Nuclear Deterrence: Neither Necessary nor Sufficient for Peace

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Abstract

This thesis carefully examines the question of the effect of nuclear weapons possession on international relations through a detailed examination of all international crises between nuclear powers, as identified by the International Crisis Behavior Project (ICB). It distinguishes itself from similar studies in four key areas. First, by including the recent dyadic nuclear crises between India and Pakistan, this study significantly expands the number of cases under consideration. Next, the India-Pakistan crises provide an opportunity for a novel comparison to the US-USSR crises of the Cold War.

Third, this work is unique among studies of nuclear deterrence in its combined use of qualitative and quantitative methodology. The quantitative analysis uses ordered logit with the ICB data set on a variety of variables, discussed below, that do not lend themselves to standard regression techniques. The qualitative analysis examines whether or not nuclear weapons caused decision-makers on both sides of each crises to refrain from escalation due to fear of nuclear catastrophe. Finally, this study compares the effect of mutual nuclear weapons capability with the effects of democracy and interdependence on the level of violence in crises.

Ultimately, this thesis finds that nuclear proliferation is far less successful at preventing war among states in dyadic nuclear crises than is commonly believed. In only one of 17

crises (the Cuban Missile Crisis) is it clear that mutual possession of nuclear weapons caused leaders on both sides to eschew war. Relative to nuclear weapons possession, democracy and trade were found to be significantly more effective at limiting violence in crises and preventing war. Moreover, regimes suffering a lack of legitimacy in either the international community or among their neighbors had a significantly higher level of violence in crises.

Taken together, these findings have significant implications for public policy regarding nuclear proliferation, suggesting that the international community should work even more diligently to prevent nuclear proliferation, while working to strengthen democratic regimes, increase interstate trade, and reduce the international isolation of states such as North Korea and Iran.

Résumé

Cette thèse se penche sur la question de l'effet de la possession de l'arme nucléaire sur les relations internationales grâce à un examen attentif de toutes les crises internationales entre puissances nucléaires, telles qu'identifiées par le *International Crisis Behavior Project* (ICB). Elle se distingue d'autres études similaires sous quatre aspects. Premièrement, en incluant les crises nucléaires les plus récentes entre l'inde et le Pakistan, cette étude augmente de manière significative le nombre de cas considérés. De plus, les crises entre l'Inde et le Pakistan permettent une nouvelle comparaison avec les crises entre les États-Unis et l'Union Soviétique durant la guerre froide.

Troisièmement, cette étude est unique parmi les travaux sur la dissuasion nucléaire par son utilisation des méthodes quantitative et qualitative. L'analyse quantitative se sert de «ordered logit» sur un ensemble de variables, discutées plus bas, qui ne se prêtent pas aux techniques de régression standard. L'analyse qualitative se penche sur la question de savoir si les armes nucléaires ont poussé les décideurs politiques, des deux côtés de chaque crise, à ne pas procéder à une escalade par peur d'une catastrophe nucléaire. Enfin, cette étude compare les effets d'une capacité nucléaire mutuelle avec l'effet de la démocratie et de l'interdépendance sur le niveau de violence des crises.

Le résultat principal de cette thèse est que la prolifération nucléaire a beaucoup moins de succès à prévenir la guerre dans des dyades nucléaires qu'on ne le croit généralement. Il n'est clair que dans une seule des dix-sept crises (la crise des missiles de Cuba) que la possession mutuelle d'armes nucléaires a amené les décideurs des deux côtés à éviter la guerre. Comparé aux armes nucléaires, la démocratie et l'interdépendance sont beaucoup plus efficaces pour modérer les crises et prévenir la guerre. De plus, les régimes souffrant d'une crise de légitimité soit au sein de la communauté internationale ou parmi leurs voisins, ont démontré un plus grand niveau de violence lors de crises.

Pris ensemble, ces résultats ont des conséquences significatives sur les politiques publiques concernant la prolifération nucléaire, et soulignent la nécessité pour la communauté internationale de redoubler d'ardeur afin d'empêcher la prolifération, tout en travaillant à la démocratisation, à l'augmentation des échanges commerciaux, et à la diminution de l'isolement international d'États comme l'Iran et la Corée du Nord.

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Chapter 1

Introduction

> "We should fire at them [with nuclear weapons] and take out a few of their cities—Delhi, Bombay, Calcutta," he [retired Pakistani Brigadier General Amanullah] said. "They should fire back and take Karachi and Lahore. Kill off a hundred or two-hundred million people. They should fire at us and it would all be over. They have acted so badly toward us; they have been so mean. We should teach them a lesson. It would teach all of us a lesson. There is no future here, and we need to start over." (Landesman, 2002)

Since 1945 the world has learned to live uneasily with nuclear weapons. Since the bombing of Nagasaki in August 1945 nuclear weapons have never been used, in spite of, or because of, their proliferation to at least seven states and the fabrication of many tens of thousands of individual weapons. Throughout the Cold War, with the United States and the Soviet Union were poised to destroy civilization at a moment's notice, many studies were conducted on the role of nuclear weapons in international relations. However, consensus was never reached on the central question of whether or not they made war impossible, or at least *extremely* unlikely, between nuclear powers. With the end of the Cold War in 1990, attention understandably shifted away from this difficult question to other, more pressing issues. However, this question is too important to be left unanswered, and recent global developments have increased its relevance.

The aim of this study is to increase our understanding of the role of nuclear weapons in international relations. More specifically, it will attempt to better answer the following question: "are nuclear weapons necessary or sufficient to prevent political leaders from deciding to go to war?"[1] In addition, this study will compare the effect of nuclear weapons with the effect of two other factors which have been identified as contributing

to peaceful interstate relations: democracy and trade. Thus, this study will update our knowledge on the effect of nuclear weapons as well as expand our understanding of how nuclear deterrence fits in with interdependence and the democratic peace. The rest of this chapter will proceed as follows. First, I will briefly look at why this study is particularly relevant now. Then I will discuss the combined methodology to be utilized. Finally, I will discuss the structure of the thesis and how each chapter contributes to our knowledge of international relations.

Why Now?

McGeorge Bundy, National Security Advisor to President Kennedy, originally coined the term "existential deterrence" to describe why war could not happen between nuclear-armed adversaries. For Bundy, existential deterrence "rests on the uncertainty of what *could happen*, not in what has been asserted" (1984, p.9, emphasis in the original). The advent of nuclear weapons (and in particular thermonuclear weapons) fundamentally altered the calculations of national leaders and made war too destructive to contemplate. Over the years, this question received a lot of scholarly attention, yet it remains to be answered definitively. Some scholars (e.g., Mearsheimer 1990, Waltz 1995 and 2000) argue that nuclear proliferation can be positive because it makes the world a safer place. According to this logic nuclear weapons make extremely unlikely a war between two nuclear powers, owing to the incredible destructiveness of these weapons.

[1] This study will not examine accidents or irrationality as factors that lead to war between nuclear powers.

Other scholars, however, criticize this proposition and argue that the spread of nuclear weapons makes the world more dangerous (e.g., Dunn 1977, Nye 1985, Sagan 1993 and 2000). However, the central arguments made by opponents of nuclear weapons tend to assume that nuclear states will not go to war deliberately, but that war could come about *unintentionally*. Scott Sagan is perhaps the most well-known scholar to argue against nuclear proliferation in the past decade through his debate with Kenneth Waltz on the merits of proliferation. But his main focus is on bureaucratic pathologies which can lead to accidents or mistakes rather than on whether leaders of nuclear powers will deliberately choose to go to war against other nuclear powers. However, the assumption that nuclear weapons will force leaders to eschew *choosing war* with other nuclear powers has not been tested rigorously for well over a decade.

The most recent study is Huth (1990), who looked at the question of extended deterrence using quantitative analysis with data through 1983. Geller (1990) looked at the role of nuclear weapons in crisis escalation, but his data set included cases only through 1976. Kugler (1984) used qualitative analysis to determine whether or not nuclear weapons prevented war, but his data set extended only through 1980. Betts (1987) used qualitative analysis to examine the use of nuclear weapons in compelling opponents behavior, but his data set also extended only to 1980. Thus, all of these studies are missing five important crises that have occurred in South Asia since 1987. Indeed, a study including the earlier crises plus these five South Asian cases represents a 71% increase in the number of cases from the Kugler study and a 39% increase in the number of cases in the Betts study. Since both of these studies had a small number of cases (7

and 13 respectively), a new study incorporating all of these cases would contribute significantly to our understanding of nuclear deterrence and the role of nuclear weapons in international relations.

Recent global developments make this study particularly timely. In 1998, India and Pakistan openly declared a nuclear weapons capability that most analysts felt they already had had for over a decade. Since then, South Asia has become a "nuclear flashpoint" possibly more dangerous than the Cold War (Hoyt 2003, pp.128-30). Unfortunately, there are potentially two additional "nuclear flashpoints": The Korean Peninsula and the Middle East.

In October 2002, under pressure from the United States, North Korea admitted that it had a secret uranium-enrichment program aimed at producing a nuclear weapon in violation of its 1994 agreement not to do so. Then in January 2003 it withdrew from the Nuclear non-Proliferation Treaty and began to restart its nuclear reactor at Yongbyon in order to produce plutonium for nuclear weapons. Theoretically these actions allow North Korea to produce a nuclear weapon in anywhere from one month to two years (Buckley 2003, online). Since North Korea never agreed to a peace treaty following the armistice of the Korean War, technically the Korean Peninsula is still in a state of war. It is also home to one of the most heavily guarded and tense borders in the world. In 2003, it seemed that the only reliable way to prevent a nuclear-armed North Korea was through the use of military force, something which would have almost certainly resulted in full-scale conventional war involving the deaths of thousands of people (Oberdorfer 2001, p.315).

Given the tense situation in Korea and North Korea's imminent acquisition of nuclear weapons, a better understanding of the effects of nuclear weapons on international relations is critical for policy-makers deciding how to deal with North Korea's nuclear ambitions.

For years western intelligence analysts asserted that Iran was working on producing nuclear weapons. The Revolutionary Government in Tehran began a program in earnest in the wake of the Iran-Iraq war, which had demonstrated to them that international regimes against weapons of mass destruction were weakly enforced (Giles 2000, p.82). The program proceeded quietly for more than a decade, but by 2003 the program was revealed to the international community. Iran continued to attempt to hide parts of its nuclear program, but in February 2004 the International Atomic Energy Agency faulted Iran "for failing to reveal the extent of its nuclear research program, months after the Tehran government had promised to tell all." (Slevin and Warrick 2004, p.A18) Given that Iran has never officially recognized the existence of Israel (the other nuclear weapons state in the Middle East) and continues to fund terrorist groups which attack Israeli civilians, the acquisition of nuclear weapons by Iran would have profound implications for peace in the Middle East. Israel, which preemptively struck an Iraqi nuclear reactor in 1981, "is deeply concerned [about Iran's nuclear weapons program] and recently the head of its intelligence service Mossad even said that the Iranian nuclear program represented the greatest ever threat to Israel." (BBC Online, 18 December 2003) Thus, the recent nuclear dyad in South Asia, and the potential nuclear dyads in Korea and the Middle East make the question of nuclear deterrence particularly relevant today.

Methodology

Over the years the field of political science, and international relations in particular, has been hampered by debilitating divisions which one leading scholar referred to as "flawed dichotomies." (Brecher 1999, p.218) Among these flawed dichotomies is the debate over quantitative (large-N) versus qualitative (small-N) studies. The division here is so deep, that scholars from each side sometimes have great difficulties even communicating. I can think of no better example than the following personal experience at a conference in which a quantitative scholar was giving a presentation on his latest work. At one point, a scholar from the other side of this divide asked the presenter what was his "end," the goal of his research. The quantitative scholar responded that his "N" was 2134, or some such number. The questioner was confused and repeated his question, to which the equally confused presenter repeated his answer. It took several minutes before they were able to sort it out and everyone had a hearty laugh, but the division remains.

What is odd about this division is that the two methodologies seem a natural complement to one another. Quantitative studies, properly used, can test broad generalities and patterns in international relations. One such example is Vasquez and Henehan (2001) on the role of territory as a source of war, another is Huth (1990) on the question of extended deterrence. However, quantitative studies identify probabilities, not certainties, and in simplifying reality sufficiently to run a regression or ordered-logit equation, they ignore certain information and exclude other factors which may influence particular cases. By contrast, qualitative research can powerfully illuminate what happened in one

or a few cases. However, it can be dangerous to infer broad generalizations from the events in one or a few cases. Achen and Snidal (1989) are perhaps a bit harsh when they say that comparative case studies "have failed when used for two tasks for which they are not suited – theory construction and theory verification" (p.145), but they are on-target when they note that case studies contain too many degrees of freedom, making rigorous prediction across societies virtually impossible (p.158). The more a researcher learns about particular cases, the more unique the cases seem to become. Additionally, case studies have an inherent pathology which is difficult to overcome: case selection bias. Because of the in-depth nature of qualitative research, it is generally not possible to examine all possible cases, so the researcher must decide which case(s) he or she will examine. Good researchers exercise a great deal of care in their case selection, but there always remains the possibility that they have missed something because they looked at only a small number of the total universe of cases. This undermines confidence in their findings.

Thus, several scholars have called for more research programs which combine quantitative and qualitative research (George 1979; Brecher 1999). This thesis will do just that. Using the International Crisis Behavior Project (ICB) data set, I have identified 17 crises in which there was at least one nuclear power one each side of the crisis (dyadic nuclear crises), from 1945-2003,[2] and created a variable for the presence of a nuclear dyad. This data set will be used in statistical analysis to compare the effect of nuclear weapons with a variety of other factors such as democracy and the presence of a

[2] Appendix C contains a list of all 17 dyadic nuclear crises, as well as the year they occurred and which nuclear powers were involved.

protracted conflict. In the second part of the thesis, I will qualitatively examine the role of nuclear weapons, democracy and trade in each of the 17 dyadic nuclear crises. Because this thesis narrows its focus to the these three variables, it is possible to avoid the problem of case selection bias and examine every case. Overall, by combining the two main research methodologies in international relations scholarship, this thesis should provide a more comprehensive understanding of the role of nuclear weapons in international relations.

Structure of the Thesis

This thesis will be presented in eight chapters. Chapter 1, the current chapter, is a brief overview of the research project, why it is timely, and how it will be accomplished. Chapter 2 is a detailed literature review of the existing scholarship on deterrence theory in general, and nuclear deterrence in particular. Chapter 3 outlines the theoretical framework for the thesis, including a model of international relations that combines elements of realism and liberalism, two paradigms which are also a "flawed dichotomy" (Brecher 1999, pp.233-35).

Chapter 4 presents the quantitative analysis. It begins with a look at crisis frequency for nuclear powers, comparing frequency rates for these states before and after the acquisition of nuclear weapons. It then proceeds to a bivariate examination of the effects of nuclear weapons on crises triggers, levels of violence in crises, and crises outcomes. In the last part of the chapter, a multivariate analysis is done using a statistical tool called

ordered logit. Chapter 4 has a detailed description of the advantages of using ordered logit for this analysis, so here I will only note that this is a little-used technique in international relations. It is well suited for the ICB data set, which is comprises predominantly non-continuous variables. This combination of frequency, bivariate and multivariate analyses gives Chapter 4 a quantitative breadth which is unique in the scholarship on nuclear deterrence.

The analysis shifts to a qualitative examination of all 17 dyadic nuclear crises in Chapters 5, 6 and 7, involving a novel use of existing source materials. The analysis will examine the effect nuclear weapons had on each crisis in comparison with the effect of trade and democracy. Chapter 5 is a look at the seven dyadic nuclear crises which involved the United States and/or the Soviet Union as part of the Cold War protracted conflict. This is the most studied relationship between two nuclear powers and formed the core of all earlier aggregate studies on nuclear deterrence. However, since the publication of these earlier studies (e.g., Kugler 1984 and Betts 1987), new information has become available due to the end of the Cold War and the opening up of national archives. Additionally, with the dramatic change in the nature of the relationship between the United States and the Soviet Union, former officials have met to discuss some of the most dangerous episodes of the Cold War and published more frank and open memoirs than had previously been available. Good examples of this work include Lebow and Stein (1994), Dobrynin (1995), and articles published through projects such as the Cold War International History Project at the Woodrow Wilson Center and the National Security Archives at Georgetown University. Taken together, these new sources of information

help this thesis enrich our understanding of the role nuclear weapons played in the long stand-off between East and West.

Chapter 6 examines the four dyadic nuclear crises which occurred within the Arab-Israeli protracted conflict, as well as the single dyadic nuclear crisis that occurred outside a protracted conflict, the 1969 Ussuri River Crisis between China and the Soviet Union. This chapter expands our knowledge of the role of nuclear weapons in international conflict in several ways. First, with the publication of an authoritative text on Israel's nuclear weapons program (Cohen 1998) which identified Israel as a nuclear power from 1967, two crises are found to have a nuclear dimension not previously recognized: the 1967 Six-Day War, and the 1969-70 War of Attrition. Additionally, as with the Cold War, there is new information available on the Arab-Israeli and Ussuri River crises. Good examples here include Lebow and Stein (1994), Israelyan (1995) and Wishnick (2001), as well as the archival projects mentioned above. As with the Cold War, this new information greatly expands our knowledge of these crises.

Chapter 7 examines all five dyadic nuclear crises between India and Pakistan. These crises have never before been included in an aggregate examination of nuclear deterrence[3] and increase the number of dyadic nuclear crises in the ICB data set by 42%. The South Asian case also adds a great deal of richness to the study of nuclear deterrence because the context of the case is dramatically different from that of other nuclear rivalries. Both countries achieved their independence in an orgy of communal violence

[3] There have been studies which have looked at the role of nuclear weapons only on the subcontinent (Hagerty 1998, Khan 2002) or in individual crises (Krepon and Faruqee 1994, Bajpai et al 1995).

as the former British colony of India was cut in two. The states almost immediately fought their first war over the ill-fated state of Jammu and Kashmir and have since remained locked in a territorial dispute unlike anything experienced by other nuclear powers. Also unlike the other nuclear rivalries, India and Pakistan had fought three wars before becoming nuclear powers, and have fought an additional one since. When not at war they continually trade artillery and small arms fire across the disputed Line of Control in Kashmir. Finally, Pakistan's military frequently dominates foreign policy decision-making, a unique occurrence among nuclear powers. Thus, the India-Pakistan nuclear rivalry is an excellent addition to the study of the effects of nuclear weapons because the context of their rivalry is far different, and more dangerous, than existed between the US and the USSR.

Chapter 8 is the concluding chapter of the thesis. In the first part, a comparison of the findings from the qualitative examination of Chapters 5, 6 and 7 will be presented. The focus here will be on how nuclear weapons affected crises in comparison with democracy and trade. Then the findings of the quantitative analysis will be combined with those of the qualitative analysis to generate conclusions about the effectiveness of nuclear proliferation as a path to peace.

Conclusion

Unleashing the power of the atom has unquestionably improved the everyday lives of citizens throughout the Western world and beyond, most notably through electricity

derived from nuclear power plants. Moreover, the knowledge that allows us to split and fuse atoms has given rise to a wealth of other technologies and devices that improve our lives. The black spot on the list of technology this knowledge has provided has always been the fearsome weapons that we can now create, from the 15-kiloton[4] weapon which killed more than 70,000 people in Hiroshima to the 10.4-megaton Mike Device that vaporized the island of Elugelab on 1 November 1952.[5] This thesis will present a comprehensive look at the role of nuclear weapons in crises to add to our understanding of whether these weapons are just a terrible, and ultimately fruitless, invention or an innovation so powerful they do fulfill the vision Alfred Nobel once had for dynamite.

[4] A kiloton is the blast equivalent to 1,000 tons of TNT, a megaton is equivalent to 1,000,000 tons of TNT.
[5] For more on the Mike test see Rhodes 1995, pp.482-513, and photo plate #73.

Chapter 2

A Literature Review

In 2002, the Nobel Peace prize was awarded to former US President Jimmy Carter. He was the 102nd recipient of the award established by Alfred Nobel to be given to those who, during the preceding year, "shall have done the most or the best work for fraternity between nations, for the abolition or reduction of standing armies and for the holding and promotion of peace congresses." (http://www.nobel.se/peace/) The large monetary award comes from the fortune made by Alfred Nobel during his lifetime as an inventor. His biggest invention unleashed the chemical energy of dynamite, which made wars far more destructive than they had previously been. Nobel hoped that his invention would make war far too horrible to wage. His hope was in vain.

The chemical energy that Nobel's dynamite made available was in turn vastly superseded by the atomic energy of nuclear weapons, first seen at the Trinity test site in New Mexico on 16 July 1945. No similar peace prize has been created by the inventors of nuclear weapons, but ironically, through "nuclear deterrence," they may have brought about the peace that Nobel hoped for. However, this question has not yet been answered definitively. In this chapter, I will discuss the scholarship to date in an attempt to answer this question, proceeding as follows. First I will discuss the literature on the broader concept of deterrence, what it is and how it fits into our understanding of International Relations. Then I will look at past studies to assess the question of nuclear deterrence, with a focus on those studies which did not constrain themselves to a single case of

nuclear deterrence (e.g., books or articles on only the Cuban Missile Crisis). Case-specific literature will be addressed in other chapters which take a qualitative look at the major crises between nuclear powers since 1945. When we examine the literature to date assessing nuclear deterrence, we will discover that there is as yet insufficient empirical evidence to support Kenneth Waltz's famous theoretical proposition that "more may be better." Thus, this chapter will set the stage for the third chapter of the dissertation, in which I will set out a theoretical model of nuclear deterrence which uses a variety of independent variables.

Overview

"Don't do it." A common phrase, uttered by everyone from mothers to policemen to political leaders. Regardless of who utters such a phrase, behind such a simple statement is a threat of some sort, whether it be the withholding of dessert, or nuclear annihilation. This is the basic aspect of human experience from which the idea of "deterrence" comes from. Although there are many different definitions of deterrence, in political science literature it basically boils down to the process of convincing some other entity, be it a person, state, or decision-making group, not to do something it might otherwise do, by threatening consequences if they do. It stands in contrast to the idea of "defense," which is what an entity does to limit damage to itself once it has already been attacked. Defense starts after deterrence has failed, even though in many cases the forces used for one can also be used for the other.

Deterrence theory is part of the broader international relations paradigm known as "Realism." Realism focuses on two main concepts which cause all states to develop into similar power-maximizing entities, international anarchy and self-help (Waltz 1979, p.74). That is, states exist in a system wherein there is no higher authority than themselves, and because of this they can only rely on themselves to ensure their security. This has been true since the time of the ancient Greeks as illustrated when Athenian statesmen said to the Melians during the Peloponnesian War, "for it has always been the law that the weaker should be subject to the stronger." (Thucydides, p.43) A citizen may call the police when a criminal has broken into the house and have a reasonable certainty of assistance because there is an established higher authority with a standing police force they can appeal to; the state has no similar option. To continue with this analogy, a potential aggressor in society may be deterred from acting by the threat from a higher power such as the police and court system. This is generally not true for the state, since aggression by one state against another infrequently leads to punishment by the international community (Kuwait in 1990 is a glaring exception). Thus states need to deter other states through their own self-help efforts.

What then is deterrence? One clear example of deterrence occurred in the spring/early summer of 1994. At that time, the United States had come into conflict with North Korea over the latter's nuclear weapons program. Tensions rose dramatically and the US was preparing to use military force to attack North Korea's nuclear weapons facility at Yongbyon. On 19 May 1994, President Clinton was briefed by the Pentagon's military chiefs that such an attack would likely lead to general war on the Korean Peninsula, and

that "if war broke out in the Korea, his military leaders told him, they estimated it would cost 52,000 US military casualties, killed or wounded, and 490,000 South Korean military casualties in the first ninety days, plus an enormous number of North Korean and civilian lives, at a financial outlay exceeding $61 billion, very little of which could be recouped from US allies." (Oberdorfer 2001, p.315) Oberdorfer goes on to note that after receiving this sobering assessment, the administration "suddenly veered back toward diplomatic efforts" to the surprise of most journalists and experts (ibid.). It would seem an imminent US military attack against Yongbyon was deterred by the prospect of massive death and destruction of a North Korean response.

The US seems to have been "deterred" in this case – and again in 2002-03 -- from a military option that would have been prohibitively costly. Many readers will be aware that North Korea is (and was) reputed to possess nuclear weapons[6], and may therefore suspect that the destruction listed above would be due to the use of these weapons. It is a reasonable assumption, but it is wrong. The destruction listed above would have come from conventional weapons only, especially North Korean artillery, of which they had 8,400 guns and 2,400 multiple rocket launchers. As one security analyst put it, "that means that at least 1000 but probably several thousand [artillery] rounds could detonate in Seoul no matter how hard the allies tried to prevent or stop the attack....The end result could be tens of thousands of civilians dead and many tens of billions of dollars in damage." (O'Hanlon 1998, p.148)

[6] The evidence is still unclear however, and the ICB data set does not code North Korea as a nuclear weapons state in 1994, and thus this crisis will not be used as a nuclear dyad crisis.

This example thus demonstrates deterrence, in a case where nuclear weapons were apparently not required.[7] However, although the US switched to more diplomatic means in this case, the North Koreans ultimately backed down in the face of a real military threat. The US was prepared to risk war to prevent North Korea from proceeding with its nuclear program, and it was only with the visit of former President Jimmy Carter to Pyongyang 15-17 Jun 1994 that North Korea accepted a freeze on its nuclear program on 17 Jun 1994 (Oberdorfer 2001, p.331-36). The interesting aspect is that North Korea's military capabilities had a partial deterrent effect. They caused the US to try more diplomacy prior to initiating military actions, but ultimately would not have stopped a US attack had the North not backed down on their nuclear program. Ashton Carter and William Perry, senior officials serving in 1994 in the Clinton administration, noted in a 2002 editorial that they knew a strike against Yongbyon would likely initiate a war on the Peninsula, but they were prepared to risk it because "we believed that the nuclear program on which North Korea was embarked was even more dangerous, and were prepared to risk a war to stop it." In this case, it seems North Korea's conventional deterrence would have been insufficient to stop a US attack because US strategic calculations indicated that a war at that time with North Korea would be less damaging than the likely actions of a nuclear-armed North Korea (a position the Bush administration apparently does not share today).

However, the example above notwithstanding, there are many critics of deterrence and they have identified some significant problems with the theory. I will now turn to a

[7] It is certainly unfortunate that the North Korean regime does not recognize this, as their continued pursuit of nuclear weapons continues to destabilize the Korean Peninsula today

review of the literature on deterrence to identify what International Relations scholarship has learned to date regarding the strengths and weaknesses of rational deterrence.

Deterrence Theory

Deterrence, despite its simple logic, is one of the most argued concepts in International Relations (IR) scholarship, and it received increasing attention in the aftermath of WWII and the start of the Cold War. This was due to the arrival of nuclear weapons and the terrible destruction that they threaten. One of the United States' foremost naval strategists, upon reading of the atomic bombing of Hiroshima on 7 Aug 1945 said to his wife, "everything that I have written is obsolete." (Bernard Brodie quoted in Fred Kaplan 1983, p.10) Since the bombings of Hiroshima and Nagasaki, decision-makers of all nations have stressed that nuclear war must not be fought. Although nuclear weapons changed forever the level of destruction general war threatens, they have not changed the underlying international system that gives rise to crisis, conflict, and war. This in spite of the fact that, soon after the creation of nuclear weapons, the victorious allies of WWII created the United Nations (UN). The UN was to be a collective security institution with the goal of at least limiting/moderating great power conflicts. (Claude 1965, p.284). However, the UN's effectiveness has never been great, for, in the post-war bipolar world, the UN Security Council was obstructed from action through the veto power of the five permanent members.

Thus, many scholars turned their attention to classic balance of power theory, and in particular the concept of deterrence, as a way to avoid nuclear war. Since war is not uncommon, it would seem that deterrence must often fail. However, the concept holds an intuitive appeal for its deductive logic, despite the empirical evidence which would question its validity. Thus, scholars strove to identify the conditions under which deterrence would succeed, with the implicit assumption that the vast majority of cases of deterrence failure were due to failures of policy, rather than failures of the theory. Writing in 1979, Robert Jervis surveyed the literature on deterrence and identified three waves of deterrence theory in the post-WWII period. The first wave consisted of authors such as Bernard Brodie, Arnold Wolfers, and Jacob Viner, who were writing immediately after WWII about the question of deterrence and its meaning in the new nuclear age. These initial studies paved the way for future studies, but otherwise had little impact themselves (Jervis 1979, p.291).

Jervis identifies the second wave as coming about 10 years later. These authors, especially Thomas Schelling and Glenn Snyder, offered a more rigorous logical framework for deterrence and much of their theoretical framework remains the center of nuclear deterrence theory today. They emphasized the central concept of a game of chicken and the various tactics used in this game. (ibid. p.292) The theoretical concepts themselves will be discussed in the next section of this chapter. For now it is important to note that these studies were not empirical tests of deterrence, but rather seemed to be written as guidelines for policy-makers as descriptions of how deterrence should work, and various strategies and tactics that could be employed.

Jervis's third wave of deterrence studies was characterized by its criticisms of the concept of deterrence itself, and of the work of the second wave. To begin with, third wave theorists noted a "startling lack of search for supporting evidence." (Jervis 1979, p.301- 2) Although this third wave of scholarship did some quantitative research, the primary methodology was case study, and there were some significant problems with these studies, as we will see below. In addition to the lack of empirical testing, Jervis noted that "the most familiar criticism of the second wave is that it [deterrence theory] overestimates the rationality of decision-makers, especially under high stress." (p.299) This is one of the main problems that remain with regard to deterrence theory. Additional problems include the unitary actor assumption, the security dilemma, and the question of whether nations go to war for gain or to avoid loss. I will examine each of these issues and then turn to a critical examination of the major empirical studies of nuclear deterrence.

Rationality is the first major question when considering deterrence theory (which is often labeled "rational" deterrence theory- henceforth called RDT). Bruce Bueno de Mesquita's Expected Utility Theory is one example of work that finds strong support for rationality in decision-making. In his 1981 book, The War Trap, he stated: "much of foreign policy may sometimes appear irrational, but when decisions about serious international conflicts are taken, leaders act like expected-utility maximizers." (p.186) This book set off a strong debate in the field, but 12 years later Bueno de Mesquita was sticking to his guns, repeating in 1993 that "even if people may not consciously make

expected utility calculations, they inherently act as if they do." (Bueno de Mesquita 1993, p.145) Expected Utility theory focuses on two main variables; 1) assessments of the probability of an occurrence, 2) an estimation of its utility. Presumably, deterrence would be effective according to this theory as leaders of a country could take actions in terms of alliances or military preparations in order to raise the cost of war, and therefore lowering the likelihood of victory, thus deterring a would-be attacker.

However, all wars will not be avoided through deterrent efforts because of the question of utility, which Bueno de Mesquita defines as the intensity of one's preferences. Thus, as with the earlier mentioned US-North Korean confrontation in 1994, deterrence may fail because of the intensity of one side's preferences. Indeed, it is through this mechanism that Bueno de Mesquita claims to resolve the different predictions of International Relations' opposing power-based realist explanations for war; balance of power and power preponderance. The prominent theories that flow from these two explanations of war, including Morganthau's Balance of Power theory and Waltz's Theory of Neo-Realism on one side, and Gilpin's Theory of Hegemonic Decline, Organski and Kugler's Power Transition Theory, and Modelski and Thompson's Long Cycle Theory on the other, derive their predictions of international behavior and the likelihood of war from the structure of the system and the power relationships among states. Unfortunately, they have diametrically opposed predictions, and history seems to show that they are both correct some of the time. Bueno de Mesquita's contribution is to show that although system structure is important, it is not necessarily system structure that drives wars, but the intensity of leaders preferences and their resultant risk

acceptance level. His "expected utility theory differentiates and encompasses circumstances that each of the other theories has to treat as contradictions." (ibid. p.161)

Strong as Bueno de Mesquita's formulation seems, there may be cognitive limitations which hinder purely rational decision-making. Citing research from the field of psychology, Janis and Mann (1977) found that human beings often make irrational decisions under conditions of high stress and limited time, a ubiquitous condition for decision-makers dealing with issues of war and peace, that is even more salient in today's age of nuclear-tipped intercontinental ballistic missiles with flying times of only 30 minutes. Because of these cognitive limitations, Janis and Mann noted that human beings frequently stop processing information efficiently and panic in high stress situations. The key question is whether or not decision-makers fall prey to this in the same way that the ordinary test subjects did in the research underlying Janis and Mann's work.

Lebow's answer was yes. He looked at what he interpreted as a series of deterrence failures and found these cognitive limitations to be highly salient in explaining the failure of deterrence, thus casting doubt on the rational actor assumption of deterrence theory. For example, one of the four key components of deterrence is "commitment." Lebow noted that "to the extent that policymakers believe in the necessity of challenging commitments of their adversaries, they become predisposed to see their objectives as attainable" (1989, p.37). Lebow went on to state that decision-makers may use psychological tactics to "ward off anxiety by practicing selective attention and other

forms of distorted information processing" (ibid. p.39). Additionally, decision-makers frequently irrationally fail to consider their opponent's position. Lebow noted that "challengers frequently focus on their own needs and do not consider, or distort if they do, the needs, interests, and capabilities of their adversaries." (ibid. p.46) As a result of these and other cognitive limitations inherent in human beings, rationality in decision-making is impossible, and thus rational deterrence theory is false.

Lebow may have overstated the case. As Quester (1989) pointed out, perfect rationality need not exist for a state to make "rational" decisions. Herbert Simon coined the term, "bounded rationality," which is "the meaning of rationality in situations where the complexity of the environment is immensely greater than the computational powers of the adaptive system" (Simon, p.166). Basically, Simon argued that decision-makers make rational calculations, even though perfect information or information processing is unavailable. Citing Simon, Quester went on to note that decision makers also need not have perfect mental health, but "merely some predictability" (Quester, p.59). Morgan, too, argued that the cognitive basis of deterrence is less on "the capacities of men for rationality than on their ability to be conscious of their limitations and to adjust their behavior accordingly" (Morgan 1983, p.14). Alexander George (1991) discussed how decision-makers can adjust their behaviors and overcome human limitations in crisis decision making, for example by limiting objectives and limiting means. Even more damaging to Lebow's claims, Brecher (1993) systematically tested a range of hypotheses regarding decision-making in crisis, arguably a time when rationality may be strained the most. Among other things, his findings strongly disconfirm the assumption that as stress

increases (in crisis), decision-makers evaluate choices less carefully (p.532), and he concluded "*the evidence uncovered here points strongly to the need to be much more sanguine about the human capacity for effective crisis management. The traditional view is, simply put, incorrect.*" (p.537, emphasis in the original)

Another cognitive critique is generally known as prospect theory. Originating from work done in sociology, and particularly economics, prospect theory modifies the rationality assumption of decision-making through several important laboratory findings. First, humans tend to place significantly greater value on losses than on gains. Second, the way in which a question is framed can have an important impact on how alternatives are viewed. Taken together, these factors cast doubt on the rationality of the decisions that political leaders make and lead to interesting hypotheses about international behavior such as, "it is easier to deter an adversary from taking an action than to compel him to terminate an action or to undo what he has already done, and easier to deter an adversary from making gains than to deter her from recovering losses." (Levy 1997, p.93)

Although prospect theory highlights potential areas of concern for rational deterrence, it does not succeed in disproving rational decision-making. For example, Levy noted that the conditions which are used in laboratory experiments to establish prospect theory do not exist in the real world and "consequently, it is extremely difficult for the analyst to determine whether an actor selects a particular option because of framing, loss aversion, the reflection effect, and the probability overweighting, or simply because it was more highly valued in terms of a standard cost-benefit calculus based on expected value. Thus,

it is difficult to distinguish empirically between a prospect theory explanation or expected-utility explanation" (ibid. p.99) Added to this problem is the question of operationalization of the variables and identifying how leaders establish reference points and whether something is a loss or a gain. Additionally, leaders may manipulate the framing points of opponents in order to increase their chances of success. As Levy pointed out, prospect theory could complement rational decision-making theory through more rigorous theoretical formulation, and the extension of prospect theory to bureaucratic decision-making. This research could explore how "loss aversion, the reflection effect, and perhaps nonlinear response to probabilities and reference dependence might be incorporated into rational choice theories or other theories of foreign policy and international politics." (ibid. p.107-8)

Overall, these ripostes to deterrence theory critics demonstrate that deterrence as a theory is not fatally flawed by the human limitations cited by these critics. In fact, as we will see, the rationality requirements may be significantly lower for nuclear deterrence as "it may presume nothing more than that the other side would prefer its cities *not* be destroyed by nuclear explosions" (Quester, p. 59, emphasis in the original).

A second major focus of controversy in the literature on deterrence is the assumption of a unitary actor. That is to say, many studies ignore the fact that different groups within a state may be motivated in ways that alter their calculations of what is rational. The most extreme example of this may be demonstrated by the quote from the retired Pakistani general at the beginning of this thesis. Although rarely as dramatic as the call by General

Amanullah, domestic interest groups may significantly affect foreign policy (Putnam, 1988). An example of this may be the effect of religious conservatives, and particularly settlers, in Israel. The policy of building new settlements in occupied territory seems irrational from the perspective of international relations, yet a politically important group in Israel continues to increase settlements in the West Bank and Gaza, so it is rational for Israeli leaders to allow it. Again, nuclear deterrence may simplify this problem since there would be fewer internal groups who would see war as an option, given the awesome destruction that would accompany nuclear war. Moreover, as the various studies of the Cuban Missile crisis suggest, once a crisis is triggered, decisions tend to be a result of the national interest and not the various bureaucracies. (e.g. Brecher 1993)

Another point to keep in mind is that case study research methodology, which has long been used in studies of deterrence, has methodological flaws that must be considered. One of the staunchest critics of RDT, Lebow (1981), uses case studies to undermine support for deterrence. However, his critique of deterrence is in turn dismissed by Achen and Snidal (1989) who argue that "*studies of crises and wars give no information about the success rate of rational deterrence*" (p. 161, emphasis in the original). A key criticism from Achen and Snidal is case selection bias, which is certainly a valid concern for any case study. In his review of the literature on deterrence theory, Morgan (2003) notes that there is no consensus in the field on case selection (p.121). He states that this problem is perhaps best illustrated by the aggregate studies of Huth and Russett, versus the qualitative case studies of Lebow and Stein (p.153-57).

Morgan (1977) had attempted to mitigate the case selection problem more than twenty years earlier by distinguishing between immediate and general deterrence. He defined immediate deterrence as "when one side is seriously considering and attack while the other is mounting a threat of retaliation to prevent it" (p.28), noting that immediate deterrence is an uncommon occurrence. Much more common, yet harder to distinguish is general deterrence, defined as occurring when "opponents who maintain armed forces to regulate their relationship even though neither is considering an attack." (ibid) For example, in his later work, Morgan stated that because there is no evidence that the USSR ever considered attacking Berlin in the Cuban Missile Crisis, "technically, it is a general deterrence success" (Morgan 2003, p.128). Yet, this is rarely coded as such in empirical studies of deterrence. Differentiating between general and immediate deterrence helps square the many empirical failures of deterrence, with its strong theoretical and intuitive appeal. It also helps explain the problem of arms races, as the result of attempts at general deterrence. Yet it is not sufficient for academics concerned with maintaining a lakatosian standard of social science.

One solution which Achen and Snidal, along with other scholars (e.g., Brecher 1999), have called for is a more complete research program which uses the strengths of aggregate and case study research, tied to a rigorous theoretical paradigm. An example is Frank Harvey's "Rigor Mortis or Rigor, More Tests: Necessity, Sufficiency, and Deterrence Logic" (1998). Using some rather elegant logic and a bewildering array of tables, Harvey attempts to convince the reader that RDT is a rigorous and predictive theory. It is hard to argue with the logic he brings to bear, and his manipulation of the

data is partially presented in a series of tables which ultimately show that, using his formulations, RDT is nearly 100% effective (table 18, p.703). Harvey points out that a prime area for dispute between supporters and critics of RDT is a "dispute over which set of coding decisions is more accurate," and that "the most interesting feature of this ongoing debate is that the evidence in the case summaries compiled by Huth and Russett to support their coding decisions is as persuasive as Lebow and Stein's" (Harvey 1998, p. 696).

Harvey's answer is to break crisis down into a long series of data points of challenges and responses (a significant innovation). By doing this, he builds a larger data set, and hopes to avoid the problem evident in the endless debate over coding decisions. It also allows for the possibility that the four conditions of deterrence can change during a crisis (e.g., a major power joins the fray and changes the capabilities indicator). He then tests it against the Bosnia crisis 1993-95 and finds his strongest support for RDT (Table 17, p. 701). Thus Harvey's work on deterrence in general illustrates that it is possible to combine strong theory, aggregate analysis, and case study into one study. However, his work was on deterrence in general, with no focus on nuclear deterrence. I will now turn to an examination of the theory behind nuclear deterrence before turning to examine critically eight aggregate studies which did focus on nuclear deterrence. Case study research on nuclear deterrence will be discussed separately in the chapters which explore the various nuclear crises that have occurred since 1949.

Nuclear Deterrence

Since the Cold War and the nuclear standoff between the superpowers was a large driving force behind many studies on deterrence, it is surprising that there have been so few aggregate studies which focused specifically on nuclear deterrence. One reason for this is that the number of cases of nuclear crisis has been quite low, which has made aggregate study problematic. Many studies restrict themselves to the descriptive fact that, since war seems to be much less common among nuclear powers than among non-nuclear powers, perhaps nuclear weapons alter leaders' calculations in some fundamental way which makes war less likely. Scholars have focused on two possible reasons for this: 1) the destructiveness of nuclear weapons is so high that no cost-benefit analysis of war would result in their use, or 2) that the indiscriminate destructiveness of these weapons somehow makes them immoral to use. Both reasons are evident in a quote from Robert Oppenheimer, one of the lead scientists on the Manhattan Project, on his thoughts as he watched the world's first atomic blast:

> "I remembered the line from the Hindu scripture, the Bhagavad-Gita: Vishnu is trying to persuade the Prince that he should do his duty and to impress him he takes on his multi-armed form and says, 'Now I am become Death, the destroyer of worlds.' I suppose we all thought that, one way or another" (Rhodes 1986).

The immorality of nuclear weapons holds much importance for many people (e.g., MacLean 1984, Hardin et al 1963). This is true not only in the West. Few people know that Iran under the Shah had a nascent nuclear program which was halted by the Revolutionary Islamic government of Ayatollah Khomeni when it took power in 1979

because nuclear weapons were seen as immoral (Giles 2000, p. 81). As realists argue, however, morality frequently gives way in the face of naked power on the world stage. I can think of no better way to illustrate this than to return to Revolutionary Iran, which changed its mind on nuclear (as well as chemical and biological) weapons after being attacked with chemical weapons by Iraq in their devastating eight-year war (1980-88).

> "With regard to chemical, biological, and radiological weapons training, it was made very clear during the war that these weapons are very decisive. It was also made clear that the moral teachings of the world are not very effective when the war reaches a serious stage; the world does not respect its own resolutions, and it closes its eyes to the violations and all other aggressions which are committed on the battlefield....We should fully equip ourselves in the defensive and offensive use of chemical, bacteriological, and radiological weapons" (Iranian Speaker of Parliament Rafsanjani, Oct 1988, quoted from Cordeseman, in Giles, p. 84).

