity.

If the costs of conflict are critical to understanding the outbreak of conflict, we need a better understanding of their role. Already noted is the importance of costs for determining the bargaining range (Fearon, 1995, 387). However, Fearon (1995) fails to fully explore how these costs increase or decrease. Slantchev (2003*b*) attempts to do so and models how a state's ability to inflict costs can influence bargaining. Drawing inspiration from Schelling (1966), Slantchev argues conflict is a contest in inflicting unacceptable costs on an opponent.[6] More importantly, he argues a direct relationship exists between State B's capabilities and State A's costs of conflict. As State B's capabilities increase, State A's costs will rise. In other words, State A's estimation of costs is dependent upon State B's military capabilities.

Because the expected costs for a state are dependent upon the actions of another state, any estimation of costs will carry with them uncertainty (Wagner, 2007). States rarely commit all of their resources to a fight and hold capabilities in reserve with the implicit threat of future punishment (Schelling, 1966). Even the United States varies in the resources they commit to a military engagement. For instance, in 1991 the US employed its largest concentration of armored forces (in addition to marine, naval, and air force assets) since World War II to expel Saddam

[5] Additionally, generally powerful military states are also advanced states with well developed infrastructures and industrial capacity. As such, military conflict threatens the destruction of these resources vital to economic output making conflict all the more costly (Mousseau, Hegre and Oneal, 2003, 281).

[6] The imposition of costs highlights how conflict is not a simple lottery as Fearon (1995) argues.

Hussein's forces from Kuwait, while only employing limited forces to Somalia in 1993. Saddam Hussein's belief in the US's lack of commitment in committing the resources necessary to achieve military victory emphasizes the difficulty in estimating the resources an opponent will employ in a fight. Because states are only estimating costs, some uncertainty regarding those costs is not surprising.

From Fearon (1995) we know that states do not operate under perfect information and information asymmetry leads to bargaining failures and conflict. However, a shortcoming of Fearon (1995) is to assume bargaining ends once the bullets start flying (i.e., conflict is a costly lottery). Viewing conflict as an extension of the bargaining process can allow us to explore the relationship between costs and conflict in greater depth (Slantchev, 2003*b*; Wagner, 2000). States may use violent means as a way of enhancing their bargaining position in the hopes of achieving a more favorable negotiated settlement when a disagreement over the distribution of some good exists. As such, conflict may reveal information. In particular, conflict may reveal the amount of costs necessary for each side to endure in order to reach their optimal outcome. Once onset reveals information, the uncertainty regarding costs that helped precipitate conflict should dissipate and allow states to observe the true bargaining range (Wagner, 2000). Hence, the costs of conflict play a crucial role in conflict onset and escalation.

Yet, what we need is a better understanding of how uncertainty of costs influences conflict in balanced dyads. I argue by viewing conflict as a multi-stage process we can begin to address the issue (Reed, 2000). In other words, we want to know the influence of cost uncertainty on conflict onset and what implications this may have for conflict escalation.

Consider conflict onset first. Increasing an opponent's capabilities increases the uncertainty of expected costs. For leaders, uncertainty increases the likelihood of miscalculation. If states had perfect information we would never observe conflict as both sides would reach an agreement (Fearon, 1995, 387).[7] Yet, states have private information and bargaining errors occur. Hence, uncertainty increases the probability of miscalculation. Specifically, uncertainty causes the miscalculation of acceptable bargains.

I argue uncertainty causes more problems for strong-balanced-dyads (SBD) than weak-balanced-dyads (WBD). The problem stems from capabilities. While these dyads have large bargaining

[7] Although, Slantchev (2003*b*) shows conflict can occur even with perfect information.

ranges (Fearon, 1995), these dyads also contain a great deal of military power. To state the point differently, states within a SBD can inflict greater costs on one another than states within a WBD (Slantchev, 2003*b*). Yet, we know states rarely use all of their resources in a fight. Because states hold capabilities in reserve, there is an increase in the uncertainty of costs in SBDs.

Here uncertainty of costs alters each state's perception of the bargaining range. Consider a SBD with State A and State B. Under perfect information, conflict should be less likely as there should be a wide bargaining range. Yet, because of the uncertainty of costs, the true bargaining range is difficult to observe. Uncertain costs can lead to State B miscalculating the expected costs of conflict and bargain too aggressively (i.e., demanding too much). Such aggressiveness is problematic for State A because of State B's abilities to inflict significant costs. This leaves State A with little choice but to use force to signal their willingness to fight. In other words, State A signals the high cost of victory through military action against State B.

The WBD faces a different situation. These states lack the ability to inflict significant costs onto one another. As such, uncertainty is less problematic and the location of the bargaining range is more evident. Even in the event of an overly aggressive State B, State A has little to fear as State B's limited capabilities mean they can demand and gain little by fighting. State B's weakness allows State A to pursue a passive approach. In other words, State A does not fear a great loss when facing a weak State B and can act accordingly (i.e., a low likelihood of conflict).

For balanced dyads, the uncertainty of victory does not drive the causal mechanism. In fact the uncertainty of victory remains constant across these dyads. Rather, the uncertainty of the costs necessary to achieve a military victory drives the causal mechanism. As capabilities increase, uncertainty of costs increases. As states become more uncertain, they are more likely to miscalculate the costs necessary in pursuing military solutions as a form of negotiation. If a state miscalculates and believes they can improve their bargaining position cheaply, they will propose a settlement the opposing state will find unacceptable. When miscalculation occurs within SBDs the potential losses are great and states may use military action as a signaling mechanism. Hence, cost uncertainty increases the likelihood of conflict.

Yet, bargaining does not the end with the outbreak of conflict. Conflict can reveal private information, reduce uncertainty, and allow actors to make a bargain (Wagner, 2000, 478). So while the first stage of conflict displays the willingness and capability to use force – reducing the

uncertainty of costs – the second stage of conflict is about avoiding a prolonged and costly conflict. Greater military capabilities mean a greater ability to inflict costs. As such, both states in a SBD are bound to face disastrous costs in the occurrence of war. One need not look further to the world wars of the twentieth century to see the destructive capability of wars involving powerful military states. Hence, if the second stage deals with avoiding costly conflict, then transmitting information about the costs necessary for victory in SBDs through onset should decrease the likelihood of escalation. Here we see the lesson of Wagner (2000) coming into play. In the first stage of conflict, the uncertainty of costs made bargaining difficult. Onset reduces uncertainty and makes the bargaining range easier to observe. As the capabilities of both sides increase, the observable bargaining range increases and decreases the likelihood of escalation.

For WBDs, the likelihood of escalation increases, however. Effective military threats display both willingness and capabilities to carry out the threat (Zagare and Kilgour, 2000). A weak state could initiate a conflict in the first stage, yet their weak capabilities decreases crediblity and the target may not gain the information necessary to negotiate a settlement. Additionally, within a WBD, an aggressive State B can remain aggressive as a weak State A can only inflict limited costs. As such, increasing capabilities increases the likelihood of onset yet decreases the likelihood of escalation.

In sum, if we view conflict as an extension of bargaining (Wagner, 2000) rather than the end of bargaining (Fearon, 1995) then we clarify our theoretical thinking about the influence of costs on the likelihood of conflict among relatively balanced dyads. As capabilities within these dyads increase, the uncertainty about the expected costs of conflict also increases. Uncertainty increases the likelihood of miscalculation leading an initiator to begin a conflict signaling the costs necessary for an opponent to achieve any military victory. However, onset should make escalation less likely as the onset reveals information necessary for a bargain to occur. As such, I hypothesize:

> Onset Hypothesis: Among relatively balanced dyads, as the capabilities of the dyad increases, the likelihood of conflict onset increases.
>
> Escalation Hypothesis: Among relatively balanced dyads, as the capabilities of the dyad increases, the likelihood of escalation decreases.

While the primary focus of this study deals with the conflict activity within relatively balanced dyads, the above theory has some implications for conflict behavior beyond just these dyads. The

theory suggests uncertainty of costs is a more important factor for driving conflict rather than uncertainty of victory. Previous work argues that dyads at parity are more likely to experience conflict because the uncertainty of victory leads to miscalculations (Reed, 2003; Blainey, 1988). I am arguing the uncertainty of costs operates independently of the uncertainty of victory and can be more important for understanding conflict activity – particularly for relatively balanced dyads. As such, there is a potential interactive effect between parity and dyadic power. Here, parity represents the uncertainty of victory with the interactive effect represents the uncertainty of costs.

What are the implications for the theory in regards to all dyads and the potential interactive effect between parity and dyadic power? Consider the initiation stage of conflict first. If the uncertainty of victory drives conflict, than parity should have a positive and significant effect on conflict onset. If, however, the uncertainty of costs primarily drives conflict, than the interaction term will be positive and significant while the parity term is not significant. Specifically, I hypothesize:

> Onset Interactive Hypothesis: Among all balanced dyads, parity has a non-significant influence on the onset of conflict while increasing dyadic power has a positive influence on onset in the presence of parity.

For the escalation stage of conflict, the implications are more nuanced. Here, I expect parity to have a positive and significant influence on conflict escalation. Remember, for military action to transmit information, the sender must have the capabilities necessary for the signal to be credible. In the interaction model, parity will represent parity for relatively weak dyads. These are the types of dyads where capabilities should be limited and information transmission to be the weakest. As such, I expect a positive and significant influence on escalation. The expectations are reversed for the interactive effect. If uncertainty of costs is driving conflict onset, military action should reveal the information necessary for a negotiated settlement. This is more likely to happen as dyadic power increases in the presence of parity. As such, I hypothesize:

> Escalation Interactive Hypothesis: Among all balanced dyads, parity at low levels of dyadic power has a positive influence on conflict escalation while increasing dyadic power has a negative influence on escalation in the presence of parity.

3.2 Research Design

Politically relevant non-directed-dyad years are the unit of analysis.[8] Here, politically relevant is defined as two states sharing a boarder or being separated by less than 150 miles of water, or a dyad involving at least one major power.[9] Additionally, the sample selection examines the likelihood of conflict among relatively balanced dyads. As such, I limited the spatial domain to dyads with a COW power ratio value between 0.5-0.575.[10] Remember that we want to explain the conflict behavior of relatively balanced dyads. In particular, I argue that the uncertainty of costs rather than the uncertainty of victory is driving conflict behavior. Because of this, we want to select on relatively balanced dyads. Such a sample selection will hold the uncertainty of victory constant and allow the uncertainty of costs to vary. By limiting our sample selection, we are ensured that our results are driven by the variation of capabilities across these dyads.

Lastly, the temporal domain is 1946-2001. While the available data goes back to 1885, the cross-national coverage of the pre-1946 data is limited – hence the post-1946 temporal domain.

3.2.1 Dependent Variables

The above theory has implications for multiple dependent variables. To test the onset hypothesis, the dependent variable is dispute onset. A dispute onset is operationalized as the beginning of a militarized interstate dispute (MID) in a given year. A MID is defined as an event "in which the threat, display or use of military force short of war by one member state is explicitly directed towards the government, official representatives, official forces, property, or territory of another state" (Jones, Bremer and Singer, 1996, 168). As such, the variable *MID Onset* is coded 1 for the first state to use military force and 0 otherwise. The data for onset is taken from the MID data set v3.10, which covers the period 1816-2001 (Ghosn, Palmer and Bremer, 2004).

The escalation hypothesis states the aggressor's capabilities will decrease the likelihood of escalation. There are numerous potential measures for escalation (Braithwaite and Lemke, 2011). One measure is to operationalize escalation as escalation to war (Reed, 2000). However, the rarity of

[8] The data set was created using the EUGene program (version 3.204) (Bennett and Stam, 2000).

[9] As a robustness check, the models testing balanced dyads were reran with a sample selection of only contiguous dyads. The results are supportive of both hypotheses and are available in the Appendix.

[10] As a robustness check, the models testing balanced dyads were reran with a less restrictive definition of balanced. The results are consistent for both hypotheses. The full results are available in the Appendix.

war means such a coding scheme ignores all of the potential actions a defender can take short of war. Therefore, I employ three different measures of escalation.

First, the variable *Reciprocation* is coded one if the onset is reciprocated and 0 otherwise. Second, the variable *Mutual Use of Force* is coded as 1 if both states use force in the conflict and zero otherwise. Lastly, the variable *Fatality 1+* is coded as 1 if the conflict is reciprocated and there is at least one fatality and 0 otherwise.

3.2.2 Independent Variables

Above I posit how the primary influence on a leader's uncertainty about the costs of conflict is the capabilities of any potential opponent. Hence, we need a measure of the observable capabilities for the dyad. I will use the same CINC scores used in creating Figure 3.1. In the regression analysis, *DyadicPower* is the summation of both states' CINC scores as calculated by the Correlates of War data project.[11] Readers will note I include no measure of relative power. Accounting for relative power occurs through the sample selection. Yet, because of variation in capabilities, as evidenced by Figure 3.1, a measure of observable capabilities is still included.

Additionally, I offer an alternative measure of capabilities. The Correlates of War calculate CINC scores by using economic, population, and military indicators. More specifically the scores include measures of iron and steel production, energy consumption, total population, urban population, military personnel, and military expenditures. The Correlates of War then combines these to create a measure of a state's share of the world's military capabilities in a given year. While the CINC scores are intended to measure a state's military strength, scholars argue they are better viewed as a state's military potential (Huth, 1988). A better measure of military strength would only take in consideration a state's actual military stock.

To address the potential criticism, I create a measure of state power only using the military personnel and military expenditures data from the Correlates of War.[12] A new measure of relative power is calculated using the dyadic military power. The variable is called *Military Ratio* and ranges from 0.5-1 with 0.5 representing perfect parity. *Military Ratio* provides the information

[11] The variable is multiplied by 10 prior to the regression analysis. The variable is rescaled to foster readable regression coefficients.

[12] The measure of power is created in a similar fashion as the CINC scores, but only uses military personnel and military expenditures measure. Hence, the variable created represents a state's share of the global military power available in a given year.

necessary for the selection of relatively balanced dyads while *Dyadic Military Power* is used in the regression analysis for the appropriate hypothesis.

Besides the above primary independent variables, I include a set of control variables. One variable controls for the domestic institutions of both states. Using the Polity IV data, dummy variables are created to capture the influence of joint democracy on conflict (Marshall and Jaggers, 2009). The variable *Joint Democracy* equals one if both states score 6 or higher on the Polity scale, and 0 otherwise.

Another variable is included to control for an economic based explanations for conflict onset. The first deals with the influence of trade dependency on onset. States more dependent upon another state for trade are less likely to initiate a dispute out of fear of upsetting their trade partner (Oneal and Russett, 1997). A state's trade dependency is calculated as state A's total imports and exports to state B, divided by state A's gross domestic product and vice versa.[13] As such, the variable *Trade* represents the lowest trade dependency in the dyad. I expect as trade dependency, the likelihood of onset and escalation should decrease.

Two additional variables account for well-known arguments in the empirical literature. First, conflict is more likely to happen among neighbors (Vasquez, 1995). As such, *Contiguity* is coded as 1 if the states share a border or are separated by less than 150 miles of war, and 0 otherwise. Second, alliances often influence conflict and another independent variable controls for their influence. The variable *Alliance* is another dummy variable equaling 1 when two states are a part of a formal alliance.

For the escalation hypothesis, an additional independent variable controls for the issue at stake. The variable *Territory* equals 1 when the primary issue of the dispute is about territory and 0 otherwise. *Territory* is not included in the empirical models testing the onset hypothesis.

Finally, dyads with a history of conflict are more likely to engage in conflict. Hence, to control for any temporal dependence in the models, a peace years variable measuring the amount of time since the last MID and three cubic splines are included in the onset models (Beck, Katz and Tucker, 1998). These variables are not included in the regression analysis for models testing the escalation hypothesis.

[13] *Trade* is multiplied by 100 prior to the regression analysis for the same reasons as the capability variables.

Before proceeding with the results, one should note how the relationship between onset and escalation suggests the necessity of a two-stage estimation strategy (Reed, 2000). After all, escalation cannot occur without onset. As such, the hypotheses are jointly tested with a bivariate probit model with sample selection. The peace year variables are in the first stage, but not the second model, and the issue variable (*Territory*) is in the second but not the first stage for model identification purposes.

3.3 Empirical Analysis

Figure 3.2 shows the results of the two-stage analysis. The figure shows the estimated coefficients for the primary variable of interest.[14] Point estimates with confidence intervals not including the vertical zero-line is evidence of statistical significance.