In addition to the Iranian experience in the 1980s, one need only look at the destruction caused in WWII through conventional bombing alone. The fact that in a coordinated attack hundreds of bombers were able to kill more people March 10, 1945 in Tokyo than the atomic attack did on Nagasaki in August of the same year illustrates that killing many thousands of civilians through indiscriminate bombing occurs in spite of the serious moral questions which accompany it.[8]

Thus, the morality explanation for the non-use of nuclear weapons is very questionable. Although other weapons of mass destruction (WMD; chemical and biological) have been repeatedly used, nuclear weapons to date have not been used since the bombings of

[8] This ambiguity is illustrated by the fact that Great Britain did not highly decorate its bomber crews after the war, owing to the questionable morality of the act. Nevertheless, Britain did bomb German cities, including the infamous fire-bombing of Dresden. For more information see Walzer (1977).

Hiroshima and Nagasaki which ended WWII. It may be that nuclear weapons' destructiveness is what is altering leaders' calculations with regard to war, since one bomb was able to do to Nagasaki what took hundreds of bombers to do to Tokyo.[9] However, the ability to visit massive death and destruction upon a population alone is not enough. As graphically stated by one scholar, "against defenseless people, there is not much that nuclear weapons can do that cannot be done with an ice pick." (Schelling 1966, p.19)

The key difference with nuclear weapons is that they do such inordinate destruction so much more quickly, and, when added to modern delivery systems, particularly the ballistic missile, nuclear weapons "make it possible to do monstrous violence to the enemy without first achieving victory," and they mean that victory in war is no guarantee against your state being devastated (ibid, p. 22). This is what may alter the calculations of political leaders. Theoretically, the power of nuclear weapons makes war too destructive to be profitably risked. There is no shortage of articles and books which discuss this theoretical connection, although in 1989 one observer noted that there have been no significant conceptual breakthroughs in nuclear deterrence since the early 1960s (Rhodes 1989, p.8).

The basic theoretical framework for nuclear deterrence is laid out quite succinctly by

[9] Some observers have stated that the atomic bombing of Japan was unnecessary as conventional bombing had already defeated Japan. See *The Effects of Air Attacks on Japanese Urban Economy*. US Strategic Bombing Survey, Urban Areas Division. Washington DC; Government Printing Office, 1947. For a strong counter argument see Robert Newman's Truman and the Hiroshima Cult, Michigan State University Press, East Lansing, 1995.

Kenneth Waltz in his debate with Scott Sagan over the merits of nuclear proliferation. Beginning with a 1981 Adelphi paper, Waltz began promoting the unpopular idea that counter-proliferation efforts may be a waste of time, and indeed global security might well be enhanced through selective proliferation due to the efficacy of nuclear deterrence. This argument found some resonance among realist theorists because of its emphasis on state security in an anarchic world. For example, in 1990 John Mearsheimer advocated a nuclear-armed Germany to maintain peace in Europe after the Cold War. Since 1981, Waltz has continued to refine the logic behind his argument, which found its fullest expression in a book co-authored with Scott Sagan which was originally published in 1995, with a revised second edition in 2003.

Waltz cites four central points with regard to nuclear deterrence. The first is the starting assumption of all realist scholarship; that the international system is one of anarchy where states must rely upon self-help to guarantee their security. The second is that nuclear weapons fundamentally alter international relations from a balance of power to a "balance of terror" (a term first coined by Glenn Snyder in 1965). That is to say that neither side, in a nuclear conflict, can hope to avoid massive retaliation and destruction. This is because an attacker can never be certain he/she can destroy all of an enemy's nuclear weapons in a first strike, and therefor be safe from nuclear retaliation. Owing to the lethality of nuclear weapons, even a small number of surviving weapons could wreak intolerable destruction on the attacking state. Thus, "in a conventional world, one is uncertain about winning or losing; in a nuclear world, one is uncertain about surviving or being annihilated" (Waltz 1995, p.7). This uncertainty is at the heart of nuclear

deterrence, and it undermines the traditional realist concerns with a balance of power. In fact, "in sharp contrast to the traditional balance of power, the notion of quantitative equality between striking forces is totally irrelevant as a criterion for balance [for nuclear deterrence]." (Snyder 1965, p.190) This balance of terror theoretically stabilizes crises between nuclear powers because they cannot afford to allow a crisis to spin out of hand, and must keep conflict to a minimum. The third key for Waltz is that nuclear weapons mean that there can be no miscalculation on the question of unacceptable destruction in a nuclear war, since it is obvious to anyone how destructive even a small number of nuclear weapons would be. The final key is that the above factors will hold for all nuclear powers, not just major powers.

These basic aspects of nuclear deterrence require further examination, particularly in three key areas: uncertainty, the stability-instability paradox, and the question of limited war. Waltz says that in a nuclear world, states are uncertain of survival. However, the historical record clearly shows that the implied uncertainty of survival does not preclude states from taking actions which could lead to war between nuclear powers. For example, during the Cold War, the United States committed a variety of actions which could have led to a nuclear war. In a study of US nuclear coercive diplomacy, Richard Betts (1987) made the point that "although postwar policymakers have always wanted to avoid nuclear war, they have never made that aim their highest priority." (p.2) Nixon's policies during the 1973 Yom Kippur War included "a dangerous naval interaction in the eastern Mediterranean in which nuclear-armed ships on hair trigger alert were tracking each other." (Morgan 2003, p.144) The USSR's provocative placement of missiles in

Cuba in 1962 is clear evidence that risky behavior was not confined to one superpower; and the Chinese attack on the USSR border outpost on the Ussuri river in March 1969 illustrates that this behavior is not limited to superpowers, or to ideological enemies.

Thus the question becomes, how does uncertainty work? Schelling illustrated the issue through a modified version of chess. Suppose that a rule were added to the chess game wherein there is a fourth possible outcome (after win, lose, or draw), which he called "disaster," in which both players are worse off than if they had simply lost the game. This outcome would occur as a result of chance if both players had met some pre-specified condition, such as both moving their queen beyond the middle of the board, after which a die roll or similar random event-generation action would take place (Schelling 1966, p.100-102).

This is akin to what might happen if two nuclear powers allowed a crisis to advance beyond some certain point, such as armed clashes between their forces. Once events have reached such a point, the risk of unintended escalation increases dramatically due to the number of individuals in position to trigger it inadvertently, particularly military commanders in the field. For example, during the Cuban Missile Crisis "the initial instructions to Soviet forces in Cuba were to use their tactical nuclear weapons to resist an American invasion with no prior approval [from higher authority in Moscow]." (Morgan 2003, p.144) Things were little different on the American side: as one prominent scholar noted, "President Kennedy may well have been prudent. He did *not*, however, have unchallenged final control over US nuclear weapons." (Sagan 1993, p.116

emphasis in original) Thus, because of the uncertainty of controlling crises, nuclear powers are theoretically forced to avoid such crises.

However, some critics have pointed out that it is uncertain that nuclear powers would use their nuclear weapons in a conflict with another nuclear power, since ultimately virtually any outcome that could be forced upon them in lieu of the use of their nuclear weapons, would still be better than the destruction they would suffer if they initiated a nuclear war. Thus it could never be rational to use nuclear weapons, removing the uncertainty that an enemy would face. Edward Rhodes (1989) deftly responds to this problem with the concept of "Contingently Irrational Behavior," which he defines as a decision to use nuclear weapons in advance under certain conditions, wherein once the conditions occur it would be irrational to use the weapons, but the decision has been pre-decided (Rhodes, p.17). Another way to look at it, from the opponent's point of view is that, "if deterrence fails, however, rational behavior may fail as well." (ibid. p.170) Thus we need to create a foolproof way to ensure decision-makers would not be rational when faced with the ultimate threat. When considering this problem, many readers may think of Stanley Kubrick's classic movie, "Dr. Strangelove," and the Soviet Union's fictional "Doomsday Machine." Rhodes says the US already effectively has a probabilistic doomsday machine due to its existing Command, Control, Communication, and Intelligence (C3I) system as well as the Standard Operating Procedures (SOPs) within US strategic military forces (ibid. p.159). He goes on to note that, viewed organizationally, "*it is impossible to eliminate entirely the existence of doomsday*

machines." (ibid. p.161, emphasis in original) Thus, Rhodes restores confidence in the uncertainty that a potential challenger faces when confronting a nuclear power.

However, even if the uncertainty guarantees that states will not go to war with nuclear powers, what about conflict short of war? Schelling's chess analogy would encourage states to get their queen across the board first, which is destabilizing as it encourages early aggressive behavior. One clear example was the Soviet Union's secret efforts to get nuclear armed short range ballistic missile into Cuba. Had the Soviets succeeded, the range of US options would have been greatly limited. Most tellingly, the single most effective US strategy of that crisis, the naval blockade, would have been unavailable. As the Cuban Missile Crisis demonstrated, reckless behavior can be logical and yet very destabilizing.

A second problem is that nuclear deterrence may encourage conflict below the specified level because of a perception that it is safe. Glenn Snyder (1965) first identified this problem which has come to be known as the "stability-instability paradox," noting that "the point is often made in the strategic literature that the greater the stability of the 'strategic' balance of terror, the lower the stability of the overall balance at its lower levels of violence." (Snyder, p.198-99) In discussing this issue, Snyder notes that one could argue either way. Either by emphasizing the strategic level stability which ensures lower levels of conflict will be contained, versus emphasizing the dangers of escalation should small wars start out. "The first hypothesis tends to stress the effect of conventional balance in reducing the probability of escalation if war occurs; the second

stresses the increased chances of the outbreak of war due to the apparently lower risk incurred by starting it." (p.199). Empirical evidence suggests this is a problem for nuclear deterrence. For example, in South Asia Pakistan seems to have become more adventurous since becoming a declared nuclear power. One study finds that "Pakistan's nuclear capabilities have become the key to successful execution of its political strategies at multiple levels. Nuclear weapons not only enable Islamabad to pursue 'strategic diversion' and immunize the country from a violent Indian counter-response, they also serve to catalyze the attention and, Pakistan hopes, the interest of the international community. Consequently, they have acquired centrality in Pakistan's national strategy." (Tellis et al 2000, p.30)

The most extreme form of low-level instability that could be risked under a strategic nuclear umbrella would be a limited war. Events in the past decade have provided evidence on this question: India and Pakistan fought a limited war in 1999, after having become declared nuclear powers a year earlier. This event seems to have led nuclear optimists to alter their claim that nuclear weapons mean no wars between nuclear states to say that nuclear armed states will not fight major wars (Knopf 2002, p.53), suggesting that perhaps they are altering their theories to fit the facts. The question of whether states can engage in limited wars and remain confident they will not escalate to a nuclear exchange is a critical one for nuclear deterrence theory, and it remains unanswered.

Ultimately, although the logic of nuclear deterrence has great appeal to policy-makers and scholars, there are clearly some questions that critics can, and do, raise. Moreover,

the empirical support for the relationship remains weak. There have been a number of empirical studies which do examine this relationship, but their findings have been inconclusive and contradictory as I will show below.

Empirical Studies

Despite the grave importance of this empirical question, several scholars note the absence of sufficient studies to answer it. In 1988, almost 40 years after the emergence of the first nuclear dyad, Huth and Russett included a variable for the effect of nuclear weapons in their study on deterrence, noting that there is "a vast and largely speculative literature about whether nuclear weapons have enhanced or diminished the likelihood of conflict in the contemporary world." (p.34) Five years later, their words were echoed by Siverson and Miller in their own literature review of conflict escalation, in which they noted that there is still little systematic research on the effect of nuclear weapons in conflict dyads. Ten years later, despite a few interim studies, the problem remained for "the empirical validity of this proposition [that there would be no war between nuclear powers] remains to be established. (Geller, 2003, p.141)

In order to understand why Geller says this, I will now turn to a critical examination of the few studies of nuclear deterrence, in chronological order of their publication. The first study did not focus exclusively on nuclear deterrence, but was rather a study on the effectiveness of the use of force in US diplomacy (Blechman and Kaplan, 1978). In the words of the authors, "This study presents a historical record of military operations in

support of American diplomacy in the postwar era and examines their effectiveness." (p.ix) Blechman and Kaplan identified 215 incidents involving the use of US military forces in support of diplomacy from 1946 through the end of 1975. Of these 215 incidents, 19 involved nuclear weapons. While not a test of nuclear deterrence per se, this study does shed some light on the deterrent effect of nuclear weapons because eight of the 19 cases they identify were between the US-USSR nuclear dyad.

They found that outcomes in which the US used nuclear weapons[10] were favorable in nearly all cases in the short term, and 75% over the longer term (p.99). They then broke down the events by US objectives, and found that "positive outcomes were least frequent when policymakers sought to *compel* an actor to do something [6/10], more frequent when the objective was to *deter* an action [7/10], and most frequent when policymakers sought to *assure* behavior." (p.100, emphasis in the original) Thus, they seemed to find moderate support for nuclear deterrence. Interestingly, the study found that nuclear force level balance was not important, and that positive outcomes did not decline as the US numerical advantage in nuclear weapons declined through the 1950s-1970s (p.128), noting that "our data would not support a hypothesis that the strategic weapons balance influences the outcome of incidents in which both the US and USSR are involved." (p.129) This finding is in line with that predicted by deterrence theorists in the 1960s, and would lend empirical support to the idea that "the notion of quantitative equality between striking forces is totally irrelevant as a criterion for balance." (Snyder 1965,

[10] They defined use of nuclear force as "whenever a force, which at that time had a designated role in US plans for strategic nuclear war, took part in one of the political incidents in such context that a nuclear signal of some type could be inferred." (p.47)

p.190) However, there were very few cases involving nuclear dyads (only eight out of 215), and the organization of this study did not focus on nuclear deterrence, so these findings are only suggestive.

Organski and Kugler's 1980 book, The War Ledger, took a more focused look at the impact of nuclear weapons on international relations. Although this study is more well-known for its contribution to Power Transition Theory, the authors set out to answer several important questions on war and the international system, and tried to determine if the rules governing conflict behavior have been drastically altered in the nuclear era. To answer this question, they looked at all conflicts between 1945 and 1975, including 14 cases involving nuclear powers. Of these 14, the authors stated that seven were nuclear monads (only one power was nuclear), four were nuclear dyads, and three could be defined either way (Organski and Kugler, p.162). In examining these cases, they noted three components to nuclear deterrence; the terrible destructiveness of nuclear weapons, the fear of this destruction that they inspire, and the claim that "nations, once threatened with nuclear destruction, will abandon their aggressive moves." They accept the first and second of these components, but dispute the third (ibid. p.156). For example, they note that, early in the nuclear era, Americans were willing to sacrifice 10-60 million US lives to a USSR attack in order to defend Western Europe, and that in 1969 Mao seemed prepared to sacrifice 300 million Chinese lives (ibid. p.157-8). This would suggest that nuclear weapons terrible destructiveness will not force states to abandon their aggressive moves.

In their detailed examination of these 14 cases they find that, of the seven cases involving only one nuclear power, only once did the nuclear power win the confrontation (ibid. p.176). In the nuclear dyad cases, the evidence is mixed. Interestingly, they find that in almost all cases reviewed (the two exceptions being the Berlin Blockade and Suez Crises) the winners had conventional superiority on the site of the dispute, stating "in other words, the victor was the country that could win without escalating the dispute [to nuclear war]." (ibid. p.177) This finding provides empirical support for the concerns of early theorists like Snyder and Schelling and the corresponding policy of "Flexible Response" that the US adopted in the early 1960s in answer to Soviet conventional superiority in Europe. Although these findings were suggestive that nuclear weapons had not dramatically changed state behavior in the international system, they were not definitive.

Thus, in a second part of this study, they devised an indirect way to test whether or not nuclear deterrence is working between the US and the USSR. They reasoned that an escalating arms race will prove the two states are reacting to each other and thus deterring each other. They chose to use defense spending rather than weapon numbers as the indicator for the dependent variable, due to the difficulty of calculating the importance and/or relative strength of each weapon system (ibid. p.185-86). Their budgeting test concluded that "no arms race was waged, that the two nations were scarcely competing," and that defense budgets were driven by internal factors (ibid. p.192-3). After running the test in two other ways, they find that the conclusion holds that the US and USSR arms buildups are not direct responses to one another, but a result

of general fears and or domestic budgeting drivers. This finding is supported by several other studies done since, leading one scholar to state "perhaps US strategy reflected the fluctuating strength of domestic factions holding competing intuitive conceptions, and not external events or deterrent logic." (Morgan 2003, p.141)

Thus nuclear weapons did not seem to have changed international relations. Organski and Kugler's wording is too dramatic to leave out. "In short, nuclear weapons do not deter confrontations at all levels. To believe they do is to believe in magic." (Organski and Kugler, p.179) They freely acknowledge that no one will easily accept what they have found, but cite Cromwell (1650) who said, "I beseech you, in the bowels of Christ, think it possible you may be mistaken." (ibid. p.202) Instead of nuclear deterrence, "regardless of risk, a nation will fight if she feels her action to be legitimate," and that "legitimacy, then, is of maximum importance in nuclear confrontations." (ibid. p.179)

However, this study does suffer from some significant weaknesses which undermine its conclusions. First, the initial study can be no more than suggestive because of the limited number of cases (14). Second, there are questions regarding Organski and Kugler's coding decisions. For example, they have a very lax definition of war. For them, war is defined as conflict with more than 100 fatalities (footnote 12, p.262) which stands in stark contrast to the more generally accepted Correlates of War definition of 1000 battle deaths. Moreover, when coding a state as nuclear or not, they base the coding on delivery systems rather than on mere possession of nuclear weapons. Theoretically, this distinction makes perfect sense, as the terror a nuclear weapon can

inspire is undoubtedly seriously lowered if the weapon is undeliverable. However, in practice this is a difficult distinction to make. For example, Organski and Kugler coded the Ussuri River Crisis between the USSR and China in 1969 as a nuclear monad because China did not have a very advanced delivery system. However, China did have bombers capable of delivering the system to major Soviet cities such as Vladivostok (Dittmer 1992, p.185, Wong-Fraser 1981, p.246-7). Whether or not they could have penetrated Soviet air defenses is uncertain, but nuclear deterrence theory highlights the deterrent effect of uncertainty. Thus, although the Chinese delivery system was primitive, the fact that they did possess a delivery system suggests that Organski and Kugler were wrong to not code China as a nuclear power in their study.

Ultimately, The War Ledger suggests two key conclusions regarding nuclear deterrence. First, despite the limited number of cases and methodological questions, their study suggested that nuclear weapons had not altered the international system and made war between nuclear powers impossible. Secondly, and related to the first point, the study showed that nuclear weapons possession alone is not enough to determine the outcome of confrontations. As Snyder and others have noted, conventional forces at the site of the dispute seem to play an important role. Thus, this early study provides evidence that champions of nuclear deterrence, like Waltz and Mearsheimer, may be overly optimistic.

The next study to be examined is Kugler (1984). This study built somewhat on The War Ledger, and tested two questions: 1) did nuclear weapons possession affect the outcomes of extreme crises, and 2) what effect does nuclear inferiority/parity/dominance have on

interstate crises? To answer the first question, he looked at all cases of extreme crises involving nuclear powers. Since defining "extreme crisis" will have a significant effect on his findings, Kugler utilized two separate classifying agents to ensure reliability; the work of Robert Butterworth, and that of a team of researchers at CACI. Specifically, he included "those crises judged by Butterworth as possibly or likely to lead major powers to engage in a war using nuclear weapons" and "those isolated by CACI as potentially or actually severe because they achieved the highest scores on three interlocking questions: 1) the nuclear capability of contestants, 2) the degree of involvement in the crisis, and 3) the threats made as the conflict develops." (Kugler 1984, p.477) Using only crises that met both definitions, Kugler is left with a usable data set of 14 crises.

Kugler subjected these cases to a robust qualitative assessment by a team of scholars at CACI to identify whether or not the nuclear nations achieved their main objective. Of the 14 cases, the nuclear armed state is judged to have attained its objectives 36% of the time, and they are judged to have not attained these objectives 64% of the time. Kugler then refined the study by focusing on the seven most extreme cases in which key decision-makers introduced nuclear threats. Within this data subset, he found that 4/7 (57%) were resolved in ways congruent with the argument of nuclear deterrence (ibid. p.479). He found that this rate of deterrence success is lower than that found using only conventional weapons (which he stated is 85%). Thus, for the first question in this study "the critical finding is that the crises in the scoreboard can be more effectively evaluated using *conventional* rather than nuclear capabilities." (ibid. emphasis in original)

For the second question, he used an expected utility (EU) framework to assess the impact of nuclear preponderance. Theoretically, nuclear preponderance would give a state extra leverage in a crisis, and thus allow it to achieve its objectives more frequently. However, he found that it did not. In fact, states with nuclear preponderance often failed to achieve their policy objectives despite its nuclear superiority (ibid. see table 1, p.480-81). Kugler then controlled for policy preferences and found that "the most consistent reason for the absence of major war in the nuclear era seems to be the relative congruence of policy objectives among the nuclear powers, and this congruence cannot be directly traced to the buildup of nuclear arsenals." (ibid. p.501) Overall, Kugler's findings do not support the argument of nuclear deterrence. Echoing the final words of The War Trap, he concludes, "challenging the world of nuclear deterrence adds uncertainty to an already uncertain world. But if the tentative results produced here are supported by further research, the need to open fresh arenas in the search for peace is indeed urgent. To do otherwise is to believe in magic." (ibid. p.502)

We may not have to believe in magic though, as there are a couple of problems with this study. The most serious question is how he codes for deterrence. His coding requires a state to be able to deliver a minimum of 30% civilian casualties in order to deter. Although he arrives at this coding decision somewhat logically, citing a 1968 speech by MacNamara in which he specifies 25% as needed and rhetoric from Mao in which Mao states that even after losing 50% of its population in a nuclear attack, China would still defeat its opponents (ibid. p.488-89), this may well be exaggerating the requirement for deterrence. For example, China has historically given very low priority to building a

significant nuclear arsenal, reasoning that by merely holding one or two enemy cities hostage, it would be able to deter an attack (Shambaugh 2002, p.280), and it has maintained this so-called "minimum deterrent" posture for almost 40 years. The minimal arsenals of France and Britain are also quite similar. Thus, the incredible arsenals and destructive capacities the US and the USSR strove for in the Cold War seem to be an anomaly among nuclear powers.

Yet this coding decision allows Kugler to say that "the Sino-Soviet dispute simmered down after 1969 – *once China developed a nuclear capability*." (Kugler 1984, p.428, emphasis added) China already had a limited nuclear capability in 1969, and though it is uncertain how big a role it played in Soviet decision-making, the historical record does not suggest it was the further development of the Chinese nuclear arsenal that led to the easing of the 1969 crisis. Overall, altering Kugler's coding for 30% casualties would greatly diminish the EU for the use of nuclear weapons by the US and USSR in the time period Kugler's study covers, and alter his findings to the second question of his study.

His findings for the first question of the study must also be treated tentatively, due to the small number of cases and the restriction of his study to three nuclear powers. His main findings on the effect of nuclear weapons in crisis is based upon only seven cases, and due to the qualitative nature of the assessment, will always be subject to some doubts regarding its reliability. Moreover, there are some concerns about case selection, as noted by Morgan (2003). For example, he cites the Hungarian uprising of 1956 as a case of nuclear deterrence failure, but the ICB coding does not cite the US as a participant in

this crisis. Similarly, the ICB does not code the US with a significant role in the 1948 Czech coup, which Kugler also cites as a failure of US policy objectives. Kugler also limits his focus to three major powers, the US, USSR, and PRC. While there are broad theoretical reasons for doing so, flowing from an emphasis in much international relations scholarship on major power war, this gives an incomplete look at the overall question of nuclear deterrence. As one scholar recently noted, "nuclear deterrence will remain at the core of the security policies of the world's great powers and will remain an attractive option for many other less powerful states worried about adversaries whose capabilities they cannot match." (Goldstein 2000, p.1) Clearly, looking only at the US, USSR, and PRC limits the strength of the conclusions of this study. Thus, this article casts some doubt on the hypothesis of nuclear deterrence, but its findings are inconclusive.

I will now turn to a brief look at Nuclear Blackmail and Nuclear Deterrence, a 1987 book by Richard Betts which examined the role of nuclear weapons in crisis, both in compelling and deterring an opponent, through a qualitative look at a selection of crises between the US and the USSR from 1945 through the mid-1980s. As noted earlier, in opening of the book Betts makes the bold statement that "although postwar policymakers have always wanted to avoid nuclear war, they have never made that aim their highest priority." (Betts 1987, p.2) Instead, they have continued to use nuclear weapons as a threat for political goals (a statement in stark contrast to the conclusion of a 1989 book by Robert Jervis, which I will review next). Thus, nuclear blackmail is the primary focus of the study, and he defines blackmail as "coercion by the threat of punishment, a threat

designed either to deter or compel action by the opponent," and notes that users of blackmail often prefer to call it deterrence (ibid. p.4). This study looks at the use of nuclear blackmail in both nuclear monads and nuclear dyads, but has no strong conclusion on the efficacy of nuclear deterrence. Part of the reason for this is that the study focused more on why the US leaders used nuclear weapons for compellence/deterrence and much less on the effect they may have had on the USSR. He also noted the difficulty in assessing the impact of nuclear blackmail on the outcome of the various crises.

Given those constraints, Betts' main conclusions regarding nuclear deterrence are that "in crisis decisions the US exhibited a proclivity toward nuclear coercion that was not strongly governed by the nuclear balance of power" and that "in the outcomes of crises, the nuclear balance appears to have played a moderately influential role when it was uneven and an uncertain one when it was equal." (ibid. p.213-14) Thus, like the two works reviewed so far, the evidence for nuclear deterrence is uncertain. However, there are several reasons why even the limited findings on nuclear deterrence in Betts' study are problematic. First, his cases are selected upon the issuance of a nuclear threat by one or more parties in the crisis. Using this as a criterion leaves out cases where nuclear weapons may have had an effect without the need of such a threat, through what Brodie and others have called "existential deterrence." This is a common failing among many studies of deterrence as noted by Morgan (2003).

Second, while informative on the individual cases, this study lacks a firm scientific approach from which to test the available information against a set of hypotheses. In some ways, the book seems an advocacy piece caught in time. It was written during the Reagan administration, and it seems to be focused on advocating a more moderate foreign policy to the hawks in Washington DC, at a time when President Reagan was caught joking in a radio studio saying during a microphone test, "My fellow Americans, I am pleased to tell I have just signed legislation which outlaws Russia forever. The bombing begins in five minutes." (Andrews 2002, p.358) The piece also argues against a further buildup of US strategic forces, noting that, despite the emphasis in the public rhetoric as the USSR gained nuclear parity, the real US concerns were less about the possibility of a Soviet first strike and more about "a hidden or unconscious agenda of fortifying American first-use options as escalation dominance disappeared." (Betts 1987, p.182)

Third, this study focuses predominantly on the US side of the equation, and spends very little time on Soviet and Chinese perceptions. While this is somewhat understandable, given the limited access that scholars had to Soviet and Chinese sources, it nonetheless leaves a big hole in the study. Moreover, this study gives no attention to other nuclear powers, particularly the new nuclear powers such as Israel, India, and Pakistan. Until these unexplored regions are addressed, a critic could easily contend that nuclear weapons are not what mattered, but rather other contextual factors in the Western World. One example would be Mueller's Retreat From Doomsday (1989), which argues that major war had already become morally unacceptable, regardless of nuclear weapons.

Overall, while this study looks explicitly at the role of nuclear weapons, it does not offer any firm conclusions on the effect of these weapons on international relations.

The next study in this review is Robert Jervis's The Meaning of the Nuclear Revolution: Statecraft and the Prospect of Armageddon (1989). Methodologically similar to Betts' book, Jervis's main thrust is to examine the effect nuclear weapons have had on statecraft. The book begins with a qualitative assessment of the impact of nuclear weapons on the international system. Jervis's reading of the evidence is that nuclear weapons have changed the world in three significant ways. First, nuclear weapons have led to the most prolonged period of peace since the Roman Empire (Jervis 1989, p.24).[11] Second, nuclear weapons have led to the preservation of the status quo, and third that they have resulted in infrequent international crises during the Cold War stating, "crises have been rare since the advent of mutual second strike capability." (ibid. p.36) After asserting these three results in the first chapter, he goes on to critique various aspects of nuclear deterrence strategy, from MAD to morality, with a heavy emphasis on the role of perceptions in international relations. His major conclusion is to call for US policies which recognize that US interests must be limited so that confrontations will be limited (like George 1991), and particularly to avoid seeking dramatic short-term gains which are "likely to produce a reaction that endangers both sides" (ibid. p.257).

As policy prescription, this book is stimulating. However, it does not systematically test the hypothesis of nuclear deterrence, but rather descriptively assesses the history of the

Cold War to arrive at its conclusions. More problematically, there is a certain inconsistency regarding the role of nuclear weapons that is reminiscent of the problems critics of Morgenthau[12] have noted regarding his concept of balance of power. That is to say, while Jervis starts by noting the positive effects of nuclear weapons in promoting peace, he ends up recommending policies in order to preserve peace in the nuclear era. As with Morgenthau's Balance of Power, if nuclear weapons do indeed preserve peace, as Jervis claims, then there should be no need to make a strong case for certain policy prescriptions to avoid war. Thus the effects of nuclear weapons would seem to be more ambivalent than Jervis suggests. To be fair, Jervis does acknowledge there could be other causes for the long peace.[13] This acknowledgement, however, leads to the vague statement that "without nuclear weapons, war between the superpowers would not, of course, be certain and might not even be likely, but it would be more likely than it is now." (ibid. p.26) Thus, the hypothesis of nuclear weapons as the source of peace after 1945 seems to be far from definitively supported.

A second problem related to nuclear deterrence is Jervis's claim that crises are far less frequent between nuclear powers. As Jervis notes, crises were frequent in the early years of the Cold War, but then became far less frequent after the 1962 Cuban Missile Crisis. Although this may be due to nuclear weapons, it may also be due to the same factor that Mueller (1989) cites; a recognition by the industrialized nations that major war is not

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[11] Some scholars dispute that this was a period of peace, e.g. Brecher and Wilkenfeld 1991, while others note that history contains other examples of similar period with an absence of major power war, e.g. Siverson and Ward 2002.

[12] A good example would be Inis Claude's Power and International Relations (1962)

[13] Vasquez (1991) makes a good case for this and will be reviewed below.

worth any possible gains. It may also be due to changes in leadership as Krushchev was a notably aggressive political leader who was subsequently replaced by the far more conservative Brezhnev. As with the explanation of the Long Peace, the best we can say is that it seems likely that nuclear weapons contributed to this phenomenon.

The final problem with this study, again with respect only to the question of nuclear deterrence, is that it says very little of nuclear powers other than the US and the USSR, and nothing about nuclear powers in the developing world at that time such as India, Israel, and South Africa. Indeed, recent events (which Jervis did not have the benefit of observing) have shown a marked increase in the frequency of crises between India and Pakistan since the two South Asian nations declared their nuclear weapons status through a series of tests in 1998. Jervis had disputed the salience of the Stability/Instability Paradox by stating that "because escalation can occur although no one wants it to, mutual second-strike capability does not make the world safe for major provocations and limited wars." (Jervis 1979, p.21) However, Pakistan's adventurous policies since May 1998 would suggest the opposite. Ultimately, Jervis's book is interesting to read and his suggestions for US (and other states') policy-makers are indeed prudent, regardless of the effect of nuclear weapons on international relations. However, it does not answer the question of whether or not nuclear deterrence precludes major war.

Around the same time that Jervis was considering this question, Paul Huth wrote a series of articles, with several different co-authors, looking at deterrence in general, and the impact of a variety of variables upon deterrence success or failure. Several of these

considered the impact of nuclear weapons and bear examination here. In 1990, Huth presented a study using probit analysis on 56 cases of immediate deterrence to test the effect of extended deterrence. He used Morgan's definition of immediate deterrence: "where at least one side is considering an attack while the other is mounting a threat of retaliation in order to prevent it." (Morgan 1977, p.30). This studies results suggested that nuclear forces were not the only important factor for extended deterrence, stating "the overall conclusion is that possession of a nuclear retaliatory capability did enhance the prospects of extended deterrence success although this effect was not so strong as to render the conventional balance of forces unimportant as an explanatory variable." (Huth 1990, p.282-3) Specifically, he found that "nuclear weapons had a very strong deterrent impact when the conventional balance clearly favored the potential attacker (a two-to-one advantage in both the immediate and short term balance) or when there was an equal balance – 44% and 52% increases, respectively, in the likelihood of extended deterrence success." (ibid. p.284)

In 1993, Huth published another study, along with Christopher Gelpi and Scott Bennett, which compared the predictions of rational deterrence theory with those of structural realism for international crises -- again using statistical analysis with 97 cases of militarized disputes from 1816-1984. In the strongest finding of any aggregate study on nuclear deterrence, they found that nuclear weapons had a much greater impact than bipolarity on maintaining the peace. Among all the variables in their study, a second strike nuclear capability "reduces the chance of escalation by 51%. This percentage change represents by far the single largest marginal effect in the entire equation. The

defender's possession of a second strike capability does not by itself ensure deterrence success, but it makes a very large contribution towards this outcome." (Huth et al 1993, p.618) This finding is statistically very strong, with a significance test finding of less than .01 percent. The authors note that they could not test for mutual assured destruction due to the high level of colinearity between it and the defender's possession of a second strike capability (ibid. note 13, p.622), but that theoretically they would expect that a nuclear armed challenger would be no more likely to escalate versus a nuclear armed defended than would a non-nuclear challenger.

Although this finding is very strong statistically, it is problematic for the thesis that nuclear deterrence is effective in preventing wars because, despite the high significance of this variable, nuclear deterrence did fail. They find five cases (including the Cuban Missile Crisis 1962, and the Sino-Soviet confrontation in 1978-79 over Vietnam) where challengers escalated the crisis against nuclear armed defenders, all of which involved nuclear dyads. The theory of nuclear deterrence says that a nuclear war is too destructive to be profitably risked, yet these five cases suggest that may not be true. As mentioned earlier, this may be caused by intensity of preferences. Focusing only on territory as an indicator of vital interests, Huth et al state that "intrinsic interests at stake also play a role in determining the outcome of a dispute." (ibid. p.618) Statistically significant at the .01 level, they found that if the territory is vital to the challenger, escalation probability is increased by 35%, and if it was vital to the defender escalation probability is reduced by 41% (ibid). However, when one looks at the five cases of deterrence failure, only two of them are cases where the challenger had a vital interest which would presumably prompt

them to escalate despite the possession of nuclear weapons by the defender. This highlights the fact that homeland/colonial territory is not the only factor that a state may consider a vital interest. Indeed, since the start of the Cold War there has been an ongoing debate over the importance of demonstrating resolve and commitment in conflicts of lesser importance in order to preserve credibility for major conflicts (e.g. Jervis 1989). Regardless, Huth et al provide partial empirical support that, although possessing nuclear capability is a powerful deterrent, interests can override nuclear deterrence.

There are three aspects of this study which partially undermine its conclusions regarding nuclear deterrence. First, like Jervis's book reviewed above, the study focused only on "great powers" and thus left out of its sample several nuclear powers whose experiences may hold important lessons on nuclear deterrence. This is particularly true for the newest nuclear powers, India and Pakistan, who exist in a protracted conflict dyad. As Michael Krepon notes, "nations such as Israel, India, and Pakistan continue to place great stock in their capabilities to make and use nuclear weapons." (Krepon 1989, p.30) Would the inclusion of these other nuclear powers strengthen or weaken the evidence for nuclear deterrence. Of course, India and Pakistan were not declared nuclear powers when this study was completed, but they were recognized as opaque nuclear powers as early as 1974 and 1987, respectively. Their absences, as well as that of France, Britain, and Israel could well have an impact on the support for nuclear deterrence. Thus a new study which included them would be useful.

A second concern regarding the Huth study is that it focuses only on cases of immediate deterrence. As noted above, "[great-power] crises have been rare since the advent of mutual second strike capability..." (Jervis 1989, p.36) Because "small wars embody the threat of larger war," (Schelling 1966, p.33) nuclear states cannot afford to allow a situation to develop which may lead to a small war. Huth et al's research design for these studies does not answer this question, but a similar study of crisis frequency could be designed which would identify crisis frequency before and after acquisition of nuclear weapons, as well as to compare the characteristics of nuclear and non-nuclear crises. Unfortunately, such a study could not use the same data set as Huth et al, because the MID data set is not coded to answer these types of questions. The ICB data set, however, can be so used.

The third concern regarding this study is some coding questions, the bane of much quantitative international relations scholarship. The biggest concern is in their coding of the Ussuri River Crisis between the USSR and China in 1969 as a deterrence success. They do this because they define success as a return to the status quo with less than 200-250 casualties. This definition may be problematic as it would seem to allow for limited but nevertheless significant violence by the challenger. Given the theoretical arguments that such a significant amount of violence may spin out of control, and therefore is to be avoided at all costs, coding such an event as a success is highly questionable. Moreover, although the events of the spring and summer of 1969 remain murky[14], it seems that there were far more than 250 casualties in the crisis in any event. The largest of several

[14] I will examine the Ussuri River Crisis in a later chapter.

clashes occurred on 15 Mar 1969, and may have involved as many as 1000 casualties (Robinson 1991, p.261). Of less importance is a coding question. Although they do not provide the coding on second strike capability in the 1993 article, in the 1990 article they do not code China as a nuclear challenger in the 1979 confrontation with Vietnam, though they include China as a nuclear defender vs India in 1971 (Huth 1990, Table 2, p.278). Although Huth notes in 1990 that leaving this case out does not change the findings (ibid. note 9, p.277), this may not be true for the 1993 study, if they have coded it the same way. Ultimately, these coding problems are not crippling, but they do undermine confidence in their findings. Additional research will help identify how important they are.

Another study which considered this question, though with a different data set, is Geller (1990).[15] This study is very focused and specifically looks at the effect of nuclear weapons possession on escalation patterns in interstate activity. Using the Correlates of War Serious International Dispute (SID) data set, Geller identifies 393 international confrontations between 1946 and 1976. He leaves out of his study 572 cases that occurred prior to 1945, correctly reasoning that changes in the international system other than nuclear weapons (e.g. polarity) could distort the results (Geller 1990, p.300). Of the 393 cases, 90 were nuclear monads, and 21 were nuclear dyads. For purposes of this study, states are considered nuclear powers following their detonation of nuclear explosion, so India is coded as a nuclear power after 1974 (ibid).

[15] I am aware of no aggregate analysis on nuclear deterrence after this, other than the 1993 Huth study just covered.

He then goes on to test two hypotheses regarding the effects of nuclear weapons and finds that "the evidence regarding the efficacy of nuclear power as a deterrent is mixed, at best, with the weight of the findings counter to expectations of classical deterrence theory." (ibid. p.297) This is because, in his analysis of the data, Geller's first major conclusion is that in nuclear dyads, target states are significantly more likely to escalate the hostility level (24%) than in non-nuclear dyads (3%) (ibid. table 1, p.301). His second major finding is that possession of nuclear weapons appears to have no deterrent effect for nuclear states in disputes with non-nuclear states, and nuclear states in these confrontations are more likely than non-nuclear states to de-escalate disputes (ibid. p.302). He wraps up the findings by saying "in sum, nuclear disputes are more likely to escalate (short of war) than are nonnuclear disputes; but in conflicts between nuclear and nonnuclear states, the possession of nuclear weapons has no apparent inhibitory effect on the escalatory behavior of the opponent," (ibid. p.302) and that "the dispute escalation patterns uncovered in this analysis suggest that...the transition period to an all-nuclear world will be a dangerous and violent one." (ibid. p.308)

Regarding the question of nuclear deterrence, a critic could raise several questions regarding Geller's conclusions, however. First of all, like the Huth et al study discussed above, this study does not examine the general deterrent effect of nuclear weapons, since it analyzes only those cases where a dispute has already arisen. Thus, nuclear weapons may well lead to fewer SIDs, and since the escalation Geller is looking at is short of war, the escalation that does happen may be less threatening than it would be in a nuclear free world. A second criticism could be leveled at the reliability of the finding that nuclear

dyads are more likely to escalate their disputes, owing to the fact that the study does not control for other variables. For example, in this study nuclear dyads effectively also represent confrontations between major powers while non-nuclear dyads, effectively represent confrontations between minor powers. Thus, the differences in escalation frequency could well be the result of the systemic effect of being a great power, which often means more serious conflicts. It could also be due to the national attributes inherent in a great power, including a far greater ability to wage war than exists among minor powers. *Would like to include a reference to a study that compares frequency of conflict for major and minor powers.*

Geller's approach complements the studies we have looked at so far in some interesting ways. For example, he uses a slightly different data set than Huth et al did in their study, and his research question is different. Rather than look at questions of peace and war, he looks at escalation short of war. This directly tests the stability-instability paradox that was first identified as a problem by Snyder in 1965. If his findings were consistent with other findings such as Huth et al above, such differences would lend greater support and confidence to observers that nuclear deterrence theory was correct or incorrect. Unfortunately, because the findings are contradictory, the waters have become muddied rather than clear.

One last article that deserves mention in this review is Vasquez (1991). Rather than looking at the correlation between absence of conflict and nuclear weapons, he examined the salience of other explanations for the long peace between the US and USSR, a central

dyad for nuclear deterrence optimists. He correctly noted that just because the US had a deterrent policy, does not mean this is what actually prevented war (Vasquez 1991, p.206). In fact, throughout the Cold War, it was the US which frequently rattled it nuclear saber for compellent, rather than deterrent ends, and "the record offers no concrete evidence that the USSR has threatened nuclear war, and therefore it cannot be validly inferred that the US has deterred such a threat." (ibid. p.209) Ultimately, he asserted that "there is little evidence to support the claim that nuclear deterrence has prevented nuclear war or that it could do so in the future, if severely tested," (ibid. p.207) because there were are several other factors beyond nuclear weapons that could explain this outcome: the absence of territorial disputes, toleration for the status quo, and the experience of the first two World Wars, creation of rules to manage conflict, crisis management, and arms control (ibid. p.220).

Of all of these, the lack of territorial disputes is the most convincing alternative explanation for the long peace. It is hard to make the claim that the USSR was a status quo state, given its ideological foundations and its activities to promote revolutions around the world, from Western Europe (e.g. Greece) to Asia (e.g. Vietnam, Cambodia) to Africa (e.g. Somalia, Angola). The patience for change that the Soviets often exhibited also had ideological origins that predated nuclear weapons. The other three factors Vasquez mentions (rules of the game, crisis management, and arms control) may have had an impact, though it is hard to say that they were independent causal factors and not themselves the result of some other factor such as nuclear deterrence. Thus we are left with the question of territory.

Many scholars have noted that territory is a key factor in international conflict (e.g. Vasquez 2000, Holsti 1991). A good illustration is Deihl's finding that militarized disputes escalate 25% of the time for states with contiguous territory, but only 2% of the time for those without (cited in Vasquez 1991, p.215). The US-USSR dyad would largely fall into the latter category, so that "the absence of a territorial dispute between the United States and the Soviet Union is probably the main irenic [peace promoting] factor that has prevented war." (ibid. p.215) Vasquez goes on to note that when territory was a salient issue (e.g. Berlin 1958-59 and Cuba 1962), the potential for conflict was greatly heightened and that ""The Berlin and Cuban crises underline the ominous power of territorial disputes to bring about war, and the weakness of deterrence to prevent it." (ibid. p.216) This bodes ill for territorially contiguous nuclear dyads such as the Indo-Pakistani dyad. Looking at the history of conflict between India and Pakistan over the past 7 years seems to confirm Vasquez's prediction.