The graph on the left in Figure 3.2 shows the models testing the onset hypothesis. From the onset hypothesis we expect the likelihood of MID onset to increase as *DyadicPower* increases. In other words, the coefficients for MID onset, represented by filled-in circles, and their corresponding confidence intervals will fall to the right of the zero-line. Also shown are the models with the alternative measure of capabilities represented with the filled-in squares. Figure 3.2 shows we cannot reject the onset hypothesis. Within relatively balanced dyads as dyadic power – in terms of either CINC or Military Power scores – increases, the likelihood of a MID onset increases.[15]

The graph on the right in Figure 3.2 displays model results with the escalation dependent variables. The escalation hypothesis argues increasing dyadic power will decrease the likelihood of escalation. MID onset provides information allowing the two actors to seek a negotiated agreement rather than spiral towards a costly war. But states need a certain level of capabilities in order for the onset to serve as a credible threat. The escalation hypothesis posits the influence of *DyadicPower* is negative and significant for escalation. Looking at Figure 3.2, for two out of the three measures of escalation, the influence of *DyadicPower* is negative and significant. The only measure of escalation not significant is *Fatal 1+*, yet the sign of the coefficient is in hypothesized direction. Additionally, we see a similar story with the alternative measure of capabilities. Here, however,

[14] Full results available in Appendix A, Table A.1.

[15] The conclusions remain the same with the additional models with relatively balanced defined as a power ratio or military ratio score of 0.5-0.6. This demonstrates the results are not dependent on an arbitrary definition of relatively balanced. Results are available in the Appendix.

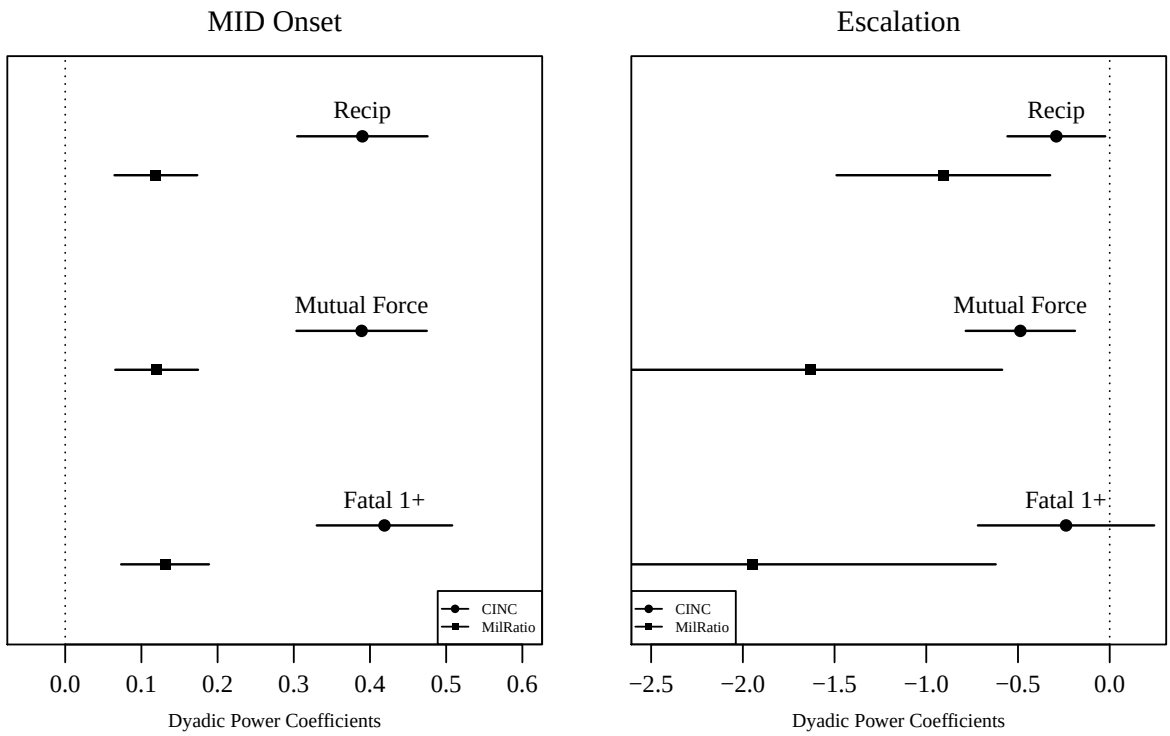

Figure 3.2: Regression Models of Conflict Onset and Escalation among Balanced Dyads: 1946-2000. Confidence intervals set at the 90% level for two-tailed hypotheses. The unit of analysis is relatively balanced politically relevant dyads with standard errors clustered on the dyad. See Appendix A, Table A.1 for full model results.

all three models show that increasing dyadic military capabilities has a negative and significant influence on conflict escalation. Hence, the model results are consistent with the expectations of the escalation hypothesis.[16]

Simulations allow us to explore the substantive implications of these findings (King, Tomz and Wittenberg, 2000). Figure 3.3 shows the results of 1,000 simulations of the two-stage model using CINC scores as the proxy for capabilities. The method for calculating the predicted probabilities from the bivariate probit model is taken from Timpone (2002) (see also Sweeney and Fritz (2004)). With these simulations we can calculate the predicted probability of either MID onset or escalation

[16]For the models with a more expansive definition of parity, the results are again consistent.

as dyadic power increases across its range while holding the control variables at their respective central tendency.[17]

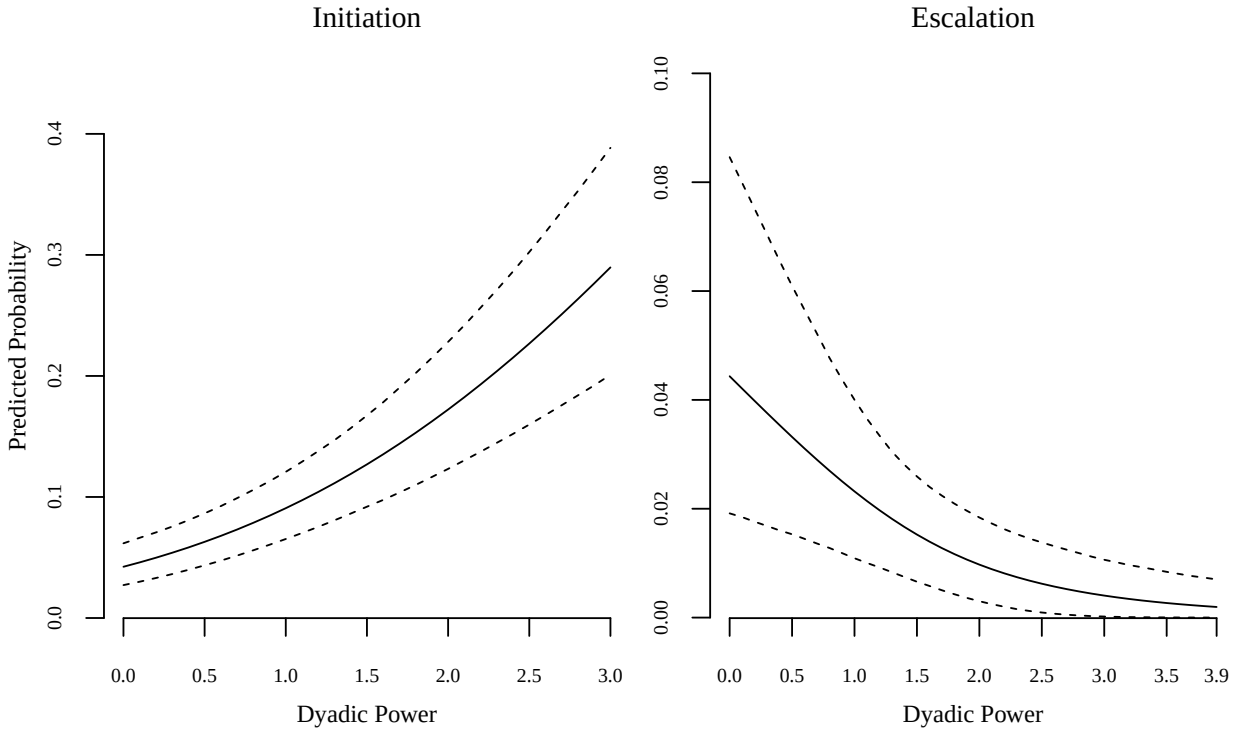

Figure 3.3: Predicted Probability of MID Onset and Mutual Force Escalation. Predicted probabilities calculated using simulations with 95% confidence intervals. For this figure, relatively balanced dyads are defined as having a power ratio measure between 0.5 and 0.575. Additionally, the control variables are all set at their appropriate central tendency. Lastly, the x-axis represents the range of dyadic capabilities from the dyads used in the two-stage analysis.

The graph on the left in Figure 3.3 shows the predicted probability in the likelihood of MID onset as dyadic power increase. We see the predicted probability of MID onset for weak dyads is under 2%. However, the likelihood increases to above 6% for strong dyads. While seemingly small, the increase is rather large considering the rarity of MID onsets. In other words, SBDs are more likely to experience conflict onset due to an increase in capabilities increasing the uncertainty of costs, which makes reaching a bargain short of conflict more difficult.

[17]The range of capabilities in the figure represents the range for in sample-dyads.

We can explore the simulated results further with a few real world examples. Consider the USA and USSR as a dyad in 1963. Here two superpowers represent a dyad with a power ratio of approximately 0.55.[18] The dyad produces a predicted probability of MID onset at approximately 0.4. We can compare the result with a predicted probability from a WBD. Consider El Salvador and Honduras as a dyad in 1962. Rather than two superpowers, the dyad contains two minor powers yet the power ratio is approximately 0.56. The power ratio score is roughly equal to the USA/USSR dyad. However, the predicted probably of MID onset is only 0.04. In other words, if we calculate a first-difference measuring the increase in the likelihood of MID onset as we move from a weaker dyad to a stronger dyad, the dyad with the superpowers is 900% more likely to experience a MID onset.[19]

We can even compare El Salvador and Honduras to a dyad not including superpowers – Turkey and Iran in 2001.[20] Calculating another first difference results in the dyad involving Turkey and Iran having a statistically significant increase in the likelihood of MID onset of 23%. While the increase is less impressive compared to the USA/USSR dyad, it is nevertheless substantively meaningful.

But, while SBDs are more likely to experience onset these same dyads are less likely to experience escalation. The graph on the right in Figure 3.3 shows the influence of dyadic power on escalation with both states using force. As the theory above argues, MID onset conveys information and relatively balanced dyads involving strong states are less likely to escalate an onset in order to avoid a costly war. From the graph the influence of dyadic power is indeed having a negative influence on the likelihood of escalation with force.

Returning to real world examples our weak dyad will consist of El Salvador and Honduras in 1969.[21] Here, the predicted probability of conflict escalation is 0.01. Similarly, we can compare the result to the likelihood of escalation in a strong dyad. The USA and USSR in 1963 will again serve as the strong dyad. For the dyad, the likelihood of escalation is about 0.0004. Calculating a

[18] In 1963 the CINC score for the USSR is about 0.17 while the CINC score for the USA is about 0.21.

[19] First differences confirm the results are significant at the 95% level.

[20] Turkey and Iran in 2001 has a power ratio of 0.52 with Turkey having a CINC score of 0.014 and Iran a CINC score of 0.013.

[21] Here, the power ratio measure is 0.58 – only slightly outside of the 0.5-0.575 parity range, yet within the 0.5-0.6 robustness range.

first-difference for these two scenarios shows how moving from a SBD to a WBD results in a 96% decrease in the likelihood of escalation.[22]

The telling point from the scenarios is how they held to the implications of the theory. In 1963 there was a MID onset involving the US and USSR. And, as the theory would expect, the dyad did not escalate. Additionally, the US and USSR experienced two more MIDs in the 1960s without escalation. Readers should not conclude escalation never occurred in any of the MID onsets involving the USSR and USA – all theories are probabilistic. But, it is telling these crises never involved fatalities. So, even when low-level conflict between the two superpowers occurred, they never escalated to a higher level. The same is not true for El Salvador and Honduras, however. A MID onset occurred in 1969 as El Salvador launched air attacks into Honduras. Honduras would escalate and the Football War would begin resulting in approximately 1,900 fatalities.[23] In sum, the SBD avoided large-scale violence, while the WBD was less fortunate.[24]

3.4 Uncertainty of Costs versus Uncertainty of Victory

While the primary focus of this article is to explore conflict activity within relatively balanced dyads, the given theory has additional implications available for testing. In particular, we can test whether uncertainty of costs is more important for conflict activity within balanced versus dyads with an asymmetric power structure. In other words, rather than restricting the sample size to relatively balanced dyads, the theory should be tested with all dyads.

To test these implications, alterations to the empirical models are necessary. First, I no longer restrict the sample to relatively balanced dyads. Second, the variable *Parity* is created and equals 1 when a dyad has a power ratio between 0.5-0.575 and 0 otherwise. Lastly, the variable *Dyadic Power x Parity* is created as an interaction term between *Dyadic Power* and *Parity*. The interaction term should be positive and significant for the MID onset models. Conversely, the interaction term should be negative and significant for the escalation models. For the constituent terms, I would

[22]The first difference between the El Salvador/Honduras dyad and Turkey/Iran dyad results in a statistically significant 10% decrease in the likelihood of escalation. Again, the results are less impressive, yet still substantively meaningful.

[23]Fatality estimates from the Correlates of War project.

[24]Three MID onsets occurred without escalation between Turkey and Iran from 1996-2001.

expect *Parity* to be insignificant for the onset models yet positive and significant for the escalation models.[25]

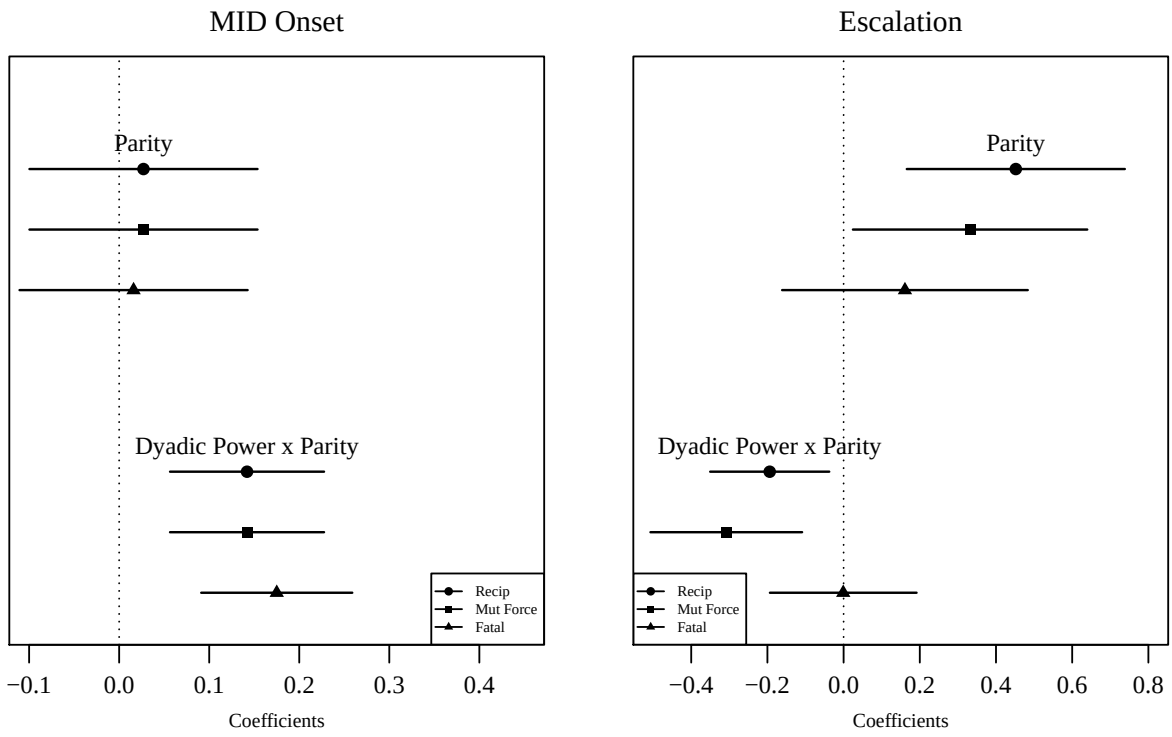

Figure 3.4: Regression Models of Conflict Onset and Escalation among All Dyads: 1946-2000. Confidence intervals set at the 90% level for two-tailed hypotheses. The unit of analysis is politically relevant dyads with standard errors clustered on the dyad. The figure only shows the *Parity* constituent term and the *Dyadic Power x Parity* interaction term. See Appendix A, Table A.2 for full model results.

Figure 3.4 shows the results of the interactive models.[26] The graph on the left shows the *Parity* constituent term coefficient and the *Dyadic Power x Parity* interaction coefficient. The above theory suggests that if uncertainty of costs is driving conflict rather than uncertainty of

[25]Here, it is difficult to make a prediction on the influence of the *Dyadic Power* constituent term. The theory offered makes no clear expectations. Additionally, in the non-directed dyadic framework, interpretation of the term is also questionable. Are we to interpret a positive and significant result as evidence of strong states preying on weak states, or as weak states attempting to signal resolve to stronger states? We simply cannot tell without switching to a directed-dyadic framework. This suggests an additional avenue of research for any significant results with the *Dyadic Power* constituent term.

[26]Full results can be found in the tables at the end of the chapter.

victory, than there will be a positive and significant interaction term. This is indeed the case as the coefficient for the interaction term lies to the right of the zero-line. Additionally, the coefficient for the *Parity* constituent term is not significant.[27] These results tells us that the uncertainty of costs is having an independent influence on conflict onset and that this is particularly problematic for dyads at parity.[28]

The graph on the right in Figure 3.4 shows the results of the escalation model. Here, we expect the *Parity* constituent term to be positive and significant and the interaction term to be negative and significant. Looking at the graph, these expectations are largely borne out – the exception being the models with escalation defined by at least one fatality. For the other two models, parity increases the likelihood of escalation only when there is little dyadic power. Additionally, we see that the interaction term is negative and significant. These results suggest that when uncertainty of costs is driving conflict, states revealing information through MID onset helps to reduce the likelihood of a conflict spiral.[29] In addition, the results suggest that information is more credible coming from states with sufficient capabilities.

3.5 Conclusion

I argue leaders must contend with multiple sources of uncertainty when making decisions regarding conflict. While the uncertainty of victory plays a role, the uncertainty of costs also plays a crucial role. The uncertainty of costs is of particular importance those dyads most prone to conflict – relatively balanced dyads. Uncertainty of costs increases uncertainty about the precise location of the bargaining range. This causes miscalculation and increasing the likelihood of bargaining errors and conflict onset. Yet, military action serves a purpose in bargaining. Military action can help reduce the uncertainty of costs by signaling a state's willingness to inflict and endure costs in order to gain a better settlement. However, states need the capability to inflict significant costs in order for a signal to be credible. As such, strong balanced dyads are more likely to experience onset and less likely to experience escalation. The empirical analysis supports these implications.

[27] For the models utilizing the military power measure, the *Parity* term is positive and significant. This suggests a multiplicative effect between uncertainty of costs and uncertainty of outcomes. Results available in Appendix A, Table A.2.

[28] These results hold when *Parity* is defined as power ratio score between 0.5-0.6. Full results available in the tables at the end of the chapter.

[29] Interestingly enough, the *Dyadic Power* constituent terms for the mutual force and fatalities models are negative a significant, suggesting additional support for this conclusion.

When states are relatively balanced, the capabilities within these dyads play a crucial role in not only conflict onset, but also conflict escalation. This study not only gives a theoretical story for the conflict behavior within relatively balanced dyads, it also gives additional support to other studies arguing the inconsistency of influence of the distribution of power across all levels of conflict (Reed, 2000; Hwang, 2010).

The theory I offer regarding the influence of cost uncertainty and conflict has additional implications to investigate. The unitary state assumption implies the uncertainty of costs affects all states equally. Yet, domestic institutions can influence of the importance of uncertainty for different leaders. For instance, domestic institutions may lead some leaders to prefer more certainty about the costs they will need to pay prior to initiating conflict. Conversely, domestic institutions may foster a risk acceptance attitude among leaders and they care less about cost certainty. By relaxing the unitary state assumption, it becomes possible to test whether domestic institutions condition the importance of cost uncertainty on decision-making.

Additionally, considering the uncertainty of costs is useful for the study of conflict onset along the full spectrum of power distributions, not just relatively balanced dyads. This study has already begun one potential line of research by examining the influence of uncertainty of victory versus the uncertainty of costs. The results of the interactive models show that uncertainty of costs can have an influence on conflict independent of the uncertainty of victory. Yet, the models also resulted in some intriguing results (such as the statistically significant dyadic power constituent term) requiring more in-depth exploration with alternative research designs. In addition, while this study has shown the existence of a great deal of variation of capabilities within relatively balanced dyads, the same is true for asymmetric power distributions as well. Traditional measures of the dyad balance of power generally constrain power ratio values between 0-1 or 0.5-1. Such constraint makes it difficult to distinguish between a dyad with the US and a non-military power and Britain and a non-military power. Both instances are examples of power asymmetry yet the two dyads are qualitatively different. If true, there are implications for the relationship between capabilities and onset beyond the perceived likelihood of victory.

The relationship between the uncertainty of expected costs and conflict offers a fruitful research program. It has implications for conflict onset, escalation, and even potentially termination. Here I

offer an initial foray into this research program by examining balanced dyads. There is much work left to be done.

CHAPTER 4

VICTORY AT ALL COSTS: UNDERSTANDING ABSOLUTE WAR OUTCOMES

Why do some wars end with absolute outcomes and others with negotiated settlements? Past work has focused on understanding questions about war outcomes in-terms of win, lose, or draw (Slantchev, 2004; Bennett and Stam, 1998; Stam, 1998). Yet little-to-no attention has been paid to understanding why some wars end with one side losing their ability to resist rather than a limited negotiated settlement. Considering that we have already witnessed two absolute war outcomes in the twenty-first century, Iraq and Afghanistan, the question is well worth exploring.

Here I present a unique contribution to our understanding of war outcomes. This chapter is one of the first empirical studies to distinguish wars that result in an absolute outcome from wars that end a negotiated settlement. In addition to distinguishing between these various outcomes, this chapter presents one of the first empirical tests for determining the likelihood of a war ending with an absolute outcome. An absolute outcome refers to a war ending with a state death or a foreign imposed regime change (Reiter, 2009, 35). For example, the Nazi's caused the state death of Poland early in WWII while the US imposed a regime change on Iraq in 2003. These outcomes are among the most extreme in international conflict and happen more often than one might imagine. Just over 25% of interstate wars end with an absolute outcome despite the costs involved.

I argue that there are two factors that can increase the likelihood of an absolute outcome: credible commitment problems and asymmetry of military power. Absolute outcomes are one of the most effective ways of dealing with credible commitment problems (Reiter, 2009, 35). Credible commitment problems arise when there are concerns about peace agreements being violated in the future. Wars where credible commitment problems are present gives the combatants the willingness to pursue an absolute outcome.

Willingness is only one factor, however. Another factor deals with the military capabilities states possess. Generally, to pursue an absolute outcome a state must possess a relative military advantage. Imposing such an outcome is difficult even for powerful states. Trying to impose an

absolute outcome when there is a parity of military forces would make such a task even more daunting. As such, we should expect the likelihood of an absolute outcome to increase when there is a disparity in military power.

The contribution of this chapter is to move beyond the questions of limited war outcomes to helping us understand war at its most punishing phase. While it may be tempting to believe only superpowers could impose such an outcome, any war with credible commitment issues and a disparity in military forces brings the potential for an absolute outcome. Yet as pointed out by Reiter (2009, 41–43), absolute outcomes are only one potential solution to dealing with wars when there are credible commitment problems present. Therefore, gaining a better understanding of absolute war outcomes can help us identify which wars have the potential for reaching extremes. Such identification would allow for the marshaling of the international community to attempt to find other solutions to the concerns of the combatants.

The chapter proceeds as follows. First, I discuss the link between credible commitment problems and the willingness to pursue absolute outcomes. Second, I discuss the link between military capabilities and the ability to pursue an absolute outcome. Third, I present a research design and an empirical analysis. Finally, the results are discussed and I offer some conclusions.

4.1 Willingness and Absolute Outcomes

An often misused idea from Clausewitz is that to win a war one must allow nothing to limit the ability of the state to fight. In other words, when wars are fought they should be fought as total wars. This idea makes it seem that Clausewitz is an advocate for war on grand scales with one side left standing when the dust settles. The problem is that Clausewitz refers to this as war in theory (Clausewitz, 1984, 78). Real war, however, is often limited and ends well before the collapse of either combatant. For Clausewitz, there is a clear distinction between limited war and absolute war.

Yet because of the supposed rarity of absolute wars, scholars have ignored studying their potential determinants. When discussing wars ending, scholars have explore what influences a state's decision to negotiate or keep fighting in the hopes of a better settlement (Filson and Werner, 2002; Wagner, 2000; Reiter, 2009; Wolford, Reiter and Carrubba, 2011). Others have explored the role of domestic institutions and politics on the role of war termination (Goemans, 2000; Filson and

Werner, 2004; Chiozza and Goemans, 2004). Within the discussions of war outcomes, the discussion is typically framed as win, lose, or draw with no mention of wars that end in their most extreme outcomes (Slantchev, 2004; Bennett and Stam, 1998; Stam, 1998; Sullivan, 2007). In other words, absolute outcomes are counted among other limited outcomes. Conversely, other studies seek to better understand how the international community can foster an negotiated settlement and bring about an end to the fighting (Fortna, 2004; Beardsley, 2008; Gent and Shannon, 2010).

While these research agendas have greatly added to our understanding of wars ending, they are lacking a more in-depth discussion about absolute wars. Reiter (2009) is one of the few authors besides Clausewitz to discuss the idea of absolute outcomes. Reiter (2009, 35) notes that a little over 25% of all wars end in an absolute outcome. Within these 25% of war outcomes reside some of the most devastating war outcomes for the losers. Yet Reiter nevertheless does not conduct any empirical tests regarding this particular outcome. These are outcomes worth exploring in greater detail. Why do some wars end with an absolute outcome?

The first part of the answer to this question lies in the reasons for war discussed in Fearon (1995). Wars occur because of bargaining failures caused by incomplete information, commitment problems, or issue indivisibilities. The first failure deals with information asymmetries. States have private information about their capabilities and resolve. If states were to reveal this information, they increase the likelihood of reaching an agreement, but decrease their potential payoff. In other words, there is a risk-return trade-off to revealing information (Powell, 1999). The risk-return trade-off means states have an incentive to misrepresent their capabilities and resolve. States misrepresent in the hopes of gaining more while also risking the outbreak of hostilities.

If wars are fought because of information problems, they should end once states gain the information necessary to negotiate a settlement (Wagner, 2007). For instance, Blainey (1988, 246) argues that wars begin because there are disagreements about the true distribution of power. Once hostilities commence, battles reveal information about the distribution of power and states can settle their differences once the states update their information (Slantchev, 2003*a*). If this is the case, wars should rarely need to reach an absolute outcome. States should have a clear understanding about the true distribution of power long before one side collapses. As such, we look elsewhere for our answer.

The second failure discussed by Fearon (1995) deals with commitment issues. The credible commitment problem (CCP) arises in an anarchical system where a state cannot commit to honoring agreements in the future (Powell, 2006). For example, if a state develops a new weapons system, they cannot credibly commit to using that weapon only for defensive purposes. This provides an incentive for both states to resort to military force. The state facing a weaker position in the future has an incentive to attack before the completion of the weapons system (preventative attack), while the other state has an incentive to challenge the status quo after the fact.

We can also think of the commitment problem in terms of the status quo. To a certain extent, the status quo is an expectation of the utility of fighting in the future. If you feel future fighting will end in your favor, you are no worse off by accepting the status quo of today. But, if you believe that future fighting will not work in your favor, the future status quo is worse than today's status quo. In this situation, you might believe that fighting today is better than fighting tomorrow. In other words, you do not believe that your opponent will honor today's status quo if the probability of victory in war shifts in their favor. This is the commitment problem.

More formally, Fearon (1995, 381) defines credible commitment problems as "situations in which mutually preferable bargains are unattainable because one or more states would have an incentive renege on the terms." Reiter (2009, 24) links this to war termination and argues that states will only enter into negotiations to end a war when they feel that commitment issues will not be problematic. Wolford, Reiter and Carrubba (2011, 568) agree with this line of thinking and show that when commitment problems are minimized, initiator's are willing to buy-off targets to avoid a long war. This means that even if there is a clear picture about the distribution of power and resolve (i.e., no information problems), states will still opt to fight if they believe their opponent will renege on deals and initiate a new fight in the near future.

Wars where at least one state is fearful of commitment issues will be more likely to end with an absolute outcome. When one side in a conflict has credible commitment fears, they are less likely to stop fighting, even in the face of battlefield setbacks. If one cannot trust their opponent to honor peace agreements, there is little reason to stop fighting.

From Fearon's definition of a credible commitment problem, we could look for evidence of CCPs based on the issues in dispute in a war. In particular, we should expect certain types of disputes to trigger CCPs because of their salience. The Issues Correlates of War (ICOW) has shown that the

salience of territorial disputes can increase their likelihood of escalation and can make negotiated settlements more difficult to achieve (Hensel, 1996). Yet studies into ICOW have also shown that there is a great deal of variance in the salience involved in territorial disputes (Hensel and Thyne, 2008).

Because of this, we should look for CCPs in which the survival of the state is at stake. In these situations the credible commitment problem is at its greatest. If one state feels their survival is at risk it is unlikely they will accept any negotiated settlements even in the face of battlefield setbacks. In other words, it will be difficult to convince a state to stop fighting and negotiate when they believe a new threat to their survival would occur in short order.

When a war involves the survival of either combatant, credible commitment problems can arise through two circumstances. One, states that set out the specific goal of an absolute outcome will pursue such an outcome unless the costs become prohibitively high. During WWII in the Pacific, the US started the war with the explicit goal of unconditional surrender from the Japanese. They maintained this goal even in the face of early setbacks in Pearl Harbor, Singapore, and the Philippines. The second pathway occurs when states find themselves the target of an absolute campaign. Here, a defender has no incentive to stop fighting as they know their opponent will renew the fight when they regain strength. For instance, the US invaded Afghanistan and Iraq with the stated goal of removing the Taliban and Saddam Hussein from power. In either case the defenders had no incentive to stop fighting even as their forces suffered major defeats. In either pathway, when the survival of a combatant is at stake, credible commitment problems will increase the likelihood of an absolute outcome.

4.2 Relative Capabilities and Absolute Outcomes

But, the willingness to pursue an absolute outcome is only one part of the story. While credible commitment issues give the willingness to pursue an absolute victory, this willingness can become more effective if one has the capabilities to pursue such an outcome. One potential reason for the low number of observed absolute outcomes is simply because they are difficult to achieve (Reiter, 2009, 39). Bringing about the collapse of an enemy is easier said than done. Witness the amount of military force necessary for the US to overthrow the Iraqi regime in 2003. Even for the world's only superpower the task was quite costly. One could imagine the potential costs involved in

attempting to completely destroy the military forces of a country that had not be subjected to debilitating sanctions. We need look no further than WWII in either theater of operations to see the incredible costs necessary for achieving an absolute outcome when powerful states are involved. As the bargaining model shows, as the costs facing both actors in a war increase, the bargaining range expands and we should be more likely to see a negotiated settlement.

While a certain amount of military capabilities are necessary to bring about an absolute outcome, more important is an advantage in relative capabilities. Schelling (1966, 3) argues that absolute power is crucial in the nuclear age.[1] Having power allows one to inflict pain on an opponent, but does not prevent opponents from inflicting pain of their own. Yet one state's capabilities can indeed lessen the potential pain of an opponent's capabilities. Schelling's argument that one state's ability to inflict pain will do little to lessen the tears caused by an opponent's ability to inflict pain makes sense when discussing nuclear war and mutually assured destruction (MAD). Theoretically, MAD will be successful in staving off nuclear annihilation when both states have a credible second-strike capability. So, State A's ability to launch a nuclear attack (inflict pain) will do nothing to minimize State B's ability to launch a retaliatory strike (inflict pain). In the context of nuclear conflict and credible second-strike capability, Schelling is correct in his notion that one's capabilities cannot lessen the pain of retaliatory strikes. But, this line of thinking does not translate to conventional conflicts.

Two examples highlight the importance of focusing on relative capabilities. In the late summer and early autumn of 1940, the Germans were employing a terrorist strategy by directly targeting British population centers during the Battle of Britain.[2] While the initial goal of the Luftwaffe was to gain air superiority and to degrade British war-making capabilities, they eventually resorted to a terror bombing strategy. Schelling's notion of power to hurt implies that the British Royal Air Force (RAF) would have no ability to reduce the pain felt from German bombs. While the RAF could indeed do little about the bombs already falling towards their intended targets, they could certainly do something about the bombs still lying behind their bomb bay doors. Throughout the course of the battle, the RAF was able to destroy hundreds of German fighters and bombers and greatly reduce the potential destructive power of an unopposed Luftwaffe air Armada.

[1] In full, Schelling states that "brute strength is usually measured relative to enemy strength, the one directly opposing the other, while the power to hurt is typically not reduced by the enemy's power to hurt in return (3)."

[2] A terrorist campaign is defined as a deliberate targeting of civilians rather than military assets (Schelling, 1966, 17).

Almost 76 years earlier another terrorist style campaign began in the American South with Union General Sherman's "March to the Sea" campaign following the razing of the city of Atlanta in the fall of 1864. The purpose of the campaign was to devastate the South's physical and psychological ability to maintain the war through a scorched-earth policy. The policy impaired the logistical ability of the Confederates to wage war through the destruction of railroads, private property, and goods. The purpose of the campaign was to make the citizens of the Confederacy feel the pains of war. Crucial to the success of Sherman's raid behind enemy lines was the relative lack of resistance he faced. Confederate General Hood had taken the bulk of his forces north to fight in Tennessee, leaving Sherman's army to face only meager resistance. As such, Sherman was able to prosecute the campaign with great success and relatively few losses while inflicting a devastating amount of damage.