Conclusion

The preceding review focused on major aggregate studies that could shed light on the question of nuclear deterrence. However, they were conducted with different research agendas over a period of 15 years, so it may help the reader to provide a recap of these studies methods, sources, findings, and any gaps they may have left. In terms of data sources, only 1 study (Geller 1990) made use of a broadly used data set (the COW SID). Each of the other studies used data sets that were created for their own particular study.

Moreover, I have raised coding concerns for several of the studies, which, combined with the fact that the data sets are unique, casts some doubt on the findings. Another fact of note is that only one study (Geller 1990) included cases involving countries other than the US, USSR, and PRC; four of the studies involved only the US and USSR, three involved the US, USSR, and China, and one involved these three plus India. Thus, there is a glaring gap of coverage beyond permanent members of the UN Security Council.

A final note on data sources is that the most recent of the quantitative studies only considered cases going up to 1984 (Huth 1993), and the most recent qualitative study only went up through 1989 (Jervis 1989). The added evidence of the past fifteen years can profitably be added to a study for further analysis; a fifteen year period which as the added benefit of largely constituting a different international political structure with the end of the Cold War in 1990. Thus, by using the latest edition of the ICB data set, I will not only benefit from using widely-accepted and comparable data set, but also one which covers crises through 2001.

In terms of methodology, though all these studies were aggregate in their scope, they used a variety of methodologies to address that scope. The majority involved simple cross tabulation-type frequency distributions versus expected frequency counts (e.g. Geller 1990, Kugler 1984), the only exceptions being Huth (1990) and Huth et al (1993), which used the more powerful statistical tool of probit analysis. These two studies are also the only ones to uses multivariate quantitative analysis. Three other studies used qualitative analysis exclusively to look at the overall effect of nuclear weapons on

deterrence. None used a sophisticated multi-methodological approach, as I proposed to do. Finally, only two of the studies focused exclusively on nuclear deterrence (Kugler 1984, Jervis 1989), while two others looked at the effects of nuclear weapons on escalation (Geller 1990, Huth et al 1993). Unfortunately, in both of these pairs of studies, the conclusions were divergent. Kugler found that nuclear deterrence did not work, while Jervis found that it did. Similarly, Huth et al found that nuclear weapons significantly reduced escalation in disputes, while Geller found that nuclear states were in fact *more* likely to escalate disputes, short of war.

Overall, among the nine studies I have reviewed in some detail, three suggest support for nuclear deterrence theory, four suggest no support for nuclear deterrence theory, and two suggest both. Of course, this literature review has left out studies which were case studies of one or two nuclear crises/confrontations. Such case studies will be considered in later chapters which examine the major nuclear crises of the past 50 years, and qualitatively assess the impact of nuclear weapons on crisis outcome. What this chapter has highlighted is that *the effects of nuclear weapons on conflict in the international system remains unclear.* It is to this question that the following chapter turns, using quantitative methodology and the International Crisis Behavior project data set.

Chapter 3

A Theoretical Model

Most scholars agree that nuclear weapons have had some effect on interstate behavior, primarily through nuclear deterrence (e.g. Schelling 1965, Snyder 1965, Kaplan 1987), but there is an ongoing dispute over exactly what that effect has been (e.g. Sagan and Waltz 1995). Indeed, one respected scholar says that "ultimately, the question cannot be answered." (Morgan 2003, p.133). This chapter will set out a theoretical model of interstate relations within which to test whether and how nuclear deterrence functions. This model will include a variable not only for nuclear weapons, but also for several other key factors which other international relations studies have found to have an important effect on levels of conflict in interstate relations. In order to test the model, the chapter will generate a series of hypotheses regarding the effect of these variables on interstate conflict. These hypotheses will be tested in subsequent chapters using both statistical and qualitative analysis.

Before one can achieve a clear understanding of the effect nuclear weapons may have had on interstate relations, one needs a baseline understanding of what drives interstate behavior. This chapter will begin with a brief discussion of the major strands of scholarship regarding interstate behavior: realism and liberalism. Although there is a great debate, and often acrimony, between proponents of each over which is more correct, they can be combined in order to gain a more persuasive understanding of interstate behavior. Such a synthesis begins with realism.

Thucydides' famous Melian Dialogue from the 4th century BC states "the strong will do what they can and the weak will suffer what they must." (Strassler, p.352) This was the reply of the then-strong city-state of Athens to the then-weak city-state of Melos in 416 BC. The Melians tried in vain to persuade the Athenians that the conquest of Melos was neither just (it wasn't) nor in the material interests of Athens (with which the Athenians disagreed). Melian pleas fell on deaf ears, and the following winter Athens took the city, murdering every male and selling the women and children into slavery. Although today we would condemn such barbarity, to the Athenians these drastic measures seemed necessary to preserve their own power and independence. Thus do we see that nuclear weapons are not the only way to destroy a city; nor is the concept of total destruction new.

States' concern for power and independence, as demonstrated by the Athenians 2,400 years ago, is a central tenet in what is known in political science as Realism. Although there are different strands within realism,[16] at its core realism holds that states in an anarchic system must pursue power to retain their independence and maintain security in a world where *relative* power is a state's paramount concern. The modern state system, generally acknowledged to have commenced with the Treaty of Westphalia in 1648, epitomized the realist model until, and perhaps beyond, 1990. Names such as Machiavelli, Hobbes, and Metternich bring to mind an era when territory was considered

[16] For a good discussion of the four main strands of realism (complex, fundamental, structural, and constitutional), see Doyle 1997. Key works in realism include Thucydides 431 B.C., Machiavelli 1513, Hobbes 1651, Morgenthau 1948, and Waltz 1979.

a key to power and within which states such as Portugal, Spain, the Netherlands, Great Britain, France, and Belgium subjugated vast tracts of the globe in their efforts to improve their status vis-à-vis one another. Along with the acquisition of colonies, warfare was frequent among the European powers as they vied for security in an anarchic world.

However, critics of realism claim that the world need not be viewed that way. These critics come from many camps, but liberalism and its variants have been the strongest opposing paradigm. Realism[17] holds that power relations between states are zero-sum, putting states in an endless and often violent conflict to improve their relative power position. In contrast, liberalism claims that power relations need not be zero-sum and that states can coexist non-violently if certain aspects of the international system are changed. Moreover, whereas realism holds that states develop into like units due to the structure of the system, liberalism claims that states are not all alike, and that different states have different goals, with some being more peaceful than others (Doyle 2000 p.27).

The historical record provides ample evidence for both theories. Supporting realists, conflict, crisis, and warfare, while not ubiquitous, seem to be endemic to the interstate system. Even the "peaceful" post-Cold War world has seen 333 Militarized Disputes

[17] From here on, when I refer to "realism," I will be referring to the theory put forward by Waltz in his 1979 book, Theory of International Politics. Other scholars have called Waltz's theory "neorealism" or "structural realism." For further discussion on this debate see Keohane 1986. Ultimately, Waltz's theory is the most generally used among realists, though there are important modifications such as Mearsheimer's (2001) "offensive realism." For a thought-provoking revision of Waltz's structural or Neorealism, see James 2002.

(MIDS), 43 interstate crises, and 7 wars since the collapse of the Soviet Union.[18] Supporting liberals, not all states display the same frequency of conflict. For example, the transition from British hegemony to US hegemony produced no war between the two, and former enemies France and Germany have found it possible to join in the supra-state European Union (Mandelbaum 2002). Indeed, looking at recent history, some liberal theorists feel that the world itself has changed and that the age of realism has all but passed (Fukuyama 1992, Rosecrance 1999). However, they may be too optimistic, as shown by the growing conflict between the United States and Europe as the former flexes its military muscle to achieve its perceived security needs. In Asia there is also the potential for conflict between the US and China, as the latter develops its economic and military strength (Bernstein and Munro 1998, Bracken 1999). Clearly, both theories are relevant to today's world, and can contribute to our understanding of interstate relations.

Realism's strongest contribution may be in its analysis of the effects of the underlying structure of the international system. In the most powerful theoretical argument put forth by realists, Kenneth Waltz highlights three central elements of the system. First, there is the ordering principle of anarchy and decentralization. Second, the units in the system are sovereign states whose first goal must be survival. Third, the system will have a distribution of capabilities or power which will make conflict more or less likely (Waltz 1979, pp.87-97). The fact that states must look after their own survival, and that they reside in the same structure of anarchy, means that they will develop into like units; units

[18] Numbers are from COW MIDs Version 3.01, ICB Version 4, and the author's count of wars since 1990: Gulf War 1991, Bosnia 1992, Eritrea/Ethiopia 1998, Kosovo 1999, Kargil 1999, Afghanistan 2001, Iraq 2003.

which seek to maximize their own *relative* power in order to guarantee their security and survival. It is in this effort to maximize relational power that states end up in conflict, and sometimes war, with other states. For Waltz, this conflict is inevitable.

Over the years there have been many critics of Waltz, and they have made some salient points regarding his theory of international relations. One well-known critique comes from Alexander Wendt, who assails the static nature of Waltz's theory in an article entitled, "Anarchy is What States Make of It," (1992) and his book, Social Theory of International Politics (1999). For Wendt, state interests are not static and eternal but rather dynamic and constructed, and few states' central concern is survival, particularly in the post-WWII era. Moreover, he notes that states behave differently toward each other, observing that "states act differently towards enemies than they do towards friends because enemies are threatening and friends are not. Anarchy and the distribution of power are insufficient to tell us which is which." (Wendt 1992, p.397) Barry Buzan echoes this criticism, stating that Waltz's theory provides an "unnecessarily narrow, static, and political perspective on what can and should be a much more comprehensive theory of IP." A closely related criticism leveled at realists is that, in the process of emphasizing the issue of power, they overlook the *power of issues* (K.J. Holsti 1991).

For Holsti, there are multiple state systems in the globe, and thus "it would be misleading to analyze the dynamics of one with the concepts of another. Waltz and his fellow structuralists' concept of the state is too undifferentiated." (p.330) Although some scholars dispute Holsti's findings regarding the salience of territory in the post-WWII era

(see especially Vasquez 1993 and 2001), there is ample evidence that some issues that were formerly dealt with violently are now being dealt with peacefully, particularly in the arena of interstate trade (Rosecrance 1986, Mansfield 1994, O'Neal et al 1996).

Waltz defends himself by saying that he is not trying to explain the sum total of interstate interaction, but rather trying to explain precisely a specific part of interstate relations. As Waltz asserted in 1993, "the behaviors of states, the patterns of their interactions, and the outcomes their actions produced had been repeated again and again through the centuries despite profound changes in the internal composition of states." (p.45) Although he has many detractors, it is hard for them to deny the core assertion that interstate conflict is an enduring part of the global system. This strength of Waltz's theory gives us a starting point for international relations. Interstate conflict may ebb and flow, and there are many factors which influence it, but the potential for conflict emanating from the anarchical nature of the system and states' need to develop power to maintain their security within that structure must remain a foundation upon which we can build more specific models, unless and until the world moves beyond an anarchical system.

One can think of this conflict as the black arrow that constitutes a cycle in Figure 3.1.

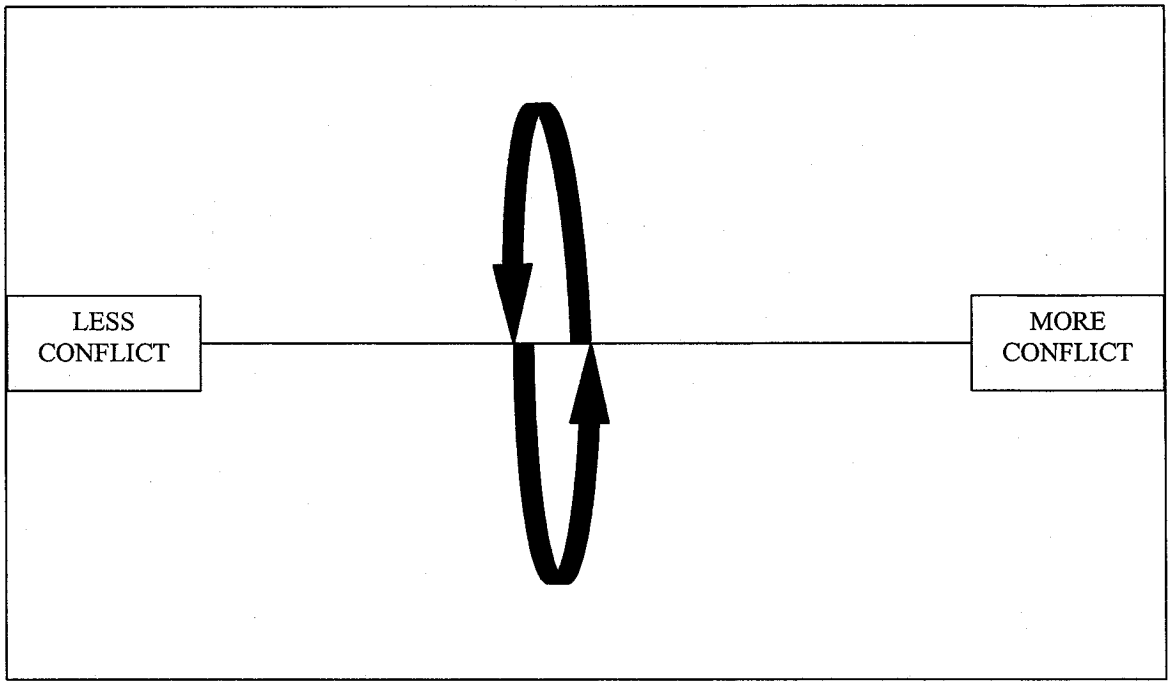

Figure 3.1
Cycle of Conflict Inherent in Anarchy

The horizontal axis represents the level of violence in interstate relations as a continuum from low to high (left to right). There may be more or less interstate conflict, as represented by the circular arrow getting smaller as it moves to the left or larger as it moves to the right, but the central fact of conflict has remained throughout the centuries, as shown in Figures 3.2 and 3.3.

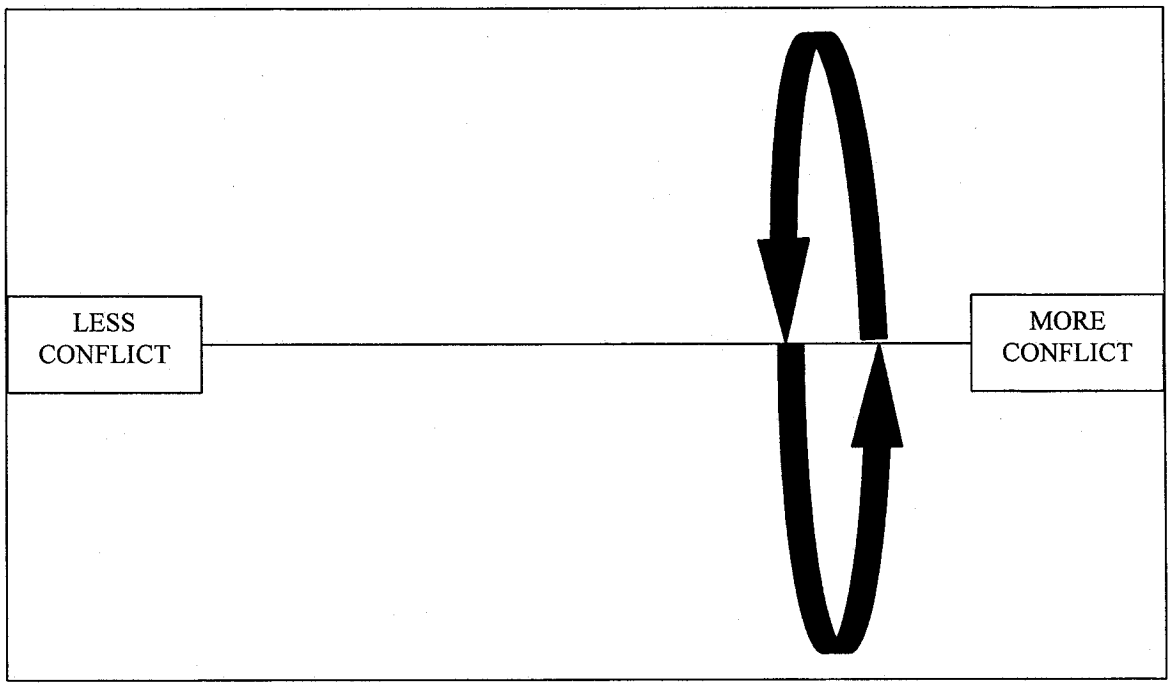

Figure 3.2
Idealized representation of state of highly conflictual interstate relations
The World 1933-1945

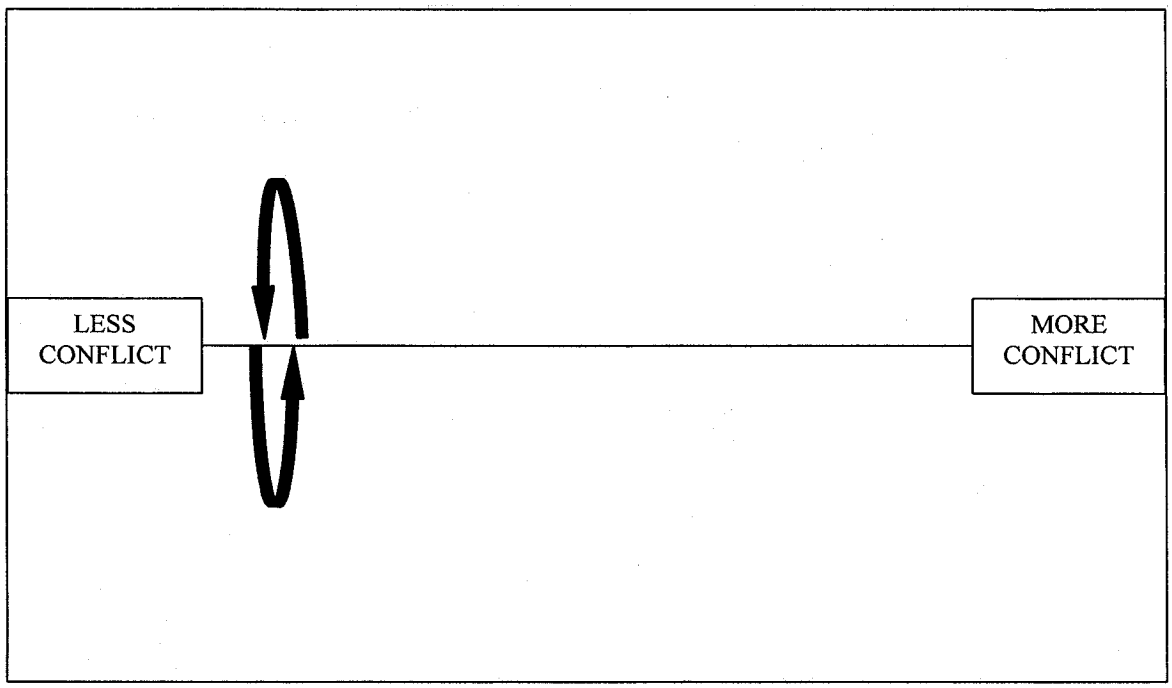

Figure 3.3
Idealized representation of minimally conflictual interstate relations
The World 1920-1930

The key question is, what factors push the cycle of conflict, inherent in an anarchical system, in a more peaceful direction, and which factors push it in a more violent and conflictual direction? Both realism and liberalism describe factors which increase or decrease the level of conflict and it is here that a synthesis of their insights can contribute to our understanding of interstate relations.

Figure 3.4 builds on Figures 3.1-3.3 and presents a model of interstate conflict. At the center

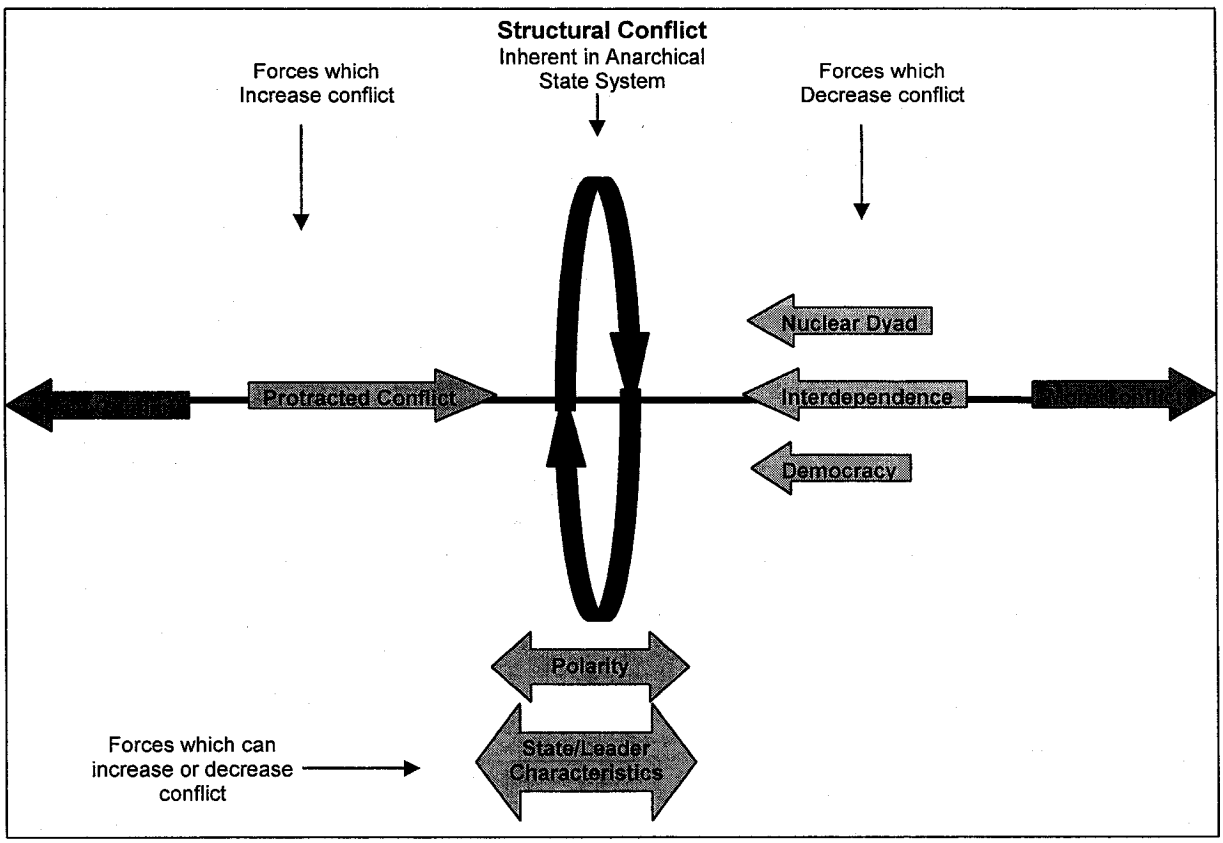

Figure 3.4
Theoretical Model of Modified Interstate Conflict[19]

is the black cyclical arrow from Figure 3.1 which represents structural conflict inherent in an anarchic system. That is to say, this arrow represents the cycle of conflict that is inherently created by states as they pursue relative power in order to ensure their survival and security.

The green, blue, and red arrows represent forces beyond the structural condition of anarchy that can affect the cycle of violence inherent in the anarchical system. The green arrows represent forces which can either increase or decrease violence. There is no way

[19] In this diagram, the different sizes of the colored arrows is due to the need to fit descriptive text into a small space. They imply no greater or lesser significance for any of the variables at this point.

to know a-priori which effect they will have. In the case of polarity, this is due to disputes in the literature. In the case of state or leader characteristics, this is due to the fact that not all states or leaders are alike. Although Waltz (1979) argues that all states must develop into like units (and therefore leaders must follow similar policies), history clearly distinguishes between a Chamberlain, a Churchill, a Nehru, and a Stalin. In what may be a truly exceptional case, one scholar argues that "to a considerable degree, WWII came about because one man [Hitler] wanted it to occur and, with astonishingly single-minded and ruthless guile and craft, made it happen." (Mueller 1989, p.64-5) The blue and red arrows represent variables which may theoretically decrease or increase conflict; and the next section of this chapter will introduce a series of hypotheses and their theoretical relationship to interstate conflict that will be tested in subsequent chapters.

One of the earliest thinkers associated with liberalism is Hugo Grotius, who advocated international law as a way to alter the condition of anarchy and reduce conflict among states. Grotius's thinking has found its fullest expression in the post-WWII era, which has seen a proliferation of international treaties regulating relations among states, as well as the creation of the United Nations. Clear examples include: the Nuclear Non-Proliferation Treaty of 1968, which has dramatically slowed the pace of nuclear proliferation; the European Union, which has made mass violence virtually unthinkable among states which previously had been the most violent on Earth; and the United Nations Security Council, which facilitated peaceful management of conflict among the superpowers.

However, for all its successes, international law has not replaced the basic condition of anarchy that Waltz identified. Immanuel Kant, In his Perpetual Peace (1796), advocated the proliferation of republican governance as the key to peace: "for if fortune directs that a powerful and enlightened people can make itself a republic, which by its nature must be inclined to perpetual peace, this give a fulcrum to the federation with other states so that they may adhere to it and thus secure freedom under the idea of a law of nations." (p.19)

History seems to have provided more support for Kant than for Grotius. Although the UN is the only entity under international law that can authorize war against a member of the UN system, the US war against Iraq in 2003 is only the latest in a long line of wars since 1945 that have occurred without UN authorization. On the other hand, democracies[20] have proven to be far more peaceful among each other than their non-democratic counterparts, creating a so-called "democratic peace" among democratic dyads that has been called the closest thing we have to a "law" in international relations (Levy 1988, p.662).[21] Some scholars go beyond democratic dyads, finding "there may be reason to doubt whether reciprocity is a necessary condition for the effects of democracy to work on limiting the likelihood of escalation." (Brecher and Wilkenfeld, 1997 p.150. see also Bremer 1992) Hence, the variable for democracy in model in Figure 3.4 and the following hypotheses:

H1: Nuclear dyadic crises will not occur between democratic states

[20] Kant used the term republic, but his focus was on a form of government that closely resembles what we call democracy today (Cederman 2001, p.16).

[21] The literature on the democratic peace is vast. For a good review of the literature see Chan 1997. More recent work includes Brecher and Wilkenfeld 1997, Cederman 2001, Mandelbaum 2002.

H2: Democratic states will experience lower levels of violence ininternational crises

Closely related to democratic peace is the role of trade in promoting pacific relations among states. In addition to republicanism, Kant advocated interstate trade as a means to a more pacific world, noting:

> "The spirit of commerce, which sooner or later gains the upper hand in every state. As the power of money is perhaps the most dependable of all powers (means) included under any state power, states see themselves forced, without any moral urge, to promote honorable peace and by mediation to prevent war when it threatens to break out." (p.32)

Theoretically, if a large percentage of a state's decision-making elite benefits strongly from interstate trade, they will be averse to seeing that trade interrupted by the forces of war. Thus, as states rely more and more upon interstate trade for their wealth and prosperity, they will find it less and less attractive to fight wars. However, the peaceful effect of trade, or interdependence as it is commonly called, has not been as successful as democracy at promoting peace.

Early predictions that the world had achieved a level of interdependence sufficient to prevent wars proved premature (Angell 1911). Angell's misprognostication may have been explained by Albert Hirschman (1945) who argued for "a frank recognition of the *risks connected with expanding trade if this trade is organized on strictly separate national lines." (Emphasis in original)* (p.79). Prior to WWI, the bulk of interstate trade did not create a situation of mutual dependence but frequently created situations of one-sided dependence, or was primarily between states and their colonies abroad. This has changed since WWII, and there is growing evidence that interdependence does indeed have a pacifying effect. Using basic game theory, Rosecrance (1986) argued that

interdependence made the world more peaceful because trade was a better means to wealth than warfare. His grandest claim is that "with the Industrial Revolution the link between power and territory was broken..." (p.139)

A stronger study on this question is Mansfield (1994), who found that "an increase of 2% in the ratio of total global exports to total global production correlates with a decrease of more than 20% on the predicted mean of wars per year." (p.130) Another aggregate study (O'Neal et al, 1996) similarly found that interdependence reduces conflict. In their strongest equation, they found that increasing trade by one standard deviation is associated with a decline in war probability among contiguous states by over 40% (p.20). However, there remain critics who say that interdependence does not reduce conflict (e.g. Keohane and Nye 1977, Gasiorowski 1986, Barbieri 1996). Although the preponderance of evidence to date suggests that interdependence does indeed reduce interstate conflict, it remains an unproven relationship. Thus it will be examined in the qualitative analysis to test the third hypothesis:

H3: States in nuclear dyadic crises will have low levels of interstate trade

In addition to democracy and interdependence which hail from liberal theory, there are several factors which realists theorize will influence levels of interstate conflict. The first centers around the concept of polarity. One group of scholars argues that hegemony or unipolarity is the most stable (i.e. less conflictual) structural configuration (Organski and Kugler 1980, Gilpin 1987, Thompson and Rasler 2000). This is viewed as theoretically accurate because, if one state is far more powerful than all the rest, it can establish and maintain a set of rules and norms for the conduct of interstate relations. No state can

hope to defeat the hegemon, so there is no point in even trying. One version of this argument is Power Transition Theory, which argues that "when a dissatisfied great power challenger achieves parity with the dominant power, the probability of international war rises dramatically." (Lemke 2002, p.8)

This theory is unsatisfying to other realists, who argue that conflict is less likely when power in the system is in balance. The balance of power camp is split into two camps: those who argue that bipolarity is the most stable structure (Waltz 1979, Mearsheimer 1990) and those who argue that multipolarity is the most stable structure (Wright 1942, Kaplan 1957, Deutsch and Singer 1964). Bipolarity is theoretically most stable because there is far less uncertainty in the system which leads to fewer miscalculations; and the two major powers have an interest in maintaining the status quo. Multipolarity is theoretically more stable because the added uncertainty of multiple power centers will make leaders more cautious, and it will be easier for states to balance shifts in relative power.

Although this debate is unlikely to be resolved anytime soon, prior work using the ICB data set found that polycentrism (defined as a hybrid structure with two centers of military power and multiple decision centers), was the least stable system, and that bipolarity was more stable than multipolarity (Brecher, James, and Wilkenfeld 1990, p.77). Thus, there is a consensus that structure matters, though not on which structure has what effect. For the aggregate test conducted in the next chapter, control variables will be included for system structure. Although it is impossible to know a-priori which

structure has which effect, including the variable in the equations to follow will ensure that the structural effect does not confuse the effect of nuclear weapons.

Protracted conflict has also been identified as a condition which affects the level of interstate conflict. Azar et al's (1978) definition of a protracted conflict is:

> "hostile interactions which extend over long periods of time with sporadic outbreaks of open warfare fluctuation in frequency and intensity. They are conflict situations in which the stakes are very high – the conflicts involve whole societies and act as agents for defining the scope of national identity and social solidarity. While they may exhibit some breakpoints during which there is a cessation of violence, they linger on in time and have no distinguishable point of termination...protracted conflicts, that is to say, are not specific events or even clusters of events at a point in time; they are processes." (Azar et al 1978, p.50)

The ICB modifies that definition, dropping violence as a necessary condition and requiring that there be three international crises between the same pair of adversaries during a period of at least five years (Brecher and Wilkenfeld 1997, p.6). The existence of a protracted conflict signifies that two or more states have some issue or issues of contention between them which continually lead to crises. There can be several reasons for such continuous disputes: disputed territory, ideology, or perhaps culture or religion. Obvious examples would be the ideological conflict between the US and USSR from 1945-90 or the religious/territorial conflict between India and Pakistan from 1947 until today. Because the issues at stake in a protracted conflict are unusually difficult to resolve, crises are frequent. Moreover, PC crises generate value threats that are more likely to induce violence, and are more prone to violent escalation because of the cumulative nature of such a conflict, "in sum, past experience and anticipated future behavior strengthen the likelihood of extreme violence in a crisis during a protracted

conflict; they do not in non-PC crises." (Brecher 1993, p.145-6) This relationship will be tested in the next two hypotheses:

H4: The more serious the issue at stake for a state in crisis, the more violence the state will experience in the crisis

H5: States in protracted conflicts will experience higher levels of violence in crises regardless of nuclear capabilities or whether the crisis is a nuclear dyadic crisis

The final independent variable in this model is the effect of nuclear weapons, which constitutes the main focus of this dissertation. As noted in the previous chapter, one of the best known theorists on this question is Waltz, who stated that, because nuclear weapons have a stabilizing effect between rival states, "More [nuclear states] May Be Better" (1981). The effect Waltz describes does not come from nuclear weapons possession alone, but when two opposing states both possess nuclear weapons. As noted in Chapter 2, the nuclear effect derives from two main theoretical sources: impossibility of victory and greatly reduced uncertainty. Victory is impossible in a nuclear war, because a state cannot prevent its own cities from being destroyed.[22] Uncertainty is reduced because even a highly effective first strike is not an attractive option, as even a small number of surviving weapons would deliver unacceptable damage.

Moreover, because no leader can be certain of preventing violence from escalating once shots have been fired, the risk of even minor violence is simply too great to risk. As Schelling (1966) stated, "small wars embody the threat of larger war..." (p.33) Scott

[22] This will hold true unless and until a state can build a 100% effective missile defense shield, something that even proponents of US national missile defense do not claim is possible.

Sagan (1993) advanced this point using organizational theory and noted that the military mindset which emphasizes maximum force and readiness could easily lead to escalation that political leaders may not wish. His extensive research on the Cuban Missile Crisis led to the unsettling conclusion that "President Kennedy may well have been prudent. He did *not*, however, have unchallenged final control over US nuclear weapons." (p.116, emphasis in the original) Thus, any violence between nuclear states represents a risk that rational leaders should not take. This theoretical relationship gives rise to hypothesis six:

H6: Nuclear dyadic crises will exhibit a lower level of violence than non-nuclear dyadic crises

A related question is what advantage a nuclear weapon conveys to a state that faces a non-nuclear opponent. Some scholars have observed that nuclear weapons convey little or no benefit against non-nuclear opponents (Organski and Kugler 1980). However, nuclear weapons represent a dramatic military capability which should help nuclear states in conflict with non-nuclear states. Whereas it took the US Army Air Force 325 bombers to destroy Tokyo on 10 March 1945 (Rhodes 1995, p.20-21), a single bomber destroyed Hiroshima on 6 August 1945. The advent of the hydrogen bomb was an even greater leap in capability because it "was so powerful that it could miss targets by two miles or more and still destroy whatever target anyone might want to hit." (Kaplan 1983, p.79) This enormous capability should translate into an unbeatable advantage when a nuclear state faces a non-nuclear state, and should mean that the nuclear state will face much less risk of violence. Thus hypothesis seven states:

H7: Nuclear states in nuclear monadic crises will experience lower levels of violence

Ultimately, the model in Figure 3.4 will assess the effect of nuclear weapons on perhaps the most important outcome variable in interstate crises: violence. Beyond this, it is also possible to look at how processes effect crisis outcomes. Brecher and Wilkenfeld (1997) identify four phases of crisis, and have used the ICB data set to examine various factors within crises and their effect on crisis outcomes. By doing the same thing with nuclear weapons, I can explore how nuclear weapons possession (both monadic and dyadic) may affect the intra-crisis processes that lead to the various outcomes, particularly levels of violence. For example, game theory posits that tit-for-tat is the most successful strategy in a prisoners dilemma (Axelrod 1984). Because of this, one would expect that nuclear weapons would lead to a lower frequency of violent crisis triggers due to political leaders concerns over possible escalation and nuclear war. Thus we have hypothesis eight:

H8: States in nuclear dyadic crises will experience less violent crisis initiation triggers

Once a crisis has been triggered, a state must choose how to respond. Although game theory suggests that the most successful strategy is tit-for-tat, in a nuclear dyadic crisis states will face strong pressures to respond non-violently or risk uncontrolled escalation, "because escalation can occur although no one wants it to, mutual second-strike capability does not make the world safe for major provocations and limited wars." (Jervis 1989, p.21) Thus, violence as a response or crisis management technique is too risky, leading to hypotheses 9-11:

H9: States in nuclear dyadic crises will respond to crisis triggers less violently

H10: States in nuclear dyadic crises will use violence less frequently as a principal crisis management technique

H11: States in nuclear dyadic crises will use lower levels of violence when violence is their primary crisis management technique

Overall, hypotheses 1-7 postulate what the overall effects of nuclear weapons will be on levels of conflict in crises, in combination with four other independent variables. Hypotheses 8-11 postulate how nuclear weapons may affect levels of violence in a crisis by looking at intra-crisis processes. Through testing these hypotheses, this study will evaluate both the strength and significance of nuclear deterrence in reducing conflict, as well as how deterrence may occur within individual crises.

Conclusion

This chapter has framed a model to assess the impact of nuclear weapons on interstate behavior, as one of several factors which affect levels of violence in interstate relations. I began by reviewing briefly the two main paradigms in international relations scholarship: realism and liberalism. I then elaborated how the two paradigms complement each other. Realism explains the underlying structure of conflict, as well as some structural configurations which affect interstate relations. Liberalism highlights how several other factors, particularly regime type and international trade, can effectively lower the levels of violence that would otherwise exist in a global system of anarchy. Armed with this understanding of interstate relations, I then proceeded to show how nuclear weapons might also be predicted to affect levels of interstate conflict.

By combining the two main theoretical strands of international relations into one model, including the effect of nuclear weapons, one can see the effect of nuclear weapons compared to a variety of other important variables which have been found to affect the levels of violence in interstate conflict, as illustrated in Figure 3.1. At the conclusion of the following chapter I will be able to insert comparable values derived from statistical analysis for most of the variables in Figure 3.4, providing a greater understanding of interstate relations. In subsequent chapters, I will examine the effects of these variables using qualitative analysis of all 17 nuclear dyadic crises, with special emphasis on the crises between the world's newest nuclear dyad: India-Pakistan. Ultimately, the combined analysis should assist us in answering the contentious question of whether or not "more may be better."

Chapter 4

A Quantitative Analysis

This chapter presents an aggregate analysis using the International Crisis Behavior (ICB) data set to test nuclear deterrence theory and examine the model proposed in Chapter 3. As Chapter 2 indicated, the effects of nuclear weapons technology on the incidence of conflict in the international system is disputed. Some observers had cited the well-known fact that there had never been a war between two states that possessed nuclear weapons...until 1999[23], when India and Pakistan fought a border war near Kargil. Subsequently, nuclear optimists altered their language, and now say that nuclear powers will be restricted to fighting "limited" wars. (Knopf, p.53) On the one hand, this makes perfect sense. In previous wars, India had opened, or seriously threatened to open, a second front with Pakistan in the latter's southwestern desert, and in 1999 it did not. On the other hand, the distinction is not so useful in that, by the accepted definition of limited war, all Indo-Pakistani wars have been limited. Webster's Encyclopedic Unabridged Dictionary of the English Language defines limited war as "a war conducted with less than a nation's total resources and restricted in aim to less than the total defeat of the enemy" or "a war restricted to a relatively small area of the world and involving few warring nations." (p.1115) Clearly, saying nuclear states will fight only limited wars does not tell us much, since that is what they usually engage in, regardless of weapons technology. Indeed, war itself is a fairly rare phenomenon. One scholar noted that, of

[23] As I will discuss later, the 1969 Ussuri River Crisis between the USSR and China may have presaged Kargil by 30 years.

2000 militarized disputes (MIDs) since 1816, only 5% developed into wars[24] (Bremer 1995, p.15). Since MIDs themselves are relatively infrequent, war is an unusual event.

In that light, the absence of "full-scale" wars among the small number of nuclear powers does not seem to be unusual, and this casts serious doubt on claims citing this absence as proof that major war between nuclear-armed states will never occur. Thus, looking at war frequency alone is far from sufficient to have a high degree of confidence in nuclear deterrence theory. Crises, however, are somewhat more common. The International Crisis Behavior (ICB) Project has identified 434 international crises between 1918 and 2001, and has detailed information on each of these crises, in both statistical and descriptive format. As such, it makes an ideal data set with which to re-examine the question of the effect of nuclear weapons on international conflict.

This chapter will proceed as follows. I begin by setting out some key definitions. I will then examine crisis frequency and nuclear weapons capability; that is, I will compare crisis frequency (both monadic nuclear and dyadic, to be defined below) for nuclear states both before and after their acquisition of nuclear weapons. Next I will examine the crisis characteristics of those crises involving nuclear powers to see if nuclear weapons had an effect on three aspects of crises -- crisis initiation, crisis severity, and crisis outcome. The final section of the chapter will be a summary of the findings and set the stage for subsequent chapters, which will qualitatively examine all dyadic nuclear crises.

[24] interestingly, as will be discussed below, 6% of dyadic nuclear crises become wars.

Definitions

Since this chapter focuses on crises, it would be useful to define this important term now. The ICB defines a crisis for a state, a **foreign policy crisis**, as:

> "a situation with three necessary and sufficient conditions deriving from a change in the state's internal or external environment. All three are perceptions held by the highest level decision-makers of the state actor concerned: a *threat to one of more basic values*, along with an awareness of *finite time for response* to the value threat, and a *heightened probability of involvement in military hostilities*." (Brecher and Wilkenfeld 2000, p.3, emphasis in the original)

It is important to note that, for the purposes of the ICB, there need not be a "high" probability of war, but rather a perception of the likelihood of war that is "*qualitatively higher than the norm.*" (ibid)

A crisis for an actor is distinct from an **international crisis,** which the ICB defines as having two necessary and sufficient conditions:

> "1) a change in type and/or increase in intensity of *disruptive*, that is hostile verbal or physical, *interactions* between two or more states, with a heightened probability of *military hostilities*; that in turn 2) destabilizes their relationship and *challenges the structure* of an international system – global, dominant, or subsystem." (ibid. p.4-5, emphasis in the original)

Using these two definitions, the ICB data set identifies over 950 state actors that have experienced crises, and 434 international crises. (Brecher and Wilkenfeld, online)

I will add several subcategories to the ICB data set for the purposes of this study. A **nuclear crisis** is any crisis meeting the above definitions and involving at least one state with nuclear capability. Most nuclear powers have demonstrated their nuclear capability through a nuclear test detonation, and they will be coded as nuclear powers for this study from the date of their first nuclear test.[25] However, there have been states believed to possess nuclear weapons even though they had not openly demonstrated a nuclear weapons capability, states often referred to as "opaque proliferators."[26] For the purposes of studying nuclear deterrence, it is assumed that a demonstrated weapons capability is not required so long as other states perceive the capability to exist. This will be delineated by the existence of general agreement among the open source information available to scholars. For example, Avner Cohen's Israel and the Bomb (1998) is judged to be an authoritative work on the Israeli nuclear program. He states that "if the physical possession of nuclear weapons is the criterion by which a state is judged to be a nuclear weapons state, then, by May 1967, Israel was a nuclear-weapon state." (p.275) Thus, Israel will be coded a nuclear weapon state from May 1967 onward.