While both of the above examples demonstrate states pursuing terrorist strategies they differed greatly in terms of resistance and therefore success. While neither the Luftwaffe nor General Sherman were given the freedom to operate without resistance, they faced different levels of resistance. Stiff resistance from the RAF kept the Nazi war machine from attempting to cross the English Channel. Yet little resistance allowed General Sherman to take Savannah, Georgia after creating a 300 mile long path of destruction. Both forces had the potential to inflict a great deal of costs, yet opposing forces played a key role in the effectiveness of the forces. Hence, when discussing the importance of military capabilities, it is crucial to keep in mind the relative nature of power. Unless a state is operating a terrorist strategy at its most pure form - meaning no potential military opposition - there are always opposing military forces limiting another state's ability to inflict costs.

The anecdotes highlight that there is a link between Schelling's discussion of power to hurt and absolute war outcomes. Schelling notes that the power to hurt will be most effective when there is no resistance - notably after the defeat of an opposing army. For an absolute outcome, states more effective at inflicting costs on their enemies are more likely to achieve an absolute outcome. Such effectiveness occurs when the balance of capabilities between combatants is highly asymmetric.

The case of the Korean War is illustrative. Early in the war as the US was facing numerous setbacks, the main goal of the war was to restore the pre-war status quo. Yet prior to the US successes at Inchon and subsequent battles, the goals of the US changed. Rather than the pre-war status quo the US sought an absolute outcome with a complete removal of the North Korean government

(Reiter, 2009, 68). But, the entry of the Chinese into the war made it too costly to continue to pursue an absolute outcome (Reiter, 2009, 82). As such, when the US was relatively more powerful, an absolute outcome seemed possible, as power became more symmetric the possibility of an absolute outcome changed.

The above arguments suggests, then, that parity makes it unlikely that an absolute outcome will occur. Rather, an absolute outcome is more likely to occur when power is asymmetric. When capabilities are asymmetric, states have the ability to brush away defenses and impose their will if so desired. Therefore, asymmetry in terms of states' power to hurt will increase the likelihood of an absolute outcome.

From the above discussions of willingness and capabilities, there is a clear interactive relationship between credible commitment problems and asymmetric power. Credible commitment problems give the willingness to pursue an absolute outcome, but an advantage in relative power gives a state the ability to impose an absolute outcome. As such while either factor may increase the probability of an absolute outcome, having both factors present will greatly increase the likelihood of an absolute outcome. As such, I hypothesize that;

> H1: As the military capabilities of the combatants approaches parity, the likelihood of observing an absolute outcome decreases. This effect is strongest when a credible commitment problem is present and minimal when a credible commitment problem is absent.

4.3 Research Design

The data set for this chapter builds from the work of Slantchev (2004). He identifies 104 interstate wars between 1816 and 1991. Wars were identified by the Correlates of War Project with large wars such as WWII broken down into smaller conflicts (Bennett and Stam, 1996).[3] I extended the data set from Slantchev (2004) to include 8 additional wars identified by COW between 1992 and 2003. As such, interstate war is the unit of analysis for the study.

This study includes 112 interstate wars. Table B.2 in Appendix B lists all of the wars included in the analysis. Of the 112 wars, 35 are multilateral wars. WWII is the only multilateral war

[3] Slantchev also adds some additional wars not included in COW due to differing definitions of system membership. See Slantchev (2004, 817-818).

broken down into smaller wars.[4] Although, the North Vietnamese invasion of South Vietnam in 1975 is separated from the main Vietnam War that included the US. Additionally, 79 of the wars occurred primarily between states that share a border or are separated by less than 150 miles of water.[5] The last wars coded are the US led invasions of Afghanistan and Iraq in 2001 and 2003 respectively.[6]

4.3.1 Dependent Variable

The dependent variable is a binary indicator of an absolute outcome. Previous studies into war outcome have lumped absolute outcomes in with other limited war outcomes. Yet to get a better understanding of absolute outcomes, we need to split them from other limited war outcomes. Here, an absolute outcome is defined as a war resulting in a state death or a foreign imposed change in leader (Reiter, 2009, 35). Two sources were used to create this variable, the Archigos data project (Goemans, Gleditsch and Chiozza, 2009) and Fazal (2011). The Archigos data identifies leaders removed by foreign powers while Fazal identifies states that suffer a violent death. *Absolute Outcome* equals one if a war resulted in either of these outcomes. Reiter (2009, 34) notes that in his work he has found that roughly 26% of wars end in an absolute outcome. In the data set for this chapter, there are 29 instances of an absolute outcome, or about 26%. As such, the dependent variable for this chapter aligns well with other works on war outcomes. Table B.1 provides one of the first lists of wars that resulted in an absolute outcome.

4.3.2 Independent Variables

One of the variables of interest is the overall parity among the combatants. Using a method similar to Slantchev (2004), *Military Balance* is a measure of military parity among the combatants. Specifically, the measure is calculated as $1 - abs\left(\frac{Milpow_A - Milpow_B}{Milpow_A + Milpow_B}\right)$. Here, military power is measured from a state's proportion of the military personnel available in the system using data from COW.[7] For multilateral wars, the military power of the states involved are aggregated for a

[4]For this study, WWII is broken down into 11 separate conflicts. The German invasions of Poland, Holland, Belgium, Denmark, Norway, Yugoslavia, and Russia are all treated as separate conflicts. Additionally, the primary war between Germany, Britain, and the US in Western Europe is coded as one war while the Pacific War is coded as its own war as well.

[5]There are 66 wars between neighbors that share a border.

[6]The Russian invasion of Georgia in 2008 failed to meet the 1,000 battle casualty threshold from COW to be considered an interstate war.

[7]For missing data in COW, historical sources were used to determine the amount of forces available to fight in the given war.

single score for each side. This results in a measure between 0 and 1 where low values indicates asymmetrical power and higher values indicate greater parity.[8]

The second variable of interest is the presence of credible commitment problems. I argue that credible commitment problems should increase the willingness of combatants to pursue an absolute outcome. To measure the presence of credible commitment problems I look at the salience of the war for each side. Each side's salience was given a value between 0 and 2 using the classification of Holsti (1991). Extending the data available from Slantchev (2004), salience with a value of 2 represents conflicts over survival and/or autonomy.[9] As I argue above, when state survival is at stake in a war credible commitment problems will dominate decisions on war termination. Conflicts where one side's salience is coded as a 2 are precisely the types of conflicts where commitment problems should be present. If one fears for the survival of the state, there is little reason to stop fighting except in extraordinary circumstances. Yet because one can argue that salience scores of 1 (territorial concerns) could also represent CCPs, I run a robustness model with an alternative measure of salience when both sides of a war score at least a 1 on salience.

Therefore, *CCP* is a binary indicator of whether the war had a salience score of 2 for either side or not. Among the 112 wars, 47 wars are coded as having credible commitment problems or around 42%. Table B.3 in Appendix B lists all of the wars with credible commitment problems. As expected, the various wars of WWII all involve credible commitment problems. Additionally, we see that 14 of the 33 wars that occurred after WWII have credible commitment concerns. Hence, credible commitment problems are still prevalent even after WWII.

Slantchev (2003*b*) and Filson and Werner (2002) argue that as states lose fighting resources they are more likely to lose the war. We would expect that as one side loses forces relatively faster than their opponent we should be more likely to witness an absolute outcome. As such, *Loss Balance* is a measure of performance parity among the combatants. *Loss Balance* is calculated in a similar fashion to *Military Balance*, but with loss for each side being calculated as the number of battle

[8]Typically in non-directed research designs parity is a measure between 0.5 and 1 where 0.5 equals perfect parity and 1 equals perfect asymmetry. Because of the relatively low number of observations in this study, a measure of parity with greater potential variation is desirable. As such, I opt for the measure ranging between 0 and 1. As a robustness check, I ran the analysis with the alternative measure of parity and the primary results hold.

[9]Salience with a value of 0 represents low level disputes over empire interests, policy, or economic interests. Salience with a value of 1 represents territory, state integrity, or wars over values.

deaths per month.[10] Again, values closer to 0 represent asymmetrical loss with values closer to 1 represent loss parity.

A variety of additional control variables are also used. *Democratic Initiator* is a binary indicator of whether the initiator is a democracy.[11] Fazal (2011) makes the argument that violent state deaths should be decreasing in the post-WWII era as norms about territorial borders become more entrenched. As such, *Post-1945* is a binary indicator of whether the war occurs after WWII. *Rivals* is a binary indicator of whether the primary combatants were rivals (Colaresi, Rasler and Thompson, 2007). Additionally, *Contiguity* is a binary indicator of whether the primary combatants share a border or are separated by less than 150 miles of war. Lastly, *Population Balance* represents the amount of population parity between the combatants (higher values represents greater parity) while *Multilateral* is a binary indicator of whether the war involves more than two combatants.[12]

4.4 Empirical Analysis

Table 4.1 shows the results for the absolute outcome analysis. Model 1 shows the base model without the interaction between *Military Balance* and *CCP*. As we would expect, parity is having a negative and statistically significant influence on the likelihood of an absolute outcome. Additionally, we see that wars with a credible commitment problem greatly enhance the likelihood of an absolute outcome.

Graphics and simulations can give us a better understanding of the substantive findings of Model 1. Figure 4.1 shows the predicted probability of an absolute outcome as *Military Balance* goes from asymmetry to parity with the control variables at their proper central tendency. The graphs in the figure also show two lines, one for when *CCP* is zero and one for when *CCP* is one. The two lines are meant to show the potential interactive influence of having a military advantage and credible commitment problems on the likelihood of an absolute outcome. The figure shows that for wars with no credible commitment problems, increasing parity decreases the likelihood

[10] The battle death data is from COW.

[11] Here democracy is operationalized using the Polity IV data with a democracy scoring a six or greater in the Polity2 variable (Marshall and Jaggers, 2009).

[12] The population data is taken from COW.

Table 4.1: Results for Absolute War Outcome

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
	Base Model	Interactive	CCP-Probit	CCP-OLS	NonCCP-OLS	With Duration	Alternative CCP
Military Balance	-2.074*	-7.070**	-2.140*	-0.544*	-0.046	-2.088*	-1.755**
	(0.814)	(2.287)	(0.955)	(0.250)	(0.051)	(0.814)	(0.665)
CCP	3.096***	2.079**				3.163***	
	(0.484)	(0.706)				(0.473)	
Military Balance x CCP		5.126*					
		(2.374)					
Loss Balance	-2.242**	-2.408**	-2.259*	-0.441*	-0.067	-2.184**	-1.117
	(0.719)	(0.830)	(1.013)	(0.205)	(0.067)	(0.726)	(0.587)
Population Balance	1.620*	1.694*	1.614	0.342	0.016	1.558	1.210
	(0.789)	(0.809)	(0.897)	(0.282)	(0.025)	(0.802)	(0.642)
Democratic Initiator	-1.028	-1.170*	-1.690*	-0.404*	0.028	-1.059*	-1.522**
	(0.538)	(0.510)	(0.718)	(0.179)	(0.031)	(0.529)	(0.527)
Rival	-0.058	-0.093	-0.216	0.023	-0.002	0.003	-0.326
	(0.462)	(0.504)	(0.590)	(0.138)	(0.014)	(0.475)	(0.424)
Contiguity	-0.557	-0.521	-0.266	-0.174	-0.036	-0.700	-0.710
	(0.552)	(0.563)	(0.660)	(0.153)	(0.038)	(0.553)	(0.393)
Post-1945	-0.480	-0.515	-0.403	-0.091	-0.011	-0.531	-0.084
	(0.531)	(0.544)	(0.576)	(0.190)	(0.016)	(0.535)	(0.408)
Multilateral	0.543	0.531	0.901	0.222	-0.037	0.583	1.024**
	(0.417)	(0.430)	(0.502)	(0.125)	(0.038)	(0.420)	(0.350)
Months						-0.005	
						(0.009)	
Constant	-0.773	0.293	2.177**	1.036***	0.100	-0.660	1.054
	(0.711)	(0.873)	(0.823)	(0.217)	(0.098)	(0.739)	(0.574)
N	112	112	47	47	65	112	86

* $p \leq 5\%$, ** $p \leq 1\%$, and *** $p \leq 0.1\%$ for two-tailed tests.

of an absolute outcome. Yet for most values of military parity the effect is negligible. The large influence of *Military Balance* comes into play when the war involves credible commitment problems. Here, we see that moving from asymmetry to parity greatly decreases the likelihood of an absolute outcome. As such, the figure shows that the influence of power asymmetry on the probability of observing an absolute outcome is enhanced by the presence of CCPs.

While the results of Model 1 are suggestive of an interactive relationship between military parity and CCPs, the results of Model 2 bring these results into question. Model 2 shows the results of the model when the interactive term is included. Hypothesis 1 posits a negative and significant interaction yet we see a positive and significant interaction in Model 2.[13] At first glance, this result is problematic. Using Clarify simulations and testing for an interaction with methods suggested by Berry, Golder and Milton (2012), however, there is some evidence of a negative interaction as we would expect (King, Tomz and Wittenberg, 2000).

Berry, Golder and Milton (2012) suggest calculating predicted probabilities along with first and second-differences. We care about two particular first-differences, increasing military parity when credible commitment problems are absent or present. Increasing the military balance from parity (0.9) to asymmetry (0.1) when there is no credible commitment problem results in a statistically significant increase in the likelihood of an absolute outcome[14] A similar first-difference when there are credible commitment problems results in a 173% increase in the likelihood of an absolute outcome from 30% to nearly 84%. Readers should note that these percentages represent the actual predicted probability from Clarify. In other words, when there are credible commitment problems and there is a vast disparity in military power there is an 85% chance of observing an absolute outcome.

From these two first-differences, we can create a second-difference to check for evidence of an interactive effect. A statistically significant second-difference would provide some evidence of an interaction (Berry, Golder and Milton, 2012, 654). Indeed, there is a negative and significant second-difference just as one might expect from the above theory.[15] Asymmetry has a much stronger influence on the likelihood of an absolute outcome when there is a credible commitment problem.

[13]The constituent terms operate as expected. *CCP* is positive and significant while *Military Balance* is negative and significant.

[14]A 1,864% increase in the likelihood of an absolute outcome. While this seems like a massive increase, the likelihood of an absolute outcome when there is asymmetry and no credible commitment problem is still below 1%.

[15]The second-difference has a mean of -0.5 with a 90% confidence interval of -0.12 to -0.78.

The probable explanation for the positive and significant interaction found in Model 2 lies with the structure of the data. There is only one absolute outcome when the war has no credible commitment problem – the Anglo-Egyptian War in 1882. In this particular war, the British enjoyed a large military capability advantage (0.15). The average value of *Military Balance* for the other CCP wars with an absolute outcome is higher (0.39). As such, the positive and significant interaction is not all that surprising. But, as the result is driven by a single war, we should be skeptical of the result.

As a different way of examining the interaction, Table 4.2 shows cross-tabulations of absolute outcomes and CCPs when the war involves either greater parity or greater asymmetry.[16] The cross-tab on the left shows the results when the war has greater parity. Here there are 55 total wars and 19 involve a CCP. Looking at the column percentages, of the 19 wars with CCPs, 9 end with an absolute outcome or roughly 47%. In other words, when there is greater parity, the likelihood of a CCP resulting in an absolute outcome is nearly 50/50. This hardly supports the findings in Model 2. Conversely, the cross-tab on the right shows the results when the war has greater asymmetry. Here there are 57 wars and 28 involve a CCP. The column percentages show that when there is power asymmetry we are more likely to see an absolute outcome. Of the 28 wars with a CCP, 19 result in an absolute outcome or nearly 67%. Again, these results cast doubt on the results of Model 2.

Table 4.2: Cross-Tab of Absolute Outcome and Credible Commitment Problems

Greater Parity					Greater Asymmetry				
		CCP					CCP		
		No	Yes	Total			No	Yes	
Absolute Outcome	No	36 100%	10 52.63%	46 83.64%	Absolute Outcome	No	28 96.55%	9 32.14%	37 64.91%
	Yes	0 0%	9 47.37%	9 16.36%		Yes	1 3.45%	19 67.86%	20 35.09%
Total		36	19	55	Total		29	28	57

Note: Percentages shown represent column percentages.

[16] Here greater asymmetry means a *Military Balance* value less than 0.5 and greater parity means a *Military Balance* value greater than 0.5.

Another potential way to test an interactive relationship is to split the sample of cases. Model 3 runs the model selecting on wars with CCPs. From hypothesis 1 we would expect a negative and significant *Military Balance* term. Indeed, this is the case. When there are CCPs we are more likely to observe an absolute outcome when the dyadic balance of power is asymmetric. Model 5 runs the model selecting on non-CCP wars using a linear probability model.[17] Here we see that *Military Balance* is having no statistically significant influence on the likelihood of an absolute outcome. Models 3 and 5 give additional support for hypothesis 1 and show there is an interactive effect between CCPs and the balance of military power.

Readers should note that parity in terms of military power does not imply the war will be less costly because an absolute outcome is likely to be avoided. Indeed, at parity we should expect longer and costlier wars. For instance, in the Iran-Iraq war that began in 1980 there was a great deal of military parity. As we would expect, the war was long and costly. What the regression results are showing is that we would not expect these type of wars to end in an absolute outcome. In the case of the Iran-Iraq War we saw a negotiated settlement rather than an absolute outcome. Neither side was able to get the advantage necessary to achieve such an extreme result.

The discussion of the Iran-Iraq War brings up another question; what is the relationship between war duration and absolute outcome? While Slantchev (2004) persuasively argues that longer wars tend to end badly for initiators in regards to the final war settlements, there is little reason to believe duration has an influence on the likelihood of an absolute war outcome. For instance, we have examples of absolute outcomes being imposed in relatively short wars; Iraq in 2003[18], Afghanistan in 2001, and the various German victories early in WWII. Additionally we have the examples of Japan and Germany as long wars resulting in an absolute outcome.

The influence of duration was tested in Model 6. Model 6 includes the duration of the war in months. The variable is statistically insignificant, suggesting duration has no influence on the likelihood of an absolute outcome. While duration has no statistical influence on the likelihood of an absolute outcome, the model's primary variables retain their significance and proper direction.

[17] A probit model was not used in this instance because when selecting on non-CCP wars, there is only one instance of an absolute war outcome. As such, the model quickly breaks down as binary independent variables cannot be included in the model and the model can easily predict the data perfectly. Model 4 shows the linear probability model selecting on CCPs. Comparing models 3 and 4 show that the level of significance across the models is fairly similar for the *Military Balance* variable. While the linear probability model is not the preferred regression model with a binary dependent variable, the results are still suggestive.

[18] Relatively short regarding the conventional phase of the war.

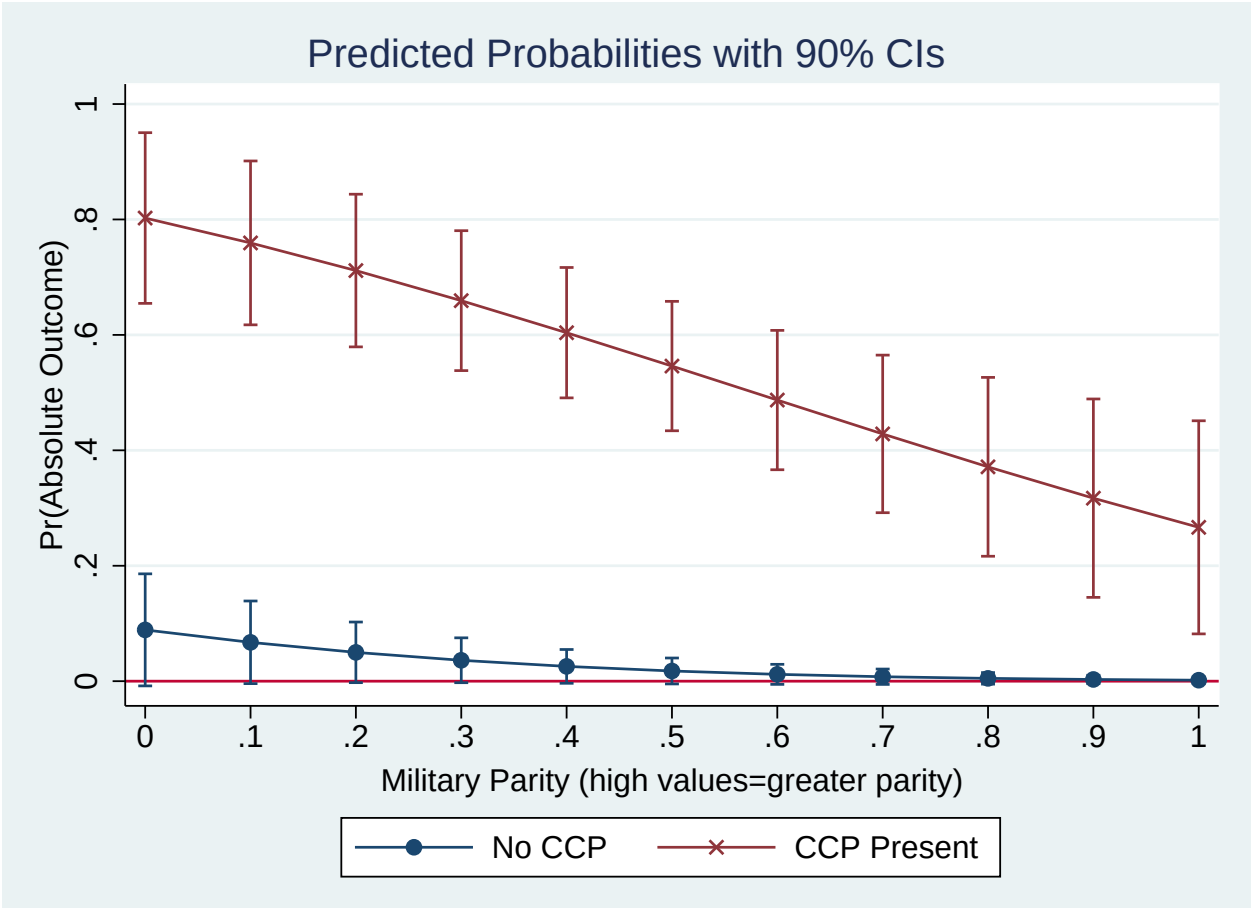

Figure 4.1: Predicted Probability of an Absolute War Outcome

From the control variables we would expect a negative and statistically significant coefficient for *Loss Parity*. The imposition of an absolute outcome takes raw military power. Yet also key to continuing the fight is maintaining one's capacity to inflict pain in the face of the opponent's attempts at inflicting costs (Slantchev, 2003*b*). In other words, armies relatively better at inflicting costs should have a higher likelihood at imposing an absolute outcome. All of the models (with the exception of Model 5) show this to be the case.

Perhaps one surprising finding from the models is that the *Post-1945* is statistically insignificant. Fazal (2011) makes the argument that inducing violent state deaths should be less likely in this era as norms on maintaining state boundaries become more entrenched. Yet from the model we see the post-1945 era is not acting any differently than the pre-1945 era. Looking at the data, this is

not that surprising. Post-WWII there have been 33 wars and 7 instances of an absolute outcome with Iraq 2003 being the most recent example. In other words, about 21% of wars post-WWII have resulted in an absolute outcome. In contrast, pre-WWII there were 65 wars and 11 instances of an absolute outcome - or about 17%. If anything, it appears that an absolute outcome may be more likely to occur in the post-WWII era.

Another interesting result from the models is the consistently negative and significant finding for *Democratic Initiators*.[19] We might expect democracies to avoid absolute outcomes due to their costly nature. In general, democracies initiate conflicts that ensure quick victories that are relatively cheap (Bueno de Mesquita et al., 1999; Anderson and Souva, 2010). Looking at the data, of the 29 absolute wars, there was a democratic initiator only 4 times.[20] While democracies do not avoid absolute wars (e.g., WWII), they typically do not initiate these type of wars. As such, the negative and significant findings show that democracies are less likely to initiate absolute wars.

Overall, what these results show is that while most wars tend to be of a limited nature, we can have some expectations about the likelihood of a war ending with an absolute outcome. Perhaps most importantly if the war involves credible commitment problems there is the real possibility of an absolute outcome. If the combatants are of unequal force we greatly increase the chance of an absolute outcome. As Figure 4.2 shows, Model 1 is performing fairly well. The Receiver Operating Characteristic (ROC) curve shows the performance of the model in predicting an absolute outcome. An area underneath the curve of over 0.95 shows evidence of a well performing model. While (Reiter, 2009, 59) maybe correct in that we do not have sufficient data to predict the exact time wars will end, we can still make predictions about the likelihood of a war ending with an absolute outcome.

As an additional way to check how well the model was performing, I ran Clarify simulations for each war included in the dataset. Table 4.3 shows the average predicted likelihood of an absolute outcome for every war along with the 90% confidence interval. Additionally, the table also includes if an absolute outcome actually occurred. Of the sixteen wars with a greater than 75% predicted likelihood of an absolute outcome, fifteen resulted in such an outcome. In fact, the model only incorrectly predicts 8 out of 31 conflicts that has a predicted likelihood greater than 50%. Only six

[19]The result is significant at the 90% level for all but Model 5.

[20]The four wars are; Anglo-Egyptian War in 1882, the Second Boer War in 1899, the 2001 Invasion of Afghanistan, and the 2003 Invasion of Iraq.

of the 81 remaining wars with a less than 50% predicted likelihood resulted in an absolute outcome. Overall, Table 4.3 shows that the model does remarkably well at predicting absolute outcomes.

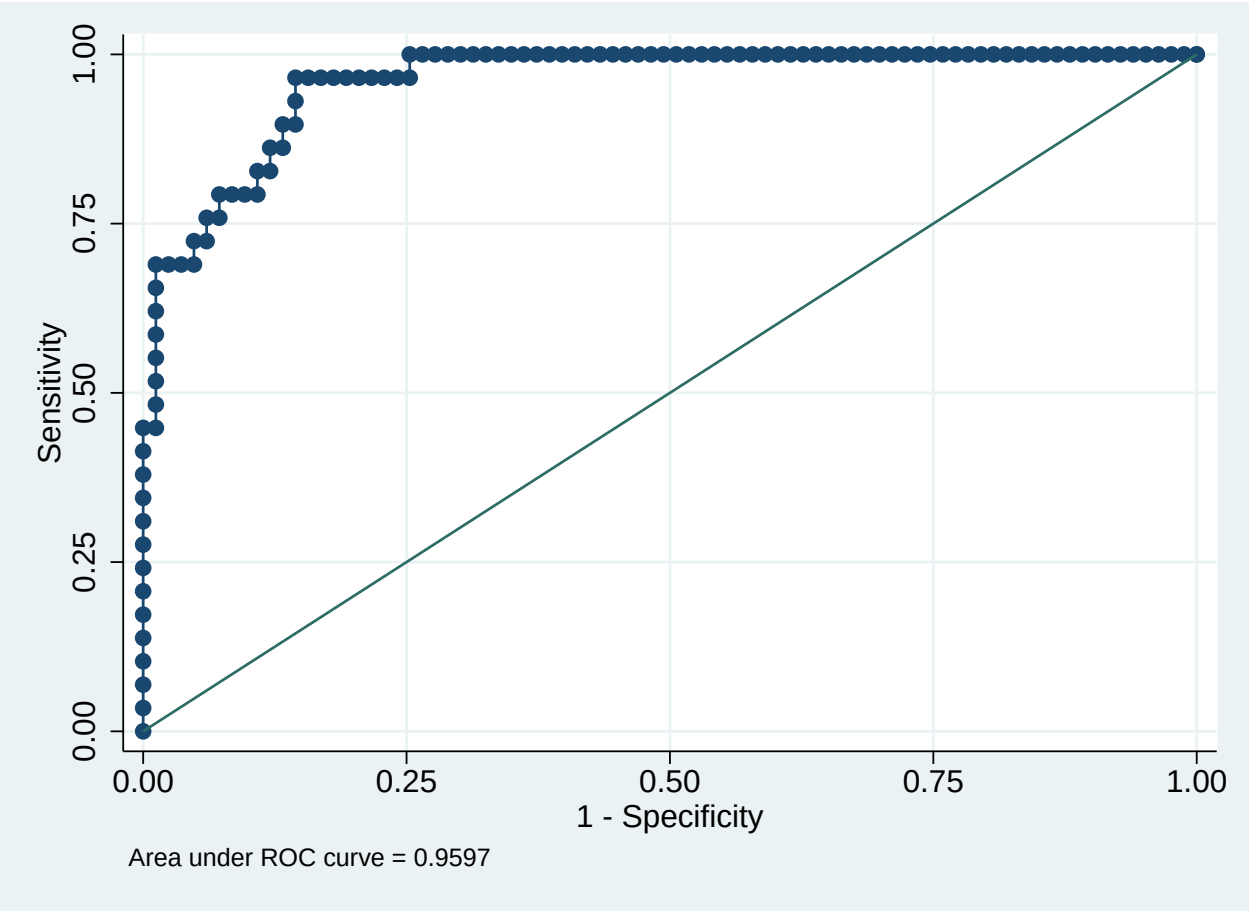

Figure 4.2: ROC Curve for Model 1

4.5 Conclusions

War can be an extension of bargaining and allow states to come to negotiated settlements through limited fighting. Yet in some cases war reaches extreme conclusions. These conflicts are incredibly destructive and lead to long roads of recovery for those on the losing end. Identifying the conditions that increase the likelihood of an absolute outcome can help the international community intervene into a war and limit its destructiveness.

I argue that two conditions increase the likelihood of a war reaching an absolute outcome. The difficulty and costs involve mean that a state must have the willingness and capabilities to impose such an outcome. Credible commitment problems give the willingness to pursue an absolute outcome. High salience wars increase the likelihood that credible commitment issues dominate the war. Reiter (2009, 35) argues that imposing an absolute outcome virtually ensures that a future attack will not happen. This makes an absolute outcome a more an attractive option.

Yet willingness is nothing without the capabilities to impose an absolute outcome. A state fighting an opponent of equal military power is more likely to find themselves fighting a long and costly war to a stalemate rather than imposing an absolute outcome. The likelihood of an absolute outcome greatly increases when a war involves asymmetrical military power. The empirical analysis has shown that asymmetry is more problematic when a war involves CCPs.

This chapter has presented one of the first analyses of wars that result in an absolute outcome. While identifying the conditions that increase the chance of an absolute outcome can help the international community intervene into wars, there are additional research avenues to explore. Organski and Kugler (1980) argued that the Phoenix Effect means that war is an inefficient means to preventing a rival from gaining power. Yet the argument of this chapter implies that we should not conflate limited wars with absolute wars. As such, limited wars may lead to the Phoenix Effect while absolute wars ensure that rivals fail to regain their military might. Going forward we need to move beyond understanding why some wars end with an absolute outcome to understanding the implications of such outcomes for winners and losers post-bellum.

Table 4.3: Mean Probability of an Absolute Outcome for All Wars

War Name	Mean	95% Confidence Interval		Absolute Outcome
WW2: German-Dutch	0.992387	0.961241	0.999995	1
WW2: German-Yugoslav	0.98763	0.946106	0.999938	1
WW2: German-Danish	0.979804	0.916257	0.999728	1
WW2: German-French	0.969669	0.903476	0.99816	1
Pacific	0.965141	0.873574	0.998639	1
WW2: German-Belgian	0.956736	0.824457	0.999553	1
WW2: German-Norwegian	0.953743	0.84376	0.997546	1
Italo-Ethiopian	0.930056	0.722433	0.998598	1
WW2: German-Polish	0.910513	0.762857	0.985803	1
WW2: Pacific	0.910257	0.714825	0.995715	1
Iraq-Kuwait	0.882958	0.638416	0.994777	1
Invasion of Afghanistan	0.880166	0.662781	0.992204	1
Italo-Roman	0.814023	0.509117	0.980239	1
WW2: Western	0.77654	0.477494	0.967911	1
Hungarian-Allies	0.776267	0.513208	0.946949	1
Franco-Mexican	0.767455	0.395846	0.980539	0
WW2: Great Patriotic War	0.739348	0.475312	0.925368	1
Peru-Bolivia Confederation	0.739053	0.540848	0.902933	1
Central American War of 1907	0.735614	0.473564	0.933552	1
WW2: Italo-Greek	0.703381	0.384611	0.932511	1
Invasion of Iraq	0.685011	0.375841	0.933551	1
Yom Kippur/October	0.684434	0.327525	0.931389	0
Vietnam	0.679518	0.329658	0.947464	0
Franco-Prussian	0.666425	0.361768	0.898239	0
Sino-Japanese	0.666224	0.415213	0.872563	1
Second Russo-Persian	0.65564	0.364031	0.894172	0
Second Boer	0.537652	0.182281	0.871515	1
Six-Day	0.521642	0.158229	0.88267	0
Ugandan-Tanzanian	0.51268	0.186086	0.828272	1
Korean	0.506977	0.164228	0.862044	0
Central American War of 1876	0.50231	0.222807	0.78646	0
Bosnian Independence	0.392156	0.089591	0.74662	0
Hungarian Revolution	0.372959	0.066318	0.774619	1
Franco-Spanish	0.349074	0.111441	0.641705	0
Two Sicilies	0.336502	0.094475	0.64979	1
Vietnamese-Cambodian	0.335296	0.059199	0.716029	1
Austro-Sardinian	0.334434	0.103593	0.618121	0
Triple Alliance	0.33155	0.052902	0.69302	1
Greco-Turkish	0.305119	0.111938	0.525507	0
Roman Republic	0.285113	0.047735	0.655967	0
North Vietnam-South Vietnam	0.280483	0.03528	0.660192	1
Saudi-Yemeni	0.264364	0.030141	0.622808	0
War of the Cakes	0.197736	0.02187	0.518083	0
La Plata	0.190972	0.037597	0.445307	0
Russo-Polish	0.164285	0.013382	0.444235	0
Turko-Cypriot	0.142649	0.011853	0.422236	0
Sino-Soviet (CER)	0.124228	0.011415	0.356376	0
Sinai	0.120055	0.002502	0.456659	0

Table 4.3: (continued)