India is a simpler case, for it detonated a "Peaceful Nuclear Explosion" (PNE) in 1974. Although that test was likely less successful than the Indian government claimed, possibly registering less than eight kilotons compared to the claimed 15 kilotons (Perkovich, p.181-83), it was a nuclear explosion. After that initial test, India was quite

[25] 16 July 1945 for the United States; 29 August 1949 for the USSR/Russia; 3 October 1952 for the United Kingdom; 13 February 1960 for France; and 16 October 1964 for China. North Korea claimed to have achieved nuclear capability in 2003, but this is after the time-frame of this inquiry.
[26] For good discussions of the question of nuclear deterrence under "opaque proliferation," see Haggerty (1998) and S. Khan (2002).

slow in developing an operational capability, and the date when it had a weapon is much less clear. In fact, one well-informed observer claimed that, prior to its 1998 tests, India had no credible deterrent, at least by Cold War standards (Tellis 2001, p.18). However, as Waltz notes, Cold War standards are probably too demanding. The uncertainty that Waltz highlights as a major aspect of nuclear deterrence means that Pakistan could not be certain of the absence of an Indian nuclear capability before that date. Scholars looking at the 1987 Brasstacks Crisis generally code India as a nuclear power at that time (Haggerty 1998, Khan 2002). Thus, I have recoded India as a nuclear power from 1987.

Pakistan is a thornier challenge, as it only openly demonstrated a nuclear capability in May 1998. As mentioned in an earlier chapter, scholars disagree as to when Pakistan achieved its nuclear capability. The ICB data set codes Pakistan as nuclear capable from 1990, echoing the opinion of some scholars such as Devon Haggerty (1998). However, Pakistan was signaling in the 1987 Brasstacks crisis with India that it had nuclear capability. Moreover, US intelligence sources throughout the 1980s were aware of the ongoing Pakistani nuclear weapons program, and a cutoff of aid to Pakistan was avoided only because of the geo-political imperatives of the Soviet occupation of neighboring Afghanistan.[27] Nuclear deterrence theory would suggest that the uncertainty as to Pakistan's capability would cause India to treat it as a nuclear-capable state, given the huge costs of a miscalculation. Thus, I have recoded Pakistan as a nuclear power from 1987.

[27] For an interesting examination of US support to the Mujahadeen in Afghanistan, see George Crile's Charlie Wilson's War (2003), especially, pp.420 and 462-65.

It should be noted that the dates given above for nuclear capability do not agree in all cases with the dates in the unmodified ICB data set. The ICB data set codes Pakistan as a nuclear power from 1990, India from 1990, and Israel from 1973. This makes only a minimal difference to the number of cases and it is hoped that the reader finds the modified coding decisions well-reasoned.

A **dyadic nuclear crisis** is one in which there was at least one nuclear power on each side of the dispute. Clear examples include the Berlin Wall (1961), Cuban Missiles (1962), Ussuri River (1969), and Kargil (1999). Using the coding decisions regarding nuclear capability above, I have identified 17 dyadic nuclear crises among the ICB's 434 international crises.

A **monadic nuclear crisis** is one in which there was at least one nuclear power on only one side of the crisis. The ICB data set contains 89 monadic nuclear crises. It should be noted that there are several crises in which there were multiple nuclear powers involved, but they were on the same side. A good example is the 1990-1 Gulf War, in which the US, the USSR, the United Kingdom, France, and Israel were all crisis actors, but all were on the same side. These, too, are coded as monadic nuclear crises.

A **non-nuclear crisis** is defined as a crisis that does not contain any nuclear power; approximately 75% of all ICB crises. This is not surprising given the fact that nuclear weapons have been in existence only about 67% of the time period covered in the ICB data set (1918-2001), and that, within that time period, they have been possessed by a

very small number of states. With the data subset created from these definitions, I can compare the crisis characteristics and outcomes between dyadic nuclear, monadic nuclear, and non-nuclear crises. However, before doing so, I will first examine crisis frequency and nuclear weapons.

Crisis Frequency

Logically, if nuclear weapons make war too dangerous to be risked, one would also posit that they would also lead to a reduced frequency of crises. Within the theoretical framework of nuclear proliferation optimists, the inherent risk to a state's survival by nuclear war means that states facing nuclear-armed opponents will be significantly less likely to become involved in a crisis due to the risk of escalation to war between nuclear powers. Thus, the first step is to analyze the frequency of crises before and after states acquired nuclear weapons. Table 4.1 shows this frequency for the seven declared nuclear

	US	Russia	UK	France	China	Israel	India	Pakistan
Total Crises	62	42	42	32	21	27	17	18
Pre-nuclear	3	23	26	19	15	14	13	13
Post-Nuclear	59	19	16	13	6	13	5	5
Dyadic nuclear	9	12	3	1	1	3	5	5
% Nuclear	95%	45%	38%	40%	29%	48%	24%	28%
% Dyadic nuclear	15%	29%	7%	3%	5%	11%	29%	28%

Table 4.1
Crisis Frequency by State[28]

powers and Israel. The first thing one notices is that the United States is an outlier; 95% of the US crises have occurred since it became a nuclear power. The country with the next highest percentage is Israel with 48%. This finding is simple to explain: the United States followed a largely isolationist foreign policy until after the end of WWII and the start of the Cold War. Indeed, prior to 1947, the United States had never maintained a large standing army and played a largely silent role in international politics, resulting in only three foreign policy crises prior to August 1945. Thus, the parallel timing of becoming a nuclear weapon state and taking on a much more active role in international politics leads me to leave the US out of this comparison.[29]

With the exception of the United States, states seem to exhibit a lower frequency of foreign policy crises subsequent to becoming nuclear powers. This finding is strengthened when one adds the time component to the comparison. As Table 4.2 shows,

	US	Russia	UK	France	China	Israel	India	Pakistan
# of Nuclear Crisis	59	19	16	13	6	13	5	5
# of Years Nuclear	56	52	45	41	37	34	14	14
% of Nuclear Crisis	95%	45%	38%	40%	29%	48%	29%	28%
% of Years Nuclear	68%	63%	54%	49%	45%	64%	26%	26%
Nuclear Crises/Year	1.05	.37	.36	.32	.16	.38	.36	.36

Table 4.2
Nuclear Crisis Frequency and Duration of Nuclear Capability by State[30]

[28] Unless otherwise noted, all tables were calculated by the author using a modified ICB-actor level data set, Version 4 (2003).
[29] The question of nuclear weapon possession leading to a greater role in international politics would seem to be answered by the fact that other nuclear powers, the UK and France, played a leading role in international politics before and after possessing nuclear weapons, and, as Table 4.1 shows, seem to have been involved in fewer crises after becoming nuclear powers.
[30] Period of study is 83 years, except India and Pakistan (54 years), and Israel (53 years).

the percentage of nuclear crises for most of these states is generally lower than the percentage of time that they have been a nuclear power. Thus, for example, the United Kingdom experienced only 38% of its crises since detonating a nuclear device, yet the UK was a nuclear power for 54% of the time span covered in the ICB data set.

However, although states seem to be less likely to become involved in international crises after becoming nuclear powers, there is an interesting exception. India and Pakistan both violate the general trend found in the case of the other nuclear powers, with both having a higher percentage of nuclear crises than the time they have been nuclear-capable states. Using 1987 as the year when Pakistan became a nuclear power, 28% of its crises are nuclear crises, while it has been a nuclear power for only 26% of the period covered. Similarly, India seems has experienced 29% of its crises during the 26% of the time it has been a nuclear power. The case of the USSR/Russia also deserves some consideration. Although 45% of its crises were nuclear, while it was a nuclear power 64% of the time, Russia has not had a single crisis since its protracted conflict with the US ended in 1990. Using only those years when it was in a protracted conflict leads to slightly different figures. 45% of Russia's crises were nuclear during 51% of the time period covered; the near parity of these figures indicates the impact of protracted conflict even in the face of nuclear deterrence.

One concern regarding the validity of the findings presented above is that monadic nuclear crises are included in the data, so that the findings presented above may be skewed if nuclear weapons possession makes a state more likely to initiate a crisis

against a non-nuclear opponent, feeling that its nuclear weapons give it an edge. For example, Betts (1987) noted that the US frequently used its nuclear monopoly to blackmail other states, with mixed success. However, other scholars have noted that nuclear weapons do not seem to help nuclear powers in conflicts with non-nuclear powers. Organski and Kugler (1980) noted that non-nuclear powers seemed quite willing to initiate conflict up to and including war with nuclear powers, and that in such confrontations, nuclear powers won only once in seven confrontations, between 1949 and 1979 (p.176) A study later that decade echoed these findings, adding that the normative inhibitions associated with nuclear weapons makes absurd the thought of their use against non-nuclear opponents. (Huth and Russett 1988, p.38) Finally, one of the leading scholars on the "nuclear taboo" found that, by limiting their aims, non-nuclear states felt they could confront nuclear states because of the normative prohibition on the use of nuclear weapons (Paul 1995, pp.699-700).

When we confine our analysis to dyadic nuclear crises, several interesting facts emerge. First, dyadic nuclear crises are much less frequent than monadic nuclear crises: 89 monadic nuclear crises and only 17 dyadic nuclear crises. This partially supports the logic of nuclear deterrence as we see a reduced incidence of crises between nuclear adversaries, yet conflict remains.

Table 4.3 lists dyadic nuclear crises that have occurred since the advent of the first

Crisis	Year	US	Russia	UK	France	PRC	Israel	India	Pakistan
Korea II	1951	X	X						
Suez	1956		X	X					
Berlin Deadline	1958	X	X	X					
Berlin Wall	1961	X	X	X	X				
Cuban Missiles	1962	X	X						
Congo II	1964	X	X						
6-Day War	1967	X	X				X		
War of Attrition	1969		X				X		
Ussuri River	1969		X			X			
Yom Kippur	1973	X	X				X		
Angola	1975	X	X						
Afghanistan	1979	X	X						
Punjab Scare	1987							X	X
Kashmir III	1990							X	X
Indo-Pak Tests	1998							X	X
Kargil	1999							X	X
Indian Parliament	2001							X	X

Table 4.3
All Dyadic Nuclear Crises Since 1949*

nuclear dyad on 29 August 1949, and each of the nuclear crisis actors. The table graphically illustrates two key points. First, dyadic nuclear crises are largely a function of protracted conflicts (PC). As the table shows, states not involved in PCs do not get involved in dyadic nuclear crises, except where they may be drawn in by alliance partners. Israel is involved in a PC only with non-nuclear powers, and the only nuclear crises it has been involved in have occurred when its PC rivals were able to bring the Soviet Union into the crisis; the June Six Day War in 1967 and the October Yom Kippur

War in 1973. The United Kingdom was brought into a dyadic nuclear crisis in the Suez Nationalization Crisis because of Egypt's involvement of the Soviet Union with its call for help on 30 October 1956.

China has been involved in only one dyadic nuclear crisis, the Ussuri River Crisis with the Soviet Union in 1969. It is a unique case as it is the *only* dyadic nuclear crisis that is not related to a PC. Interestingly, although not part of a PC, it was a crisis involving a serious dispute over territory. Many scholars have noted the importance of territory as a cause of war (e.g. Small and Singer 1982, Holsti 1991, Vasquez 1993, Huth 1996). Thus, it is not surprising that the one non-PC related dyadic nuclear crisis involved territorial issues. However, it does undermine confidence in the impossibility of war between nuclear powers.

The second point illustrated by Table 4.3 is that there may be a learning component with regard to nuclear deterrence. Although Leng (2000) found that states in enduring rivalries do not seem to learn over time, the reduced frequency of crises among some nuclear dyads suggests that learning is occurring. There are three main PCs that occur among the states involved in dyadic nuclear crises: East-West, Arab-Israeli, and India-Pakistan. The evidence is clear that crisis frequency declined in the Cold War as time went on, as did crisis severity. The US and the USSR were direct participants in four dyadic nuclear crises from 1949 to 1962, a rate of 3.9 crises per decade. After the Cuban Missile Crisis, they were involved in only five crises in almost 40 years, a rate of only

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* Five cases (Suez, Berlin Deadline, Berlin Wall, 6-Day War, and Yom Kippur) were nuclear dyads, with Britain, France, and Israel aligned with the US against the USSR.

1.3 crises per decade. Moreover, the crises in the second period were less severe than the earlier period, with only the 1973 October-Yom Kippur War crisis escalating to dangerous levels for the superpowers. Finally, from 1973 until the demise of the Soviet Union and the Cold War PC there were no serious direct confrontations between the US and the USSR. They seem to have established "rules of the game" which limited direct conflict after 1962,[31] and eliminated it after 1973.

The Arab-Israeli conflict may have benefited from a similar process, particularly since there was a strong patron-client relationship between the belligerents in this PC and the superpowers. Of central importance, the United States played a strong role in mediating the conflict between Egypt and Israel, culminating in the Camp David Accords in 1978. Following Egypt's recognition of the state of Israel, and the resulting peace between the most important Arab state and Israel in 1979, the Arab-Israeli PC has been significantly quieter. Some scholars (Ben-Yehuda and Sandler 2002), have noted that the Arab-Israeli PC moderated after the October Yom Kippur War due to war fatigue, institutional arrangements, and the growing acceptance of the legitimacy of Israel. However, the efforts of the United States in mediating this conflict, and subsequent massive subsidies to Egypt and Israel (the two largest recipients of US aid for the past 25 years), illustrate how nuclear weapons proliferation can significantly increase superpower, particularly US, efforts to attenuate crisis frequency and severity, a process which will also be discussed in the Indo-Pakistani context in Chapter 7.

[31] Trachtenberg (1999) argues that the decline in superpower conflict after 1962 was due to the resolution of the Berlin issue, rather than nuclear deterrence. This contention will be discussed in a later chapter.

Against the hopeful evidence of learning during the Cold War PC and the ambiguous evidence of the Arab-Israeli PC, stands the India-Pakistan protracted conflict. Only time will tell if it will undergo a decline in crisis frequency and severity as did the East-West and the Arab-Israeli PCs. However, the evidence to date is not encouraging (Geller 2003). Although I will examine this PC in greater detail in Chapter 7, it is worth noting at this point a few features of the Indo-Pakistani conflict. First, crisis frequency has *increased dramatically* since both states emerged as a nuclear dyad, particularly in the aftermath of their nuclear tests in May 1998. This may be due to a sense on the Pakistani side that their nuclear force gives them a protective umbrella under which to engage in provocative action in Kashmir, illustrating Snyder's stability-instability paradox. Second, the sources of crises in South Asia are far different from those in the East-West PC, particularly the role played by harder-to-control non-state actors. It is far from clear that the terrorist attack on the Indian Parliament in October 2000 was sanctioned by the Pakistani government, but the aftermath was a huge mobilization by the Indian army on the Pakistani border , reciprocal mobilization by Pakistan, and an international crisis of dangerous proportions. Such un-sanctioned actions by non-state actors threaten to provoke crises between these nuclear rivals in the years ahead. Finally, the India-Pakistan PC suffers from an immediacy that did not exist in the East-West PC. The US and the USSR were separated, for the most part, by many thousands of miles, as were the nuclear powers in the Middle-East crises. By contrast, India and Pakistan can, and do, routinely trade artillery fire, and suffer casualties, across the Line of Control in Kashmir. Thus, the immediacy of the PC is much more intense in the India-Pakistan case than it has been in other nuclear PCs. These factors seem to be the source of the

sharp increase in crisis frequency between India and Pakistan over the past decade, despite the growing nuclear capability of the two states.

Overall, the data on crisis frequency for nuclear powers does not provide strong evidence either for or against nuclear deterrence theory. However, there are indications that other contextual variables such as protracted conflict and superpower involvement may play a larger role in determining crisis frequency than do nuclear weapons possession or a dyadic nuclear relationship. Before turning away from the question of frequency, it is worth mentioning the question of war frequency between nuclear powers. In fact, of the 17 crises between nuclear powers, one meets the Correlates of War (COW) definition of war (Kargil in 1999) and one might (Ussuri River in 1969). Hard numbers of battle deaths are sometimes hard to come by, particularly when the crisis actors are not open democracies. However, there have been published reports indicating that the Kargil crisis led to more than 1,000 battle deaths (Bedi 1999), a statistic confirmed by the newest version of the COW-MID (Militarized Interstate Dispute) data set, V3.02, which codes Kargil as a war. The incomplete information on Ussuri River suggests the actual number may exceed 1,000 (Robinson 1991), but remains coded as less than a war in all major data sets. Counting only Kargil, this means that nearly 6% of all dyadic nuclear crises became wars;[32] slightly above the rate at which MIDs become wars and just under half the rate (13.5%) of crises leading to wars in the ICB data set. The fact that in Kargil military operations were limited is of mixed meaning. It does show that, so far, wars between nuclear powers have been few and of limited scope and intensity. However, as

[32] Coding Ussuri River as a war would mean nearly 12% of all dyadic nuclear crises become wars, a figure far higher than the rate at which non-dyadic nuclear crises become wars!

noted earlier in the chapter, war is already an infrequent phenomenon and most wars are limited wars. Thus, frequency patterns alone are insufficient to identify the effect of nuclear deterrence. In future chapters I will examine the Kargil and Ussuri River crises in more detail to determine the effect nuclear weapons may have in determining their outcomes. For now, however, I will turn to an examination of crisis characteristics and nuclear weapons.

Crisis Characteristics and Nuclear Weapons

Several of the studies discussed in Chapter 2 examined the effect of nuclear weapons in MIDs, but the ICB data provide an opportunity for a richer evaluation of the effects of nuclear weapons in the aggregate, which will enhance the value of this study for the literature on nuclear deterrence. First, the ICB data set, with its written summaries of each crisis, contains far more detail regarding individual crisis characteristics than other data sets, such as the COW MID data set. A second strength of the ICB data set is that it uses decision-makers' perceptions in defining a crisis, whereas the COW MID does not consider perceptions at all, but rather looks only at whether or not a military act has taken place (Hewitt 2003, p.2). Given the central role that perceptions play in nuclear deterrence theory, this makes the ICB a much stronger data set to consider this question. Finally, although I will not use all of them, the ICB contains far more variables (80) than does COW MID (11), including a nuclear capability variable which is unavailable in the COW MID data set. This allows for a much richer exploration of international disputes.

Although it has far fewer cases than COW MID for a shorter period, the actor-level data set in ICB contains 954 cases and the system-level data set 434 cases; both are sufficient for rigorous statistical analysis. For the purposes of this analysis, these are two complementary data sets. The system-level data set codes one case for each international crisis, of which there are 434. The actor-level data set codes one case for each actor in an international crisis, resulting in 954 cases. Having two data sets allows the researcher to examine both the characteristics of the states involved in crises, and the overall characteristics of the crises themselves; strengthening the overall analysis. The analysis that follows will use the actor-level data set first.

Actor-Level Data Analysis

Before running any statistical analysis, it was necessary to make some minor additions to the data set. First, I created a new variable called NUKEYNO which recodes the ICB actor-level variable NUCLER. The original NUCLER variable is coded with four values: 1 = states with no nuclear capability, 2 = states with a foreseeable capability in 5 years, 3 = states with a nuclear capability, and 4 = states with a second-strike capability. The distinction between 1 and 2 is useful to test questions related to the likelihood of crisis in the period just before a state acquires a nuclear capability, but is not a question I will be exploring. The distinction between 3 and 4 is unnecessary according to Waltz (1995), who claimed that since no state can ever be certain that it will able to destroy all of an opponent's nuclear weapons in a first strike, nuclear deterrence holds even without

a developed second-strike capability.[33] Thus, NUKEYNO is simply coded as 0 if a state has no nuclear capability, and 1 if they do. Since some readers may question the wisdom of this decision, I compared the NUCLER variable to the results of the NUKEYNO variable in the cross tabulations presented below. In cases where one is significant and the other is not, I report the distinction.

The second variable I have created in both the actor-level and system-level data sets is called NUKEDYAD and is coded as 0 if the crisis is not a dyadic nuclear crisis, and 1 if it is, based upon the coding for individual states from NUKEYNO. A third variable, called NUKES, was also created in the actor-level data set. NUKES identifies whether a particular crisis was a non-nuclear crisis (coded as 1), a monadic nuclear crisis (coded as a 2), or a dyadic nuclear crisis (coded as a 3).[34] Using these variables, I ran a set of cross tabulations to test the relationship between nuclear capability and the existence of a nuclear dyad against a variety of variables involving crisis initiation and crisis characteristics.

For crisis initiation, I used two variables to test the impact of nuclear weapons. The first is TRIGGR, "the specific act, event or situational change which leads decision-makers to perceive a threat to basic values, time pressure for response and heightened probability of involvement in military hostilities."[35] A cross tabulation between NUKEDYAD and TRIGGR found no correlation. Closely related to the trigger of an international crisis is

[33] My analysis of second-strike capability, to be presented later in the chapter, does not support Waltz's claim that second-strike capability is not required for nuclear deterrence.
[34] NUKES will be used primarily in the multivariate analysis.

the state's major response (MAJRES) to a crisis trigger. The ICB codes for a list of increasingly serious responses beginning with a verbal actions, such as protest notes, up to, and including, violent responses such as sending military forces into action. Theoretically, given the risks of escalation, states in a nuclear dyad would be less likely to respond violently to a provocative action that triggers an international crisis. However, a cross tabulation using MAJRES and NUKEDYAD finds no correlation between the two. Thus, neither the trigger to an interstate crisis, nor the major response to that trigger, seems to be affected by the threat of nuclear destruction inherent in a nuclear dyad, providing no support for Hypotheses 7 or 8.[36]

The next set of questions I will examine focus on the effect of nuclear weapons on crisis characteristics, particularly the levels of violence in the crisis, for both dyadic nuclear and monadic crises. Table 4.4 shows the variables tested, and the respective significance

Variable [i]	CHI Square	Significance	Support Deterrence?
TRIGG2	4.1083 (2)	.128	NO
MAJRES4	1.2923 (1)	.256	NO
CRISMG2	1.3513 (1)	.245	NO
CENVIO	5.4921 (4)	.139	NO
SEVVIO	5.3557 (4)	.148	NO
VIOL	12.2717 (3)	.007	YES
ISSUE	9.3784 (3)	.025	YES
OUTCOM	.5812 (3)	.901	NO

Table 4.4
Cross Tabulations of Nuclear Dyad X Variables for Crisis Characteristics
Number in parenthesis is the degrees of freedom for that cross tabulation

[35] Unless otherwise notes, all of the following descriptions of the variables used come from the code books provided at the ICB website, www.icbnet.org
[36] All of the hypothesis from Chapter 3 are listed in Appendix B.
[i] Variable descriptions are in Appendix A.

findings, for dyadic nuclear crises. As shown in the table, nuclear deterrence theory seems to be supported by only two of the eight tested variables for the crisis characteristics; VIOL and ISSUE. VIOL, defined as the highest level of violence experienced by the state, is significant at .007. Hypothesis 6 (H6) posited that states in dyadic nuclear crises would experience lower levels of violence, and this bivariate analysis suggests strong support. As shown in Table 4.5, states in a dyadic nuclear crisis experienced war only

	No Violence	**Minor Clashes**	**Serious Clashes**	**War**	**Total**
Non-Nuclear Dyad	32.39% (296, 305.9)	21.99% (201, 196.9)	22.10% (202, 198.8)	23.52% (215, 212.2)	100% 914
Nuclear Dyad	57.14% (24, 14.1)	11.9% (5, 9.1)	9.52% (4, 9.1)	21.43% (9, 9.8)	100% 42
Total	33.47% 320	21.55% 206	21.76% 208	23.22% 222	100% 956

Table 4.5
NUKEDYAD X VIOL, derived using Stata V 8.0, P=.007, chi square 12.2717 (3 degrees of freedom)
Cells include row percentages with actual and predicted frequencies in parentheses

nine times, compared to an expected frequency (if there were no relationship) of 9.8, four serious clashes compared to an expected frequency of 9.1, and five minor clashes compared to an expected frequency of 9.1. The high significance of the chi square (12,2717 with three degrees of freedom), and the observed reduced frequencies of violence, offer support to H6. The support is mixed, however, because the reduction in violence is in the middle categories of minor and serious clashes. *Being in a nuclear dyad makes almost no difference in the incidence of war.* Nine state actors experienced full-scale war even though they were in a dyadic nuclear crisis. These nine states were

India and Pakistan in the Kargil crisis, Israel in the October-Yom Kippur War (two crises), Israel in the War of Attrition (two crises), Israel in the Six-Day War, the United Kingdom in the Suez Nationalization/War, and the United States in Korean War II.

The results above indicate a limited correlation between levels of violence in a crisis and the possession of nuclear weapons and/or the existence of a nuclear dyad. However, there are several other variables which may also be used to explain levels of violence in a crisis, and it is to an examination of several of those that I now turn. The first is ISSUE, which "identifies the most important *initial* issue area of the crisis as perceived by the crisis actor." (emphasis added) As Table 4.6 shows, issue is coded with four categories.

	No Violence	**Minor Clashes**	**Serious Clashes**	**War**	**Total**
Military-Security	30% (192, 213.8)	20.16% (129, 138.1)	23.81% (146, 138.1)	27.03% (173, 150.1)	100% 640
Political-Diplomatic	42.13% (91, 72.2)	23.61% (51, 46.6)	16.67% (36, 47)	17.59% (38, 50.2)	100% 216
Economic-Development	42.55% (20, 15.7)	21.28% (10, 10.1)	17.02% (8, 10.2)	19.15% (9, 10.9)	100% 47
Cultural-Status	30.77% (16, 17.4)	30.77% (16, 11.2)	30.77% (16, 11.3)	7.69% (4, 12.1)	100% 52
Total	33.4% 319	21.57% 206	21.57% 208	23.46% 222	100% 955

Table 4.6
ISSUE X VIOL, derived using Stata V 8.0, P=.001, chi square 29.3724 (9 degrees of freedom)
Cells include row percentages with actual and predicted frequencies in parentheses

A cross tabulation of ISSUE X VIOL is highly significant at .001, and clearly shows an increase in levels of violence as the importance of the issue at stake increases, supporting Hypothesis 4. War is the result in 173 cases where military-security issues are at stake, whereas the expected count would only be 150.1 if there were no relationship. This finding is stronger than the negative impact of a nuclear dyad on violence in a crisis. One concern that comes to mind when considering this comparison is whether or not being in a nuclear dyad leads states to avoid crises with serious issues at stake. A multivariate analysis will be presented below, but first let us look at this effect in a bivariate manner. A cross tabulation for ISSUE X NUKEDYAD is significant at .025 (chi square of 9.378 with three degrees of freedom). As shown by the cell counts in Table 4.7, we find that there is a slight reduction in the frequency of military-security

	Military-Security	**Political-Diplomatic**	**Economic-Developmental**	**Cultural-Status**	**Total**
Non-Nuclear Dyad	67.25% (614, 611.9)	21.91% (200, 206.5)	5.15% (47, 44.9)	5.7% (52, 49.7)	100% 913
Nuclear Dyad	61.9% (26, 28.1)	38.1% (16, 9.5)	0% (0, 2.1)	0% (0, 2.3)	100% 42
Total	67.02% 640	22.62% 216	4.92% 47	5.45% 52	100% 955

Table 4.7
NUKEDYAD X ISSUE, derived using Stata V 8.0, chi square 9.3784 (3 degrees of freedom)
Cells include row percentages with actual and predicted frequencies in parentheses

issues in dyadic nuclear crises (26 versus the expected count of 28.1).[37] More significant is the unexpected increase in the frequency of political-diplomatic crises. Rather than

[37] It is worth reminding the reader that when discussing cross tabulations, the expected frequency corresponds to what would be expected if there was no relationship between the two variables.

decreasing the severity of the issues in a crisis, dyadic nuclear crises seem to increase the likelihood of a political-diplomatic issue. Thus, states in nuclear dyads do not seem to avoid a crisis over more serious issues (military-security), which lends strength to our finding (in Table 4.6) that the issue at stake in a crisis can have a greater effect than the presence of a nuclear dyad.

Overall, then, the cross tabulations on several key crisis characteristics and the impact of both nuclear capability and the presence of a nuclear dyad provide mixed findings for the question of nuclear deterrence. First, they do provide support for Hypothesis 6, indicating that dyadic nuclear crises experience lower levels of violence. However, the data also shows that, for a range of dependent variables other than violence (e.g. crisis trigger or major response), the presence of a nuclear dyad has no effect. Moreover, variables other than a dyadic nuclear relationship (such as the issue of the crisis) seem to have a stronger impact on levels of violence in a crisis. However, using only bivariate analysis shows only part of the picture. So, responding to the call of scholars advocating more multivariate analysis in international relations scholarship (e.g. Siverson and Miller 1995), I will now examine the effect of nuclear weapons on international crises using multivariate ordered logit analysis.

I used ordered logit analysis to examine this data for a number of reasons. First, because the variables are categorical, rather than continuous, ordinary least squared regression should not be used (Borooah 2002, p.1). Second, because the variables are ordered (e.g. VIOL proceeds from no violence through full-scale war), multinomial logit analysis

would leave out significant explanatory power since it assumes no directional order in the data. (ibid. p.5) Finally, because the dependent variables I will be using have more than two outcomes, regular logit or probit analysis will not work (ibid. p.91). Both ordered probit and ordered logit are appropriate for analysis of this type. However there is no consensus on which is superior (see Greene 2000, p.815).

One last note on methods. Statistical analysis assumes that the data points are not related in any way. In the case of the ICB, the data points are related in two ways. First, each data point represents a state in a particular crisis, and states have characteristics[38] which carry through from crisis to crisis. Second, each data point represents a state in a particular crisis, which may have 2-5 or more actors. Different states within the same crisis often face similar pressures. These two problems challenge the assumption that all data points are unrelated. I controlled for this problem in two ways. First, I was able to create a variable for each nuclear state in the data set, which I could include in the multivariate analysis. Thus, for nuclear states at least, the effect of state characteristics will be directly captured in the equation. Second, I used a statistical function in STATA known as SVYSET. Basically, SVYSET allows the user to specify a particular category which may challenge the randomness assumption of the sample. Subsequent calculations will control for factors within this category (in this case state and crisis), enabling greater

[38] e.g. same leadership (India's BJP government during the last three India-Pakistan crises), same geographic location (Israel remains surrounded by states which have been very slow to recognize its right to exist), etc.

confidence in the results.[39] Having outlined why, I will now turn to an examination of the data using ordered logit.

The multivariate analysis below involved testing each of the dependent variables mentioned in the bivariate analysis presented above in a multivariate equation based upon the model presented in Figure 3.4 in Chapter 3, and reprinted below.

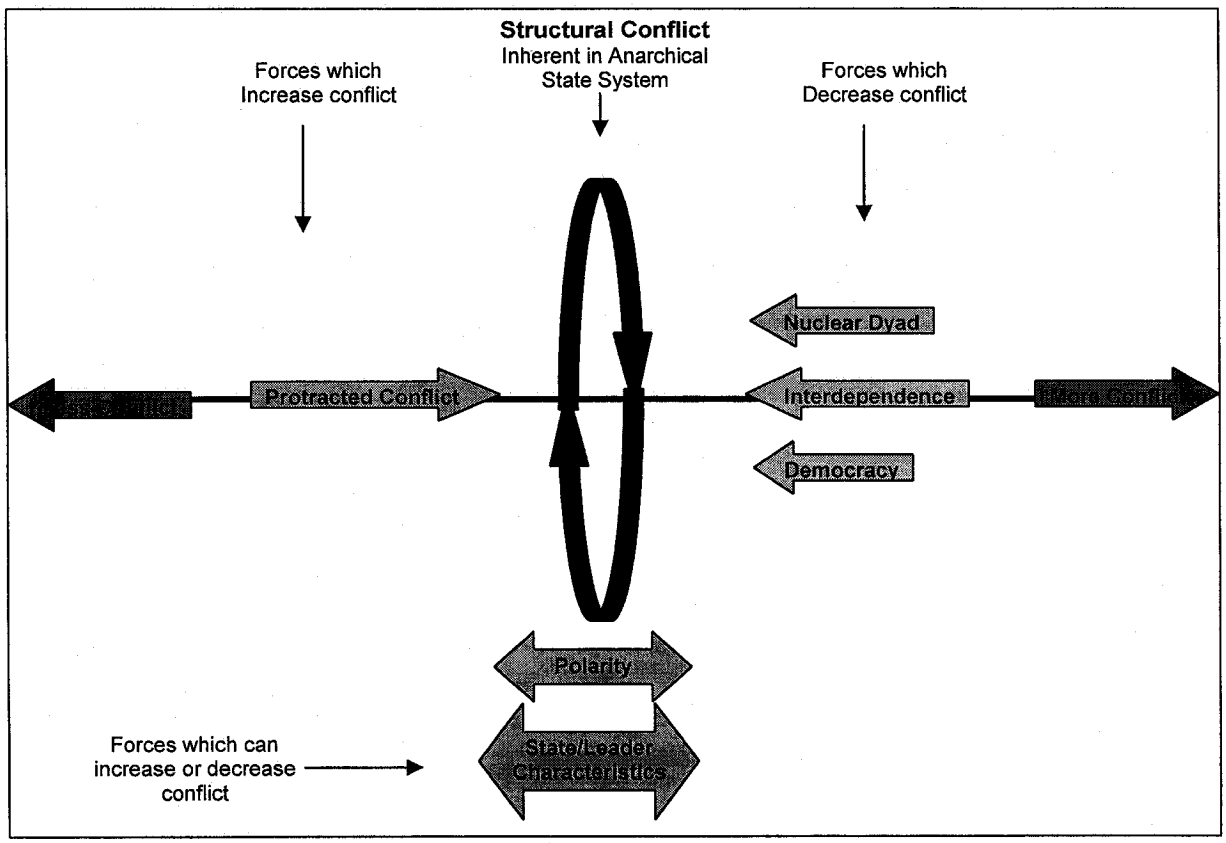

Figure 3.4
Theoretical Model of Modified Interstate Conflict[40]

[39] For further information on the Survey Set function, consult STATA User's Guide pp.321-332, and STATA Reference Manual Su-Z pp.15-31, 75-77.

[40] In this diagram, the different sizes of the colored arrows is due to the need to fit descriptive text into a small space. They imply no greater or lesser significance for any of the variables at this point.

As shown in the model, there are several theoretically important variables to compare with the effect of nuclear weapons; REGIMEREV (for democracy), PC, PERIOD (for polarity), and state characteristics. REGIMEREV accounts for regime type and has three values: military regimes, civil authoritarian regimes, and democratic regimes. PC indicates the presence of a protracted conflict and has three values: non-protracted conflict, protracted conflict, long-war protracted conflict. PERIOD accounts for the system structure and has five values; multipolar (1918-1939), WWII (1939-45), bipolar (1945-1962), polycentric (1963-1990), and unipolar (1990-2001). Since some crises are intra-war crises, and these would be expected to be more violent than non-intra-war crises due to the existing high level of violence, I have also added a dummy variable called IWC2 which identifies whether or not the crisis is an intra-war crisis. Finally, I was able to include variables for all the nuclear states, to capture the effect of state characteristics. In the analysis presented below, only Israel and China will be discussed, because they were the only two states found to be statistically significant when I originally ran the analysis. Thus, the other states were dropped from the final equations.

The first multivariate equation will test the effect of the above variables on crisis triggers (TRIGG). As with bivariate cross tabulations, multivariate ordered logit finds no evidence that nuclear weapons affect the levels of violence in a crisis trigger, either in monadic nuclear (.859) or dyadic (.423) crises, as shown by the expected probabilities for dyadic and monadic nuclear crises in the far right column of Table 4.8. Using

Independent Variable	Baseline Value*	Odds Ratio	P>x
RegimeRev – Civ Authoritarian	Military Regime	.88	.475
RegimeRev – Democratic	Military Regime	.66	.038
PC – protracted conflict	Non-PC	1.00	.994
PC – long war protracted conflict	Non-PC	1.56	.094
Intra-War Crisis	Non-Intra-War Crisis	2.06	.002
Period – WWII	Multipolarity	1.20	.527
Period – Bipolar	Multipolarity	1.11	.629
Period – Polycentric	Multipolarity	2.71	.000
Period – Unipolar	Multipolarity	1.79	.019
Issue2 – Non-Military-Security	Military-Security Issue	.25	.000
Nukes – Monadic Crisis	Non-Nuclear Crisis	1.04	.859
Nukes – Dyadic Crisis	Non-Nuclear Crisis	.78	.423
China	All Other States	1.01	.977
Israel	All Other States	.92	.829
Psuedo R-Square .1058 Number of cases 948			

Table 4.8
Ordered Logit with dependent variable TRIGG2, using Stata 8.0

Morgan's (1977) distinction between general and immediate deterrence, one would expect that, if nuclear deterrence worked primarily through general deterrence, triggers would be less violent in dyadic nuclear crises. Since this seems not to be the case, it suggests that nuclear deterrence does not make states significantly more cautious in the initial stages of a conflict or crisis with a nuclear power. Thus, statistical research supports Betts (1987) contention that "although postwar policymakers have always wanted to avoid nuclear war, they have never made that aim their highest priority." (p.2) Table 4.8 also contains five categories of independent variables in addition to the possession of nuclear weapons, several of which are significant. The strongest statistical relationship in the table is that for two types of system structure, polycentrism and unipolarity. As Table 4.8 indicates, states in crises that occur when the international

* For independent variables with multiple values, the given odds rations are in comparison to the lowest (baseline) value for that variable. For example, the variable REGIMEREV has three values; 1= military regime; 2= civil-authoritarian regime; 3= democratic regime. Thus the odds rations for Civil-Authoritarian and democracy are in comparison to a military regime. The second column indicates the baseline values.

system structure is polycentric (1963-1989) are 271% more likely to experience higher levels of violence in crisis triggers, compared to the baseline condition of multipolarity. Crises under unipolarity also more likely, by 179%, to have more violent triggers, and this finding is at the highest level of significance (.000). Interestingly, bipolarity shows no statistical difference from multipolarity in levels of violence in crisis triggers. While unable to explain this finding theoretically, including POLARITY in my analysis controls for system structure, strengthening the findings regarding the significance of other variables on the levels of violence in crisis triggers.

Another statistically significant relationship revealed in the Table 4.8 is that democratic states are 34% more likely to experience lower levels of violence in crisis triggers than military regimes. Prior research shows that there is a strong correlation between violence in triggers and subsequent violence in a crisis (Brecher and Wilkenfeld 2000, pp.181-184). Thus, the finding that democracies experience less violent crisis triggers lends indirect support to H2: *Democratic states will experience lower levels of violence.*

Another significant variable is the issue at stake in the crisis. For the ordered logit analysis, the ICB variable ISSUE was recoded into a dummy variable so that the issue was either a military-security issue, or other (including cultural, economic, and political). As Table 4.8 shows, if the primary issue of the crisis is not of a military-security nature, the trigger is 75% more likely to have lower levels of violence, with a very high statistical significance (.000). As with the discussion of democracy above, since there is a high correlation between levels of violence in a crisis trigger and subsequent levels of

violence in a crisis, the finding in Table 4.8 lends indirect support to H4: *the more serious the issue at stake for a state in crisis, the more violence the state will experience in the crisis.*

Surprisingly, the presence of a protracted conflict seems to have no effect on levels of violence in crisis triggers. The finding of no relationship between protracted conflict and violence in crises will be repeated in each ordered logit equation presented below. Thus no support is found for H5: *states in protracted conflicts will experience higher levels of violence in crises regardless of nuclear capabilities or whether the crisis is a dyadic nuclear crisis.* This surprising finding runs counter to other research using ICB that did find a strong correlation between protracted conflict and violence in a crisis (Brecher and Wilkenfeld 2000, p.p162-170). What may account for this difference? Brecher and Wilkenfeld used bivariate analysis in their study, but multivariate analysis allowed me to include a variable, IWC (intra-war crisis) for whether or not the crisis took place during an existing war. As Table 4.8 shows, that variable is very powerful and significant at the .002 level. Since many protracted conflict crises occur within existing wars, this may explain the contrasting findings. Finally, for the dependent variable of crisis trigger, China and Israel were not found to be significantly more likely to experience higher or lower levels of violence in crisis triggers.

Once a crisis has been triggered, a state must decide how to respond. As shown in Table 4.9, ordered logit indicates that states in dyadic nuclear crises respond neither more nor

Independent Variable	Baseline Value	Odds Ratio	P>x
RegimeRev – Civ Authoritarian	Military Regime	0.69	.068
RegimeRev – Democratic	Military Regime	0.66	.065
PC – protracted conflict	Non-PC	1.27	.158
PC – long war protracted conflict	Non-PC	1.48	.174
Intra-War Crisis	Non-Intra-War Crisis	3.50	.000
Period – WWII	Multipolarity	0.72	.314
Period – Bipolar	Multipolarity	0.42	.001
Period – Polycentric	Multipolarity	1.20	.388
Period – Unipolar	Multipolarity	2.48	.001
Issue2 – Non-Military-Security	Military-Security Issue	1.03	.868
Nukes – Monadic Crisis	Non-Nuclear Crisis	1.69	.049
Nukes – Dyadic Crisis	Non-Nuclear Crisis	0.80	.558
China	All Other States	3.10	.026
Israel	All Other States	1.35	.501
Psuedo R-Square .0993 Number of cases 948			

Table 4.9
Ordered Logit with dependent variable MAJRES4, using Stata 8.0

less violently to a crisis trigger. For example, in the 1999 Kargil Crisis, India responded to Pakistan with severe violence. However, nuclear armed states who face a non-nuclear opponent are 169% *more* likely to respond using violence (P=.049). There are several possible explanations for this finding. First, nuclear states in monadic nuclear crises may feel less constrained in responding to a crisis due to the presumed superiority their nuclear capability gives them. Second, it may be that, since most nuclear powers are great powers, it is great powers who respond more violently to crises. Regardless, multivariate analysis for the initiation phase of a crisis found no support for H7 or H8.

For regime type, the ordered logit shows democracies more likely to respond to crisis triggers with lower levels of violence than military regimes, the expected relationship. However, the statistical significance of the relationship is less powerful. At .065, it falls below the standard minimum social science definition of significance (.05). Although this does not provide strong support for H2, it does add some support insofar as it shows that even within crises, democracies tend to dampen levels of violence.

Unlike the findings for crisis triggers, the issue at stake in a crisis shows no correlation with the level of violence in a state's major response to a crisis trigger. This is theoretically consistent with the finding on violence and crisis triggers because the question of issue, unlike that of regime type, would not be expected to vary from a matching response to a crisis trigger. Theoretically, issues of a serious nature may lead to more violent triggers, a finding supported in Table 4.8. However, there is no theoretical reason to expect matching behavior in crises to be disrupted by the issue at stake.

As with the finding on crisis triggers, system structure accounts for some variation in states' major responses to crisis triggers, with unipolarity 248% more likely to experience higher levels of violence in states' major response. Very significant at .001, this adds strength to the finding in Table 4.8 that in unipolarity violence is a more central characteristic of crisis than it is in periods of multipolarity. Interestingly, under conditions of bipolarity, states are 58% more likely to respond to a crisis trigger with *lower* levels of violence. In terms of individual states, China is 310% more likely to respond to a crisis trigger with higher levels of violence. This finding is consistent with other findings reported below that indicate China is unusual among the nuclear powers in that it is more likely to experience higher levels of violence across a range of crisis characteristics. Possible reasons for this will also be discussed below.