War Name	Mean	95% Confidence Interval		Absolute Outcome
Anglo-Egyptian	0.118263	0.001631	0.440916	1
Uruguayan Dispute	0.111015	0.005584	0.347247	0
Israeli War of Independence	0.102628	0.002513	0.378663	0
British-Abyssinian	0.10211	0.002325	0.389041	0
Franco-Turkish	0.091427	0.000853	0.365277	0
War for Kosovo	0.07463	0.001713	0.27316	0
Second Turko-Egyptian	0.073983	0.0098	0.202989	0
Russo-Finnish	0.06289	0.00244	0.233309	0
Tonkin	0.062833	0.000959	0.260954	0
Central American War of 1885	0.060072	0.00415	0.178435	0
First British-Afghan	0.055123	0.000758	0.210478	0
Sino-Russian	0.043372	0.000325	0.185197	0
Mukden Incident	0.036382	0.001	0.139922	0
American Union	0.034999	0.000958	0.13752	0
First Balkan	0.024448	0.001582	0.080983	0
Second Schleswig-Holstein	0.024361	0.000308	0.098153	0
Second Anglo-Burmese	0.022737	4.26E-06	0.114681	0
Franco-Siamese	0.022198	3.32E-05	0.099574	0
Spanish-American	0.019811	3.78E-05	0.087042	0
Anglo-Persian	0.018579	2.89E-05	0.080697	0
Boxer Rebellion	0.016939	1.12E-05	0.088975	0
Serbo-Bulgarian	0.016342	0.000612	0.054739	0
Persian Gulf	0.013123	5.89E-05	0.054458	0
Second Spanish-Moroccan	0.011758	1.89E-05	0.052909	0
Franco-Austrian	0.011126	6.71E-06	0.055376	0
Falklands	0.010174	2.81E-06	0.054429	0
Sino-Japanese	0.007002	2.89E-05	0.032094	0
Israeli-Egyptian	0.006837	3.34E-06	0.03257	0
Russo-Turkish	0.006703	0.000139	0.02536	0
Seven Weeks	0.006473	4.39E-06	0.027529	0
Himalayan	0.005545	7.39E-06	0.028132	0
Cisplatina	0.005501	1.57E-06	0.029249	0
World War I	0.005416	9.18E-05	0.021577	0
Ogaden	0.004877	2.01E-06	0.027194	0
First Anglo-Burmese	0.004406	3.21E-06	0.019433	0
First Spanish-Moroccan	0.003805	1.88E-05	0.015686	0
Crimean	0.003635	1.79E-07	0.016347	0
Central American War of 1906	0.003177	3.66E-05	0.011709	0
Greco-Turkish	0.002807	1.38E-07	0.011968	0
Tripolitanian	0.002541	7.35E-06	0.011306	0
Russo-Japanese	0.002332	1.59E-05	0.009358	0
Ecuadorian-Colombian	0.002218	9.50E-06	0.010017	0
Khalkhin Gol	0.002139	6.24E-06	0.009987	0
Second Balkan	0.002004	2.95E-08	0.00865	0
Lake Khasan	0.001759	0.000011	0.006977	0
First Schleswig-Holstein	0.001486	3.52E-06	0.005956	0
Bangladesh	0.001485	3.08E-07	0.005996	0
Football	0.001337	1.43E-07	0.006205	0

Table 4.3: (continued)

War Name	Mean	95% Confidence Interval		Absolute Outcome
Chaco	0.0013	5.49E-06	0.005184	0
First Sino-Vietnamese	0.001231	5.19E-08	0.005239	0
Second Italo-Ethiopian	0.001189	6.15E-08	0.004748	0
Second Kashmir	0.00079	1.65E-08	0.003563	0
Lebanon	0.000616	1.10E-09	0.00201	0
Mexican-American	0.000555	1.64E-07	0.002287	0
Cenepa Valley	0.000402	6.88E-10	0.001141	0
Lithuanian-Polish	0.000341	3.23E-10	0.000862	0
Russo-Turkish	0.00028	6.01E-08	0.000864	0
Vichy France-Thailand	0.000269	1.34E-09	0.000596	0
Kargil War	0.000227	2.55E-09	0.000827	0
First Kashmir	0.000205	1.27E-09	0.000765	0
Azeri-Armenian	0.000188	5.41E-11	0.000365	0
Iran-Iraq	0.000165	2.08E-09	0.000624	0
Second Sino-Vietnamese	0.000123	1.13E-10	0.000333	0
Badme Border	9.98E-05	8.63E-11	0.00021	0

For multilateral wars, Side 1 and 2 represent the largest state for each side.

CHAPTER 5

CONCLUSION

While the three studies have examined various topics, all have questions about the role of military capabilities in international conflict at their heart. Chapter 2 uses a new dataset on naval power to provide the first comprehensive evidence showing that increasing naval power can increase the likelihood of non-contiguous disputes. Chapter 3 challenges the assumption that all dyads with relatively equal military power are created equal. The first test of the conflict behavior of relatively balanced dyads shows that strong dyads at parity may see a high level of low-level conflict, but escalation is unlikely. The first test of the factors that increase the likelihood of an absolute outcome in Chapter 4 shows that the combination of power asymmetry and credible commitment problems greatly increases the likelihood of such outcomes.

All three studies give us hints of what we may observe in the future and offers some policy suggestions. Chapter 2 and Chapter 3 gives us some idea of the future activities of China. As China continues to expand her naval might, the likelihood of China initiating non-contiguous hostile disputes is increasing. This suggests we should observe a greater level of hostility in the South China Sea. Additionally, the chapter suggests that despite the US commissioning a new line of aircraft carriers (the Ford), these new ships are unlikely to have an influence on the conflict activity of the US.

While China, and others, may use their growing naval capabilities to initiate non-contiguous hostile disputes, the US is left wondering about their policy options. Chapter 3 suggests that the US can engage China over some of these non-contiguous issues. From Chapter 3 we should expect a higher likelihood of disputes between strong states of relatively equal military power. But, while we may observe low-level conflict, escalation in this context is less likely. As such, the US will be able to engage China in hopes of minimizing China's activities towards her neighbors. Chapters 2 and 3 suggest that we may be entering a new Cold War era between China and the US. Two naval powers have the ability to engage over numerous issues across the globe. While we may observe

an increase in the number of MIDs between the states, the likelihood of any disputes escalating to open war are relatively low – much as we saw in the Cold War.

From Chapter 4, knowing the conditions that can cause a war to reach an absolute outcome can help inform the international community about helping to avoid such outcomes. Reiter (2009) argues that there are options other than absolute war outcomes that can help solve credible commitment problems. Peacekeepers can help mitigate fears about future attacks. The chapter shows how military parity can greatly decrease the likelihood of an absolute outcome. As such, when one combatant makes their intentions of an absolute outcome known, the international community can interject with forces to help create parity among the combatants. Additionally, the international community can help foster agreements over the control of strategic territory to help mitigate credible commitment concerns. Hence, having a better understanding of when we may observe an absolute outcome can help the international community intervene to avoid war at its most punishing phase.

The chapters are not without their shortcomings, however. A potential problem with the findings of Chapter 2 is a concern about the direction of the causal mechanism. While I make the argument that naval power has an influence on conflict, it is possible that the anticipation of conflict is what leads states to develop naval power. In other words, there are concerns about endogeneity. If there is endogeneity, the results reported here are biased. In this particular instance, we would expect a positive influence of anticipating conflict on naval development. As such, the results in Chapter 2 would be positively biased (King and Verba, 1994, 187–188). One possible solution to deal with endogeneity is to simultaneously model naval development and conflict. Because of the difficulty of finding instrumental variables for these equations, that task is left for future work.

In Chapter 4 there are concerns about selection issues. Because if it is known that wars involving credible commitment problems have a higher probability of ending in an absolute outcome states may elect to negotiate these disputes prior to a formal war occurring. In other words, the empirics in Chapter 4 use a non-random sample of cases. There maybe something fundamentally different about conflicts with credible commitment problems that reach war versus those conflicts that do not turn into a war. Empirically, this means that the sample of cases with credible commitment problems in Chapter 4 is probably less than we would otherwise expect. While this is unlikely to

alter the lessons from Chapter 4, it is important to remember the strategic nature of international politics.

Nevertheless, all three studies are also ripe for future research. Chapter 2 and Chapter 3 leaves open questions about the influence of regimes on either non-contiguous conflict or conflict among balance dyads. From Chapter 2, going forward one could study the influence of regime types on using naval power for non-contiguous conflict. Are democracies more likely to use naval force than non-democracies? Additionally, rather than using naval power as an independent variable, naval power can be used as the dependent variable. Building up one's naval power requires an incredible amount of resources. Why do states develop naval power? Are democracies more likely to develop naval power than non-democracies? There are numerous additional research questions regarding naval power and its role in foreign policy and international relations.

Finally, from Chapter 4, there are questions about what happens to the combatants after absolute war outcomes. The absolute outcomes in Iraq and Afghanistan both show how post-war insurgencies can greatly increase the costs of conflict for states pursuing absolute outcomes. Yet there are also questions about the ability of states to recover after suffering an absolute outcome. The Phoenix Effect suggests that states suffering a war defeat can recoup their power in relatively short order (Organski and Kugler, 1980). Chapter 4 suggests that states who experience an absolute war outcome may recover in the ways suggested by the Phoenix Effect.

While military power has certainly not suffered from a lack of research attention, all three studies suggest that there are still questions worth asking.

APPENDIX A

CHAPTER 3 APPENDIX

Table A.1: Balanced Models: 1946-2001

	Model 1 RECIP	Model 2 MUT FORCE	Model 3 FATAL 1+	Model 4 RECIP	Model 5 MUT FORCE	Model 6 FATAL 1+
			Escalation			
Dyadic Power	-0.291	-0.487**	-0.238			
	(0.162)	(0.181)	(0.292)			
Dyadic Military Power				-0.907*	-1.631*	-1.949*
				(0.354)	(0.635)	(0.807)
Joint Democracy	-0.521	-0.229	-0.441	-0.479	-0.213	-4.604***
	(0.363)	(0.364)	(0.563)	(0.437)	(0.309)	(0.437)
Trade Dependency	-90.538**	-62.696*	-97.164	-32.529	-45.707	-7.957
	(30.796)	(31.173)	(50.541)	(30.024)	(24.395)	(6.802)
Allies	0.717	0.135	-0.339	0.480	0.235	0.266
	(0.370)	(0.358)	(0.320)	(0.278)	(0.222)	(0.272)
Territory	0.920*	0.724*	0.511	0.162	0.159	0.466
	(0.461)	(0.359)	(0.443)	(0.302)	(0.235)	(0.273)
Contiguity	2.697	2.460*	2.860*	0.814	3.195***	3.212***
	(1.535)	(1.148)	(1.128)	(0.507)	(0.620)	(0.492)
Constant	-1.643	-2.237	-3.287	0.341	-2.032*	-2.908***
	(2.307)	(2.004)	(2.419)	(0.718)	(0.849)	(0.760)
			MID Onset			
Dyadic Power	0.390***	0.389***	0.419***			
	(0.052)	(0.052)	(0.054)			
Dyadic Military Power				0.119***	0.120***	0.131***
				(0.033)	(0.033)	(0.035)
Joint Democracy	0.267	0.264	0.346	-0.163	-0.180	-0.141
	(0.191)	(0.195)	(0.190)	(0.173)	(0.172)	(0.178)
Trade Dependency	-6.914	-6.908	-6.620	-3.796	-3.502	-3.193
	(4.710)	(4.688)	(4.702)	(3.069)	(2.831)	(2.775)
Allies	-0.162	-0.163	-0.222	-0.147	-0.147	-0.175
	(0.131)	(0.131)	(0.131)	(0.093)	(0.093)	(0.101)
Contiguity	1.501***	1.499***	1.543***	0.322	0.340	0.299
	(0.211)	(0.213)	(0.210)	(0.217)	(0.220)	(0.221)
Peace Years	-0.117***	-0.121***	-0.107***	-0.162***	-0.163***	-0.162***
	(0.029)	(0.028)	(0.030)	(0.034)	(0.033)	(0.035)
Constant	-2.393***	-2.384***	-2.527***	-0.830***	-0.844***	-0.863***
	(0.274)	(0.277)	(0.280)	(0.248)	(0.253)	(0.255)
ρ	-0.420	-0.201	0.079	-0.450	-0.780**	-0.409
	(0.529)	(0.475)	(0.655)	(0.278)	(0.283)	(0.246)
Censored Obs	1812	1812	1812	1893	1893	1893
Uncensored Obs	108	108	98	127	127	116

* $p \leq 5\%$, ** $p \leq 1\%$, and *** $p \leq 0.1\%$ for two-tailed tests.
Standard errors clustered on the dyad. Estimates for the three cubic splines not shown.

Table A.2: Interaction Models: 1946-2001

	Model 7 RECIP	Model 8 MUT FORCE	Model 9 FATAL 1+	Model 10 RECIP	Model 11 MUT FORCE	Model 12 FATAL 1+
			Escalation			
Dyadic Power	-0.123	-0.259*	-0.318**			
	(0.078)	(0.114)	(0.106)			
Parity	0.452**	0.332	0.161			
	(0.174)	(0.187)	(0.196)			
Dyadic Power x Parity	-0.194*	-0.308*	-0.001			
	(0.095)	(0.121)	(0.117)			
Dyadic Military Power				-0.117	-0.205*	-0.276**
				(0.064)	(0.095)	(0.084)
Parity (Military Power)				0.246*	0.212	0.120
				(0.122)	(0.137)	(0.155)
Dyadic Military Power x Parity				-0.003	-0.079	0.120
				(0.060)	(0.083)	(0.073)
Joint Democracy	-0.119	-0.127	-0.252	-0.068	-0.083	-0.230
	(0.135)	(0.155)	(0.219)	(0.133)	(0.153)	(0.214)
Trade Dependence	-60.835***	-57.936**	-60.754*	-60.549***	-60.289**	-70.750**
	(18.108)	(20.808)	(25.682)	(15.779)	(19.475)	(24.853)
Allies	0.073	-0.058	-0.046	0.110	-0.008	0.014
	(0.113)	(0.121)	(0.136)	(0.116)	(0.123)	(0.139)
Territory	0.664***	0.414***	0.467***	0.640***	0.417***	0.435**
	(0.120)	(0.113)	(0.139)	(0.127)	(0.122)	(0.150)
Contiguity	-0.050	-0.020	-0.080	-0.073	-0.010	-0.133
	(0.164)	(0.201)	(0.223)	(0.173)	(0.217)	(0.236)
Constant	0.674*	0.348	0.004	0.687*	0.264	-0.025
	(0.297)	(0.354)	(0.435)	(0.304)	(0.367)	(0.473)
			MID Onset			
Dyadic Power	0.195***	0.195***	0.191***			
	(0.036)	(0.036)	(0.038)			
Parity	0.027	0.027	0.016			
	(0.077)	(0.077)	(0.077)			
Dyadic Power x Parity	0.142**	0.142**	0.175***			
	(0.052)	(0.052)	(0.051)			
Dyadic Military Power				0.143***	0.143***	0.141***
				(0.025)	(0.025)	(0.026)
Parity (Military Power)				0.190**	0.189**	0.195**
				(0.064)	(0.064)	(0.071)
Dyadic Military Power x Parity				0.088***	0.087***	0.107***
				(0.023)	(0.023)	(0.023)
Joint Democracy	-0.168**	-0.168**	-0.136*	-0.132*	-0.133*	-0.099
	(0.059)	(0.059)	(0.059)	(0.058)	(0.058)	(0.058)
Trade Dependence	-6.406	-6.425	-5.690	-7.195*	-7.206*	-6.574
	(3.377)	(3.382)	(3.270)	(3.486)	(3.489)	(3.398)
Allies	-0.029	-0.029	-0.015	-0.045	-0.045	-0.034
	(0.054)	(0.054)	(0.057)	(0.057)	(0.057)	(0.060)
Contiguity	0.888***	0.888***	0.870***	0.866***	0.867***	0.848***
	(0.063)	(0.063)	(0.066)	(0.065)	(0.065)	(0.067)
Peace Years	-0.132***	-0.133***	-0.128***	-0.139***	-0.140***	-0.135***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Constant	-1.718***	-1.716***	-1.783***	-1.672***	-1.670***	-1.742***
	(0.073)	(0.073)	(0.076)	(0.072)	(0.072)	(0.074)
ρ	-0.346***	-0.382***	-0.300*	-0.339**	-0.357**	-0.269
	(0.104)	(0.113)	(0.139)	(0.103)	(0.110)	(0.142)
Censored Obs	42958	42958	42958	40715	40715	40715
Uncensored Obs	1074	1074	962	1018	1018	911

* $p \leq 5\%$, ** $p \leq 1\%$, and *** $p \leq 0.1\%$ for two-tailed tests.
Standard errors clustered on the dyad. Estimates for the three cubic splines not shown.