I will now turn to an examination of the effects of nuclear weapons on several key crisis characteristics, using two variables from the ICB actor-level data set; CENVIO and

VIOL. CENVIO measures the importance which decision-makers attach to their use of violence in order to achieve their goals and is coded as follows: 1 = no violence; 2 = violence minor; 3 = violence important; 4 = violence preeminent. Table 4.10 shows the findings for an ordered logit on CENVIO, which indicates that a dyadic nuclear

Independent Variable	Baseline Value	Odds Ratio	P>x
RegimeRev – Civ Authoritarian	Military Regime	.89	.516
RegimeRev – Democratic	Military Regime	.66	.036
PC – protracted conflict	Non-PC	1.01	.944
PC – long war protracted conflict	Non-PC	1.77	.025
Intra-War Crisis	Non-Intra-War Crisis	4.90	.000
Period – WWII	Multipolarity	1.31	.341
Period – Bipolar	Multipolarity	1	.987
Period – Polycentric	Multipolarity	1.31	.163
Period – Unipolar	Multipolarity	3.40	.000
Issue2 – Non-Military-Security	Military-Security Issue	.83	.20
Nukes – Monadic Crisis	Non-Nuclear Crisis	1.69	.028
Nukes – Dyadic Crisis	Non-Nuclear Crisis	.61	.144
China	All Other States	2.89	.014
Israel	All Other States	1.96	.101
Psuedo R-Square .0834 Number of cases 948			

Table 4.10
Ordered Logit on dependent variable CENVIO, using Stata 8.0
Generated by the author using modified ICB actor-level data set

relationship shows no observable impact on the importance of violence as a crisis management tool for achieving policy goals. However, as with Tables 4.8 and 4.9, several other key variables in the multivariate equation are significant: REGIMEREV, POLARITY (Unipolar), and the variable for China. Democratic regimes are 34% more likely to use *lower* levels of violence to achieve their policy goals, adding further indirect support for H2 (see Appendix B). Conversely, China is 289% more likely to use *higher* levels of violence to achieve its foreign policy goals, indicating that regime change in China would likely make East Asia less prone to violence. Unipolarity continues to be a more violent type of system structure, with states 340% more likely to use *higher* levels of violence to achieve their foreign policy goals.

For the first time, protracted conflict becomes significant in the ordered logit, with states in long-war protracted conflicts 177% more likely to use higher levels of violence as a central tool to achieve their foreign policy goals, The fact that higher levels of violence exist within existing conditions of war is not surprising, however. The absence of significance for non-long-war protracted conflict variable (P = .944!) undermines support for H5, and suggests that protracted conflict is not as important a determinant of levels of violence as expected.

Perhaps the most critical dependent variable for the question of nuclear deterrence is the overall level of violence an actor experiences in a crisis. Table 4.11 below shows the

Independent Variable	Baseline Value	Odds Ratio	P>x
RegimeRev – Civ Authoritarian	Military Regime	.67	.019
RegimeRev – Democratic	Military Regime	.49	.000
PC – protracted conflict	Non-PC	.99	.922
PC – long war protracted conflict	Non-PC	1.49	.129
Intra-War Crisis	Non-Intra-War Crisis	9.12	.000
Period – WWII	Multipolarity	1.32	.352
Period – Bipolar	Multipolarity	1.22	.343
Period – Polycentric	Multipolarity	1.70	.004
Period – Unipolar	Multipolarity	4.00	.000
Issue2 – Non-Military-Security	Military-Security Issue	.75	.037
Nukes – Monadic Crisis	Non-Nuclear Crisis	.81	.354
Nukes – Dyadic Crisis	Non-Nuclear Crisis	.53	.051
China	All Other States	2.71	.016
Israel	All Other States	2.39	.025
Psuedo R-Square .1135			
Number of cases 948			

Table 4.11
Ordered Logit on dependent variable VIOL, using Stata 8.0
Generated by the author using a modified ICB actor-level data set

findings of an ordered logit analysis equation using VIOL as the dependent variable. Finally, the variable indicating the presence of a nuclear dyad borders on significance. States in dyadic nuclear crises have a 47% greater probability of experiencing a *lower*

level of violence in crises than states in non-nuclear crises, significant at the .051 level. This provides weak support for H6: *dyadic nuclear crises will experience lowers levels of violence than dyadic non-nuclear crises.* However, as with each ordered logit presented above, several of the other variables in the equation are both *more powerful*, and *more significant.*

Regime type continues to be very powerful in determining the levels of violence a state will experience in a crisis. Table 4.11 shows that civil authoritarian regimes have a 33% chance of having a *lower* level of violence than a military regime, while democratic regimes have a 51% chance of having a *lower* level of violence than a military regime (at .000 significance level). This corresponds with the findings of Brecher and Wilkenfeld (2000), who found that democracies in crises had lower levels of violence than non-democracies, regardless of whether there was a democratic dyad. The findings of all ologits on crisis characteristics thus add more rigorous support to their claim that "there may be reason to doubt whether reciprocity is a necessary condition for the effects of democracy to work on limiting the likelihood of escalation" (p.150), and provide powerful support for H2.

Table 4.11 also shows that the structure of the international system matters for levels of violence in crises. As with each of the findings presented above, states under the structural condition of unipolarity are much more likely to experience higher levels of violence in crisis than those during the baseline structure of multipolarity. States in crises during the period of polycentrism were also more likely to experience higher levels

of violence, though significantly less than under conditions of unipolarity (170% vs. 400%). An explanation for this is beyond the scope of this study, but this finding indicates that perhaps IR theorists who claim hegemony is more peaceful (e.g. Organski and Kugler 1980, Gilpin 1987, Kugler and Lemke 2000) may want to look at this question again.

Another important variable in determining the level of violence a state experiences in a crisis is the issue at stake for that state. As Table 4.11 shows, if the issue at stake for a state was not military-security, it was 75% more likely that the state would experience a *lower* level of violence, controlling for all the other variables in the equation. This is not surprising, since states would logically be expected to risk more violence if the value threatened was of a significant security concern, as opposed to a less important cultural or even economic matter.

Not surprisingly, different states also had different proclivities to violence in crises. The ologit found that both Israel and China are significantly more likely to experience *higher* levels of violence in crises (239% and 271%, respectively). Although it is beyond the scope of this study to explain conclusively why Israel and China experience such high levels of violence in their crises, it is worth mentioning possible explanations.

Obviously Israel is in a protracted conflict with its Arab neighbors that has been ongoing for all of its history, a conflict so intense that many of its neighbors have yet to recognize the right of the state of Israel to exist. Thus, the particular context within which the

Israeli state exists makes it somewhat of a unique case in the state system that has existed since 1648. The historical context of China is not quite as unusual as it is for Israel, however for a significant period of time the Chinese political regime in Beijing was also not accepted as legitimate as illustrated by the fact that from its founding in 1949 until October 1971, Beijing did not have the Chinese seat on the UN Security Council, which was occupied by Taiwan as it was viewed as the legitimate regime of China. Thus, one characteristic that China and Israel share is their role as challenger states in the international system. Although this is certainly not the definitive reason for the observed higher levels of violence by these states in international crises, it does suggest that nuclear weapons will not pacify the relations of states whose existence and policies are not seen as legitimate....something policymakers confronting nuclear proliferation in Iran and North Korea should be aware of. Overall, then, Table 4.11 indicates that there is a deterrent effect in nuclear dyads, but that it is not strong, and *that other factors have greater influence than mutual nuclear capability.*

Since there has been a strong policy debate on the number and capability of nuclear weapons required to ensure deterrence, I ran this same equation with slightly different coding to test opaque nuclear deterrence and also the importance of second-strike capability. Since the number of crises involving only opaque proliferators is quite small, I instead took out the opaque nuclear cases to see if the overall finding on nuclear deterrence were significantly strengthened. The ordered logit showed that nuclear deterrence is indeed stronger without opaque nuclear proliferators included. Both the

significance level and the power of the variable get slightly stronger, significance at .023 versus .029 and dampening effect on violence at 58% versus 51%.

I then ran the equation to test deterrence using only states having second-strike capability. Not surprisingly, nuclear deterrence becomes even more robust when only second-strike dyads are considered, decreasing the likelihood of conflict 82% at a significance level of .009. However, strong as this finding seems to be, it is based upon only 16 cases, all of which are US-USSR dyads. Thus, although this seems to undermine Waltz's contention that second-strike capability is not necessary for nuclear deterrence, we cannot have a great deal of confidence in the result due to competing explanations for the long peace between the US and the USSR (e.g. Mueller 1989, Vasquez 1991, Gaddis 1991).

Overall, the data analysis using the ICB actor-level data set provides strong support for Hypothesis 2 (democratic states will experience lower levels of violence), moderate support for Hypothesis 4 (the more serious the issue at stake, the higher levels of violence a state will experience), weak support for Hypothesis 6 (dyadic nuclear crisis will have lower levels of violence), and very little support for any of the other hypotheses regarding dyadic nuclear crises. It seems that the level of violence in dyadic nuclear crises is lower due to nuclear deterrence. However, the same analysis which provides this support also shows that other variables have an even greater impact on levels of violence in a crisis. This, coupled with the fact that there have been nuclear crises that have experienced full-scale war, seems to undermine the absolutist claim of

nuclear proliferation optimists. Before drawing any final conclusions, there is one more data set to be explored.

System-Level Data Analysis

Having found the claims for the effectiveness of nuclear deterrence not strongly supported using the actor-level data set, I will now conduct a similar examination of the effect of nuclear weapons on international crises using the ICB system-level data set. Rather than focus on the actors, the system-level data set focuses on the crisis as a whole. Thus it contains no data on the attributes of crisis actors, such as political regime or nuclear weapons capability, but it does have data on the overall levels of violence in a crisis, whether or not the crisis took place in the context of a PC, and so on. As noted earlier, I created a new variable, NUCLEAR DYAD to use with the system-level data set. Of the 434 cases contained in the ICB system-level data set, 17 of them meet the definition of NUCLEAR DYAD (compared to 42/956 cases in the actor-level data set). Thus, this data set has fewer instances of the critical independent variable, which means that whatever results our data analysis produce must be interpreted with caution.

Nonetheless, with 17 cases out of 434 crises we can still run statistical analyses on this data set. As with the actor-level data set, I begin with a series of cross tabulations. Most of the those cross tabulations did not prove significant, so I will present them first in table form, and then discuss the case where the statistical analysis indicated there was some significant relationship.

As Table 4.12 shows, using bivariate analysis the variable NUCLEAR DYAD had only

Variable	Chi Square	Significance	Support Deterrence?
CRISMG2	0.8490 (1)	.357	No
ISSUES2	4.3069 (2)	.116	No
CENVIOSY	2.2950 (3)	.513	No
SEVVIOSY	4.1532 (3)	.245	No
VIOL	4.6399 (3)	.200	No
SUBOUT	4.6212 (1)	.032	Yes

Table 4.12
ICB System-Level Cross Tab Results with NUKEDYAD
All variables that are not in the ICB codebook can be found in Appendix 1
Number in parenthesis is the degrees of freedom for that cross tabulation

one significant correlation, which was with the variable SUBOUT, defined as "whether or not the outcome of an international crisis was perceived by the actors to have been definitive or ambiguous." This lone positive finding, presented in Table 4.13, indicates

	Ambiguous Outcome	**Definitive Outcome**	**Total**
Non-Nuclear Dyad	49.88% (208, 212.3)	50.12% (209, 204.7)	100% 417
Nuclear Dyad	76.47% (13, 8.7)	25.53% (4, 8.3)	100% 17
Total	50.92% 221	49.08% 213	100% 434

Table 4.13
Nuclear Dyad X Content of Outcome (SUBOUT), Sig .032, X2 4.6212 with 1 degree of freedom
Generated by the author using a modified ICB system-level data set
Cells include row percentages with actual and predicted frequencies in parentheses

that dyadic nuclear crises have fewer definitive outcomes (four observed, expected count of 8.3), and more ambiguous outcomes (13 observed, expected count of 8.7). This

finding gives some support to the logic of nuclear deterrence, as fewer definitive outcomes indicate states' unwillingness to use all possible means to resolve a crisis in their favor.

One last test of the data remains, multivariate analysis using the system-level data set. A series of ordered logit equations were done using largely the same independent and dependent variables that were used in the actor-level analysis presented earlier. *The variable for dyadic nuclear crises is never significant* in any of the ologits, from crisis initiation through crisis characteristics, through crisis outcome. Nuclear power in a monadic nuclear crisis seems to have some impact, but only on form of outcome. As shown in Table 4.14, nuclear powers in monadic nuclear crises are more able to impose

Independent Variable	Baseline Value	Odds Ratio	P>x
Nukes – Monadic Crisis	Non-Nuclear Crisis	1.97	.009
Nukes – Dyadic Crisis	Non-Nuclear Crisis	1.77	.268
Period – WWII	Multipolarity	2.49	.140
Period – Bipolar	Multipolarity	.393	.005
Period – Polycentric	Multipolarity	.359	.001
Period – Unipolar	Multipolarity	.484	.075
PC – protracted conflict	Non-PC	1.07	.766
PC – long war protracted conflict	Non-PC	1.87	.166
Intra-War Crisis	Non-Intra-War Crisis	1.34	.478
Pseudo R-Square .0733 Cases 434			

Table 4.14
Ordered Logit for form of outcome (FOROUT)
Generated using Stata with a modified ICB system-level data set

an agreement than non-nuclear powers. This finding is logically consistent with a realist interpretation of the effect of nuclear weapons in a monadic nuclear crisis, but provides no support for nuclear deterrence. The key question is why does analysis using the

system-level data set not result in the same findings as analysis done using the actor-level data set?

A careful review of the data sets reveals a possible reason why the system-level data set findings do not correspond to those of the actor-level analysis; the coding on the dependent variables. In the actor-level data set, the variables are all coded for what the individual states experience, whereas in the system level data set they are coded for the crisis as a whole, using the highest value of any crisis actor. For example, in the system-level data set VIOL "identifies the extent of violence in an international crisis as a whole, regardless of its use or non-use by a specific actor as a crisis management technique." (Brecher and Wilkenfeld 2000) This coding methodology is similar for the main variables of this study, including CENVIOSY, SEVVOI, and ISSUES. While this coding decision is appropriate for the original purposes of the ICB, it presents problems in testing nuclear deterrence using the 17 dyadic nuclear crises I have identified. Of the 17, there are seven[41] in which the nuclear powers, although crisis actors, are not direct participants in the higher levels of violence the crisis as a whole experienced. For example, the October-Yom Kippur War of 1973 involved the US and USSR as crisis actors, but they were not directly involved in the violence. The overall crisis was coded as a war on VIOL, but neither nuclear power experienced even minor clashes.

This coding difference, coupled with the different findings for the two data sets suggests that, while nuclear powers in dyadic nuclear crises experience lower levels of violence

[41] Suez (1956), Congo II (1964), Six-Day War (1967), War of Attrition (1969), October-Yom Kippur War (1973), Angola (1975), and Afghanistan (1979).

themselves (as shown by the actor-level data analysis), they are unable to extend this protection to their client states. They also avoid the grave risk of nuclear escalation that comes from direct participation in hostilities with nuclear opponents. Thus, using the October-Yom Kippur War again as an example, although the USSR was a crisis actor, the effect of its nuclear capability did not extend to its client states, Egypt and Syria. The USSR could not give strong support to these states without worrying that Israel would use its nuclear capability against the USSR, and Israel could fight a war with Egypt and Syria without worrying about the nuclear capability of the USSR. One could argue that Israel could not yet deliver a nuclear weapon to the USSR in 1973, so a better example might be the War in Angola in 1975. The US and USSR were involved in the crisis through the actions of their client states, and although both perceived a heightened risk of involvement in military hostilities, the actual fighting in the crisis was done by proxy-actors as part of the East-West PC. Thus, the lack of support for deterrence theory in the system-level analysis seems to be due to the fact that, in 35% of dyadic nuclear crises, the fighting was done not by the nuclear powers but by client states, and nuclear deterrence does not extend to these client states. This finding suggests that the presence of significant numbers of US troops in Europe was indeed a necessary condition for US deterrence of the Soviet Union in Europe during the Cold War. Without the threat of direct military hostilities between Soviet and American troops,[42] it is likely that the USSR would have not been deterred from attacking Western Europe.

[42] A good example would be the tank face-off in Berlin on 27-29 October 1961 during the Berlin Wall Crisis, see Slusser (1978).

Overall, then, the actor-level data analysis partially supports deterrence theory, and system-level analysis indicates that effective nuclear deterrence is limited to direct confrontations such as the Cuban Missile Crisis. The evidence to date also suggests that nuclear capable states are unlikely to be drawn into direct conflict with one another through proxy states. Although this is an important finding, it does not support the position of nuclear optimists that mutual nuclear weapons capability makes major war between states impossible.

Conclusion

This chapter has presented a statistical analysis of international conflict and specifically the effect of nuclear weapons on various aspects of international and foreign policy crises. The findings provide little support for those who are optimistic about the prospect of nuclear weapons making war impossible. As with Alfred Nobel's hope that dynamite would make war too destructive, *the technology of nuclear physics*, destructive as it can be, *does not seem to have overcome the human propensity for warfare.*

First, crisis frequency does not seem to be dramatically reduced as a result of nuclear capability, but seems rather to be driven more by other factors. Nuclear states in a protracted conflict show a marked increase in crisis frequency, compared to those nuclear states not in a protracted conflict, as illustrated by Table 4.3 above. Particularly telling is the fact that only one dyadic nuclear crisis occurred outside of a protracted conflict, the 1969 Ussuri River Crisis. Overall, 94% of all dyadic nuclear crises occurred within

protracted conflicts, compared to 60% for all crises (Brecher and Wilkenfeld 2000, p.161). It would seem that the nature of protracted conflicts overcomes the general deterrent effect of a nuclear dyad. It is also noteworthy that most of the states that have developed nuclear weapons, and all proliferators since the adoption of the NPT, did so subsequent to becoming involved in a PC. Thus it is no surprise that North Korea and Iran strenuously continue their efforts to acquire nuclear weapons to counteract the nuclear power of their main adversary, just as the USSR did in the period from 1945-1949.[43]

Second, there is some evidence of a *learning component for nuclear rivalries,* which reduces conflict, as illustrated by the dramatic reduction in crisis frequency for the US and the USSR after 1962. However, of the three nuclear dyad PCs, it is the only one which provides unambiguous evidence of learning from the danger of nuclear war. In the case of the Arab-Israeli PC, it may well have been superpower intervention which lowered the likelihood of conflict, as shown by US involvement in the Camp David Accords. Other scholars have also noted that conflict in the Arab-Israeli PC may have declined due to factors other than nuclear weapons (Ben-Yehuda and Sandler 2002). The India-Pakistan nuclear dyad is too new to answer the question of learning. However, evidence to date is not encouraging (Leng 2000). Prior to 1987, India and Pakistan had experienced 1.75 crises per decade, but since 1987 the frequency has jumped to 3.33 per decade. Thus, it is clear that nuclear weapons capability did not reduce crisis frequency in that PC, undermining support for nuclear optimists.

[43] For more on this, see Richard Rhodes (1986). For a good assessment of the reasons for nuclear proliferation, see Myers (1984).

To answer the question of immediate deterrence, I looked at the effect of nuclear weapons and mutual nuclear weapons capability on a variety of crisis characteristics. In so doing, it was found that *nuclear weapons have only a marginal impact on crisis characteristics*, with the exception of overall levels of violence. The *main finding* is that, although mutual nuclear capability in dyadic nuclear crises does lower the likelihood of violence, *other contextual variables have an even stronger effect.* Specifically, democracy has a greater effect on lowering levels of violence in a crisis than do nuclear weapons, while certain system structures (especially *unipolarity*) seem to *increase violence levels even more dramatically than democracy reduces it.* These effects are graphically illustrated in Figure 4.1, using the model presented in Chapter 3. Upon

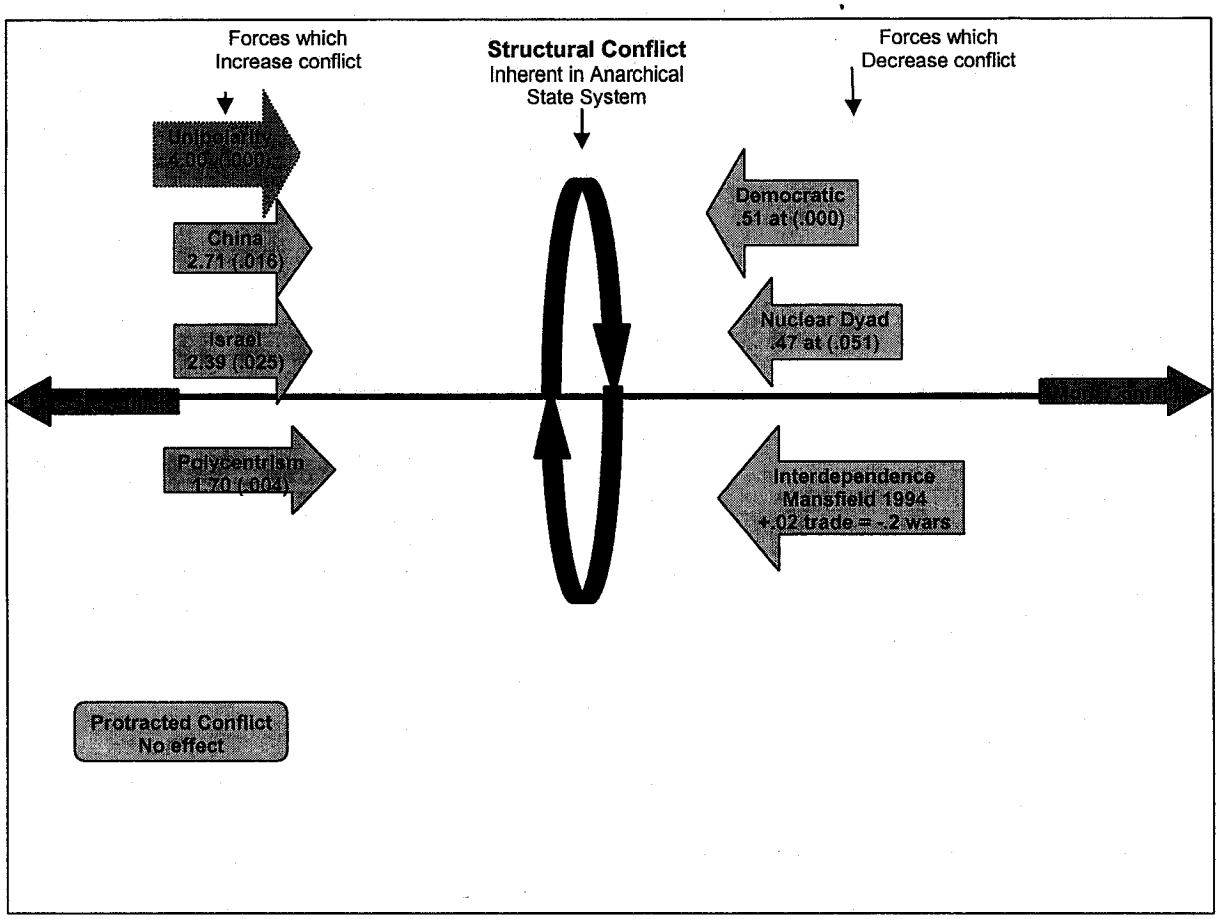

Figure 4.1
Odds of Variables Increasing or Decreasing Levels of Violence in Crisis
Numbers to the left are power of affect, those in parenthesis are the significance
Values derived from Table 4.11

examining Figure 4.1, nuclear optimists may want to rethink their conclusions. Although being in a nuclear dyad reduces the odds of violence by 47%, having the crisis occur in a period of polycentrism increases the odds of violence by 170%, almost offsetting the pacific effect of mutual nuclear possession. The most negative impact emanates from unipolarity, in which case the likelihood of violence increases by 400%, more than offsetting the pacific effect of mutual nuclear possession. Additionally, should the state involved be China or Israel, the idiosyncrasies of those states also increase the likelihood of violence by a greater amount than the pacifying effect of mutual nuclear weapons

possession. Clearly, *relying on nuclear weapons alone to reduce the frequency and intensity of conflict is a high-risk policy.*

A better idea would be to increase levels of democracy and trade. Democracies were found to experience a 51% lower likelihood of violence (at a much greater significance level, .000). Thus, this study agrees with a growing body of literature (Bremer 1992, O'Neal et al 1996, Brecher and Wilkenfeld 2000, Cederman 2001) that finds that *promoting democracy would be far superior to promoting proliferation as a path to peace.* Additionally, although not tested in my model, other studies (e.g. Polachek 1980, Rosecrance 1986, Mansfield 1994, O'Neal et al 1996, Geller 2003) find a significant reduction in violent conflict as levels of trade increase. Polacheck found that a 100% increase in trade could lead to a 19% reduction in conflict (p.63), while Mansfield found that "an increase of .02 in the ratio of total global exports to total global production produces a decrease of more than .20 in the predicted mean of wars per years." (p.130) Thus, *interdependence offers another path to reduced violence.*

As their final defense, nuclear optimists point to the fact that there have been only "limited" wars between nuclear opponents. As mentioned earlier, until the 1999 Kargil Crisis between India and Pakistan they had argued there would be no wars at all between nuclear powers. This minor wording change is a major change from their original position, and does seem to be a case of changing a theory to fit the facts. Of course, as new facts come up, scholars must change their theories. Holding to old theories in the face of new knowledge is intellectually suspect. However, in this case, the new facts

lead me to conclude that nuclear optimists have not changed their theory *enough* to fit the new facts. As the ordered logit shows, nuclear proliferation can reduce the frequency of violence in a conflict between states. However, that same aggregate analysis indicates that it cannot be counted on to prevent war.

The distinction between limited and unlimited war made by the new phrasing of the nuclear optimists is spurious and misleading for two reasons. First, the vast majority of wars are limited, so that nuclear weapons have contributed little. Second, the great destruction that nuclear war would entail prompts great caution in wise leaders, but that caution can be overcome by mistakes, military commanders who exceed their authority, or even a rational calculation that prompts a first strike by a state that is certain the other will strike. Although studies have shown that decision-making can improve in a *crisis* (e.g. Brecher 1993), the fog and friction of *war* increase the chances of the above factors significantly. To use Schelling's (1965) chess analogy, it would seem that actual war would put states in the position where a random event could well lead to a nuclear exchange. It is exactly this danger that kept the US and the USSR out of a direct violent military confrontation during the Cold War. However, as noted by many scholars (e.g. Mueller 1989, Vasquez 1992, Gaddis 1992) that caution was not the only factor at work in the US-USSR protracted conflict. The fact that wars (albeit limited, so far) have been fought between nuclear powers other than the US and USSR indicates that mutual nuclear weapons capability alone is not enough to preserve the peace.

Ultimately, aggregate analysis is an excellent tool for generating probabilities of outcomes based upon variables which simplify reality. However, one must always bear in mind that cases in the real world will include unusual combinations of independent variables and have certain idiosyncrasies which will alter the general probabilities identified by aggregate analysis. Thus, in order to strengthen the analysis of nuclear deterrence presented here, the following chapters will present a qualitative exploration of each of the 17 dyadic nuclear crises.

Chapter 5

US-USSR Crises

Chapters 5, 6 and 7 will examine qualitatively each of the 17 dyadic nuclear crises in the ICB data set, complementing the aggregate statistical analysis presented in Chapter 4. Chapter 5 will focus primarily on the dyadic nuclear crises resulting from the East-West Protracted Conflict (PC), commonly referred to as the Cold War. Some of these crises were direct confrontations of US and Soviet military forces, and some were indirect confrontations which centered around conflict between the superpowers and their proxy allies. Table 5.1 lists all the crises that will be considered in this chapter, as well

CRISIS	YEAR	COUNTRY			
		USA	RUSSIA	BRITAIN	FRANCE
Korean War II	1951	X	X		
Berlin Deadline	1958	X	X	X	
Berlin Wall	1961	X	X	X	X
Cuban Missile	1962	X	X		
Congo II	1964	X	X		
War in Angola	1976	X	X		
Afghanistan	1979	X	X		

Table 5.1
East-West PC Dyadic Nuclear Crises

as the participating nations and year for each. Each crisis summary will begin with a brief description of the crisis setting and background, followed by a detailed look at the role nuclear weapons and nuclear deterrence played in the crisis. Finally, each crisis summary will assess the role that democracy, trade, and individual state characteristics

may have played in levels of violence and crisis outcomes. This will give a qualitative comparison to add to the quantitative comparison in Chapter 4.

It should be stated that the examination of these crises is not intended to bring forth new or original material, but rather to look at existing material through an analytical lens that focuses specifically on how the mutual possession of nuclear weapons influenced decision-making in each crisis. Additionally, for each crisis I will also consider the influence of democracy, interstate trade, and country-specific characteristics on levels of violence and outcomes in these crises in *comparison* to the influence of nuclear weapons. This focus and comparison across all dyadic nuclear crises constitutes the originality in the qualitative analysis of Chapters 5, 6 and 7. It also makes this study's scope and breadth greater than any prior studies I am aware of.

Korean War II

The world's first dyadic nuclear crisis, Korea II, also involved the most casualties of any of the dyadic nuclear crises. Although only one nuclear power, the United States, experienced full-scale war, the Soviet Union supplied copious war material, as well as some combat personnel, to North Korea. This included fighter pilots, of which perhaps as many as 150 were in direct combat with US forces (Sherwood 1996, p.75), and 26,000 personnel in total by the time of the armistice (Weathersby 1993, n15). According to Lieutenant General Georgi Ageyevich Lobov, the Soviet Union lost 345 planes and over 200 pilots killed in the war. (Halliday 1993, p.36) Given that the USSR had exploded its

first nuclear device in August 1949, the Korean War "exacerbated global tension and posed a real danger of uncontrolled escalation." (Stueck 1995, p.46) However, beyond posing the ultimate danger of nuclear war, the role of nuclear weapons in the Korean War is disputed. As we shall see, the evidence suggests that they played at best a marginal role in this crisis.

When I first visited South Korea in 1996, the North and South had been divided for 51 years, a separation which seemed to many contemporary observers, including myself, to be the natural state of affairs. A visit to the DMZ (Demilitarized Zone) quickly disabuses one of the notion that this division is stable, or that there is anything natural about it. It is part of an ongoing agony that the Korean people have endured since Korea became a Japanese colony in 1910. After living under harsh Japanese rule for 35 years, the country became a casualty of the East-West divide at the end of WWII, with the USSR controlling the north and the US controlling the south, an arrangement created by a few US Army colonels after looking at a map for about 30 minutes in August 1945 (Lee 2001, p.21)! The plan was to govern Korea as a trusteeship by the US and USSR until it was ready for independence (the country was highly fractured ideologically in 1945, and remains so almost 60 years later). However, rather than coming together, by September 1948 the two rival ideological camps had hardened into two opposing regimes, both claiming jurisdiction over the entire country (Stueck, p.27). Negotiations were fruitless and by 1948 it was clear that "if Korea was to be unified it would be through violence. Synghman Rhee and Kim Il Sung had accepted this by 1946." (Lee, p.30)

The two sides fought skirmishes along the border intermittently for the next 21 months, until June 25, 1950, when DPRK (Democratic Peoples Republic of Korea – North Korea) forces crossed the 38th parallel in force, driving back the inferior ROK (Republic of Korea – South Korea) Army, which lacked armor and artillery. This initiated Korean War I, one of three crises involving the Korean War. Although this crisis was not a dyadic nuclear crisis because the USSR was not a crisis actor, the USSR did play a role in the crisis through Stalin's reluctant approval for the attack, given to Kim in April 1950 after Kim Il Sung had sent 48 telegrams seeking support (Weathersby 1993a, p.14) and had personally come to Moscow to plead his case in April 1950 (Goncharov et al 1993, p.144). In addition to Stalin's approval, "as soon as Kim Il Sung returned home, the weapons began arriving [from the USSR] in huge numbers at the [DPRK] port of Chongjin." (ibid. p.147) Total aid went from 250 million rubles in 1949, to 887 million in 1950, to 2.16 billion in 1951 (ibid). Clearly, Soviet approval and tangible support was crucial to the DPRK's decision to attack.

The question is: why was the Soviet Union willing to risk a confrontation with the nuclear-armed United States? The answer is rather simple; approval and aid to North Korea were given only after Stalin became convinced that the US would not intervene (Weathersby 1993b, p.33). "At no point in his deliberations over the situation in Korea was he willing to allow the conflict to draw him into a direct military confrontation with the United States." (Weathersby 2002, p.20) Furthermore, Stalin explicitly told his North Korean friends that "if you should get kicked in the teeth, I shall not lift a finger. You shall have to ask Mao for all the help." (Goncharov et al, p.145) Although

ultimately limited Soviet forces did participate in the war, "extreme measures were taken by the Soviet government to keep the extent of its military involvement in the Korean War a secret, an effort motivated by Stalin's *fear* of direct conflict with the United States." (Weathersby 1993a, p.15, emphasis added) It would appear that, in this case, the Soviets would have been deterred by US superiority, but the US had signaled a lack of resolve in Korea,[44] leading to essential USSR support for the invasion. Deterrence theory posits four conditions for success (capability, communication, commitment, and resolve: Harvey 1997), and only one was present in this case. It would seem that even in dyadic nuclear crises mere capability is insufficient to deter aggression.

However, although deterrence failed because the US did not communicate resolve to North Korea and the Soviet Union, why was Stalin so concerned about conflict with the United States at that time? Stueck (1995) noted three possible reasons: US nuclear weapons, US superior industrial capacity, or war weariness on the part of the USSR, which had lost 10% of its population in WWII (p.44). The archival record strongly suggests that Stalin was more concerned with avoiding war with the US in 1950 because the USSR was not yet ready for war, rather than fear of nuclear war, even to the point of allowing the US to defeat the DPRK. Khrushchev claimed that Stalin said "let the United States of America be our neighbors in the Far East. They will come there, but we shall not fight them now. We are not ready to fight." (Goncharov et al 1993, p.191)

[44] The most widely cited example is Secretary of State Dean Acheson's speech on 12 January 1950, in which he left Korea outside the US security perimeter in Asia. Lee (2001) notes that Stalin gave the go-ahead on 30 January 1950 after receiving intelligence (Lee does not specify from whom) that the US would not intervene in a war between North and South Korea (p.41). Weathersby 2002 noted that it is likely Stalin got information on NSC-48, which excluded Korea from the US defensive perimeter from a Soviet spy, Donald McClean, in London (p.11).

Stalin's desire to the keep out of a conflict with the US is also illustrated by his criticism of Kim subsequent to US entry into the war. "Soviet criticism of Kim for failing to pursue

peaceful methods of reunification, a line which began soon after the American entry into the war, was a veiled way of holding Kim responsible for the negative consequences the Soviet Union suffered as a result of the U.S. intervention." (Weathersby 1993b, p.31) Thus, it may well have been US industrial superiority that provided the primary deterrent capability vis-à-vis the USSR in 1950.

President Truman surprised Stalin, Mao and Kim by acting immediately and decisively when the DPRK invaded and committing the United States to defend South Korea. The first US troops were warmly greeted upon arrival in South Korea on 1 July, and fought their first battle with DPRK forces four days later (Stueck. p.47). Kim's gamble had proven wrong. However, US forces initially were unable to halt the North Korean advances, and it was only with MacArthur's brilliant landing at Inchon on September 15th that UN forces (led by the US) were able to turn back the DPRK forces. Subsequently, UN forces quickly recaptured territory lost in the initial North Korean advance, retaking Seoul on 28 September.

As the US-led UN forces rolled back the DPRK forces, the question grew as to whether the former should stop at the 38th parallel or continue into North Korea. The question was not a simple one, as crossing the parallel and threatening the destruction of the DPRK would certainly threaten China and the USSR. Ultimately, the decision was

made, and ROK forces crossed the 38th parallel on 20 September 1950, triggering the second crisis of the Korean War and the world's first dyadic nuclear crisis, Korean War II.

Why was the US not deterred from crossing the 38th parallel and threatening destruction to a Soviet and Chinese client state? The historical record suggests two reasons. First, the US did not see the USSR as an active participant in this crisis-war at that time, but rather was focused on China. In the voluminous scholarship on the Korean War (e.g., Paul 1994, Stueck 1995, Chang 1996), almost all attention is focused on the failure of the Chinese to deter the US from crossing the parallel. Second, US decision-makers were probably more focused on the costs of not crossing the 38th parallel than the risks of foreign (most likely Chinese) intervention if they did so. In July 1950 Secretary of State Dean Acheson put it this way:

> "In the longer run, if we should succeed in reoccupying the South, the question of garrisoning and supporting it would arise. This would be a hard task for us to take on, and yet it seemed hardly sensible to repel the attack and then abandon the country. I could not see the end of it." (Christensen 1992, p.130)

Thus Christensen concludes that the US took the offensive because in the long run it was the cheapest defense (ibid. p.147). Soviet nuclear capabilities seem to have played little, if any, role in US decision-making.

This crisis also provides an opportunity to examine the deterrent effect of nuclear weapons against non-nuclear opponents. On November 26, 300,000 Chinese

"volunteers"[45] attacked UN forces approaching the Yalu river, the border between the PRC's Manchuria and North Korea, routing them and forcing the longest retreat in the history of the US Army. There is general agreement among scholars that the US nuclear capability failed to deter China from this attack (see Schelling 1966, Kugler 1984, Betts 1987, Huth and Russett 1988). Also, more recent scholarship makes it clear that China was well aware of possible US responses to this attack, despite critics' claims that the US failed to communicate clearly and strongly enough to deter Mao. Using archival telegrams from Mao to Stalin, Christensen (1992) notes that "Mao attacked fully recognizing that the United States might respond by bombing Chinese cities..." but was not deterred because he found the idea of foreign forces in North Korea unacceptable at any cost (p.128).

Thus, the threat of nuclear destruction was neither necessary nor sufficient to deter China in the Korean War II crisis, although it could have been effective in deterring the Soviet Union in Korean War I if US commitment had been properly communicated. A clear difference between the USSR and China is their relative status in the global community. Although locked in an ideological struggle with the United States, the Soviet Union under Stalin was an accepted member of the world community, even possessing a permanent, veto-bearing, seat on the UN Security Council. By contrast, the People's Republic of China was as yet a largely unrecognized, isolated member of the international community, somewhat paranoid about its security. This state of affairs was exacerbated by Truman's decision to send the US Seventh Fleet to the Taiwan Straits

[45] "Volunteers" was a term created by the PRC to keep conflict restricted to Korea and "not give the US a pretext to attack China." (Paul 1994, p.95)

after the North Korean invasion on 25 June, heightening China's fear of encirclement by the US (Christensen 1996, p.162). Ultimately, the US not only failed to deter China in Korea in 1950, but it is likely that its policies proved to be the impetus for the subsequent PRC decision to acquire nuclear weapons (Lewis and Litai 1988, p.34). Particularly problematic were the nuclear threats made by the US, beginning with Truman's warning on 30 November 1950 and continuing through Dulles's nuclear threat at the Geneva Conference in April 1954. This led Mao to conclude in 1956, "if we are not to be bullied in the present-day world, we cannot do without the Bomb." (Foot 1988, p.112)

The last aspect of Korean War II to consider is the effects (if any) of the other variables noted in Figure 3.4. In Korean War II, there was only one democracy involved, the United States, so H1 regarding democratic dyads is not relevant. In this case, the United States experienced full-scale war, so H2 is not supported. There was also no significant trade relationship between the US and the USSR in 1950, so H3 is supported. Korean War II was part of a protracted conflict, and there was a high level of violence in the crisis overall. However, direct violence between the two nuclear powers amounted to no more than minor clashes, so the key test for this thesis regarding violence and nuclear dyads, H5, is supported. As noted above, Stalin went to great lengths to avoid direct conflict with the US, although we cannot be sure whether it was due to US nuclear capabilities or to other factors. Overall, Korean War II provides some positive support for nuclear optimists.

The Berlin Deadline

As with the Korean War, the 1958-59 Berlin crisis had its genesis in the division of a country after WWII. War-time agreements between the allies resulted in a divided Germany and Allied administration of Berlin, 100 miles within East Germany. This Western outpost was the source of constant friction and had been the site of a nuclear monadic crisis, the Berlin Blockade, in 1948. However, an uneasy 10 years passed following the lifting of the blockade, until 27 November 1958, when the governments of the United States, Great Britain, and France were given an ultimatum by the Soviet Union that the status of Berlin must be resolved within six months, initiating a crisis that became known as the Berlin Deadline.

Berlin's legal status had been largely unchanged since the defeat of Nazi Germany and had become a focal point of East-West tensions due to its status as an island of the West with a small western garrison of approximately 10,000 Western troops surrounded by tens of Red Army divisions. For the West, Berlin was a major defensive liability, but had become a major ideological rallying point. By 1958, at least 10,000 East Germans were seeking asylum in Berlin each month (George and Smoke 1974, p.395), as people "voted with their feet" on which political system they preferred. Indeed, the refugee problem was so serious that Khrushchev's aides were joking that "soon there will be nobody left in the GDR except for Ulbricht and his mistresses." (Zubok 1993, p.24).

Unlike the Korean War, US and Soviet military forces faced each other directly in Berlin, and the risk of war between the two during this crisis was considerably higher than it was in the Korean War. More ominously, due to the imbalance of conventional forces, nowhere was "the United States more dependent on nuclear retaliation to ensure a national commitment [than Berlin]." (Schick 1971, p. ix). The questions, then, are why did the USSR choose to initiate this crisis, and what role did nuclear weapons play in the crisis?

There are several arguments advanced for Khrushchev's action. Slusser (1978) emphasized the role of internal power struggles in Moscow, while Harrison (1993) emphasized the roles of East German leaders and the effect of Berlin's position in the ideological battle between the East and West and its resulting impact on the Sino-Soviet struggle for leadership of the global communist movement. However, the strongest reason put forward for Khrushchev's decision to initiate this crisis is the fear in the Soviet Union of a re-armed and powerful Germany (Schick 1971, Trachtenberg 1991, and especially Trachtenberg 1999).[46] The Soviet Union had suffered tremendously under German invasions in WWI and WWII, so it is not surprising that they would be concerned about German power. They saw the new German army, the Bundeswehr, as "old German militarism dressed in American fatigues." (Schick 1971, p.5). Even more critical than simply German power was the question of a nuclear-armed West Germany, leading one scholar to note that "the German nuclear question lay at the heart of Soviet policy during the Berlin crisis." (Trachtenberg 1999, p.253) Thus, one could argue that,

[46] Harrison 1993 also mentions this as an important reason.

rather than deterring conflict, nuclear weapons may have *caused* the Berlin Deadline crisis in a manner consistent with that classic problem in international relations: the security dilemma.