Table A.3: Robustness Checks: Contiguous Models 1946-2001

	Model 13	Model 14	Model 15	Model 16	Model 17	Model 18
	RECIP	RECIP	MUT FORCE	MUT FORCE	FATAL 1+	FATAL 1+
			Escalation			
Dyadic Power	-0.288	-0.229*	-0.487**	-0.345*	-0.244	-0.351*
	(0.154)	(0.096)	(0.172)	(0.157)	(0.278)	(0.152)
Joint Democracy	-0.527	-0.417	-0.233	-0.170	-0.445	-0.714
	(0.364)	(0.349)	(0.364)	(0.325)	(0.563)	(0.483)
Trade Dependency	-90.483**	-90.729***	-62.612*	-56.368*	-97.113	-73.112
	(30.647)	(26.332)	(31.174)	(27.607)	(50.495)	(39.410)
Allies	0.717	0.676*	0.136	0.199	-0.336	-0.062
	(0.370)	(0.286)	(0.358)	(0.301)	(0.319)	(0.300)
Territory	0.919*	1.070**	0.723*	0.908**	0.511	0.600*
	(0.460)	(0.360)	(0.358)	(0.285)	(0.443)	(0.305)
Constant	1.056	0.950*	0.232	0.338	-0.399	-0.027
	(0.781)	(0.460)	(0.867)	(0.529)	(1.286)	(0.730)
			MID Onset			
Dyadic Power	0.371***	0.312***	0.370***	0.312***	0.401***	0.333***
	(0.056)	(0.069)	(0.056)	(0.069)	(0.057)	(0.078)
Joint Democracy	0.280	0.182	0.277	0.179	0.360	0.243
	(0.193)	(0.182)	(0.197)	(0.183)	(0.193)	(0.182)
Trade Dependency	-6.943	-7.298	-6.939	-7.296	-6.645	-7.020
	(4.828)	(4.554)	(4.810)	(4.569)	(4.824)	(4.586)
Allies	-0.162	-0.191	-0.163	-0.191	-0.222	-0.232*
	(0.133)	(0.119)	(0.133)	(0.119)	(0.133)	(0.118)
Peace Years	-0.116***	-0.130***	-0.119***	-0.130***	-0.106***	-0.114***
	(0.029)	(0.027)	(0.029)	(0.027)	(0.030)	(0.028)
Constant	-0.883***	-0.773***	-0.875***	-0.772***	-0.973***	-0.877***
	(0.154)	(0.152)	(0.154)	(0.152)	(0.160)	(0.153)
Rho	-0.422	-0.391	-0.206	-0.343	0.064	-0.179
	(0.516)	(0.310)	(0.460)	(0.318)	(0.633)	(0.372)
Censored	1577	2134	1577	2134	1577	2134
Uncensored	107	151	107	151	97	136

* $p \leq 5\%$, ** $p \leq 1\%$, and *** $p \leq 0.1\%$ for two-tailed tests.
Standard errors clustered on the dyad. Estimates for the three cubic splines not shown.

Table A.4: Robustness Models: Balanced Dyads 0.5-0.6, 1946-2001

	Model 19	Model 20	Model 21	Model 22	Model 23	Model 24
	RECIP	MUT FORCE	FATAL 1+	RECIP	MUT FORCE	FATAL 1+
			Escalation			
Dyadic Power	-0.238*	-0.351*	-0.355*			
	(0.102)	(0.161)	(0.163)			
Dyadic Military Power				-0.128*	-0.241***	-0.148*
				(0.050)	(0.066)	(0.065)
Joint Democracy	-0.407	-0.159	-0.708	-0.485	-0.226	-5.085***
	(0.349)	(0.323)	(0.480)	(0.352)	(0.250)	(0.294)
Trade Dependency	-90.742***	-56.595*	-73.172	-37.324	-31.973	-6.886
	(26.393)	(27.625)	(39.381)	(31.762)	(26.488)	(6.826)
Allies	0.673*	0.195	-0.065	0.624*	0.240	0.207
	(0.286)	(0.301)	(0.300)	(0.299)	(0.271)	(0.284)
Territory	1.070**	0.910**	0.601*	0.315	0.220	0.380
	(0.361)	(0.286)	(0.305)	(0.300)	(0.263)	(0.260)
Contiguity	4.066***	3.062***	3.316***	1.147*	4.267***	4.234***
	(0.692)	(0.670)	(0.606)	(0.536)	(0.400)	(0.343)
Constant	-3.114**	-2.733*	-3.349**	-0.575	-3.867***	-4.565***
	(1.122)	(1.134)	(1.283)	(0.725)	(0.688)	(0.681)
			MID Onset			
Dyadic Power	0.357***	0.357***	0.378***			
	(0.067)	(0.067)	(0.074)			
Dyadic Military Power				0.159***	0.159***	0.171***
				(0.025)	(0.025)	(0.025)
Joint Democracy	0.147	0.144	0.205	-0.003	-0.007	0.033
	(0.178)	(0.180)	(0.178)	(0.165)	(0.166)	(0.160)
Trade Dependency	-7.176	-7.172	-6.892	-5.492	-5.413	-4.986
	(4.409)	(4.421)	(4.432)	(4.231)	(4.169)	(3.915)
Allies	-0.182	-0.182	-0.222	-0.149	-0.149	-0.190*
	(0.118)	(0.118)	(0.117)	(0.090)	(0.089)	(0.094)
Contiguity	1.200***	1.199***	1.218***	0.476*	0.480*	0.464*
	(0.186)	(0.186)	(0.190)	(0.219)	(0.219)	(0.224)
Peace Years	-0.128***	-0.129***	-0.113***	-0.165***	-0.166***	-0.162***
	(0.026)	(0.026)	(0.027)	(0.027)	(0.027)	(0.029)
Constant	-1.993***	-1.991***	-2.115***	-1.001***	-1.003***	-1.051***
	(0.246)	(0.246)	(0.252)	(0.242)	(0.242)	(0.252)
Rho	-0.391	-0.336	-0.174	-0.185	-0.343	-0.141
	(0.317)	(0.324)	(0.383)	(0.240)	(0.233)	(0.253)
Censored Obs	2440	2440	2440	2539	2539	2539
Uncensored Obs	154	154	139	163	163	149

* $p \leq 5\%$, ** $p \leq 1\%$, and *** $p \leq 0.1\%$ for two-tailed tests.
Standard errors clustered on the dyad. Estimates for the three cubic splines not shown.

Table A.5: Robust Models: All Dyads and Parity (0.5-0.6), 1946-2001

	Model 25	Model 26	Model 27	Model 28	Model 29	Model 30
	RECIP	MUT FORCE	FATAL 1+	RECIP	MUT FORCE	FATAL 1+
			Escalation			
Dyadic Power	-0.113	-0.284**	-0.287*			
	(0.079)	(0.103)	(0.113)			
Parity	0.447**	0.299	0.253			
	(0.140)	(0.166)	(0.179)			
Dyadic Power x Parity	-0.186*	-0.130	-0.100			
	(0.090)	(0.140)	(0.139)			
Dyadic Military Power				-0.117	-0.235**	-0.259**
				(0.061)	(0.082)	(0.089)
Military Power Parity				0.236*	0.214	0.130
				(0.120)	(0.134)	(0.138)
Dyadic Military Power x Parity				-0.009	0.009	0.069
				(0.058)	(0.085)	(0.091)
Joint Democracy	-0.107	-0.120	-0.249	-0.075	-0.094	-0.229
	(0.135)	(0.156)	(0.220)	(0.134)	(0.154)	(0.215)
Trade Dependence	-63.651***	-60.125**	-64.617*	-60.737***	-61.154**	-70.937**
	(18.436)	(20.808)	(26.584)	(15.739)	(19.335)	(24.997)
Allies	0.075	-0.055	-0.046	0.110	-0.008	0.017
	(0.114)	(0.122)	(0.136)	(0.116)	(0.123)	(0.138)
Territory	0.674***	0.422***	0.471***	0.636***	0.413***	0.429**
	(0.121)	(0.114)	(0.139)	(0.126)	(0.121)	(0.148)
Contiguity	-0.061	-0.054	-0.078	-0.078	-0.056	-0.115
	(0.161)	(0.193)	(0.225)	(0.168)	(0.204)	(0.238)
Constant	0.659*	0.363	-0.016	0.678*	0.303	-0.053
	(0.298)	(0.351)	(0.440)	(0.295)	(0.350)	(0.472)
			MID Onset			
Dyadic Power	0.192***	0.192***	0.188***			
	(0.037)	(0.037)	(0.039)			
Parity	0.052	0.052	0.048			
	(0.073)	(0.073)	(0.073)			
Dyadic Power x Parity	0.142*	0.142*	0.165*			
	(0.062)	(0.063)	(0.067)			
Dyadic Military Power				0.139***	0.139***	0.137***
				(0.025)	(0.025)	(0.026)
Military Power Parity				0.158**	0.158**	0.165*
				(0.059)	(0.059)	(0.064)
Dyadic Military Power x Parity				0.100***	0.100***	0.114***
				(0.027)	(0.027)	(0.030)
Joint Democracy	-0.167**	-0.167**	-0.135*	-0.134*	-0.134*	-0.100
	(0.059)	(0.059)	(0.059)	(0.059)	(0.059)	(0.059)
Trade Dependence	-6.649	-6.670	-5.972	-7.157*	-7.174*	-6.554
	(3.445)	(3.452)	(3.331)	(3.513)	(3.519)	(3.428)
Allies	-0.030	-0.030	-0.016	-0.044	-0.043	-0.032
	(0.055)	(0.055)	(0.057)	(0.057)	(0.057)	(0.060)
Contiguity	0.880***	0.880***	0.862***	0.858***	0.858***	0.839***
	(0.064)	(0.064)	(0.066)	(0.065)	(0.065)	(0.068)
Peace Years	-0.132***	-0.133***	-0.129***	-0.139***	-0.140***	-0.134***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Constant	-1.716***	-1.714***	-1.782***	-1.667***	-1.666***	-1.737***
	(0.073)	(0.073)	(0.076)	(0.072)	(0.072)	(0.074)
Rho	-0.345**	-0.376**	-0.306*	-0.334**	-0.353**	-0.269
	(0.105)	(0.115)	(0.140)	(0.104)	(0.110)	(0.142)
Censored Obs	42958	42958	42958	40715	40715	40715
Uncensored Obs	1074	1074	962	1018	1018	911

* $p \leq 5\%$, ** $p \leq 1\%$, and *** $p \leq 0.1\%$ for two-tailed tests.
Standard errors clustered on the dyad. Estimates for the three cubic splines not shown.

APPENDIX B

CHAPTER 4 APPENDIX

Table B.1: List of Wars with Absolute Outcomes

War Name	Strongest State - Side 1	Strongest State - Side 2	Year
Peru-Bolivia Confederation	Chile	Peru	1836
Italo-Roman	Sardinia	Papal States	1860
Two Sicilies	Sardinia	Naples	1860
Triple Alliance	Paraguay	Brazil	1864
Pacific	Chile	Peru	1879
Anglo-Egyptian	Britain	Egypt	1882
Second Boer	Orange Free State	Britain	1899
Central American War of 1907	Nicaragua	Honduras	1907
Hungarian-Allies	Hungary	Czechoslovakia	1919
Italo-Ethiopian	Italy	Ethiopia	1935
Sino-Japanese	Japan	China	1937
WW2: German-Polish	Germany	Poland	1939
WW2: German-French	Germany	France	1940
WW2: German-Danish	Germany	Denmark	1940
WW2: German-Norwegian	Germany	Norway	1940
WW2: German-Belgian	Germany	Belgium	1940
WW2: German-Dutch	Germany	Netherlands	1940
WW2: Western	Germany	Britain	1940
WW2: Italo-Greek	Italy	Greece	1940
WW2: German-Yugoslav	Germany	Yugoslavia	1941
WW2: Great Patriotic War	Germany	USSR	1941
WW2: Pacific	Japan	USA	1941
Hungarian Revolution	USSR	Hungary	1956
North Vietnam-South Vietnam	North Vietnam	South Vietnam	1975
Vietnamese-Cambodian	Vietnam	Cambodia	1977
Ugandan-Tanzanian	Uganda	Tanzania	1978
Iraq-Kuwait	Iraq	Kuwait	1990
Invasion of Afghanistan	USA	Afghanistan	2001
Invasion of Iraq	USA	Iraq	2003

Table B.2: List of Wars: 1816-2003

War Name	Side 1	Side 2	Year
Franco-Spanish	France	Spain	1823
First Anglo-Burmese	Burma	Britain	1823

Table B.2: (continued)

War Name	Side 1	Side 2	Year
Cisplatina	Brazil	Argentina	1825
Second Russo-Persian	Persia	Russia	1826
Russo-Turkish	Russia	Turkey	1828
Peru-Bolivia Confederation	Chile	Peru	1836
War of the Cakes	France	Mexico	1838
First British-Afghan	Britain	Afghanistan	1838
Second Turko-Egyptian	Turkey	Egypt	1839
Uruguayan Dispute	France	Argentina	1845
Mexican-American	Mexico	USA	1846
Austro-Sardinian	Sardinia	Austria	1848
First Schleswig-Holstein	Prussia	Denmark	1848
Roman Republic	France	Papal States	1849
La Plata	Brazil	Argentina	1851
Second Anglo-Burmese	Britain	Burma	1852
Crimean	Britain	Russia	1853
Anglo-Persian	Britain	Persia	1856
Franco-Austrian	Austria	France	1859
First Spanish-Moroccan	Spain	Morocco	1859
Italo-Roman	Sardinia	Papal States	1860
Two Sicilies	Sardinia	Naples	1860
Franco-Mexican	France	Mexico	1862
Ecuadorian-Colombian	Ecuador	Columbia	1863
Second Schleswig-Holstein	Prussia	Denmark	1864
Triple Alliance	Paraguay	Brazil	1864
American Union	Chile	Spain	1865
Seven Weeks	Prussia	Austria	1866
British-Abyssinian	Britain	Ethiopia	1868
Franco-Prussian	France	Prussia	1870
Central American War of 1876	Guatemala	El Salvador	1876
Russo-Turkish	Russia	Turkey	1877
Pacific	Chile	Peru	1879
Anglo-Egyptian	Britain	Egypt	1882
Tonkin	China	France	1883
Central American War of 1885	Guatemala	El Salvador	1885
Serbo-Bulgarian	Serbia	Bulgaria	1885
Franco-Siamese	France	Siam	1893
Sino-Japanese	Japan	China	1894
Second Italo-Ethiopian	Italy	Ethiopia	1895
Greco-Turkish	Greece	Turkey	1897
Spanish-American	USA	Spain	1898
Second Boer	Orange Free State	Britain	1899
Boxer Rebellion	Britain	China	1900

Table B.2: (continued)

War Name	Side 1	Side 2	Year
Sino-Russian	Russia	China	1900
Russo-Japanese	Japan	Russia	1904
Central American War of 1906	Guatemala	El Salvador	1906
Central American War of 1907	Nicaragua	Honduras	1907
Second Spanish-Moroccan	Spain	Morocco	1909
Tripolitanian	Italy	Turkey	1911
First Balkan	Bulgaria	Turkey	1912
Second Balkan	Bulgaria	Turkey	1913
World War I	Germany	Britain	1914
Hungarian-Allies	Hungary	Czechoslovakia	1919
Franco-Turkish	France	Turkey	1919
Russo-Polish	Poland	USSR	1920
Greco-Turkish	Greece	Turkey	1920
Lithuanian-Polish	Poland	Lithuania	1920
Sino-Soviet (CER)	Russia	China	1929
Mukden Incident	Japan	China	1931
Chaco	Bolivia	Paraguay	1932
Saudi-Yemeni	Saudi Arabia	Yemen	1934
Italo-Ethiopian	Italy	Ethiopia	1935
Sino-Japanese	Japan	China	1937
Lake Khasan	USSR	Japan	1938
Khalkhin Gol	Japan	USSR	1939
WW2: German-Polish	Germany	Poland	1939
WW2: German-French	Germany	France	1940
Russo-Finnish	USSR	Finland	1939
WW2: German-Danish	Germany	Denmark	1940
WW2: German-Norwegian	Germany	Norway	1940
WW2: German-Belgian	Germany	Belgium	1940
WW2: German-Dutch	Germany	Netherlands	1940
WW2: Western	Germany	Britain	1940
WW2: Italo-Greek	Italy	Greece	1940
Vichy France-Thailand	Thailand	Vichy France	1941
WW2: German-Yugoslav	Germany	Yugoslavia	1941
WW2: Great Patriotic War	Germany	USSR	1941
WW2: Pacific	Japan	USA	1941
First Kashmir	Pakistan	India	1947
Israeli War of Independence	Egypt	Israel	1948
Korean	North Korea	USA	1950
Sinai	Israel	Egypt	1956
Hungarian Revolution	USSR	Hungary	1956
Himalayan	China	India	1962
Vietnam	USA	North Vietnam	1964

Table B.2: (continued)

War Name	Side 1	Side 2	Year
Second Kashmir	Pakistan	India	1965
Six-Day	Israel	Egypt	1967
Israeli-Egyptian	Egypt	Israel	1969
Football	El Salvador	Honduras	1969
Bangladesh	Pakistan	India	1971
Yom Kippur/October	Egypt	Israel	1973
Turko-Cypriot	Turkey	Cyprus	1974
North Vietnam-South Vietnam	North Vietnam	South Vietnam	1975
Ogaden	Somalia	Ethiopia	1977
Vietnamese-Cambodian	Vietnam	Cambodia	1977
Ugandan-Tanzanian	Uganda	Tanzania	1978
First Sino-Vietnamese	China	Vietnam	1979
Iran-Iraq	Iraq	Iran	1980
Falklands	Argentina	Britain	1982
Lebanon	Israel	Syria	1982
Second Sino-Vietnamese	China	Vietnam	1987
Persian Gulf	USA	Iraq	1991
Iraq-Kuwait	Iraq	Kuwait	1990
Bosnian Independence	Yugoslavia	Croatia	1992
Azeri-Armenian	Armenia	Azerbaijan	1993
Cenepa Valley	Ecuador	Peru	1995
Badme Border	Eritrea	Ethiopia	1998
War for Kosovo	USA	Yugoslavia	1999
Kargil War	Pakistan	India	1999
Invasion of Afghanistan	USA	Afghanistan	2001
Invasion of Iraq	USA	Iraq	2003

For multilateral wars, Side 1 and 2 represent the largest state for each side.