Clearly the USSR was not deterred from this provocative action by US nuclear power. Part of the reason may have been Khrushchev's growing confidence in the deterrent value of the USSR's own nuclear forces, particularly after the successful launching of Sputnik in October 1957 (George and Smoke 1974, p.395-6). However, it would be wrong to assume that the US nuclear deterrent had no impact on Khrushchev. In fact, Khrushchev was extremely cautious during this period. "Conscious of US strategic superiority, and never completely certain that the US could be relied upon not to use its power, Khrushchev and his colleagues moved cautiously, testing each stage before moving on to the next one and leaving themselves plenty of room for maneuver or retreat if the United States and its allies showed any intention of forcibly resisting Soviet demands." (Slusser 1978, p.359) Indeed, the note of 27 November 1958 had been preceded by Khrushchev's speech on 10 November, wherein he had threatened a deadline over Berlin and the West had chosen not to react (Richter 1994, p.101, Slusser p.358). The Soviets had then provocatively interfered with a US military convoy on 14 November. Again the US reacted mildly (Trachtenberg 1991, p.194-5). Thus, the Soviets would have possibly been deterred had the US taken a stronger line. As it was, they proceeded cautiously, because "the Kremlin clearly perceived and respected US deterrence, and despite its rhetoric evidently found that deterrence credible." (George and Smoke 1974, p.399)

US diplomacy kicked into high gear with the delivery of the diplomatic notes on 27 November, as Eisenhower wanted to resolve the crisis without recourse to war, because he was convinced that if there was a war, it would be a nuclear one. The position of nuclear optimists is undermined in the Berlin Deadline crisis because both sides were threatening nuclear war. Khrushchev's rhetoric indicated that he was prepared for such a conflict. In a meeting with the US Secretary of State, John Foster Dulles, on 23 June 1959, Khrushchev threatened war, saying "if you send in tanks they will burn, and make no mistake about it. If you want war, you can have it, but remember it will be your war. Our rockets will fly automatically." (Slusser 1978, p.379) However, it may well be that Khrushchev was bluffing. Indeed, he was similarly provocative three years later in the Cuban Missile Crisis, but subsequently backed down. One Soviet scholar noted that "Khrushchev stressed again and again that a threat of war over West Berlin was merely a bluff." (Zubov 1993, p.22-3) While Khrushchev may have been bluffing, in early 1959 Eisenhower indicated clearly that he would fight a nuclear war rather than capitulate over Berlin[47] (Trachtenberg 1999, p.256). The US quietly bolstered its conventional forces in Europe and moved nuclear-powered and nuclear-armed aircraft carriers to the European Theater (Brecher and Wilkenfeld 2000, CD-Rom). Thus, the risk of nuclear war was serious, and at least one side seemed to accept such an outcome as preferable to capitulation. It is noteworthy that Great Britain was also a nuclear power by this time, having tested their first weapon in 1956. However, unlike the US and the USSR, the British told US officials throughout the summer and fall of 1961 that they did not think

Berlin was worth nuclear war (Trachtenberg 1999, p.263). This illustrates the importance of protracted conflict, because both the US and the USSR saw Berlin as central to their credibility in the ongoing East-West protracted conflict – making it worth much greater risks (including nuclear war) than would otherwise be the case.

Both sides remained somewhat flexible, and they agreed to a foreign ministers' conference in Geneva in the summer of 1959. Western diplomacy at the conference was greatly impaired by the fact that they had no conventional military fallback position (Schick 1971, p.48). As a result, for the West, the Geneva Conference in the summer of 1959 was "an exhausting, grinding series of sessions that never ended with an opponent that never relented," (ibid. p.77) in which "the allies lost and lost badly." (ibid. p.96) However, during the conference, Khrushchev was invited for a summit in the United States, something which strengthened his uncertain position in Moscow. His position was also under challenge externally, from a reinvigorated China, for leadership of the international communist movement. Because of this, he was willing to forego the strategic gains made in Geneva for the political gains to be made from a meeting with Eisenhower. Thus, political struggles in Moscow and escalation of the Sino-Soviet conflict, "produced an abrupt shift in Soviet policy that led the USSR to accept termination of the foreign ministers' conference just as the West was on the point of making damaging concessions." (Slusser 1978, p.383) A formal agreement was signed by Khrushchev on 15 September during his visit to the US, thus ending the crisis. This

[47] Trachtenberg (1991) noted that Eisenhower believed that any war in Europe would require nuclear strikes against the USSR and such attack authority had already been pre-delegated to SACEUR, the top US military officer in Europe (p.162).

agreement called for a ban on nuclear weapons and missiles, and limited Anglo-French-U.S. forces, in Berlin (Brecher and Wilkenfeld 2000, CD-Rom).

Ultimately, nuclear weapons were at least partially to blame for the initiation of the crisis in the first place. During the crisis, the shadow of nuclear war over Berlin hung over Europe, but it seems that the USSR was not prepared to push the crisis to that level (George and Smoke 1974, p.410-11), probably because of US strategic superiority (Slusser 1978, p.385). Thus, it seems that it was not mutual nuclear weapons possession that precluded war in this crisis, but rather the fact that the USSR was unwilling to go to war with a strategically superior United States. Thus, although H6 is supported insofar as there was no violence in this crisis, *it does not seem to be due to deterrence deriving from mutual nuclear weapons possession,* as the US was apparently not deterred by Soviet nuclear weapons. Regarding democracy and trade, neither played an important role in this crisis. As with Korea, there was no democratic dyad, so H1 is not relevant. H2 is supported by the absence of violence in this crisis, but an examination of the case clearly shows that a democratic United States was willing to go to war over Berlin. There was very little trade at that point between the rival nations, so H3 is supported. This crisis did occur in a protracted conflict, but there was no violence, so H5 is not supported. Overall, the Berlin Deadline *does not* support the case of nuclear optimists.

The Berlin Wall

Although Eisenhower and Khrushchev signed an agreement in September 1959, the Berlin issue was far from resolved. Eisenhower and Khrushchev met in Paris for a summit in June 1960, but the shoot-down of the U-2 piloted by Gary Powers, and Eisenhower's subsequent mishandling of the issue, led Khrushchev to storm out on the first day. Khrushchev then decided to wait for Eisenhower's successor (Trachtenberg 1991, p.215) before raising the issue again. He raised the issue soon after Kennedy's inauguration because he was apparently feeling pressure within the Socialist camp from China (Schick 1971, pp.138-39) as well as Ulbricht in East Germany (Harrison 1993, p.8+). The refugee flow was particularly embarrassing for the Eastern bloc as the West Berlin "beacon of hope" ultimately enticed nearly 13% of the population of East Germany to flee to the West (Slusser 1973, p.67). It got particularly bad in 1961, which saw a 66% increase in the rate of refugees so that during the first six months of the year 103,159 refugees fled to West Berlin (ibid). Beyond the numbers, the refugees tended to be the most productive citizens of East Germany, thus constituting a serious threat to its economic future. This pressure led Khrushchev to indicate to Kennedy in March 1961 that he needed to move fast on Berlin (Slusser 1978, p.397-8).

Kennedy also needed to move fast. He had taken office with a pledge to strengthen America's conventional forces and reduce US reliance on immediate use of nuclear weapons to defend Europe, and he acted. In the first three months of office, he increased US defense spending by one billion dollars (ibid. p.408). Then came the Bay of Pigs fiasco in April 1961, during which Kennedy told Khrushchev that the US would not intervene militarily in Cuba. Speaking to Cuban exiles afterwards, Kennedy said that

"Khrushchev's message [of 18 April] had forced on him a choice between risking a Berlin confrontation, which could touch off a large-scale war, or maintaining world peace and suffering the loss of fourteen-hundred men in Cuba. It was a difficult and painful decision, but the priority clearly had to be world peace." (Beschloss 1991 p.121) The decision may have staved off a wider conflict, but it likely also made Khrushchev think Kennedy was a bit weak. It also set the stage for the Cuban Missile Crisis 18 months later, something foreseen by senior Kennedy administration officials in May 1961 (ibid. p.147).

Less than two months after the Bay of Pigs, Kennedy and Khrushchev met in Vienna. Khrushchev took a tough line and presented Kennedy with a memorandum concerning Berlin which was similar, though not identical, to that which precipitated the Berlin Deadline almost three years earlier (George and Smoke 1978, p.415). The memorandum's hard-line "astounded" Kennedy, and the Soviets further raised the pressure by publishing the text 10 June and following that five days later with a speech by Khrushchev giving the West a six-month deadline for the resolution of the status of Berlin (Schick, p.146-7). Kennedy had no intention of giving ground on Berlin, and, although his response called for negotiations, it also raised the specter of military confrontation with its heavy emphasis on increased military spending and preparedness.[48]

From this point, there was a series of public statements on both sides regarding increased military spending and threats of war. On 21 June, the US Congress voted for full

[48] A senior Kennedy advisor, Dean Acheson, advocated an extremely hard line toward the Soviets, acknowledging without flinching that such a policy could lead to nuclear war (Schlesinger 1865, p.382).

funding of Kennedy's conventional military buildup, adding an extra $500 million for heavy bombers (Slusser 1978 p.419). Khrushchev responded on 8 July with a speech in which he announced a one-third increase in the Soviet military budget (Slusser 1973 , p.51). This speech, which was typical of what Khrushchev was saying to the US and US allies all through the summer of 1961, came on the heels of a 2 July meeting with the British ambassador in Moscow where Khrushchev declared that six hydrogen bombs "would be quite enough to annihilate the British Isles, and nine would take care of France." (ibid. p.44) The rhetoric continued and on 25 July Kennedy gave a speech to the American people in which he asked the US Congress for an additional $3.25 billion for defense and additional funds to enlarged the civil defense program (Schlesinger 1965, p.391). The hint was not missed. "The Soviet reaction to the President's speech was one of horror. What was the matter with these Americans? Were they truly contemplating thermonuclear war?" (Trachtenberg 1991, p.218-19)

Thus by August of 1961 tensions were high, bomb shelter sales in America were growing, US conventional forces in Europe were being bolstered, and East Germans continued to flee to West Berlin in record numbers. It was in this context that the Soviet Union built the Berlin Wall, beginning at midnight on 12-13 August 1961. As noted above, the situation had been ripe for a crisis throughout the summer of 1961, but it was the construction of the Wall that triggered the Berlin Wall Crisis.[49]

[49] There is some disagreement on the effect of building the Wall. Trachtenberg (1999) states that the Wall did not trigger a crisis (p.324). However, the US decision to send an armed convoy down the autobahn to Berlin and the subsequent tank confrontation at checkpoint Charlie together clearly indicate that the conditions created by the construction of the Wall met the definition of an international crisis.

Although West Germany's Willy Brandt lamented that the West's response was not more rapid or vigorous (Schlesinger 1965, p.402), the forceful tone was clear. The most notable response was a 1500-man battle group that the US sent down the autobahn to West Berlin on 17 August. This small force would not have been able to fight its way through if the East German or Soviet military tried to stop it, but it was considered large enough to signal to Moscow Western resolve. The US also bolstered its air forces in Europe, again increased defense spending (Slusser 1978, p.425-30), and Kennedy urged American citizens to build bomb shelters (Kennedy J. 1961, p.95). Moscow responded with resumed nuclear testing and harassment of Western aircraft in the air corridors to Berlin. The worst moment of the crisis came on 27-28 October, when Soviet tanks took up positions less than 100 meters from US tanks at Checkpoint Charlie in Berlin. For 16 hours, "the preservation of peace hung on the fragile thread of the steady nerves of the Soviet and American tank crews and their commanding officers." (Slusser 1973, p.443) At the end of that time the Soviet tanks withdrew from the checkpoint. US tanks followed suit 30 minutes later, ending the crisis. The US had met the Soviet test of their resolve (Brecher and Wilkenfeld 2000, CD-Rom).

The Berlin Wall crisis was the most serious dyadic nuclear crisis that the East and West had experienced. Military forces were poised for use on a knife edge, and had US and Soviet conventional forces come to blows, it was a short step to commitment of US nuclear forces. Yet war did not come, and the question is what role did nuclear weapons play in that outcome? George and Smoke (1974) noted that in 1961 the US could hardly have done more to reinforce their deterrent threat to the USSR, yet deterrence partially

failed nonetheless (ibid p.428; Kugler 1984, p.480). They identify the cause as an asymmetry in motivations in which the USSR had to change the status quo in Berlin (p.419). The Wall turned out to be something the West could live with,[50] particularly since the West was beginning to recognize that the refugee situation was "dangerously fluid." (Slusser 1973, p.132)

According to one Soviet scholar, Khrushchev had built the Wall for two key reasons. First, Kennedy's actions led Khrushchev to conclude that Kennedy was too rash and that "the old stability of mutual nuclear bluff was gone and perhaps it was time to refrain from brinkmanship altogether," and second that Khrushchev had given up on reconciliation with China in lieu of détente with the West, which meant he could accept the status quo in Berlin (Zubok 1993, p.31-2). While it seems clear that Khrushchev was only bluffing, Kennedy seemed to have been prepared to go to nuclear war over West Berlin (Schlesinger 1965, p.351; Sorenson 1965, p.512-13; Slusser 1973, p.443; George and Smoke 1974, p.420-21; Trachtenberg 1991, p.225). As with the Cuban Missile Crisis, to be discussed below, US willingness to risk nuclear war over West Berlin can be explained by two things: US national security interests and US strategic superiority. US decision-makers' perceptions of US national security interests meant that the freedom of, and access to, West Berlin was non-negotiable because, as verbalized by Dean Acheson, anything less would "shatter our [US] world power and influence." (quoted in Schlesinger 1965, p.381) Kennedy thought a showdown over Berlin inevitable, and

[50] Indeed, some observers have argued that Kennedy had earlier signaled to Khrushchev that a separation in Berlin would be acceptable to the United States (Beschloss 1991, p.281; Zubok 1993, p.28).

preferred it happen when US strategic superiority was clear (Trachtenberg 1999, p.351)...which it was:

> "If ever in the history of the nuclear arms race, before or since, one side had unquestionable superiority over the other, one side truly had the ability to devastate the other side's strategic forces, one side could execute the RAND counterforce/no-cities option with fairly high confidence, the autumn of 1961 was that time." (Kaplan 1983, p.301)

It is impossible to know if Kennedy would have taken as hard a line if the USSR had a greater nuclear capability, but the facts of the case lend, at best, minimal support for nuclear optimists.

Britain and France were also nuclear powers, on the side of the United States, during this crisis. They were repeatedly threatened with nuclear destruction by the Soviet Union (Slusser 1973) and seemed to be more willing to negotiate with the Soviet Union. But they did not bring much pressure to bear on the US. Kennedy maintained the lead role for the West, and Britain and France maintained their support for the US throughout the crisis. Soviet threats against them failed to affect the outcome of the crisis. Democracy may have played a role, insofar as the three democratic states preferred negotiations over Berlin to military confrontation. Some scholars feel Khrushchev did too, and that it was hardliners in Moscow, some civilian and some military, who pushed the crisis to the dangerous levels it reached (Slusser 1973). This provides some support for H2 (democratic states will experience lower levels of violence in crises). Finally, trade levels between the two blocs remained quite low, so H3 (states in dyadic nuclear crises will have low levels of trade) is supported. Overall, the facts of this case provide more support for the aggregate findings in Chapter 4 than for the argument of nuclear optimists that war between nuclear powers will not occur.

The Cuban Missiles Crisis

On 16 October 1962, US President John F. Kennedy was informed that the Soviet Union was installing Intermediate Range Ballistic Missiles (IRBM) in Cuba. Thus began the crisis that most experts agree brought the world closer to nuclear war than it ever has been. Mikhail Gorbachev, after reading a history of the crisis prepared for him after he became leader of the Soviet Union, remarked "the world had almost been blown up because two boys were fighting in the schoolyard over who had the bigger stick." (Lebow and Stein 1994, p.xi) For 13 days the possibility of a nuclear war between the United States and the Soviet Union was very real, with President Kennedy estimating that the odds the USSR would go all the way to war as "somewhere between one out of three and even." (Sorenson 1965, p.705) It was only with the announcement by Khrushchev on 28 October that the Soviet Union would withdraw the missiles from Cuba that war was averted, as shown by a senior Kennedy advisor's recollection that "If word had not come by that Sunday, if work had continued on the bases, the United States would have had no real choice but to take military action against Cuba the next week. No one could discern what lay darkly beyond an air strike or invasion..." (Schlesinger 1965, p.830) There is no question that nuclear weapons played a central role in the minds of the decision-makers involved in this crisis, but the question for this thesis is "did the presence of nuclear weapons preclude a war?"

Ironically, as with the Berlin Deadline, nuclear weapons may well have been a significant *cause* of the Cuban Missile Crisis. Subsequent to the Soviet success with

Sputnik in 1957, Khrushchev used Soviet rocketry as a source of pressure on the United States through 21 October 1962. At that point, while the Berlin Wall crisis was still ongoing, US Deputy Defense Secretary Gilpatrick gave a speech wherein he not only asserted US strategic superiority, but clearly told the world the US was aware of Soviet inferiority: "in short, *we have a second strike capability that is at least as extensive as what the Soviets can deliver by striking first.*" (quoted in Slusser 1973, p.373, emphasis Slusser's) The Soviet's exposed weakness is cited by many as the underlying reason for Khrushchev's decision to place the missiles in Cuba (Horelick and Rush 1965, Allison 1971, George and Smoke 1974, Hilsman 1990).[51] Putting missiles in Cuba to offset this weakness was a huge gamble, and one that the US thought Khrushchev would be deterred from taking. Thus, the initiation of the crisis itself was a deterrence failure for the US which happened because the US failed to envisage "how the Soviets might satisfy themselves that the missile deployment was a *calculable and controllable risk,*" (George and Smoke, p.479, emphasis in original) due to their desire to alter their condition of strategic vulnerability.

Kennedy was informed of the US discovery of the missile bases under construction in Cuba on 16 October 1961 (Kennedy 1969, p.23). This immediately provoked a crisis for the US, and Soviet missiles in Cuba were seen as unacceptable for two reasons. First, with these missiles, US Strategic Air Command bases could be destroyed with almost no warning, compared to the 20-minute warning a Soviet ICBM would give. Second, "If we

[51] Lebow and Stein (1994) discount this and emphasize other reasons for the Soviet emplacement of missiles, such as to deter a US attack on Cuba (p.27), but in the end they say that Khrushchev's decision was not rational (p.88). Given the compelling nature of the strategic rationale others put forth, Lebow and Stein's conclusion is unsatisfactory.

had allowed deployment of Soviet missiles just ninety miles off our coast, American credibility would have been destroyed, and there would have been a devastating psychological impact on the American people, the Western Hemisphere, and NATO." (Rusk 1990, p.230) In order to decide what to do about this problem, Kennedy set up a group which came to be known as Ex Comm, made up of top administration officials, to deliberate and devise contingency plans from which the President could choose. Initially, the group favored an air strike against the missile sites (Kennedy 1969, p.31), but by the next day a blockade or quarantine emerged as an alternative option, supported most forcefully by Secretary of Defense McNamara. Ultimately, a quarantine was the chosen strategy of President Kennedy (ibid. p.48).

A quarantine was chosen to demonstrate US commitment to removing the missiles without causing any Soviet casualties. Kennedy had recently read Barbara Tuchman's Guns of August, which described how WWI was caused by miscalculation, and he did not want a similar book written to be called The Missiles of October. (Kennedy 1969, p.127) Despite his care, mistakes did occur. On the US side, a U-2 strayed into Soviet airspace at the height of the crisis on 27 October, prompting Soviet speculation that it could be a last-minute intelligence mission prior to an attack (Lebow and Stein 1994, p.139-140). The US Navy may have used small depth charges to force a Soviet submarine to surface during the crisis (Sagan 1985, p.117), and twice during the crisis US low-level false warnings occurred which caused the officers involved to believe a war had begun. (Sagan 1993, p.98-99). Moreover, in the crisis atmosphere, Minuteman ICBMs and nuclear-armed interceptor aircraft may well have violated standard command

and control procedures, and thus allowed individual US military officers to initiate nuclear attacks without proper authorization (Sagan 1993, p.90, pp.106-111).

On the Soviet side, a U-2 piloted by USAF Major Rudolph Anderson was shot down by a Soviet SA-2 crew on 27 October, despite explicit orders from Moscow not to do so unless attacked (Lebow and Stein 1994, p.304). This was a particularly dangerous event, because some US decision-makers thought it was done deliberately, and that "there had been a coup in the Kremlin, and the hardliners had taken over." (Dobbs 2003, p.W14) Hard-liners in Ex Comm wanted to reply with an attack on Cuba (Sorenson, p.827), but Kennedy held back saying, "it isn't the first step that concerns me, but both sides escalating to the fourth and fifth step – and we don't go to the sixth because there is no one around to do so." (Kennedy 1969, p.98)

Kennedy's choice to hold back proved wise, and the next day Khrushchev announced that the Soviets were pulling the missiles out of Cuba, under an agreement with the US that the US would not invade Cuba. The announcement was hailed as a victory, and many observers have since cited the Cuban Missile crisis as a successful case of compellence by the United States, due to its superior strategic and local conventional forces (Betts 1987, Hilsman 1990, George 1991). However, there has always been much speculation as to whether or not Kennedy made a major concession and agreed to pull the Jupiter missiles from Turkey in exchange for the Soviet pullback from Cuba. New evidence strongly suggests that Kennedy, in fact, did make this concession through a meeting between his brother, Robert Kennedy, and Soviet Ambassador Dobrynin.

Dobrynin's cable to Moscow stated that Kennedy offered a trade, US missiles out of Turkey for Soviet missiles out of Cuba. It went on to state, "'however, the President can't say anything public in this regard about Turkey,' R. Kennedy said again. R. Kennedy then warned that his comments about Turkey are extremely confidential; besides him and his brother, only 2-3 people know about it in Washington." (Hershberg 1995, p.80) In a detailed study of the crisis, Lebow and Stein (1994) found that the US government created a myth that JFK had wanted to remove the Jupiters prior to the missile crisis in order to avoid the foreign and domestic political backlash that would have accompanied a public admission that Kennedy had made concessions (p.124). Indeed, the myth went as far as censorship as indicated by Sorenson's later confession that he had edited Robert Kennedy's memoir, Thirteen Days, prior to publication to reduce the appearance of a concession by President Kennedy on the Jupiter missiles (ibid. p.11, p.125-26). Thus, it seems that the United States did not, in fact, achieve a compellence success, regardless of its local superiority in conventional power or its superiority in strategic nuclear power.

Why was Kennedy so willing to make concessions in the face of US military superiority? Certainly his fear of nuclear conflict between the US and USSR had to be high on the list of reasons. One scholar noted that "both the hawkish and dovish [observers'] positions reflect the belief that nuclear weapons had an intense inhibiting effect on the likelihood that either Nikita Khrushchev or John Kennedy would make a *premeditated decision to initiate a nuclear strike.*" (Sagan 1993, p.55, emphasis in the original) A mid-level State Department official later noted, "That the United States could launch 3000 strategic

weapons against the Soviet Union, and possibly be hit with only 30 (or at most a few dozen more than that) was no consolation. The mere possibility of nuclear war was the deterrent." (Garthoff 1987, p.113) Although there were bellicose statements by Kennedy and others that the US would risk nuclear war rather than accept Soviet missiles in Cuba (Kennedy 1969, p.108-9), in reality that seems unlikely. Numerous subsequent statements by Ex Comm officials support this. McGeorge Bundy, Kennedy's National Security Advisor, later wrote "the largest single factor that might have led to nuclear war – the readiness of one leader or the other to regard that outcome as remotely acceptable – simply did not exist in October 1962." (Bundy 1988, p.453) Robert Kennedy, the Attorney General and the President's closest confidant on Ex Comm, later wrote, "if hostilities were to come, it would be either because our national interests collided – which, *because of their limited interests and our purposely limited objectives, seemed unlikely* – or because of our failure or their failure to understand the other's objectives." (Kennedy 1969, p.125-6, emphasis added) Thus it would seem that the aggressive stance taken by President Kennedy publicly was a result of a strong belief that there was insufficient conflict of interest to lead to war, so long as he made sure there were no miscalculations, and it was complemented by a much more accommodating stance taken through private back channels. This was also true of Khrushchev.

Ultimately, it seems clear that Kennedy and Khrushchev stared into the abyss and wanted to pull back. Rather than the one-way [Soviet] concession of traditional wisdom, "when Kennedy and Khrushchev were 'eyeball to eyeball,' both leaders blinked....their mutual commitment to settle the crisis peacefully, even at the price of major concessions, grew

in intensity as the crisis deepened." (Lebow and Stein 1994, p.144) H6 is strongly supported.

However, there remains one area of concern. Although Kennedy and Khrushchev avoided military conflict because of their fear of nuclear war, they were both surrounded by others who did not feel that way. First, senior military officials in the US seemed almost eager for military conflict. Robert Kennedy noted that, except for General Maxwell Taylor, the senior generals all seemed to want a war, something which "pointed out for us all the importance of civilian direction and control and the importance of raising probing questions to military recommendations." (Kennedy 1969, p.119) Other observers have noted that General Taylor was no dove, and that he was "absolutely convinced" the US had to attack Cuba (Lebow and Stein 1994, p.119). Although there were certainly non-military hard-liners in the Ex Comm, such as Paul Nitze (Assistant Secretary of Defense), John McCone (CIA Director), and Douglas Dillon (Secretary of the Treasury), this evidence provides strong support to H2 and the findings in Chapter 4.

On the other side of the crisis, while the US generals were ready to attack, confident the USSR would not respond, Fidel Castro was actually encouraging Khrushchev to launch a nuclear attack on the United States. Late in the crisis, Castro concluded the US would attack Cuba, so he urged the Soviets "to immediately deliver a nuclear missile strike against the United States." (Khrushchev 1990, p.177) Fortunately, Khrushchev did not give this option any consideration, as he did not put missiles in Cuba in order to start a war. However, this does give rise to some concern that not all leaders would be as

prudent as Kennedy and Khrushchev were in 1962. Nevertheless, of all the crises examined thus far, the Cuban Missiles Crisis gives the strongest support to the nuclear optimist position.

Congo II

Congo II was a brief crisis at the end of 1964 driven by the political instability in the former Belgian colony of the Congo,[52] instability largely caused by domestic factors but exacerbated by international competition between capitalist and communist forces. At its height it involved direct military intervention by Belgian commandos supported by the US Air Force, as well as Western-funded mercenaries, to accomplish a hostage rescue mission and stabilize the western government in power. The USSR's response to the western military intervention was limited to mild verbal protests, and nuclear weapons played no role in this crisis.

The problems in 1964 can be traced back to the conditions created at Congo's independence in 1960. As one scholar noted, "Of all the colonies on the continent, the Belgian Congo was undoubtedly the least prepared for Independence when it came and had the shortest period between the advent of nationalist activity and the granting of independence." (Somerville 1990, p.11-12) The instability in 1960 that led to the first Congo Crisis had temporarily been quieted through a UN Peacekeeping mission which had landed 3,500 troops in Congo by 17 July 1960 (ibid. p.18). However, the UN

[52] Congo changed its name to Zaire in 1971, and back to the Democratic Republic of the Congo in 1997. In this summary, I will refer to it as "Congo."

mission, one of its most successful peacekeeping missions, ended on 30 June 1964.[53] As noted by one scholar, "the United Nations had essentially run the Congo for almost four years, and there was no force capable of taking its place." (Gibbs 1992, p.147)

The Western-backed government of Moise Tshombe began losing territory to the CNL rebels at an alarming pace in the summer of 1964. The US did not wish to become overtly involved in the Congo, mainly to avoid the political repercussions of appearing to be supporting neo-colonial policies. However, the US was also strongly interested in preventing the expansion of communist influence in Africa, particularly in the Congo. "Such a development, it was thought, would jeopardize Western access to strategic raw materials and upset the world balance of political power." (Weissman 1974, p.257) Thus, as the situation deteriorated in July 1964 the US increased its support for the Tshombe government, organizing an "instant air force" of planes flown by anti-communist fighters trained for the Bay of Pigs invasion (Gibbs 1992, p.156). Airpower proved effective yet again, with the New York Times reporting that "most troops term the air cover as decisive in their success on the ground." (Weissman 1974, p.240) However, the Congolese army, the ANC, was largely an ineffective institution, and government forces were still having dramatic problems with the rebel forces. Stanleyville fell to the CNL on 5 August 1964,[54] marking "a turning point in the Congolese crisis of 1964. While it handed the [rebel] Simbas control of the eastern

[53] The Congo was also a UN tragedy as UN Secretary General Dag Hammarskjöld was killed in a plane crash in the Congo in September 1961 while trying to negotiate a cease-fire (Rusk 1990, p.278).
[54] This was the same day two US Navy ships were attacked in the Gulf of Tonkin, leading to escalated US involvement in Vietnam (Kelly 1993, p.112).

Congo, it led to the strategy, faulty though it might be, that would destroy them." (Odom 1988, p.15)

In addition to capturing more than 1600 foreigners in Stanleyville, the rebels captured five US diplomats working at the US Consulate there. President Johnson decided to work with the Belgian government to create a mercenary force to fight the rebels. A top secret telegram from Secretary of State Dean Rusk on 7 August 1964 sought Belgian help to create "a *mercenary officered* gendarmerie force, as the only alternative to the continued disintegration of the security situation, with a tentative force level of four thousand gendarmes and *two hundred white officers*." (cited in Kelly 1993, p.112, emphasis Kelly's) By late September, "the rebels threatened the lives of Belgian and American hostages in an attempt to persuade their governments to cease military aid to Tshombe." (Weissman 1974, p.246) US planning for a rescue mission went into high gear.

On 24 November 1964 the rescue mission occurred. It involved 545 Belgian paratroopers flown into Stanleyville aboard US-piloted C-130 transports. It was timed to coincide with the arrival of the mercenary-led army fighting its way into Stanleyville on the ground, so as to maximize chances of success and ensure Stanleyville remained in central government hands after the raids. One military expert noted:

> "the operation was remarkably successful in its primary purpose of saving the hostages. Operation "Dragon Rouge" rescued 1,600 hostages and refugees at a cost of 33 dead hostages (61, if those on the Rive Gauche are included). In addition, there were two dead and three wounded Belgian Paracommandos, as well as minimal rebel casualties from

> hostilities. The Third World reaction, while violent and unexpectedly vocal, did not have a lasting impact on the United States or Belgium. So while the results of "Dragon Rouge" were not ideal, they were better than might have been expected against such difficult odds." (Odom 1988, p.159)

The hostage rescue mission triggered a crisis for the Soviet Union, as it was concerned that the defeat of the rebels would reduce Soviet influence in the area (Brecher and Wilkenfeld 2000, cd-rom crisis summary). However, the Soviet reaction provoked little or no concern in the US. One specialist described it in this way:

> "[the rescue mission] prompted irate press coverage in Moscow – it goes without saying – and once again an official Soviet protest. But no more than this. The episode passed too quickly for the Russians to gain more than passing advantage from it, an advantage that was diluted by Moscow's failure (or inability) to take any concrete steps against the 'mercy mission'." (McLane 1974, p.168)

A review of the memoirs of then-Soviet Foreign Minister Gromyko and Soviet Ambassador Dobrynin finds absolutely no mention of this crisis, whereas Dobrynin devoted five pages to a discussion of the crisis in Angola (to be discussed below). This is not surprising because for the Soviets "Africa as a whole falls well down on the ladder of Moscow's geopolitical concerns, and sub-Saharan Africa ranks lower than North Africa." (Albright 1987, p.1) In the Congo, "the months following Congolese independence showed clearly the limits of Soviet power in Black Africa – limits imposed by the weakness of Soviet resolve compared to that of the West, and the weakness of its African friends compared to those of the West." (Stevens 1976, p.18-19) Ultimately, this lack of resolve and weakness meant that, in the Congo crisis of 1964, the USSR did not seriously consider military action versus the US-backed central government or mercenaries. The primary US concern was not the Soviet Union, but the reaction of

states in the developing world, with whom it was trying to maintain good relations. Overall, then, nuclear weapons made no contribution to limiting violence in this case, lending no support to H6.

Trade also played almost no role in reducing violence in this crisis. Soviet-US trade at this point was quite minimal, as was Soviet-Congo trade (Weinstein and Henriksen 1980, p.26). The US had a strong interest in strategic mineral resources in Congo (particularly cobalt), but US trade with Africa as a whole was "less than 4% of US foreign commerce" in 1960, and "the Congo's own contribution was rather insignificant." (Weissman 1974, p.39) Thus, US interest in raw materials is likely to have heightened its resolve to prevent Soviet encroachment in this area (and potentially increasing violence), but the overall level of trade was insufficient to invoke the pacifying effect of interstate trade noted by Mansfield (1994) and others. Thus, H3 is supported. As with most of the dyadic nuclear crises, only one side was democratic. In this case, the democratic side experienced a higher level of violence than the non-democracy; the US experienced minor clashes, while the Soviet Union experienced no violence. While democracy has been shown to have a pacifying effect on conflict, it clearly does not preclude it. With US and Belgian citizens threatened with execution, and a shaky allied government in need of aid, the democratic governments of Belgium and the United States saw the need to use at least low levels of violence to alter the situation. Ultimately, Congo II was a marginal dyadic nuclear crisis, and the findings from this brief examination indicate that it neither lends strong support, nor undermines, the aggregate findings of Chapter 4.

War in Angola

This study has found that democracy has a more significant impact on reducing violence in crises than nuclear weapons, and this is no more clearly demonstrated than in the Angola Crisis of 1975-76. An escalating civil war in Angola, prompted by the precipitous departure by Portugal, became a swirling vortex which drew in more than nine external powers and became the "most serious example of foreign military intervention since the end of the colonial period." (Somerville1990, p. 95) By December 1975, both the United States and the Soviet Union were providing tens of millions of dollars in military aid while their allies were sending many thousands of soldiers into combat. The Angolan faction supported by the USSR, the MPLA (Popular Movement for the Liberation of Angola), had gained the upper hand, and the Ford Administration intended to increase its commitment when, on 19 December 1975, the US Congress voted to cut off all aid to Angola. Concerns of nuclear war played no role in the public debate; the US public did not want to get involved in another Vietnam, to which Angola looked ominously similar, as a quick look at the history will show.

The Angola Crisis of 1975-76 originated in a coup d'etat in Portugal in April 1974, which in turn led to rapid de-colonialization of Portugal's overseas possessions, including Angola (Papp 1993, p.162). Angolan rebels had been fighting for independence for over a decade[55] when Portugal agreed to the Alvo Accord in January 1975 which specified a transitional government would take power in March, to be followed by full independence on 11 November 1975. Unfortunately, three groups that

had been fighting for independence, the MPLA, UNITA (Union for the Total Independence of Angola) and the FNLA (National Front for the Liberation of Angola), almost immediately began fighting each other and civil war soon broke out. The conflict quickly involved the superpowers despite the fact that, as one scholar noted, "prior to the Portuguese revolution of April 1974, Angola was not viewed as strategically essential by either the United States or the Soviet Union." (Klinghoffer 1980, p.1)

The Soviet Union had been supporting the MPLA for over a decade, providing $60 million to MPLA prior to January 1975 (Marcum 1976, p.99). After the Alvo Accord was signed, the US decided to give $300,000 in non-military aid to the MPLA's main opponent, the FNLA. With an absence of strategic interests in Angola, one is led to conclude that "the US decision to intervene, however futilely, in Angola stemmed from the same fear of communism capturing African nationalism that had motivated Eisenhower's policy in the Congo." (Chazan et al 1992, p.401) Or, as a noted expert on US foreign policy in this period observed, "the American stake in the Angolan situation was not *threatened* by the Soviet-Cuban involvement on the other side, it was *created* by it." (Garthoff 1985, p.521, emphasis in the original)

However, it is important to note that the Soviet Union also lacked tangible strategic interests in Angola. Why was it willing to give such extensive support to the MPLA? There are two main answers to this question: competition with China and a conviction that the US would not respond. Former Soviet Ambassador to the United States, Anatoly Dobrynin, stated, "the Politburo felt we had to show the flag against China in Africa so

[55] Colonial wars were in fact one of the key reasons for the 1974 coup in Portugal.

as to not be seen by international communist and democratic movements as being idle in post-colonial areas." (Dobrynin 1995, p.362) China had been supporting the FNLA and UNITA[56], and the Soviets felt that they would lose support in the Third World and among revolutionary movements if they did not act to check this Chinese influence (Garthoff 1985, p.527). Thus, the record between Moscow and Peking "shows clearly that the Russians were far more concerned about 'defeating' the Chinese than in undermining the West in Angola," while the Russian/Cuban contention that their intervention was in response to the South African invasion of Angola is a "post facto rationalization." (Legum 1976, p.40)

The second reason the Soviets intervened was because they were certain the US would not strongly oppose them (Klinghoffer 1980, p.99; Rothenberg 1980, p.11; Hosmer and Wolfe 1983, p.79-83; Menon 1986, p.136). Post-Cold War scholarship using Soviet archival material supports this critical point, as illustrated by the following lengthy quote:

> "There is enough evidence in the materials on Angola, and elsewhere, to indicate that the Soviet leadership was very much aware of the strategic opportunities which the post-Vietnam anti-interventionist mood in the United States afforded Moscow for activism in regional conflicts. It is likely that the Politburo would have been much less inclined to interventions like the one in Angola if they had been convinced that Washington would respond in force. The conventional realist approach to interventions provides adequate explanation for this side of Soviet interventionism: the Brezhnev leadership saw an opportunity for unchecked expansion and made use of it. " (Westad 1996, p.29)

This suggests that the Soviets could have been deterred from their intervention supporting the MPLA in Angola had the US demonstrated a credible commitment to the FNLA and UNITA. However, there is no evidence to suggest that the Soviets ever

[56] Indeed, it is ironic that Jonas Savimbi, the leader of UNITA who was to be seen as a heroic anti-communist fighter by the Reagan administration, had originally been supported by Communist China, and structured his movement on Maoist principles.

considered nuclear weapons as part of that calculation. Additionally, the United States was not deterred from escalating its own involvement in Cuba by fear of conflict, and its potential escalation, with the Soviet Union in Angola. In December 1975 there with thousands of Cuban proxy soldiers fighting in Angola, hundreds of Soviet advisors on the ground, and a Soviet naval task force enroute to the area. Regardless of the risks, Kissinger and Ford desperately wanted to escalate US support for the FNLA and UNITA. They blamed the US Congress for destabilizing the US-Soviet relationship by preventing the US from escalating support for the FNLA/UNITA in Angola: "crisis prevention was also not a factor in American deliberations." (Garthoff 1985, p.534). Of course, we can never know how far the US would have escalated in the absence of the Congressional action of 19 December, so it is difficult to assess what affect mutual nuclear weapons possession would have had at a later point in the escalatory ladder, but the facts of this case provide little support for H6.

Rather, what is clear beyond a doubt is that democracy – domestic pressure – prevented the United States from escalating the level of violence in Angola in 1975, providing strong support for H2. The crisis in Angola marked the first time a superpower was prevented from playing a major role in an international crisis due to public opinion (Legum 1976, p.39). As another scholar dramatically portrayed it, "when the issue came to a head in December, a phalanx of alarmed Senators, sensing a congruence of conscience and a promising election year issue, derailed the escalation train by voting 54-22 to ban further covert aid to Angola." (Marcum 1976, p.105)

Hypothesis 3 receives some support in the Angolan case. Trade between the US and the USSR was minimal at this time, except in the realm of agriculture. The US was selling a large amount of grain to the USSR, and the USSR had experienced a poor harvest in 1975, necessitating greater imports of grain from the United States. In an interesting confluence of effects, democracy, trade, and low strategic salience, President Ford was not going to use a grain embargo against the USSR over Angola and escalate the crisis. In a major speech to the American Farm Bureau Federation on 5 January 1975, "President Ford assured his audience (and the Soviets) that his administration would not cut off grain over Angola," something which would mean hardship for US farmers for no strategic gain (Garthoff 1985, p.523, see also Klinghoffer 1980, p.96).

Ultimately, the Angolan Crisis of 1975-76 was a marginal case for testing nuclear deterrence because neither side had important strategic interests at stake and the crisis took place thousands of miles from the two nuclear states' homelands. Regardless, the facts of the case clearly show that nuclear weapons possession by the United States and the Soviet Union did not prevent serious Soviet escalation and would not have prevented a robust US response. What did stop the US from escalating was democracy. Interestingly, Castro, in a performance which would foreshadow the Soviet experience in Afghanistan, did not tell his people of the sacrifice Cuban soldiers were making until 19 April 1976 (Rothenberg 1980, p.21), a month after the crisis was over. Thus, it would seem that the evidence again supports the contention that democracy is a superior path to peace than nuclear proliferation.

Afghanistan Invasion

The Soviet invasion of Afghanistan in December 1979 triggered the last major dyadic nuclear crisis between the US and the USSR.[57] The Soviet occupation would continue for a decade, but ultimately the Soviets would have no more success in subduing Afghanistan than the British had had a century earlier. Although the insurgency continued in Afghanistan throughout the 1980s, the crisis itself ended soon after the United States announced a series of non-military responses to the invasion and it became clear that there was little else the US would, or could, do. Nuclear weapons, and nuclear deterrence, played no role in the crisis, as the USSR was not deterred from invading Afghanistan due to fear of US strategic forces. Nor is it likely that the US was deterred from responding militarily by fear of Soviet nuclear forces. Rather, the Soviets gave almost no consideration at all to what the US would do, and the US had no stake in Afghanistan then which would justify military action, even if it possessed the military forces to respond to the Soviet invasion in Afghanistan (which it did not).

When the Soviets invaded, all prior invasions into Afghanistan had proven to be unsuccessful and enormously costly for the invaders. British garrisons in Kabul were completely wiped out in 1842 and 1879, while Russian operations during the so-called "Great Game" experienced similar catastrophes in and around Afghanistan.[58] Thus,

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[57] Able Archer was the name of a US military readiness exercise which provoked a major nuclear crisis for the Soviet Union in November 1983 because it was "misperceived by the USSR as preparation for, not a simulation of, a nuclear attack by the West. It therefore triggered a grave crisis for the USSR--the closest the two superpowers came to a direct nuclear confrontation since the Cuban Missile crisis in 1962 (Brecher and Wilkenfeld 2000, CD-Rom). However, the United States was not a crisis participant, so it is not a dyadic nuclear crisis, and therefore will not be examined in this chapter.

[58] For an excellent review of this history see Hopkirk 1990.

Afghanistan remained a buffer state between the Russian and British Empires, and never experienced the kind of strong administration that India and Pakistan had during the colonial period. Indeed, Afghanistan has never experienced strong central administration and to this day remains a state with one of the most traditional cultures in the world. Thus, Afghanistan has nearly always been somewhat unstable, and Soviet desires to secure its southern border (and to expand its Communist ideology) ultimately resulted in a political blunder that would cost the Soviets dearly.

A key event leading up to the Soviet invasion was a coup on 26 April 1978, in which a pro-Soviet leader named Taraki took power, killing Prime Minister Daoud, much of his family, and thousands of defenders of the regime (Arnold 1985, p.70-1). There was some debate as to Soviet involvement in the coup, but the latest evidence suggests that the Soviets did not coordinate the coup, but found themselves its beneficiaries as it replaced a centrist leader with one more oriented toward Moscow (Garthoff 1987, p.939; Mitrokhin 2002, p.26). The new regime quickly moved closer to the USSR (signified most clearly by the December 1978 Friendship Agreement), but "lacked legitimacy and a broad popular following." (Hosmer and Wolfe 1983, p.111) Soviet backing for the regime meant that Moscow was associated with a very unpopular regime. In March 1979 serious anti-government riots erupted in the western city of Heart, and rebels took control of the city. Before the government could re-establish control, the rebels massacred up to 50 Soviet soldiers and dependents. Reports indicate Soviet women and children were chased down, and victims were beheaded and flayed alive (Collins 1986, p.59). This triggered a crisis for the Soviet Union.

In the ensuing months the situation deteriorated and the Soviets sent various military and political delegations to ascertain what to do. Additionally, the Soviets sent more military advisors (they numbered over 4,500 by November), including helicopter pilots and fighter pilots who flew combat missions, in an attempt to help the Afghan government deal with the insurgents (Hammond 1984, p.75; Garthoff 1987, pp.900-901). The situation worsened in September when Amin took complete power and executed Taraki, who at least had some legitimacy among Afghanis. Although the Soviets saw Amin as a big part of the problem, and likely had even tried to help Taraki eliminate him (Bradsher 1999, pp.57-58), there was not much they could do in September 1979. However, with the internal situation worsening due to Amin's brutal and unwise rule,[59] the Politburo decided on 12 December 1979 to force out Amin and send in far more Soviet troops (Dobrynin 1995, p.437-38). Thus, on 24 December 1979 the Red Army invaded Afghanistan.

The Soviets had hoped to get a clear invitation from Amin, or a successor, before sending in their troops, but Amin did not cooperate, leading one observer to note, "whatever his other characteristics, his country owes one debt of gratitude: he never tendered the Soviets the crucial invitation that would have legitimized the invasion. He paid for this refusal with his life." (Arnold 1995, p.95) Thus the Soviets were forced to invade Afghanistan, kill Amin, and install a successor (an Afghan named Babrak) more

[59] One scholar compared Amin to Pol Pot, noting "Amin was different more in degree that in nature of brutality..." (Bradsher 1985, p.150)

amenable to them. This invasion triggered a crisis for the United States, which was to last two months.

When the Soviets invaded, US decision-makers almost unanimously saw the invasion as part of an aggressive Soviet move to threaten the Persian Gulf. Subsequent scholarship seems to confirm that, although the Soviets did find themselves in a stronger position vis-à-vis the Persian Gulf as a result of their move into Afghanistan, their motives for invading were largely defensive (Arnold 1985, p.96; Bradsher 1985, p.163; Dobrynin 1995, p.441). Although several experts noted that "it is not clear that the USSR had any more strategic reason to launch an invasion of Afghanistan to change its government than Argentina had to invade the Falklands" (Cordesman and Wagner 1990, p.2), at the time the Soviets felt they had little other choice. One US official noted that, in 1980, conversations with Soviet officials indicated they feared that Amin was going to do what Sadat had done, send the USSR home and invite in the US (Garthoff 1987, note 94, p.920). While the US was alarmed at the threat the USSR presented to the Persian Gulf from Afghanistan, from the Soviet perspective a pro-Western regime on its 1500-kilometer southern border was much more threatening.

Probably partly because Moscow saw Afghanistan as part of their sphere of influence, they seem to have given little thought to the US reaction, and may not have even consulted their Ambassador to the United States, who noted "I was not consulted by Gromyko even though I was in Moscow at the time: he believed that the American reaction, whatever it might be, was not a major factor to be taken into consideration."

(Dobrynin 1995, p.439) Another reason for this neglect is likely related to the minimal US reaction to similar events in the recent past such as Angola (1975-76) and Ethiopia (1977) (Westad 1996, p.29). Additionally, although the Carter administration had issued several warnings to the Soviets regarding Afghanistan, these warnings were ineffectually vague. As Bradsher (1985) noted, "the Carter Administration simply issued warnings without thinking through what should lie behind them, what would be done if they were ignored." Bradsher went on to say "the warnings looked good on the bureaucratic record. They showed that the administration had not been unaware of the situation. But that was all they were – a bureaucratic record." (pp.151-2; see also Garthoff 1987, p.924)

Unfortunately for détente, the reaction of the Carter Administration was much different than the Soviets had expected. Coming up on an election, reeling from the hostage situation in Iran and feeling personally betrayed by Brezhnev, President Carter seemed to believe his statement that the Soviet invasion of Afghanistan was "the greatest threat to peace since the Second World War." (Garthoff 1987, p.957) As a result, "he did just about everything he could have done [to the Soviets] without taking direct military action." (Hammond 1984, p.124) These responses included the suspension of SALT II ratification, a US wheat embargo, limits on Soviet fishing quotas in US waters, and the suspension or cancellation of most American-Soviet cultural, business, and political exchanges (Arnold 1985, p.113-14). Additionally, Carter withdrew the US from 1980 Moscow Olympics (something which likely upset the Soviets much more than most Americans realized), increased US defense spending, announced the Carter Doctrine, and began covert support for the Afghanistan fighters resisting the Soviet Union (who later

became well known as the Mujahadeen).[60] President Carter later said that he wanted to "make it as costly as possible" for the Soviets, although "direct military action on our part was not advisable." (Carter 1982, p.472-3) The stated, and unrealistic, goal of these actions was nothing less than Soviet withdrawal from Afghanistan. Because the Soviets did not feel they could withdraw and because they knew Afghanistan was not of vital interest to the US, they could not believe the US rhetoric, and saw the US reaction as an excuse for the US to take its own aggressive actions (Garthoff 1987, p.965). By the end of February 1980 US policy regarding Afghanistan had stabilized. The administration was almost exclusively focused on the Iran hostage situation (Carter 1982, p.480), and the crisis for the US ended in late February 1980. Subsequently, President Carter lost the 1980 election to Ronald Reagan, and a renewed period of US-USSR confrontation began.

As the account above indicates, the US nuclear deterrent capability played no discernable role in the Soviet Union's decision to invade Afghanistan. Focused on their own security concerns and seeing no US vital interest in Afghanistan, the Soviets were more concerned about Third World condemnation than US nuclear weapons (Arnold 1985, p.113). For Moscow, it was obvious that "the United States could not and would not counter-intervene militarily in Afghanistan, under any administration and regardless of the strategic balance." (Garthoff 1987, p.931) Once the Soviet Union had invaded Afghanistan, its nuclear deterrence played little role in US deliberations to apply maximum sanctions against Moscow. However, a direct military confrontation over Afghanistan was not an option because in 1979 the US simply did not have the

[60] Crile (2003) gives an outstanding account of the politics of US support for the Mujahadeen.

conventional forces to mount an operation in land-locked Afghanistan (Collins 1986, p.134). Nuclear deterrence was unnecessary because "the danger of a superpower confrontation was...limited by the combination of such factors as the political mood in the United States, the regional context and mode of Soviet intervention, and the geographical conditions." (Menon 1986, p.149) Had the Soviets moved beyond Afghanistan into Iran, the United States would have responded militarily, as indicated clearly by the Carter Doctrine. In this hypothetical situation, the Soviets would have directly threatened Persian Gulf oil, a vital interest of the United States. Their decision not to go beyond Afghanistan (in many ways a moot point since their army never pacified that country) could be attributed to a desire to avoid war with the United States over an issue that they had no vital interest in, just as the US had no vital interest in Afghanistan. Ultimately, this case provides little support for the hypothesis that dyadic nuclear crises will have lower levels of violence (H6).

Democracy may have played a minor role insofar as the only democratic country in this crisis, the United States, also had the lowest level of violence. However, as noted above, the US had almost no capability to intervene militarily in Afghanistan anyway. Interestingly, partially due to the Soviet invasion, the US elected Ronald Reagan president in 1980, heralding a much more confrontational line with the Soviet Union. Thus, although a simple statistical coding would suggest otherwise, this crisis also provides little support for H2, that democratic states will experience lower levels of violence in crisis. Trade played a significant role in this crisis, though not in terms of lowering violence, as predicted by H3. By 1979 détente was already in trouble, but the

US and the USSR still had a significant level of trade involving US food exports to the USSR and Soviet strategic mineral exports to the US (Garthoff 1987, p.970). The Carter Administration decided to use trade as a weapon against the USSR to punish them for invading Afghanistan, mainly through the grain embargo, which ultimately cost the USSR an estimated one billion dollars and "contributed to a very poor meat situation in the Soviet Union." (Collins 1986, p.87) Unfortunately, "the embargo had a palpable negative effect on Soviet confidence in relying on economic ties with the US – and *almost no effect at all on Soviet policy toward Afghanistan.*" (Garthoff 1987, p.970, emphasis added) The Soviet Union showed no signs of withdrawing from Afghanistan by 1981, so the newly elected Reagan Administration decided to end the embargo because of the harm it was doing to American farmers. Overall, the Afghanistan crisis, like the Angola and Congo crises, was a marginal dyadic nuclear crisis due to the lack of a direct confrontation between the nuclear powers. Nonetheless, it does provide evidence that factors other than nuclear weapons are often more central to lowering levels of violence in crises.

Conclusion

The seven crises presented in this chapter have provided some support for nuclear deterrence, although a careful reading renders surprisingly little confidence regarding the claim by nuclear optimists that major war will not happen between nuclear-armed states. The evidence suggests that a range of factors can reduce violence in crises, but that no one factor seems to rule out significant levels of violence among interstate crisis

participants, including mutual nuclear weapons possession. Chapter 8 will present an overall comparison of the findings from the qualitative analysis of all 17 dyadic nuclear crises for the main factors identified in the model in Chapter 4: nuclear dyad, democracy, trade, and state characteristics.

Chapter 6

Arab-Israeli Crises and the Ussuri River Crisis

Chapter 6 will focus primarily on the dyadic nuclear crises resulting from the Arab-Israeli protracted conflict (PC), with the addition of the Sino-Soviet Ussuri River Crisis as the last part of the chapter. The Ussuri River crisis is included in this chapter primarily for aesthetic reasons. Largely because it is the only dyadic nuclear crisis to take place outside of a protracted conflict, it is not theoretically linked to any of the other dyadic nuclear crises, so there is no theoretical reason to include it in any particular chapter. As a single crisis it does not justify its own chapter, and since the Arab-Israeli PC resulted in the fewest dyadic nuclear crises of the three PCs which have generated such crises, including the Ussuri River Crisis here balances the length of the three qualitative chapters.

Table 6.1 lists the five crises that will be examined in this chapter and indicates the

CRISIS	YEAR	COUNTRY				
		USA	RUSSIA	BRITAIN	CHINA	ISRAEL
Suez Nationalization-War	1956	X	X	X		
6-Day War	1967	X	X			X
War of Attrition	1969		X			X
Ussuri River	1969		X		X	
Yom Kippur	1973	X	X			X

Table 6.1
Arab-Israeli and Ussuri River Dyadic Nuclear Crises

participating nuclear states and year for each crisis. As with Chapter 5, each crisis summary will begin with brief description of the crisis setting and background, followed

by a detailed discussion of the role nuclear weapons and nuclear deterrence played in the crisis. Finally, each crisis summary will assess the role that democracy, trade, and individual state characteristics may have played in levels of violence and crisis outcomes. This will give a qualitative comparison to add to the quantitative comparison from Chapter 4.

Suez Nationalization War

This is the first of four nuclear dyadic crises that occurred within the Arab-Israeli protracted conflict. Occurring before Israel developed a nuclear capacity, the nuclear powers in this crisis were the UK, the US, and the USSR, but the major nuclear participant was the United Kingdom. The primary nuclear weapons component of this crisis were threatening letters sent by Soviet PM Bulganin to Israel, France, and the United Kingdom on November 5, 1956. In these letters, the Soviet Union threatened the capital cities of France and Britain, and the very existence of Israel. However, a close look at the impact of these letters, and the various actors responses to them, suggests that neither nuclear deterrence nor compellence play a major role in this crisis. As will be discussed below, other factors, such as interdependence and democracy likely were much more determinate in the crisis outcome.

This crisis developed out of two main factors: the ongoing Arab-Israeli conflict that had started before the founding of Israel in 1948, and conflict emerging from British and French efforts to maintain their power and influence in their former colonies. The latter

had led to conflict between Britain/France and Egyptian nationalist President Nasser. One major area of conflict was the Suez Canal and a 750 square mile base within the Canal Zone that was the lynchpin of British hegemony in the Middle East. In 1954, Britain and Egypt concluded an agreement under which the British would withdraw all of its forces from this base, with the right to come back if there was a major threat to the security of the Suez Canal (Louis 1989, p.43).[61] Although they agreed to pull out, the British felt quite vulnerable without the base since such a large percentage of British trade, and especially oil, flowed through this chokepoint.

As one way to alleviate this security concern, Britain negotiated a defense alliance known as the Baghdad Pact (later CENTO), which was designed to protect Britain's oil interests and "prop up her sagging presence as a regional power." (Kyle 1989, p.104) Unfortunately, this defense alliance heavily antagonized Nasser, who, the British belatedly realized, saw it as a threat to his leadership of the Arab world (Shuckburgh 1986, p.211). The Baghdad Pact was not the only problem, as British policies in the Middle East throughout the mid-1950s seemed to be largely counterproductive. Shuckburgh admitted as he left Egypt in June 1956 that "obviously my policy and all efforts to save relations with Egypt have all been wrong." (ibid. p.356-7)

Beyond the Baghdad Pact, problems with Western arms embargoes, financing for the proposed Aswan Dam, and ongoing questions about the status of the Suez Canal led to

[61] Interestingly, the development of the hydrogen bomb, which "at one stroke appeared to make the base at Suez obsolete," may have made it easier for the British to withdraw from the Canal (Louis 1989, p.48).

the decision by Nasser to nationalize the Suez Canal on 26 July 1956. This action led Britain to conclude that President Nasser of Egypt was inimical with the UK's national security interests, and that he must be removed from power, even if it meant using force

(Kyle 1989, p.112-13, 123). This British position dovetailed nicely with the Israeli perception in the fall of 1956 that they must use force to stop the fedayeen raids into Israel from Egyptian-controlled territory (Brecher 1975, p.252-53).[62] Initiated by France, which also wanted to reduce Nasser's power and influence due to its own problems in its North African colonies, the three states met in Sevres, a suburb of Paris, on 22-24 October to discuss collusion to achieve their shared goals. It was agreed that Israel would attack the Sinai, and then, 12 hours later, the British and French would issue an ultimatum that called for all warring parties to withdraw 10 kilometers from the Canal, and then use that as a pretext to attack Egypt. However, when the ultimatum was issued 12 hours after the Israeli attack it was clear to all that it was "part of a previously agreed upon plot" (Bar-on 1989, p.159)

Both superpowers immediately opposed the Israeli attack and the French/British ultimatum, and sponsored resolutions in the UN calling for the Israelis to withdraw. However, the French and British both vetoed these resolutions, giving the Israelis the political cover they needed and making the UN ineffective in halting the fighting, which began on 29 October and lasted until 6 November. Israel stopped combat operations

[62] Adams (1958) noted that the Israelis were overreacting to the fedayeen raids. "Israel's policy of merciless reprisal raids in return for minor infiltrations of the Arabs had not had the desired result of cowing the Arabs, but had genuinely alarmed them – and now the Arabs' counter-measures [creating a joint military command for Egypt, Syria, and Jordan in Oct 1956] alarmed the Israelis." (p.78)

after achieving its goals on 5 November, 12 hours *before* the Soviets issued their ultimatum. (Bar-Siman Tov 1987, p.49) The UK and France stopped their combat operations the next day, after Britain was forced to yield to intense US pressure. There are two key questions for this study. First, why were the British, French and Israelis not deterred from attacking Egypt when it was aligned with the Soviet Union? Second, what was the effect of the Soviet nuclear threat on the nuclear-armed United Kingdom?

There are two main reason why the tripartite attack on Egypt took place despite the Soviet interest in Egypt. First, although the Soviet Union had sold Egypt a large amount of weapons in 1955, and was clearly interested in improving its relationship with Nasser, it had made no public commitment to defend Egypt in the face of an attack from Israel. Soviet interests in the Middle East were limited, and its primary goal was to avoid confrontation with the United States (Golan 1990, p.47). The second reason, closely tied to the first, were (mistaken) British expectations of US actions. The British needed US support in three ways: cover to prevent intervention by the USSR, financial support, and neutrality of the US military (Kyle 1989, p.129). Of these three, they got only the first. As will be described below, the US not only failed to give financial support, but used this need against the British. Finally, the US military, far from being neutral, obstructed, non-violently, French and British operations in the Mediterranean (Kyle 1991, p.412). Thus, expected US support and the absence of a Soviet deterrent commitment obviated the effect of nuclear weapons on the decision to attack.

A week after the attack came the Soviet threats, but their effect was very limited for several reasons. First, the threats themselves were not very credible, as the Soviet Union had only a doubtful capability to hit Paris or London with its first generation rockets (Golan 1989, p.281-82; Golan 1990, p.51). Another scholar noted that "The reaction of Western leaders to Khrushchev's missile-rattling during the Suez crisis was one of almost universal disbelief; the lateness of the threats was widely noticed at the time." (Fukuyama 1981, p.594) Second, the US immediately indicated it would retaliate against the Soviet Union were it to attack Britain or France. Later analysis by the BBC noted that the American reply to retaliate if USSR attacked the United Kingdom or France negated USSR threat and "took the sting and indeed took the timing out of the Soviet ultimatum which was allowed to die a small little death and was never heard of again." (Calvocoressi 1967, p.22) The fact that US assurances were quite important to Britain suggests that second-strike capability (which Britain lacked in 1956) is an important part of nuclear deterrence, supporting the statistical findings in Chapter 4, and undermining Waltz's claim that second strike capability is unnecessary (Sagan and Waltz 1995, p.110).

However, Britain and France did stop military operations soon after the Soviet letters, even with US nuclear support. Was this because of the threat of nuclear war? Although some commentators have noted that fear of nuclear war did exist in 1956 (e.g. Love 1969, p.557), the evidence indicates clearly that it was US political and, especially, financial pressure which forced the British and French to cease military operations, and Israeli withdrawal from the Sinai. The British Prime Minister indicated that it was

factors other than the Soviet threat which lead to the British decision to stop (James 1987, p.572-74). Foremost among these factors was US economic pressure. The US had made its opposition to the use of force to resolve problems with Nasser well known prior to 30 October, and reiterated this after the Israeli attack and the British/French ultimatum (Bowie 1989, p.211; Campbell 1989, p.244-45). Although the British and French could veto US actions in the UN, the British were quite vulnerable to US economic pressure because "Sterling was dependent on the dollar as Britain was dependent on the United States. Neither the currency nor the country could go it alone." (Kunz 1989, p.218)[63] By withholding US support for the British currency during the crisis, the US seriously threatened the entire British economy. In the end, this fiscal pressure was too much, and the British were forced to pull back. The US also maintained economic pressure on the Israelis to pull out of the Sinai, as well as *not* providing cover from Soviet military threats, so that Israel was also forced to withdraw from the Sinai, albeit with some conditions (Brecher 1975, p.285).

Thus, it would seem that nuclear weapons played a very limited part in the Suez Nationalization War. This supports the findings of Chapter 4, which indicate that nuclear deterrence does play a role, but that other factors are often more important. In this case, the main factor seems to have been economic; "the Suez crisis provides a striking example of the militant use of financial power. American use of economic artillery to achieve its policy objectives largely determined the course of the crisis from the seizure

[63] Pape (1997) argues that economic sanctions had no impact, but the nuclear threat which caused the British and French to back down. However, he ignores the fact that US assurances to the British came before the British decision to withdraw.

of the Suez Canal to the Israeli evacuation of the Sinai Peninsula under the pressure of economic sanctions." (Kunz 1989, p.215; see also Organski and Kugler 1984, p174). Democracy as a pacifying factor in crisis is not supported in this case because the three states which initiated the violence were all democracies. Chapter 4 also found that some nuclear states (China and Israel) have a greater propensity to violence, and the actions of Israel in the summer of 1956 seem to support this. Evidence indicates that the Israeli decision to attack Egypt was driven most by the need to halt fedayeen raids which were increasing in frequency. The fedayeen were supported by an Egyptian government that did not recognize the right of Israel to exist, and had increased in frequency since the Egyptians took control of the Suez Canal zone (Brecher 1975, p.229). Violent Israeli reprisals after these attacks, designed to show Israeli determination so as to discourage future attacks, may have instead *encouraged more* anti-Israeli violence (Adams 1958, p.78). Thus, this case supports the statistical finding of greater violence by the State of Israel, but it is difficult to identify the exact cause of this. Overall, then, the Suez Nationalization War crisis provides little support for nuclear optimists contention that nuclear weapons destructiveness means major wars will occur between states possessing them.

The Six Day War

One of the most striking events in the history of the Arab-Israeli protracted conflict occurred over a period of 25 days in May-June 1967. Termed "The Six Day War" by the Israelis and "The June War" by the Arabs, this conflict drastically altered the geopolitical

map of the Middle East, creating much of the context of the Arab-Israeli conflict with which present-day observers of the Middle East are familiar. Although neither nuclear weapons nor nuclear threats play a direct role in this crisis, they did play a secondary role, both in creating and limiting the overall crisis. This crisis also witnessed the emergence of Israel as an undeclared nuclear power (O'Ballance 1972, p.47; Cohen 1998, p.274), although Israel's limited delivery methods meant that she was incapable of reaching the other nuclear powers at that time. Overall, however, nuclear weapons had a minimal role in the levels of violence and outcomes of this crisis.

The issues underlying the Arab-Israeli protracted conflict were the indirect causes of the Six Day War, but specifically "this war was provoked partly by terrorism and partly by brinkmanship on the part of the Soviet Union and Egypt, but the result was devastatingly different from what the Arabs had anticipated." (O'Ballance 1972, p.15) Terrorist attacks had been escalating for some time, and mainly took the form of Syrian shelling of Israeli settlements below the Golan Heights, and fedayeen raids conducted from Syria and Jordan. Indeed, even without Egyptian moves in May, had the fedayeen raids alone continued, Israel would have responded with a reprisal against Syria which would have been on a "large scale." (Brecher 1975, p.359; Brecher 1980, p.45)

However, at the same time the fedayeen raids were escalating, the Kremlin, or a faction therein, decided to provoke Egypt by providing false information of a massive Israeli military buildup on the border with Syria in mid-May 1967 (Brecher 1980, p.43-45; Oren 2002, p.54-55), triggering an Egyptian decision to dramatically increase its forces in the

Sinai. Egyptian President Nasser asked the UN to withdraw from its observer posts on the Egyptian-Israeli border. UN Secretary General U Thant has been roundly criticized for pulling UN forces out of the observation posts in Sinai and Gaza on 18 May, and "there is no doubt that his actions contributed to the process of escalation." (Brecher 1975, p.364; Brecher 1980, p.50)

The most significant escalatory step came, unexpectedly, five days later when Nasser announced the closure of the Straits of Tiran, an issue that was *casus belli* for the Israelis, and one which one specialist cited as the act "which in my opinion made war inevitable." (O'Ballance 1972, p.27) The Israelis immediately looked to the United States to fulfill its obligations under a 1957 memorandum of understanding to maintain the freedom of this waterway. Unfortunately, the Johnson administration, bogged down militarily and politically in the Vietnam War (Spiegel 1985, p.120), was unable to respond with sufficient vigor. "Only an early American commitment to use force to open the Strait of Tiran could have stayed Israel's hand, and that was more than he [President Johnson] had been prepared to contemplate." (Quandt 2001, p.42)

The second major immediate cause of the crisis, was Israel's fear that Egypt might launch an airstrike against its nuclear weapons production facilities at Dimona. On 17 May, 2 Egyptian Mig-21 fighters darted in from the Jordanian border and flew reconnaissance directly over the reactor, returning to Egyptian airspace "before the Israeli Air Force had begun to react." (Oren 2002, p.75) Israeli decision-makers were very sensitive to the concern that Egypt may launch a war in order to prevent Israel from

acquiring nuclear weapons, and one expert noted that Israeli Prime Minister Eshkol was convinced the Egyptian Mig-21 over-flights meant war (Cohen 1998, p.270). Thus, nuclear weapons were a significant cause of the crisis and subsequent war, although subsequent research shows that the Israelis misjudged Egyptian intentions. There seems to be no evidence that the Egyptians were precipitating a crisis to attack Israel and destroy its nuclear program, "Israel's fear for the reactor – rather than Egypt's of it – was the greater catalyst for war." (Oren 2002, p.76)

However, before Israel would launch an attack, it wanted to be certain of US support or, at least, acquiescence. It had learned from the 1956 Suez Nationalization War that "without US support, Israel had to face Soviet threats alone – and this it could not do." (Bar-Siman-Tov 1987 1987, p.85; see also Brecher 1980, Chapter 5) Thus Israel worked hard to earn US support and seems to have succeeded, as illustrated by a quote from one scholar who noted that President Johnson had no reason to be surprised with news of the war on 5 Jun, "after all, he had taken steps to assure the Israelis that the 'red light' of May 26 had turned yellow. Johnson, while far from instigating the Israelis to attack, seemed to feel he had nothing to offer them." (Quandt 2001, p.41)

The Israeli victory over Egypt was smashing, and began with a brilliant air attack which had all but eliminated the Egyptian Air Force by 10:35 a.m. on the first day of the war (O'Ballance 1972, p.66). The Soviet reaction was to use the Moscow-Washington hotline for the first time ever to appeal to the US for peace (Quandt 2001, p.43). During the next three days, the hotline was used several times but the superpowers did very little

else except call for both sides to adopt a cease-fire. Especially noteworthy was that the USSR did nothing to help Egypt (Fukuyama 1981, p.584). The US Sixth Fleet patrolled away from the conflict, and the small Soviet squadron was on the other side of the Sixth Fleet (Golan, p.60-61).[64]

The crisis took on a more serious nature for the superpowers on 9 June when Israel attacked Syria, probably because it perceived an easy opportunity to conquer the Golan Heights (Oren 2002, p.279). Unlike the war against Egypt, the Soviet Union reacted far more strongly to this Israeli attack, issuing a warning to President Johnson on the hotline at 0745 (Washington time) 10 June that Israel must stop advancing toward Damascus, or the Soviet Union would take military action. This Soviet threat created a sense of tension in the White House as no one wanted a direct superpower confrontation. However, despite the tension, and the risk, President Johnson almost immediately ordered the US Sixth Fleet to sail closer to Israel, signaling to Kosygin that the US would not accept Soviet intervention in the war (Johnson 1971, p.301-302; Quandt 2001, p.44) Thus, the presence of a nuclear dyad did not seem to deter a US military response on 10 June 1967. The Soviets did not respond in any way to the movement of the Sixth Fleet (Golan 1990, p.64), perhaps indicating Soviet recognition that the US had far stronger forces in that theater and was committed to preventing Soviet military involvement.

[64] Ginor (2000; 2003) stated that the Soviet ships in the Mediterranean were in fact far closer to the Israeli coast, and had been planning an amphibious invasion of Israel. However, her sources are controversial, and given the likelihood of US intervention, and the vastly superior US Sixth Fleet on station, this seems implausible.

However, at the same time the US was signaling the Soviets, the Kosygin call "triggered the first US constraints on Israel to stop the war." (Bar-Siman-Tov 1987, p.142) While not willing to leave the Soviet threat of 10 June unchallenged, the US was sensitive to the Soviet position. The Soviet Union was also putting heavy pressure on Israel, including verbal threats and then a break in diplomatic relations (Oren 2002, p.299). As a result of all this pressure, the Israelis accepted a cease-fire at 6:00 pm local time, after capturing most of the Golan Heights (ibid. p.301-303). Clearly, Israel's decision to cease its offensive in Syria was strongly provoked by superpower pressure. However, as in 1956, both superpowers were pressuring Israel to do the same thing, so nuclear weapons, either between the superpowers or between Israel and the superpowers, played no direct role. Israel's nascent nuclear weapons program was incapable of harming either the US or the USSR, but was rather useful only as a last resort attack on an Arab city or two, the so-called Samson Option (see Hersh 1991).

The major effect of nuclear weapons in this crisis was that they likely moderated superpower behavior. Both the United States and the Soviet Union were keen to avoid direct military confrontation. Nuclear constraints on the US and the USSR were "clearly evident in the 1967 crisis, with both Washington and Moscow, especially the latter, determined to avoid a direct confrontation." (Brecher 1975, p.320) President Johnson "was later to see this as a Cuban missile crisis of his own. However, the war appears to have ended before any actions by either superpower were necessary or had any time to be effected." (Spiegel 1985, p.151) The US Chairman of the Joint Chiefs of Staff, General Wheeler, discounted the nuclear dimension of the crisis, saying "I never had any (worry

about intervention on the part of the Soviet Union), because I didn't think that they would. It's contrary to their practice to intervene in things like that. Of course, this is something you have to take into account. But it wasn't anything that really worried me a great deal." (ibid)

Another factor is that this Soviet threat did not conflict with US policy, and this climactic threat came only after the US had publicly stated its support for a cease-fire (Fukuyama 1981, p.589). Fukuyama, noting that Soviet threats in all Arab-Israeli crises came after it was clear they would not conflict with established US positions, stated that if the Soviets were serious about protecting the regime in Damascus, they would have acted far sooner because the regime was threatened long before the Israelis occupied the Golan Heights: "a serious effort to protect the Syrians would have come before the Israelis began their land invasion, not afterward." (ibid. p.584) Moreover, "both the deployment and quality of reinforcements for the Soviet's Mediterranean Squadron clearly signaled to the United States that the Soviets had no intention of intervening or becoming directly involved." (Golan 1990, p.61)

Thus, it would seem that nuclear weapons had the *indirect* effect of making both the US and the USSR work to avoid a direct confrontation due to the actions of their client states, but no direct impact on the outcome. Soviet threats to Israel were never nuclear, nor did they threaten the destruction of the State of Israel as they had in Bulganin's note of 5 November during the Suez War. The Israeli government was clearly concerned about Soviet intervention during the Syrian phase of the War, especially when strong US

pressure to stop their offensive on 10 June indicated that they could not count on US support, but it was US action that seemed to have the most impact. In this case, unlike the 1956 Suez crisis, US pressure was political rather than economic. Thus, trade seems to have had little impact in lowering violence in this crisis. Democracy also seems to have had little impact. Israel initiated the war despite being a democracy due to (correctly) perceived security threats. The unique state characteristics of Israel did play a role in increasing the violence of this crisis. Israel's neighbors did not accept the legitimacy of the existence of Israel, and war was probably inevitable under those circumstances. With such strong perceptions, fears and motivations, neither superpower pressure nor nuclear weapons were sufficient to prevent a war.

The War of Attrition

The War of Attrition was a nuclear dyadic crisis involving Israel and the Soviet Union. Although the United States played an important diplomatic role in ending the crisis, it was not a crisis participant. During the crisis, Israel never possessed the military capability to attack targets within the Soviet Union, but it could have easily delivered nuclear weapons against the substantial military forces the Soviet Union deployed to Egypt during this crisis. However, neither nuclear capability nor concern about escalation to nuclear war seem to have played a significant role in this crisis. Most importantly, mutual nuclear capability did not prevent either Israel or the Soviet Union from significantly escalating the crisis, and it played no role in ending the crisis, which

came about through US diplomatic efforts, greatly amplified by Israeli dependence upon US military hardware.

"The War of Attrition of March 1969 to August 1970 between Egypt and Israel was a direct consequence of the Six Day War." (Bar-Siman-Tov 1987, p.147) Israel had conquered vast areas of land, including the entire Sinai Peninsula, and Israel's neighbors could not accept that. Nor would they allow themselves to negotiate for its return, as so clearly illustrated by the "three noes" of the August 1967 Khartoum conference.[65] Thus, military force was the chosen method. The Sinai posed special security problems for Israel because the long front line along the Suez Canal was separated by hundreds of miles of desert from Israel's population centers. Egypt, with its vastly larger population, could easily place 100,000+ men with artillery there, and Israel could match this only through mobilization of its reserves, which could not be done on a long-term basis. Its answer was to use airpower to respond to attacks along the front.

However, the attacks continued. From March to December 1969, Israel lost 515 soldiers on the Egyptian Front (Bar-Siman-Tov 1980, p.97), and conditions for the Israeli troops were horrendous (Korn 1992, p.175, p.206-8). Israel eventually decided to use "deep-penetration" bombing of Egypt to bring an end to the attacks, and hopefully an end to the Nasser regime. This meant that Israel would begin bombing targets deep inside Egypt, rather than simply the offensive military positions along the Suez Canal. In the words of Israeli Defense Minister Dayan this would "bring the truth to the Egyptian people." (ibid.

[65] No Peace with Israel, No Recognition of Israel, No Negotiations with Israel (Korn 1992, p.71).

p.184) The Israelis would soon learn the same lesson about airpower that the Germans learned in WWII and the US learned in Vietnam, strategic bombing more often strengthens, than weakens, the will of the enemy to fight. However, the deep-penetration bombing initiated a crisis for the Soviet Union because of the potential threat to its main client in the Middle East, Nasser (Golan 1990, p.73)

The Israeli cabinet had given consideration to possible Soviet responses to the deep penetration raids, but only Defense Minister Dayan was concerned. Overall, the Cabinet decided that the Soviets "would threaten, as they had in the past, but they would not take any steps that would put Israel seriously in danger." (Korn 1992, p.177) This was because the Israelis thought the USSR was a "Paper tiger" in 1969. "The Russian bear had growled so many empty warning without ever making a direct move that many Israelis no longer took it seriously. In the crisis in May and June 1967, Moscow had threatened fire and brimstone but, in fact, did nothing to prevent Israel's victory." (ibid. p.173) Moreover, the risk of intervention was seen to be worth it as "strategic bombing was deemed vital to the attainment of Israel's objectives, and was therefore worth the risk." (Bar-Siman-Tov 1987, p.164) However, for once, the Soviets did do something. Nasser went to Moscow in late January to plead for aid, and the Soviets agreed to send arms and troops in order to prevent Egypt from turning toward the West (Heikal 1975, p.87). Thus began a massive Soviet military buildup, the largest to date undertaken beyond the Warsaw Pact. By September of 1970, the USSR had 150 Mig-21Js and their pilots, 10,000 troops manning SAM sites, and perhaps 4,000 additional military advisors (Bar-Siman-Tov 1980, p.160).

The first direct military clash between the two nuclear adversaries came on 18 April 1970, when Soviet Migs attacked IAF Phantoms returning from a reconnaissance mission, without success. This had a partial deterrent effect on the Israelis, but the US was also pressuring Israel. On 23 March 1970, the US had announced a delay in sale of aircraft to Israel in an effort to restrain the Israelis and promote peace. "Although Soviet military intervention would be cardinal in the decision to end the in-depth bombing, the lack of US support proved to be the decisive factor in Israel's ultimate change of strategy." (Bar-Siman-Tov 1987, p.172) Subsequently, Israel issued a policy that "stressed that it would not be deterred by fear of military confrontation with the USSR in the event of a Soviet attempt to intervene in the fighting in the canal zone (along the front line) or to breach the cease-fire line laid down after the Six-Day War (the political and strategic status quo), but it would continue to refrain from aggressive air action deep inside Egyptian territory." (Bar-Siman-Tov 1980, p.155) However, Israel's restraint from deep-penetration bombing did not stop the Soviets from working to expand their SAM network toward the Canal zone. Thus, despite the risk of escalation, the IAF set up an ambush for the Soviets, and succeeded in downing five Soviet aircraft on 30 July 1970. (Bar-Siman-Tov 1987, p.178) The Soviets responded with their own SAM ambush 3 Aug, downing an IAF Phantom and Mirage (Korn 1992, p.233).

While Israel and the USSR found themselves in increasingly violent confrontations, US diplomacy was finally making great progress. US Secretary of State Rogers and Assistant Secretary of State Sisco had been working hard on a plan to get the Israelis and

Egyptians (and the Soviets) to stop fighting, and start talking, throughout 1969 and 1970. Rogers had presented a second plan to both sides in June 1970.[66] The Israelis hated the plan, but US pressure kept them from rejecting it first. On 22 July, Egypt decided to accept the plan after Nasser had gone to Moscow seeking aid and had returned "in despair over the Soviet position [which refused to provide offensive weapons to attack Israel]." (Golan 1990, p.75-76)

Subsequently, the US brought strong pressure to bear on Israel to get it to accept it as well, which they did on 30 July. Nixon sent a demarche 24 July with political and economic support, including more F-4s and Shrike Missiles, that was "more a carrot than a stick," which proved pivotal in getting the Israelis to accept the Peace Plan (Brecher 1975, p.493-5). It is important to note that US diplomacy worked because the Israelis were losing planes; "what tipped the scales in favor of the US initiative, more than anything else, was the success the Egyptians and the Soviets had in shooting down two Phantoms on June 30 and the downing of more Phantoms on July 5 and July 18...The loss of five of Israel's first-line fighter-bomber aircraft in less than three weeks and the steadily expanding scope of Israel's confrontation with the Soviet Union shook the confidence of the Labor Party leadership." (Korn 1992, p.256) One detailed study found that among Israel's five key decision-makers in 1969-70 (Meir, Dayan, Eban, Galili, and Allon), the main reason for accepting the cease-fire in Aug 1970 was to maintain good relations with the US, and to maintain their military capability (two issues that were closely linked) (Brecher 1975, p.470-71).

[66] The first plan was too ambitious and was strongly rejected by both sides in December 1969.

Thus trade vulnerability proved essential in 1970 to end the conflict, while nuclear weapons possession played no role beyond instilling in the superpowers a strong desire to avoid confrontation. Interestingly, democracy may have also played a small role. As the War of Attrition continued, Israel's open society could not hide the casualties and pain it caused.[67] In the spring of 1970, letters were written by the sons of major political figures questioning whether the Meir government really sought peace. The most shocking of the letters came from a group of 58 high school students in April 1970 which called on the government to "exploit every opportunity and every chance for peace." (Brecher 1975, p.463) Although not the primary impetus to the Israeli government's acceptance of the US peace plan, this letter greatly disturbed the political establishment and helped create the conditions for the acceptance of the cease-fire. (Brecher 1975, p.464, Korn 1992, p.220).

The 1973 October-Yom Kippur War

The 1973 October-Yom Kippur War resulted in the most serious confrontation between the superpowers since the Cuban Missiles Crisis 11 years earlier. Nuclear weapons assumed political significance at the end of the crisis on 24/25 October, when, in response to a letter threatening unilateral Soviet action in the Middle East, the United States ordered a defense alert that brought its strategic nuclear forces to a higher level of readiness. Nuclear weapons may also have played a role early in the crisis in US-Israeli negotiations regarding US re-supply of Israeli arms a week after the war had begun.

[67] Though it did try. Korn (1992) noted that the Israeli government did try to hide conditions on the Suez line (p.206-8).

However, the evidence in both cases indicates that rather than a deterrent role, nuclear weapons were used to strengthen the political position of the two nations threatening their use, the United States and Israel. There is no evidence that the Soviet Union attempted to use nuclear weapons for deterrence or political gain during this crisis (Israelyan 1995). Moreover, in addition to the obvious fact that nuclear weapons did not deter conflict, there is no evidence to suggest that nuclear weapons played a role in ending the war. In fact, the major nuclear aspect to the crisis occurred after a cease-fire had been declared and the war was, for practical purposes, over.

The origins of this crisis are identical to those underlying every Arab-Israeli war since 1948, compounded by the ongoing territorial dispute left over from the Israeli victory in the June 1967 Six-Day War, which had left Israel in control of the Sinai Peninsula, the Golan Heights, East Jerusalem, and the West Bank. The War of Attrition (1969-70) had ended in a cease-fire that satisfied neither side, nor did it succeed in leading to resolution of the underlying causes of the Arab-Israeli conflict. Sadat had labeled 1971 as a "year of decision" for resolving the conflict, either through war or peace, and diplomacy had failed (Quandt 2001, p.128). Egypt, unsatisfied with the status quo, became convinced that war, and not diplomacy, was required to redress the situation (Lebow and Stein 1994, p.171). However, war had not been an option for Egypt prior to 1973 due to problems acquiring sufficient offensive military hardware from the Soviet Union. That changed when the Soviets resumed major arms shipments to Egypt in early 1973 in an effort to strengthen their position in the Middle East (ibid. p.164-5).

Although concerned about the renewed arms shipments, Israel maintained a significant conventional and nuclear superiority vis-à-vis Egypt, leading Israeli decision-makers to remain confident that Egypt would not attack. However, in a case that has become a classic illustration of the inadequacy of deterrence theory, Egypt focused on its own domestic situation and gave little consideration to Israel's superior military position (Lebow and Stein 1987, p.11). To the extent that Egypt did consider Israel's nuclear capability, it calculated that a limited attack with limited aims would preclude the Israeli use of nuclear weapons (Paul 1995, p.707). Thus, Egypt's goal was to achieve limited territorial objectives in the Sinai and draw superpower intervention to compel Israel to make territorial concessions that it was otherwise unwilling to make. Thus, Egypt and Syria launched their attack on 6 October.

Initially, the Arab armies were far more successful than expected, and their successes triggered an intra-war crisis for Israel on 7 October. Although the evidence is limited due to the secrecy of the Israeli nuclear weapons program (which remains unacknowledged by Israel to this day), some sources report that Israel put its nuclear forces on alert and moved its Jericho I missiles into firing position, the so-called "Samson Option." (Isaacson 1992, p.517, Hersh 1991, p.225) Hersh reported that the initial target list included the Egyptian and Syrian military headquarters near Cairo and Damascus," and that no weapons were targeted at the Soviet Union (p.226). There is no evidence to suggest that the Israelis expected this action to cause the USSR to further restrain its clients Syria and Egypt, and later analysis found that the Soviets were never aware of the alert (Lebow and Stein 1994, p.194, footnote 87).

Hersh goes on to state that the Israelis told Kissinger of the alert in a meeting on 9 October, and that this caused Kissinger to change his mind and push hard for US re-supply of military hardware (pp.228-30). However, other sources contradict this finding (Lebow and Stein 1994, pp.194-95; Quandt 2001, p.157 footnote 29), and the timing of the US airlift seems to confirm that a nuclear threat on 9 October did not lead to greater US efforts. Hersh stated that Israel made the nuclear threat to Kissinger on 9 October, but Kissinger's strong efforts to re-supply Israel did not occur until 12 October, after it became clear that Israel needed the arms to achieve Kissinger's goal of a limited Israeli victory (Lebow and Stein 1994, p.191, Quandt 2001, p.160). Another source stated that "Nixon and Kissinger made the decision to re-supply Israel because of the massive Soviet airlift and Sadat's refusal to accept the cease-fire." (Spiegel 1985, p.157) Overall, while it is likely that Israel alerted its nuclear forces around 8 October 1973, *this alert had no identifiable deterrent effect*, nor does it seem to have led immediately to increased US support for Israel.

Beginning 12 October, the United States began a massive airlift to Israel (the Soviet Union had begun its major airlift and sealift to its clients on 10 October), which allowed the Israelis to mount a major counterattack against the Egyptians beginning 14 October.[68] Israeli Defense Force Chief, General Elazar, later testified that US arms were critical to Israel's success (Bar Siman-Tov 1987, pp.212-213), for although Israel in fact had enough weapons (except 155mm artillery shells), dwindling stockpiles "would have

[68] Israel had already mounted a successful offensive against Syria on 11 October, which was halted short of Damascus under Soviet pressure on 13 October (Bar Siman-Tov 1987, pp.201-203).

placed an intolerable strain on the IDF and its leaders." (Brecher 1980, p.206) With the reversal of the battlefield situation, Egypt and its patron, the Soviet Union, became much more interested in a cease-fire. The Soviets "invited" Kissinger to discuss the crisis, and he arrived in Moscow on 19 October. Although the situation was seen as quite serious by the superpowers, the "context within which the crisis erupted in 1973 was also much more benign than in 1962. Important interests were at stake, but both sides thought that the risk of war was low. Each superpower was convinced of the other's commitment to avoid war." (Lebow and Stein 1994, p.229) Thus, both sides very quickly agreed to the conditions of a cease-fire and communicated this to their client states. Egypt quickly accepted the conditions, but Israel was not happy with the limitations imposed upon them by the US-USSR-negotiated agreement. Ultimately, however, Israel could not resist US pressure. Prime Minister Meir "gave US pressure as the reason for Israel's acceptance of the cease-fire call." (Brecher 1980, p227) The cease-fire went into effect at 6:52 pm (local time) on 22 October.