Table B.3: List of Wars with Credible Commitment Problems and Outcomes

War Name	Largest State - Side 1	Largest State - Side 2	Year	Absolute Outcome
Second Russo-Persian	Persia	Russia	1826	0
Peru-Bolivia Confederation	Chile	Peru	1836	1
First British-Afghan	Britain	Afghanistan	1838	0
Austro-Sardinian	Sardinia	Austria	1848	0
Italo-Roman	Sardinia	Papal States	1860	1
Two Sicilies	Sardinia	Naples	1860	1
Triple Alliance	Paraguay	Brazil	1864	1
British-Abyssinian	Britain	Ethiopia	1868	0
Franco-Prussian	France	Prussia	1870	0
Central American War of 1876	Guatemala	El Salvador	1876	0
Pacific	Chile	Peru	1879	1
Second Boer	Orange Free State	Britain	1899	1
Hungarian-Allies	Hungary	Czechoslovakia	1919	1
Russo-Polish	Poland	USSR	1920	0
Greco-Turkish	Greece	Turkey	1920	0
Italo-Ethiopian	Italy	Ethiopia	1935	1
Sino-Japanese	Japan	China	1937	1
WW2: German-Polish	Germany	Poland	1939	1
WW2: German-French	Germany	France	1940	1
WW2: German-Danish	Germany	Denmark	1940	1
WW2: German-Norwegian	Germany	Norway	1940	1
WW2: German-Belgian	Germany	Belgium	1940	1
WW2: German-Dutch	Germany	Netherlands	1940	1
WW2: Western	Germany	Britain	1940	1
WW2: Italo-Greek	Italy	Greece	1940	1
WW2: German-Yugoslav	Germany	Yugoslavia	1941	1
WW2: Great Patriotic War	Germany	USSR	1941	1
WW2: Pacific	Japan	USA	1941	1
Israeli War of Independence	Egypt	Israel	1948	0
Korean	North Korea	USA	1950	0
Hungarian Revolution	USSR	Hungary	1956	1
Vietnam	USA	North Vietnam	1964	0
Six-Day	Israel	Egypt	1967	0
Yom Kippur/October	Egypt	Israel	1973	0
Turko-Cypriot	Turkey	Cyprus	1974	0
North Vietnam-South Vietnam	North Vietnam	South Vietnam	1975	1
Vietnamese-Cambodian	Vietnam	Cambodia	1977	1
Ugandan-Tanzanian	Uganda	Tanzania	1978	1
Iraq-Kuwait	Iraq	Kuwait	1990	1
Bosnian Independence	Yugoslavia	Croatia	1992	0
Invasion of Afghanistan	USA	Afghanistan	2001	1
Invasion of Iraq	USA	Iraq	2003	1

REFERENCES

Anderson, Sally and Mark Souva. 2010. "The Accountability Effects of Political Institutions and Capitalism on Interstate Conflict." *Journal of Conflict Resolution* 54(4):543–565.

Beardsley, Kyle. 2008. "Agreement Without Peace? International Mediation and Time Inconsistency Problems." *American Journal of Political Science* 52(4):723–740.

Beck, Nathaniel, Jonathan N. Katz and Richard Tucker. 1998. "Taking Time Seriously: Time-Series-Cross-Section Analysis with a Binary Dependent Variable." *American Journal of Political Science* 42:1260–1288.

Bennett, D. Scott and Allan C. Stam. 1996. "The Duration of Interstate Wars, 1816-1985." *American Political Science Review* 90(2):239–257.

Bennett, D. Scott and Allan C. Stam. 1998. "The Declining Advantages of Democracy A Combined Model of War Outcomes and Duration." *Journal of Conflict Resolution* 42(3):344–366.

Bennett, D. Scott and Allan C. Stam. 2000. "EUGene: A Conceptual Manual." *International Interactions* 26:179–204.

Berry, William D., Matt Golder and Daniel Milton. 2012. "Improving Tests of Theories Positing Interactions." *The Journal of Politics* 74(3):653–671.

Blainey, Geoffrey. 1988. *The Causes of War.* New York: Free Press.

Boulding, Kenneth. 1963. *Conflict and Defense: A General Theory.* New York: Harper and Row.

Braithwaite, Alex. 2010. "MIDLOC: Introducing the Militarized Interstate Dispute Location dataset." *Journal of Peace Research* 47(1):91–98.

Braithwaite, Alex and Douglas Lemke. 2011. "Unpacking Escalation." *Conflict Management and Peace Science* 28(2):111–123.

Bremer, Stuart A. 1992. "Dangerous Dyads: Conditions Affecting the Likelihood of Interstate War." *Journal of Conflict Resolution* 36(2):309–341.

Bueno de Mesquita, Bruce. 1981. *The War Trap.* New Haven: Yale University Press.

Bueno de Mesquita, Bruce, James D. Morrow, Randolph M. Siverson and Alastair Smith. 1999. "An Institutional Explanation of the Democratic Peace." *American Political Science Review* 93:791–807.

Bueno de Mesquita, Bruce, James D. Morrow, Randolph M. Siverson and Alastair Smith. 2003. *The Logic of Political Survival.* Cambridge: MIT Press.

Chiozza, Giacomo. and H.E. Goemans. 2004. "International Conflict and the Tenure of Leaders: Is War Still Ex Post Inefficient?" *American Journal of Political Science* 48(3):604–619.

Clausewitz, Carl Von. 1984. *On War.*

Colaresi, Michael P., Karen Rasler and Wiliam R. Thompson. 2007. *Strategic Rivalries in World Politics: Position, Space and Conflict Escalation.* Cambridge University: Cambridge University Press.

Crisher, Brian Benjamin and Mark Souva. 2014. "Power at Sea: A Naval Power Dataset, 1865-2011." *International Interactions* 40(4):602–629.

Fazal, Tanisha M. 2011. *State Death: The Politics and Geography of Conquest, Occupation, and Annexation.* Princeton University Press.

Fearon, James D. 1994. "Signaling Versus the Balance of Power and Interests: An Empirical Test of a Crisis Bargaining Model." *Journal of Conflict Resolution* 38(2):236–269.

Fearon, James D. 1995. "Rationalist Explanations for War." *International Organization* 49:379–414.

Fey, Mark and Kristopher W. Ramsay. 2011. "Uncertainty and Incentives in Crisis Bargaining: Game-Free Analysis of International Conflict." *American Journal of Political Science* 55(1):149–169.

Filson, Darren and Suzanne Werner. 2002. "A Bargaining Model of War and Peace: Anticipating the Onset, Duration, and Outcome of War." *American Journal of Political Science* 46(4):819–837.

Filson, Darren and Suzanne Werner. 2004. "Bargaining and Fighting: The Impact of Regime Type on War Onset, Duration, and Outcomes." *American Journal of Political Science* 48(2):296–313.

Fordham, Benjamin O. 2011. "Who Wants to be a Major Power? Explaining the Expansion of Foreign Policy Ambition." *Journal of Peace Research* 48(5):587–603.

Fortna, Virginia Page. 2004. "Interstate Peacekeeping: Causal Mechanisms and Empirical Effects." *World Politics* 56(04):481–519.

Geller, Daniel. 1993. "Power Differentials and War in Rival Dyads." *International Studies Quarterly* 37(2):173–193.

Gelpi, Chris F. and Joseph M. Grieco. 2008. "Democracy, Interdependence, and the Sources of the Liberal Peace." *Journal of Peace Research* 45(1):17–36.

Gent, Stephen E and Megan Shannon. 2010. "The Effectiveness of International Arbitration and Adjudication: Getting into a Bind." *The Journal of Politics* 72(02):366–380.

Ghosn, Faten, Glenn Palmer and Stuart A. Bremer. 2004. "The MID3 Data Set, 1993-2001: Procedures, Coding Rules, and Description." *Conflict Management and Peace Science* 21:133–154.

Gibler, Douglas. 2009. *International military alliances, 1648-2008*. CQ Press.

Goemans, Hein E. 2000. *War and Punishment: The Causes of War Termination and the First World War*. Princenton: Princenton University Press.

Goemans, Hein E., Kristian S. Gleditsch and Giacomo Chiozza. 2009. "Introducing Archigos: A Dataset of Political Leaders." *Journal of Peace Research* 46(2):269–283.

Hensel, Paul R. 1996. "Charting a Course to Conflict: Territorial Issues and Interstate Conflict, 1816-1992." *Conflict Management and Peace Science* 15(1):43–73.

Hensel, Paul R. 2001. "Contentious Issues and World Politics: The Management of Territorial Claims in the Americas, 1816–1992." *International Studies Quarterly* 45(1):81–109.

Hensel, Paul R., Sara McLaughlin Mitchell Thomas E. Sowers and Clayton L. Thyne. 2008. "Bones of Contention Comparing Territorial, Maritime, and River Issues." *Journal of Conflict Resolution* 52(1):117–143.

Holsti, Kalevi Jaakko. 1991. *Peace and War: Armed Conflicts and International Order, 1648-1989*. Vol. 14 Cambridge University Press.

Huth, Paul K. 1988. "Extended Deterrence and the Outbreak of War." *American Political Science Review* 82(2):423–443.

Hwang, Wonaje. 2010. "Power, Preference, and Multiple Levels of Interstate Conflict." *International Interaction* 36:215–239.

Jones, David M., Stuart A. Bremer and J. David Singer. 1996. "Militarized Interstate Disputes, 1816-1992: Rationale, Coding Rules, and Empirical Patters." *Conflict Management and Peace Science* 15:163–213.

Kim, Woosang. 1991. "Alliance Transitions and Great Power War." *American Journal of Political Science* 35(4):833–850.

King, Gary, Keohane Robert O. and Sidney Verba. 1994. *Designing Social Inquiry: Scientific Inference in Qualitative Research.* Princeton University Press.

King, Gary, Michael Tomz and Jason Wittenberg. 2000. "Making the Most of Statistical Analyses: Improving Interpretation and Presentation." *American Journal of Political Science* 44:347–361.

Kydd, Andrew. 2003. "Which Side are You On? Bias, Credibility, and Mediation." *American Journal of Political Science* 47(4):597–611.

Lake, David A. 2011. "Two Cheers for Bargaining Theory: Assessing Rationalist Explanations of the Iraq War." *International Security* 35(3):7–52.

Maoz, Zeev and Bruce Russett. 1993. "Normative and Structural Causes of Democratic Peace, 1946-1986." *American Political Science Review* 87(3):624–638.

Marshall, Monty G. and Keith Jaggers. 2009. "Polity IV Project: Political Regime Characteristics and Transitions, 1800-2007." http://www.systemicpeace.org/inscr/inscr.htm. Center for Systemic Peace (CSP).

Mearsheimer, John J. 2001. *The Tragedy of Great Power Politics.* WW Norton & Company.

Morrow, James D. 1985. "Capabilities, Uncertainty, and Resolve: A Limited Information Model of Crisis Bargaining." *American Journal of Political Science* 33(4):941–972.

Mousseau, Michael, Havard Hegre and John R. Oneal. 2003. "How the Wealth of Nations Conditions the Liberal Peace." *European Journal of International Relations* 9(2):277–314.

Oneal, John R. and Bruce Russett. 1997. "The Classical Liberals Were Right: Democracy, Interdependence, and Conflict 1950-1985." *International Studies Quarterly* 41(2):267–294.

Oneal, John R. and Bruce Russett. 2005. "Rule of Three, Let it Be? When More Really is Better." *Conflict Management and Peace Science* 22:293–310.

Organski, A.F.K. and Jacek Kugler. 1980. *The War Ledger.* Chicago: University of Chicago Press.

Powell, Robert. 1999. *In the Shadow of Power: States and Strategies in International Politics.* Princeton University Press.

Powell, Robert. 2004. "Bargaining and Learning While Fighting." *American Journal of Political Science* 48(2):344–361.

Powell, Robert. 2006. "War as a Commitment Problem." *International Organization* 60(1):169–203.

Reed, William. 2000. "A Unified Statistical Model of Conflict Onset and Escalation." *American Journal of Political Science* 44:84–93.

Reed, William. 2003. "Information, Power, and War." *American Political Science Review* 97(4):633–641.

Reiter, Dan. 2009. *How Wars End.* Princenton: Princenton University Press.

Reiter, Dan and Allan C Stam. 2002. *Democracies at War.* Princeton University Press.

Russett, Bruce and John R. Oneal. 2001. *Triangulating Peace: Democracy, Interdependence, and International Organizations.* New York: W.W. Norton.

Schelling, Thomas. 1966. *Arms and Influence.* New Haven: Yale University Press.

Sechser, Todd S. 2010. "Goliath's curse: coercive threats and asymmetric power." *International Organization* 64(04):627–660.

Sechser, Todd S. 2011. "Militarized compellent threats, 1918–2001." *Conflict Management and Peace Science* 28(4):377–401.

Signorino, Curtis S. and Jeffrey M. Ritter. 1999. "Tau-b or Not Tau-b: Measuring the Similarity of Foreign Policy Positions." *International Studies Quarterly* 43(1):115–144.

Singer, J. David, Stuart Bremer and John Stuckey. 1972. Capability Distribution, Uncertainty, and Major Power War, 1820-1965. In *Peace, War, and Numbers*, ed. Bruce M. Russett. Beverly Hills: Sage pp. 19–48.

Slantchev, Branislav. 2003*a*. "The Principle of Convergence in Wartime Negotiations." *American Political Science Review* 97(04):621–632.

Slantchev, Branislav L. 2003*b*. "The Power to Hurt: Costly Conflict with Completely Informed States." *American Political Science Review* 97(1):123–133.

Slantchev, Branislav L. 2004. "How Initiators End Their Wars: The Duration of Warfare and the Terms of Peace." *American Journal of Political Science* 48(4):813–829.

Slantchev, Branislav L. 2011. *Military Threats: The Costs of Coercion and the Price of Peace.* Cambridge: Cambridge University Press.

Stam, Allan C. 1998. *Win, lose, or draw: Domestic politics and the crucible of war.* University of Michigan Press.

Stinnett, Douglas M., Jaroslav Tir Philip Schafer Paul F. Diehl and Charles Gochman. 2002. "The Correlates of War Project Direct Contiguity Data, Version 3." *Conflict Management and Peace Science* 19(2):58–66.

Sullivan, Patricia L. 2007. "War Aims and War Outcomes." *Journal of Conflict Resolution* 51(3):496–524.

Sweeney, Kevin and Paul Fritz. 2004. "Jumping on the Bandwagon: An Interest Based Explanation for Great Power Alliances." *Journal of Politics* 66(2):428–449.

Timpone, Richard J. 2002. "Estimating Aggregate Policy Reform Effects: New Baselines for Registration, Participation, and Representation." *Political Analysis* 10:154–177.

Vasquez, John A. 1995. "Why Do Neighbors Fight? Proximity, Interaction, or Territoriality." *Journal of Peace Researc* 32(3):277–293.

Wagner, R. Harrison. 2000. "Bargaining and War." *American Journal of Political Science* 44(3):469–484.

Wagner, Robert H. 2007. *War and the State: The Theory of International Politics.* Ann Arbor: University of Michigan Press.

Waltz, Kenneth N. 1979. *Theory of International Politics.* New York: McGraw-Hill.

Wolford, Scott, Dan Reiter and Clifford J Carrubba. 2011. "Information, commitment, and war." *Journal of Conflict Resolution* 55(4):556–579.

Zagare, Frank C. and D. Marc Kilgour. 2000. *Perfect Deterence.* Cambridge: Cambridge University Press.

Zorn, Christopher. 2001. "Estimating between-and within-cluster covariate effects, with an application to models of international disputes." *International Interactions* 27(4):433–445.

BIOGRAPHICAL SKETCH

Brian Crisher received his bachelor's and master's degree from Western Michigan University. His teaching and research interests include international conflict, statecraft, military power, bargaining, and international security.