The cease-fire was a major accomplishment, but it was incomplete and "Kissinger's failure to work out with the Soviets a method for supervising the cease-fire proved to be his gravest diplomatic mistake of the crisis, an omission that resulted two days later in a nasty US-Soviet confrontation." (Spiegel 1985, p.262) At the time the cease-fire went into effect Israel had very nearly surrounded and cut off Egypt's Third Army in the Sinai desert, and it wanted to complete the encirclement and compel the surrender of the Egyptian army. Subsequently, each side accused the other of violating the cease-fire, and Israel took advantage of the opportunity and completed the encirclement of the Third

Army. This triggered a crisis for the Soviet Union as it could not allow its client state to lose an entire army after the cease-fire agreement. The Soviets immediately began communicating with the US to compel the Israelis to stop their military operations, culminating in the letter delivered to Kissinger[69] at approximately 9:30 pm on 24 October, which stated that if the US could not act jointly with the USSR to stop Israeli military action, the Soviet Union "should be faced with the necessity urgently to consider the question of taking appropriate steps unilaterally. We cannot allow arbitrariness on the part of Israel." (Brezhnev 1973)

Although this threat was not as serious as that issued by the Soviets in prior Arab-Israeli crises, this letter led to a decision by the United States to increase its strategic nuclear forces alert posture to DEFCON 3,[70] the highest level it had reached since the Cuban Missile Crisis in 1962. Among the operational changes brought about by this alert, the US recalled 50 to 60 B-52 bombers from Guam, deployed tanker aircraft to dispersed airfields, and deployed the aircraft carrier John F. Kennedy to the Mediterranean (Blechman and Hart 1982, p.140). Perhaps the most dangerous of these actions was the naval buildup in the Mediterranean, which was already dangerously overcrowded with warships. "The most authoritative analysis of the two navies in the crisis concludes that a single misjudgment could have produced a Soviet-American battle in the Mediterranean," with incalculable consequences (Lebow and Stein 1994, p.265).[71]

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[69] Kissinger was de facto US decision-maker during this crisis because President Nixon was extremely distracted by the growing Watergate scandal, which led to Vice President Spiro Agnew's resignation on 10 October and the so-called "Saturday Massacre on 20 October (Quandt 2001).

[70] DEFCON stands for Defense Condition, and the scale ranges from five to one. DEFCON 5 is the most relaxed posture, while DEFCON 1 indicates the US is in a state of war.

[71] Israelyan claims that the US reply to the Brezhnev's letter of 24 Oct, included statement that US was already pressuring Israel, something not mentioned in any of the US participants memoirs (p.186).

Although the alert increased the possibility of unintentional overt superpower conflict, the evidence seems clear that US decision-makers did not order the alert because they were genuinely concerned about conflict with the USSR, but because the US "had to react," to maintain US political pre-eminence in the Middle East (Spiegel 1985, p.264). This interpretation is strengthened by the fact that the US never considered what would happen if the Soviets had actually deployed troops in spite of the alert (Lebow and Stein 1994, p.256). Thus, the alert "served both to stress the dangers of confrontation and to emphasize the stake which the United States perceived in the situation." (Blechman and Hart 1982, p.146) Kissinger's lack of serious concern over US-USSR conflict was later confirmed as appropriate by scholars who found that the Soviet threat was almost certainly a bluff (Fukuyama 1981, p.588-89; Golan 1990, p.92; Lebow and Stein 1994, p.235; Israelyan 1995, p.173).

At the same time that the US issued the alert, it was continuing to pressure the Israelis to forego the destruction of the Egyptian Third Army. This had always been the US strategy, as Kissinger recognized that the chances for lasting post-war peace would be much greater if Egypt emerged from the conflict with its pride intact, and that a dramatic defeat such as it suffered in 1967 would make peace much harder to achieve (Spiegel 1985, p.248-49; Isaacson 1992, p.515). Thus, the Soviet threat did not significantly alter US policies. There is some dispute in the literature as to the extent to which Kissinger used the Soviet threat to pressure the Israelis. Spiegel noted that Kissinger used the threat and the US alert to get the Israelis to open up the Third Army to a convoy, "he

thereby thwarted a decisive Israeli victory and achieved the military stalemate for which he had worked throughout the war." (p.265; see also Brecher 1980, p.226-227) Lebow and Stein (1994) stated the opposite, saying that Kissinger repeatedly reassured Israel that the US "had no intention of coercing Israel in response to a Soviet threat," and noting that the Israelis confirm that US pressure on Israel came only *after* the crisis with the USSR was over (p.270-2).

Regardless of the extent to which Kissinger used the Soviet threat to press the Israelis, it is clear that US policy did not change as a result of the Soviet threat. A second important question for deterrence theory is how did the US alert affect Soviet policy? While it is impossible to be certain, interviews with former Soviet officials led one authoritative study to conclude that, while Soviet leaders were concerned about war with the US, and nuclear weapons had the general deterrent effect of making them cautious in this crisis, "had Soviet leaders seriously considered a deployment to Egypt, the evidence suggests that the alert would not have deterred them." (Lebow and Stein 1994, p.268) Instead, the alert surprised the Soviets and may have strengthened the hard-liners in the Kremlin. The fact that the Soviets did not respond to the alert also strengthened the hard-line position in the US, with the end result that hard-line policies in both capitals got a boost – it was the beginning of the end of détente (Lebow and Stein 1994, p.288). Overall, it would seem that nuclear weapons did not succeed in preventing the war, nor did they appreciably lower the levels of violence during the conflict or significantly affect the outcome of the crisis.

Of the three other factors (democracy, trade, and state characteristics) found to be important in Chapter 4, democracy seems to have had little effect on dampening levels of violence in this crisis. The unique state characteristics of Israel do seem to have led to a higher level of violence in this crisis. Israel was disinclined to return territory it had captured in the 1967 war for reasons of both security (e.g. the Golan Heights and the Sinai) and ideology (e.g. East Jerusalem and the West Bank). Israel's neighbors found this unacceptable, and when it became apparent to them that diplomacy would not lead to the return of this land, they turned to war. Israel's security concerns also drove its efforts to complete the destruction of Egypt's Third Army, which led to the major superpower confrontation of the crisis. These causes of conflict would likely have caused further wars had not the 1978 Camp David Peace Accord led to the return of the Sinai Desert to Egypt. Israel and Egypt have had peaceful relations since Camp David. Territorial concerns have not been addressed with Syria, and Israel and Syria have continued to battle intermittently, most notably during the 1982 Israeli invasion of Lebanon. Thus, the unique state characteristics of Israel and its geographic position do seem to have led to higher levels of violence in this crisis.

Trade also may have had some impact on levels of violence in this crisis, this time in reducing conflict between the superpowers. Scholars agree that one key goal of the Soviet Union during this crisis was to preserve good relations with the US (e.g. Golan 1990, p.85; Lebow and Stein 1994, p.280; Israelyan 1995, p.17). One of the key reasons was Brezhnev's desire to preserve and increase détente with the US. Interviews with former Soviet officials confirm that the fact that the US and USSR were in a period of

détente made the crisis much less dangerous (Lebow and Stein 1994, p.286-7). A key Soviet desire, leading to détente, was to improve trade between the US and the USSR. Specifically, the Soviets were seeking most-favored nation (MFN) trading status with the United States, and this was "a main economic plank of the Soviet détente platform." (Garthoff 1985, p.396) One year before the October-Yom Kippur War the US and the USSR signed a comprehensive trade agreement, which included MFN status for the USSR. Total trade of $1.5 billion over three years was predicted (ibid. p.307). MFN status for the USSR required US Senate approval, which had not occurred by the time of the war. However, while the crisis was ongoing, Kissinger told Soviet ambassador Dobrynin that "he would continue to push for most-favored-nation status if the Soviets showed restraint in the Middle East crisis." (Isaacson 1992 p.516) Evidence from the Kremlin also strongly supports this. At the height of the crisis, when the Soviets were considering their response to the US DEFCON III alert, Brezhnev advocated no response to the US action because "no matter how complicated the situation might be, our wish is to develop our relations with the United States." (Israelyan 1995, p.183) In addition, as noted above, Israeli dependence upon the US for economic and military assistance enabled the US to secure the cease-fire which prevented the Israeli destruction of the Egyptian Third Army. Thus, trade relations seem to have played a significantly larger role in lowering levels of violence in this crisis than nuclear deterrence, supporting the findings in Chapter 4. I will now turn to the only dyadic nuclear crisis that has occurred outside of a protracted conflict, the 1969 Ussuri River Crisis.

Ussuri River Crisis

From March until October 1969, China and the Soviet Union fought a series of border clashes, the largest of which occurred on 15 March and involved over 800 casualties (MacFarquhar, p.261). Following the initial Chinese attack on 2 March, the Soviet Union moved large numbers of troops to the border, including significant nuclear forces (Haldeman 1978, p.90), and "in June 1969, Soviet bomber fleets were brought from the Western USSR to Siberia and Mongolia to engage in mock attacks against targets made to resemble nuclear facilities in northwestern China." (Dittmer 1992, p.191) Ultimately, the evidence suggests that Soviet threats led the Chinese to agree to return to the negotiating table to resolve the border dispute. The negotiations resumed on 20 October 1969, signaling the end of the crisis. There is no question that nuclear threats played a significant role in this crisis, although it is difficult to be certain of their exact impact, due to the limited information these two totalitarian states have made available. What we know with certainty is that nuclear weapons did not deter either side from attacking the other. We cannot be certain as to the impact of nuclear weapons on the outcome of the crisis, but it seems quite likely that Soviet nuclear threats overpowered the very limited Chinese nuclear deterrence, and led the Chinese to make concessions which ended the crisis.

The Ussuri River Crisis remains a little known conflict, despite the fact that it involved the second largest number of deaths resulting from direct military operations between

nuclear powers in the 17 dyadic nuclear crises to date.[72] One of the central reasons for this is that both protagonists were totalitarian governments which not only lacked a free press, but actively used disinformation both internally and externally. Furthermore, since the crisis occurred primarily in a remote border region, no external observers were able to verify the limited information that was provided. Thirty-five years later, despite the opening up in China and the emergence of a democratic government in Moscow, we know little more than Western observers who wrote about the crisis in the 1970s.

Better known are the conditions leading up to the crisis. The bilateral relationship in the years after the Communist Party took power in Beijing in 1949 was one of Communist brotherhood, and the Soviet Union provided considerable economic and military assistance to the People's Republic of China (PRC). This assistance is most dramatically illustrated by Soviet help in the PRC's nuclear, aviation, and missile programs. For example, the two nations signed a "New Defense Technology Pact" in 1957, in which the Soviet Union agreed to supply "'two bombs': nuclear weapons, and missiles to deliver them." (Dittmer 1992, p.185) In fact, as we shall see below, in 1969 the only methods the PRC had for delivering nuclear weapons had been sold to them by the USSR!

However, by the mid-1960s, relations had taken a decided turn for the worst, perhaps most dramatically illustrated by Kruschev's veiled nuclear threat to the PRC in October 1964 (Wishnick 2001, p.29). The question of why the relationship soured is still subject to contention, but the two basic issues were ideological leadership of the international

[72] The 1999 Kargil Crisis has the highest number of deaths (1108) from direct military operations between nuclear powers.

Communist movement, and border disputes dating from the 1800s when a powerful Russia took advantage of a weak China and used force to take "without compensation, of some 1,000,000 square kilometers of territory." (Tsui 1983, p.34) In addition to the deterioration of the bilateral relationship, both regimes were experiencing domestic turmoil, although the situation in China was considerably worse as the Cultural Revolution took hold in the late 1960s.

Territory as an underlying cause of war is well established (Vaquez 1993, Huth 1996), and aspects of the Sino-Soviet dispute lend support to this hypothesis. Most tellingly, one month before his ouster in October 1964 "Khrushchev issued a veiled nuclear threat in response to Chinese claims about the illegitimacy of the Sino-Soviet border." The border dispute had heated up despite the fact that the two states were comrades in the international communist movement, a situation which had led the USSR to help the PRC develop nuclear weapons (Lewis and Litai 1988). From 1964 onward, there were sporadic border incidents, mainly pushing and shoving between rival border patrols. Thus, territory clearly serves in this case as an underlying cause of the conflict. However it would seem that it was insufficient to provoke the serious clashes that occurred in 1969 (Robinson 1970, p.72).

The most prominent and relevant international event prior to the Ussuri River Crisis was the August 1968 Soviet invasion of Czechoslovakia. This invasion was justified by what came to be called the "Brezhnev Doctrine," defined to mean that once a state became communist, the USSR had the right, as the world communist center, to intervene in its

affairs, to ensure that it stayed communist. Since the PRC-USSR relationship had suffered from a debate over the issue of what form global communism should take, the Brezhnev Doctrine was seen as especially threatening by the PRC (Garthoff 1985, p.200). In August 1968, the PRC reaction was immediate. They called the Soviets "social-imperialists" and Zhou Enlai denounced the Soviet "fascist aggression" in Hanoi in September 1968 (Wishnick 2001, p.32). Other scholars support this (e.g., Wich 1980, p.42), including one who noted that the Soviet actions in Czechoslovakia in August 1968 "had a galvanizing effect on the Chinese." (Gelman 1982, p.28)

Domestic politics, too, may have contributed to the crisis. In the Soviet Union, Khrushchev fell from power just a month after issuing his veiled nuclear threat to the PRC, but Brezhnev did not cement his control over the Soviet Union until after the Ussuri River Crisis had ended. Indeed, one scholar notes that Kosygin's (a leading Brezhnev rival) September 1969 "failure to achieve a breakthrough in relations gave Brezhnev further evidence with which to discredit his most serious rivals for power, and China policy soon became a victim of Kremlin politics." (Wishnick 2001, p.48) However, while the Soviet political situation was in some flux, this does not seem to have been a significant contributor the Ussuri River Crisis itself.

The situation in the PRC, however, was one of much greater turmoil. The Cultural Revolution had gathered steam from mid-1966. By January 1967 the situation had become so unstable that even the (formerly) powerful Foreign Minister, Ch'en I, was forced to deliver a "self-criticism" at a public rally of 10,000 people (MacFarquhar 1991,

p.245). Things continued to worsen, and in the summer of 1967, the PRC recalled all of its foreign ambassadors to Beijing, except the one in Cairo, where they remained for the duration of the Cultural Revolution (ibid). Added to the chaos (and partly a cause) of the Cultural Revolution was a leadership struggle. There was great tension between the People's Liberation Army (PLA) commander and Mao and "there is sufficient Pekinological evidence to give credence to this possibility [namely, that the PLA commander, Lin Piao, thought creating an external military threat would enhance his power in Peking], especially given the subsequent struggle for power leading to Lin's demise in late 1971." (MacFarquhar, p.262) Others also point to the domestic turmoil, but shift the focus to Mao. For Goldstein (2001), writing with the benefit of better information access, "the second explanation for China's aggressive behavior, Mao's need for an external threat, is most convincing." (p.997) Mao could make use of this action within the context of seriously deteriorated Sino-Soviet relations which had been caused by conflict over leadership of international communism and the ongoing border dispute.

Regardless of the reason for the initial Chinese attack, a key question is why Mao felt that he could risk a major confrontation with the USSR at a time when the strategic military balance of power heavily favored the USSR, particularly in nuclear weapons? Soviet nuclear deterrence clearly failed, despite the fact that, at the strategic nuclear level, Soviet superiority was vast and beyond question. In 1969, the USSR possessed approximately 1274 Intercontinental Ballistic Missiles, each armed with one nuclear

warhead.[73] They possessed a further 568 nuclear bombs and 157 long-range bombers capable of carrying them. Thus the Soviet Union could credibly threaten to destroy the PRC with its strategic nuclear forces.

To stand against them at the strategic level, the PRC in 1969 had two TU-16 medium range bombers (ironically, the USSR had given the PRC these bombers years earlier), which were capable of carrying the PRC's recently tested thermonuclear bomb (Wong-Fraser 1981, p.246). The PRC may also have achieved initial operational capability of their DF-2 missile, with a range of 1250 kilometers carrying a 12 kiloton nuclear warhead (Lewis & Di 1992, p.15). However, the PRC's ability to deliver nuclear weapons was highly questionable. With a range of 3100 miles, their two TU-16 bombers were not capable of threatening the USSR beyond its Far East cities, and their ability to penetrate sophisticated Soviet air defenses was highly questionable. They may or may not have had an operational DF-2 missile, but if they did its limited range also meant that the most the PRC could threaten was Vladivostok. Moreover, the DF-2, was not a tactically mobile missile, and was vulnerable to a pre-emptive strike with its 6-10 hour fueling time (http://www.fas.org/nuke/guide/china/theater/df-2.htm). Thus, at the time the PRC decided to initiate a violent border confrontation, the Soviet Union had an unbeatable strategic advantage; nuclear deterrence failed to deter serious clashes between the two states (Kugler 1984, p.480), and the subsequent risk of escalation.

[73] Unless otherwise noted, the following information on weapons numbers is from the Federation of Atomic Scientists website at http://www.fas.org/nuke/index.html, and the National Resource Defense Councils website at http://www.nrdc.org/nuclear/default.asp

At the theater conventional level, the odds were not as bad for the PRC. Although various authors give slightly different accounts of conventional force levels, they all agree that the PRC had an advantage in manpower, while the USSR had the advantage in technology and tactics. Goldstein (2001) states that the USSR had 22 divisions in the Soviet Far East, while the PRC had 47 divisions[74] along the Sino-Soviet border (p.993). Although Soviets were outnumbered by more than 2-1, this did not mean that they were vulnerable. Having lost 577,000 men by June 1951 to the tactical and technological superiority of the United States Army in Korea (Lewis and Xue 1988, p.8), the PRC was not ignorant of the relative weakness of its People's War Strategy. Moreover, since signing a defense agreement with Mongolia in January 1966, the Soviets had moved 100,000 troops along the Sino-Mongolian frontier which were "ideally suited for an attack on the Chinese capital, only a few hundred kilometers away." (Dittmer 1992, p.188) Thus, in March 1969 it would seem the PRC did not possess any significant advantage in terms of conventional weapons, and was totally inferior in strategic nuclear weapons.

Once the PRC initiated the clashes, the Soviet Union reacted vigorously, as shown by its retaliatory attack on 15 March which likely resulted in over 800 Chinese casualties, almost 30 times the number the Soviets suffered on 2 March (Robinson 1970, p.33-40). Despite this response, armed clashes continued throughout the summer, and the "net result, for many in Moscow, was to confirm the impression of Chinese irrationality and unpredictability that had been fed by Chinese conduct over the preceding three years." (Gelman 1982, p.32-3) Although the Soviets had used nuclear threats immediately after

[74] Goldstein (2001) noted that a Chinese division is typically larger by 2,000-4,000 men (p.992, note 39)

the 2 March attack (Tsui 1983, p.45; (Scalapino 1986, p.26), the threats became much more serious in August. In August 1969, the US State Department put the odds that the Soviets would use nuclear weapons at "substantially less than 50-50." (Burr 2001, p.89) However, a bit later in the month, CIA Director Richard Helms said the assessment had changed, and was now "slightly under 50 percent, compared with ten percent a month earlier." (ibid. p.90) The Soviets were even reputed to have approached the US that month to test US sentiments regarding a possible Soviet nuclear attack on China (Shevchenko 1985, p.166).[75]

The increased Soviet pressure, particularly its nuclear blackmail, seems to have had the desired affect. One scholar noted that "the repeated intimations of the nuclear strike threat appear to have impressed the Chinese somewhat more that the more explicit Soviet trumpeting about past large scale invasions of China, although this may also have had some effect." (Gelman 1982, p.42) Dittmer (1992) claims that Zbigniew Brzezinski (who would become National Security Advisor in the Carter Administration) told an audience at Harvard in September 1972 that Kosygin had issued a nuclear threat at a meeting with his Chinese counterparts 11 September 1969 in Beijing (note 33, p.332-3). Ultimately, "the Chinese appeared to back down on October 7 when they denied they were demanding the return of territories seized by Russia in the previous century and agreed to reopen border negotiations that they had broken off five years earlier." (Betts 1987, p.81; see also Garthoff 1985, p.211; Wishnick 2001, p.36, 219; Morgan 2003,

[75] Interestingly, Shevchenko (a high ranking Soviet official who defected to the US in April 1978) states "I know of only one instance when a nuclear strike was even discussed – in 1969 during the time of the Soviet-Chinese border incidents, when the Chinese nuclear capability was no real threat." (p.286) This supports the conclusions of the earlier case studies of dyadic nuclear crises involving the Soviet Union.

p.151) Thus, this seems to be a case of nuclear compellence, rather than nuclear deterrence.

While Soviet nuclear threats seemed to be effective in compelling Chinese concessions on the border dispute, it is also true that the Soviets did not escalate the level of violence beyond border clashes (although, as noted above, the 15 March clash alone resulted in deaths approaching the consensus definition of war – 1,000 battle deaths). Were they deterred from escalation by the limited Chinese nuclear capability? The answer seems to be no. The most direct evidence comes from a former high-ranking Soviet official who stated: "Of the factors that dissuaded the Politburo from approving an attack upon China, *the most important one was undoubtedly the warning that the United States would rebuff it vigorously*." (Shevchenko 1985, p.166, emphasis added) Although some scholars question the accuracy of Shevchenko's claims, Wishnick (2001) notes that recently declassified documents show the consistency of Shevchenko's views (note 139, p.219). Burr (2001) agrees that US pressure staved off a large scale USSR attack on the PRC after March 1969, noting that there was no mention of USSR fear of the PRC (p.91-2). It would seem the PRC was also counting more heavily on the US than its own military capability, as Burr also noted that senior PLA marshals argued that "any Soviet decision for war, the marshals believed, largely depended on the 'attitude of the US imperialists, which is far from satisfactory [to Moscow] so far.'" (p.95) The PRC was well aware of the inadequacy and vulnerability of its nuclear forces, which meant that "after months of frustration [following the March 1969 attacks], the Soviet resort to strategic intimidation appears to have had some impact," because the Chinese "were acutely vulnerable to a

preemptive strike," against their just-deployed operational missiles (Dittmer 1992, p.192). The view that Chinese nuclear forces in 1969 were inadequate is reinforced by the fact that even in 1980, China's nuclear missile forces were not effectively mobile and lacked a second strike capability because they suffered poor navigation systems and were unreliable (Wong-Fraser 1981, p.249). Thus, mere possession of nuclear weapons did not seem to pose a sufficient retaliatory threat to protect the PRC from a Soviet attack.

Overall, then, the Ussuri River Crisis does not seem to provide strong support for nuclear deterrence theory. The PRC was not deterred from attacking the nuclear armed-Soviet Union, and the Soviet Union was apparently not deterred from serious retaliation by PRC nuclear capabilities. None of the hypotheses which predict that dyadic nuclear crises will be less violent (H6 - H11, see Appendix B) are supported by this case. Chapter 4 identified three other factors which are important in dyadic nuclear crises; democracy, trade, and individual state characteristics. Democracy is clearly not relevant in this case, as both the Soviet Union and China were totalitarian states in 1969. Trade is also not relevant, as interstate trade between the two states was virtually non-existent in 1969. Interestingly, the rising tensions between the two states seems to have been a major cause of declining trade in the years before 1969. After hitting $2.1 billion in 1959, trade declined precipitously, recovering to only $290 million in 1972 (Garthoff 1985, p.212). While neither trade, democracy, nor nuclear weapons seemed to decrease the level of violence in the 1969 crisis significantly, as noted above, the individual state characteristics of China seem to have increased the level of violence. Chapter 4 found that China was 271% more likely to experience higher levels of violence in crises, and

the Ussuri River Crisis strongly suggests this is due to internal characteristics of the regime in Beijing, which was particularly unstable in 1969, and its international isolation. Although aimed primarily to strengthen US security vis-à-vis the Soviet Union during the Cold War, US efforts to improve relations with the PRC, culminating in Nixon's visit to China in February 1972, seem to have ameliorated the conditions which heightened the violence of the PRC in crises. Subsequent international efforts to promote economic and political liberalization in China have also had a positive effect. Prior to 1970, China had nine serious crises in 20 years, whereas after 1970 it had only five serious crises in 31 years. Thus, this brief examination of the Ussuri River Crisis indicates that the aggregate findings in Chapter 4 are clearly supported in this case.

Conclusion

Overall, the five crises examined in this chapter provide minor support to nuclear deterrence theory, but also a great deal of support to other factors as even more important in levels of violence in crises, as well as crises outcomes. None of the five cases provides a clear indication that nuclear deterrence worked as predicted by nuclear optimists, namely that states in a nuclear dyad will not fight major war. In fact, three of the five crises escalated to full-scale war and the other two escalated to serious clashes. Instead, in each case there were a variety of factors at work, some of which seemed significantly more important than nuclear weapons, supporting the quantitative findings presented in Chapter 4. A complete comparative analysis of all 17 cases will be the focus of Chapter 8. First however, Chapter 7 will examine five dyadic nuclear crises

which took place outside the Cold War between the world's newest nuclear powers: India and Pakistan.

Chapter 7

India-Pakistan Crises

Chapter 7 will examine the five India-Pakistan dyadic nuclear crises, which are listed in Table 7.1 below. The India-Pakistan rivalry provides a very interesting contrast to the

CRISIS	YEAR
Punjab War Scare II	1986-87
Kashmir III	1990
India-Pakistan Nuclear Tests	1998
Kargil	1999
Indian Parliament Attack	2001-02

Table 7.1
India-Pakistan Dyadic Nuclear Crises

Cold War for examining the question of nuclear deterrence because "elements are present in this dyad that were largely absent between other nuclear-armed antagonists and that make escalation to war more probable. Among those factors are the presence of a contiguous border between India and Pakistan, a history of multiple wars, and an ongoing territorial dispute." (Geller 2003, p.37) In addition to these factors, India and Pakistan have routinely traded artillery and small arms fire across the Line of Control (LoC) in Kashmir for the past 15 years (Riedel 2002, p.2).

In many ways, this rivalry could be seen as a critical case for nuclear proliferation optimists such as Waltz and Mearsheimer, because many of the other factors which may have driven the peace in the Cold War are not present. For example, India and Pakistan did not participate in either World War I or World War II, thus they did not suffer such horrific losses that would change their attitude toward war as Mueller (1989) has argued.

Moreover, at the sub-system level, there is no balance of power in the bipolar relationship between India and Pakistan, which some scholars cite as a stabilizing factor (Walt 1979; Mearsheimer 1990). Nor is there hegemony, which other scholars have identified as a stabilizing factor in international relations (Organski and Kugler 1980, Kugler and Lemke 2000). Interdependence is another path to peace identified by scholars of international relations (Rosecrance 1986 and 1999, O'Neal et al 1996), and there is virtually no trade between India and Pakistan. Moreover, neither state is significantly tied into the global economy, although that is changing in India. Thus, of all the factors identified as possible causes for the "long peace" between the USSR-led East and the US-led West during the Cold War (Gaddis 1991), only one is present in the India-Pakistan rivalry: nuclear weapons.

As with Chapters 5 and 6, each crisis summary will begin with a brief description of the crisis setting and background, followed by a detailed discussion of the role nuclear weapons and nuclear deterrence played in the crisis. Finally, each crisis summary will assess the role that democracy, trade, and individual state characteristics may have played in levels of violence and crisis outcomes. This will facilitate a qualitative comparison to add to the quantitative comparison in Chapter 4.

Punjab War Scare II

India planned and partially conducted a series of large-scale military exercises in late 1986 and early 1987 called "Exercise Brasstacks." Due to the size and location of the

exercise, in Rajasthan, an Indian state contiguous to Pakistan, the latter became alarmed that they might be designed as a prelude to an Indian attack to dismember Pakistan, similar to what had happened in the 1971 Bangladesh War. Pakistan's defensive response in turn alarmed India, provoking a counter-response. By 23 January 1987, tensions were extremely high and war seemed a very real possibility. However, at that point diplomatic talks accelerated and led to a gradual reduction of tensions, culminating in the phased mutual withdrawal of troops from threatening positions, ending the crisis on 19 February 1987. Although it seems quite certain that both states had nuclear weapons capability, this capability seems to have played no role in the crisis or its outcomes.

Although the size and scope of "Brasstacks" would likely have been sufficient to provoke alarm in Islamabad in its own right, several background factors made it even more alarming. First, domestic unrest in both India and Pakistan exacerbated its threatening nature. This problem, a constant in both counties, was particularly intense among minority ethnic groups on both sides of the Indo-Pakistani border at this time, with each state blaming the other for inciting violence among disaffected groups. Thus, "the violence in the Punjab [homeland of India's Sikhs] provided the immediate political backdrop for the Brasstacks exercises." (Hagerty 1998, p.95) Against this background of violence came the elevation of Indian General Sundarji to India's highest military post, Chief of Army Staff.[76] It seems clear that General Sundarji convinced Prime Minister

[76] Interestingly, "Sundarji was the military's most vocal proponent of nuclear weapons." (Perkovich 1999, p.277)

Rajiv Gandhi, a relatively inexperienced political leader,[77] to hold a series of bold military exercises. It is unclear whether Rajiv understood the implications of these exercises

which were "comparable to the most massive NATO and Warsaw Pact exercises," (Bajpai et al. 1995, p.30) and situated perfectly to be converted into an actual attack on Pakistan.

As one specialist on South Asia noted, "whether General Sundarji's Operation Brasstacks maneuvers in 1987 constituted a bold exercise or the beginning of a preemptive attack on Pakistan was not clear at the time," but it was known that "few in the Indian Army are as bold as Sundarji..." (Tanham 1996, pp.84-85; see also Sidhu 2000, p.136; Cohen 2001, p.170) We will probably never know if "Brasstacks" was intended to become a real military attack, but it is odd that Indian communications with Pakistan were deliberately kept to a minimum (Hagerty 1998, p.99), suggesting that, at the minimum, "although not an 'operation,' Brasstacks was an open-ended attempt to probe Pakistan's defenses as well as the response from its allies, especially the United States and China." (Cohen 2001, p.147) If that was indeed the objective, it succeeded brilliantly.

Since Pakistan could not hope to stop a combined Indian attack from the Rajasthani desert, it responded by moving military forces close to the Indian border in an area of

[77] Rajiv Gandhi, grandson of Nehrul, Prime Minister of India from 1947-1964, had been an airline pilot drafted to lead the country when his mother, Indira Gandhi, Prime Minister from 1966-1984, and his younger brother were assassinated. For an excellent review of Rajiv Gandhi's ill-fated rule see Kohli (1990) Chapter 12.

Indian weakness closer to Kashmir, which in turn provoked fear in India of a Pakistani attack. Overall, as the crisis unfolded and each side moved forces to counter the other, "the two sides became enmeshed in a competitive dynamic dominated by the logic of the security dilemma." (Hagerty 1998, p.110) The crisis reached its peak on 23 January 1987 following an airlift of 15,000 Indian troops to the border. In a meeting with General Sundarji and senior bureaucrats after the airlift of troops on 22 January Rajiv contemplated attacking Pakistan first, probably at the urging of General Sundarji. One expert observed that:

> "Sundarji argued that India's cities could be protected from a Pakistani counterattack (perhaps a nuclear one), but, upon being probed, could not say how. One important advisor from the Ministry of Defense argued eloquently that 'India and Pakistan have already fought their last war, there is too much to lose in contemplating another one.' This view ultimately prevailed." (Perkovich 1999, p.280)

Despite the possibility of General Sundaji's adventurism, it seems Pakistani President Zia was calm throughout the crisis, and did not expect a war (Bajpai et al. 1995, pp.59-60). The United States too, thought the danger derived more from misperception and miscalculation, and US assurances to both sides may have helped diffuse the crisis (ibid. pp.81-82). By 24 January India agreed to open negotiations, "stating categorically that it had no intention of invading its neighbor," thus easing tensions (Hagerty 1998, p.101). By 19 February, with the first troop withdrawals completed, the crisis was over for both countries.

There are three main inter-related questions regarding the role of nuclear weapons in this crisis. The first question is the extent of Pakistan's nuclear capability. The second is the extent to which India was aware of this capability. The third is how it affected Indian

policy during the crisis. Regarding the first question, the evidence seems to support the conclusion that Pakistan had a nuclear weapons capability by the time of this crisis, as noted by one leading expert on nuclear weapons in South Asia: "In fact, by this time [Jan 1987] Pakistan did have the necessary components to rapidly assemble a very small number of nuclear weapons for aircraft delivery against India, although these components were kept physically and bureaucratically separated under the overall control of Zia." (Perkovich 1999, p.281)

However, although Pakistan seems to have had a nuclear weapons capability in 1987, the weight of evidence suggests that Indian officials did not believe Pakistan had this capability. For example, a foremost specialist on nuclear crises in South Asia stated that "a senior Indian decision-maker confirms that the threat of Pakistan using nuclear weapons in a conflict was never a subject of discussion in Indian leadership circles." (Hagerty 1998, p.113) Hagerty's assertion is backed up by Tellis (2001) who noted that most Indian scientists did not believe Pakistan had a nuclear capability in 1987 (p.191). The fact that Indian scientists appear to have been wrong suggests that it is indeed fortunate that war was averted for other reasons.

In addition to the skepticism of Indian scientists, Pakistan had difficulty communicating its nuclear capability. Any overt declaration would trigger international sanctions, particularly from the United States which was trying very hard to ignore developments in the Pakistani nuclear weapons program so that it could continue to work with Pakistan to support the Mujahadeen fighting the Soviet Union in Afghanistan (Hersh 1993, p.60).

There is evidence that a nuclear threat was officially communicated by Pakistan's Minister of State for Foreign Affairs, Zain Noorani, to the Indian High Commissioner Ambassador in Islamabad, SK Singh (Executive Summary of the Kargil Review Committee Report, Part III, the Nuclear Factor; also cited by Jones 2002, p.304 note 73), but it seems that this warning had no impact. As noted above, Indian scientists did not believe Pakistan was yet capable of making nuclear weapons, so if this warning was passed along, Indian leaders seem to have dismissed it as a bluff.[78]

Moreover, an interview between Pakistan's best-known nuclear scientist, A.Q. Khan, and an Indian journalist on 28 January 1987 may have been a clumsy attempt at signaling. Khan told the journalist that Pakistan had nuclear weapons and would use them if threatened. S. Khan (2002) claimed that the nuclear threat from the interview prevented "Brasstacks" from turning into war, noting that "no other explanation adequately accounts for the non-war situation in this crisis."(pp.159-160) However, most other observers have noted that the crisis was already over by the time of the 28 January interview, which was, in any case, not published until March 1987, well after the crisis had ended (Bajpai et al. 1995, pp.39-40, p.106; Hagerty 1998, p.112; Perkovich 1999, p.280). S. Khan's claim is weakened by the fact that she noted no evidence that India knew of the January interview before it was published in March, and the fact that she never accounts or describes the cause of the delay in publication. Thus, it would seem that this crisis provides no support for H6 and that the lack of violence was caused by other factors.

[78] Indeed, Indian skepticism of Pakistani technological capabilities is so strong that even after the May 1998 tests many Indians continued to believe that Pakistan was not capable of this feat (Tellis 2001, pp.40-

Democracy may have played some role, as India's democratically-elected Rajiv Gandhi seems to have over-ruled the advice of his senior military commander and decided against attacking Pakistan in January 1987. The analysis presented in Chapter 4 indicates that military regimes are significantly more likely to experience higher levels of violence in a crisis and the evidence in this case supports this finding. Thus, there is some direct support for H2.

At independence in 1947, India and Pakistan had very high levels of bilateral trade. However, the violence of Partition and mutual suspicion meant that bilateral trade declined dramatically thereafter. By 1992, bilateral trade constituted less than two percent of their total trade (Sridharan 2000, p.91). Moreover, their import-substitution economies were largely internally focused, resulting in relatively low levels of interstate trade. Thus, H3 is supported in this case.

Finally, as with several of the Arab-Israeli crises, the United States played a role in preventing violence in this crisis. As noted above, the US provided assurances to both countries of the benign intent of the other. Additionally, there is some evidence to suggest that the crisis may have been defused by phone calls from President Reagan to Gandhi and Zia (Bajpai et al. 1995, p.42; Chari 2003, p.16). The US has long been concerned that conflict in South Asia could result in a nuclear exchange, and this seems to have prompted it to pressure both sides to reduce tensions during this crisis, as we will see in later India-Pakistan crises.

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Ultimately, the absence of violence in the Punjab War Scare II crisis is likely due to insufficient reasons for war. Although both sides were in conflict on a variety of issues, "no political dispute was deemed so intractable that either side viewed war as the best possible solution."[79] (Hagerty 1998, p.115) Thus, this is a marginal dyadic nuclear crisis. Critics may even dispute whether Pakistan (or even India) had operational nuclear weapons at the time. Taking this case out of the aggregate analysis would only strengthen the general finding that nuclear weapons do not preclude war, since in this crisis there was no violence.

Kashmir III

The 1990 crisis over Kashmir was, by one account, the "near nuclear war in South Asia [that] has remained an unknown event – a crisis that wasn't a crisis – with no lessons learned." (Hersh 1993, p.69) However, some scholars have severely criticized Hersh for exaggerating the threat of nuclear war in this crisis (e.g.: Krepon and Faruqee 1994; Hagerty 1998). Regardless of the dispute on the threat of nuclear war, it is beyond dispute that nuclear weapons played an important role in the development of this crisis and its outcome.

[79] Although the source of three wars between India and Pakistan, in 1987 Kashmir was relatively quiet.

The origins of this crisis lie in the creation of India and Pakistan from the British colony of India.[80] At that time Jammu/Kashmir (JK), as a princely state in the subcontinent, had the option of joining India or Pakistan. With its Muslim majority population it was expected that JK would join Pakistan but, like several other princely states, JK was interested in independence. Tribesman from Pakistan's North West Frontier Province (NWFP), supported by Pakistani officials, launched an attack in order to bring JK into Pakistan. As they rapidly advanced on the capital of Srinagar the leader of JK, Maharaja Hari Singh, feeling he had no other options, turned to India for help (Brecher 1953, pp.36-37). India accepted on condition that JK join the Indian Union, and Kashmir has been an issue of contention between the two countries ever since. Most notably, it was the source of two of the three wars between India and Pakistan (and would be the source of another war in 1999 and another major crisis in 2001-02, to be discussed below).

Kashmir had been largely quiet from 1971 until 1989. However, the interaction of "global, regional, and domestic developments made South Asia extremely unstable in 1990." (Hagerty 1998, p.136) Of central importance were the frustrated hopes of the Kashmiri people, which led to a great rise in violence after a corrupt election conducted in April 1987 "effectively closed the last possible venue for the expression of legitimate dissent in Kashmir." (Ganguly 1997, pp.98-99; see also Perkovich 1999, p.306; Cohen 2001, pp.216-17) Added to this was Pakistani support for the anti-India insurgents in Kashmir. As noted by a former US Ambassador to New Delhi, William Clark, the

[80] An excellent account of the origins of the conflict over Kashmir and the first India-Pakistan War is The Struggle for Kashmir (Brecher 1953).

Soviet departure in defeat from Afghanistan in 1989 emboldened the Pakistani military, so that they thought they could repeat in Kashmir what had happened in Afghanistan (Krepon and Faruqee 1994, pp.6-7). Thus they began providing abundant arms and training for the anti-Indian militants, (Ganguly 1997, p.16), exacerbating the violence.[81]

Due to the worsening security situation, in January 1990 the central government in New Delhi appointed a tough new minister, Jagmohan, to administer JK. His hard-line policies resulted in violent confrontations between police and demonstrators, culminating in a blood-bath on 13 January 1990 when Indian police opened fire and killed 50 pro-independence demonstrators in the Vale of Kashmir (Brecher and Wilkendfeld 2000, CD-Rom). Pakistan expressed support for the demonstrators the next day, triggering a crisis for India. India's (verbal) response triggered a crisis for Pakistan the next day. The political rhetoric on both sides grew quite hawkish, exacerbated by weak governments in New Delhi and Islamabad. William Clark, then-US Ambassador to India, noted that the friction between India and Pakistan over Kashmir escalated quite rapidly in 1990, "aided by the advent of television and tapes made for television." (Krepon and Faruqee 1994, p.3)

By April 1990, both sides had mobilized significant numbers of troops and reinforced their border defenses. As in the Punjab War Scare II three years earlier, military moves that were defensive in nature became threatening to the other side, resulting in a classic

[81] This continues to be a source of instability to this day, leading one long-time scholar of South Asia to note that, "cynically, it could be said that Pakistan is willing to fight India to the last Kashmiri." (Cohen 2001, p.226)

security dilemma. In addition, India was incensed by Pakistani support for the Kashmiri militants, especially training camps in Pakistan-occupied Kashmir. Apparently India began considering a pre-emptive strike to solve the Kashmir problem once and for all (Coll 1990, p.A25). Regardless of India's true intentions, Pakistan concluded that an Indian attack was a real possibility. General Beg, Commander in Chief of the Pakistani Army and, at that time, first among equals in Pakistan's ruling troika, convened a meeting on 11 April 1990, under the cloud of a possible Indian attack, to discuss Pakistan's options (Hagerty 1998, p.147). It may well be at this time that intelligence, "described as a hundred percent reliable – perhaps an NSA intercept – reached Washington with the ominous news that General Beg had authorized the technicians at Kahuta to put together nuclear weapons." (Hersh 1993, p.64) Although Hersh seems to have erred on the name of the nuclear facility (see Hagerty 1998, pp.147-60), reliable sources confirm that this message intercept was real (Perkovich 1999, p.308).

It was at this point that the United States became heavily involved in the crisis. With senior US intelligence officers alarmed at the potential for nuclear war (Hersh 1993, p.56; Krepon and Faruqee 1994, p.v; Hagerty 1998, p.156), President George Bush ordered his Deputy National Security Advisor, Robert Gates, to fly from Moscow to Islamabad and New Delhi to try and defuse tensions. Gates arrived in Islamabad and briefed Pakistani leaders on 20 May, and flew to New Delhi to brief Indian leaders the next day. In Islamabad, Gates briefed Pakistani leaders that the US had war-gamed every possible angle, and there was no way Pakistan could win. This seemed to surprise

Pakistani President Ghulam Ishaq Khan, who may have been misled by the Army Chief, General Beg, on how a war would turn out (Hersh 1993, p.67).

In New Delhi, Gates pressed Indian leaders to take steps to reduce tensions and also passed on an assurance he had received in Islamabad that Pakistan would take steps to close down the terrorist training camps. India responded positively, and allowed US military attachés to visit Indian troops near the border to confirm they were in defensive positions only (Hagerty 1998, pp.143-44). This information was passed to Pakistan, "and over the next few days both armies moved their troops away from the borders and both foreign ministries opened discussions on confidence-building measures. By the end of June, the crisis was over." (Hersh 1993, p.68) Most scholars agree that the "Gates Mission" deserves significant credit for averting war (Haggerty 1998, p.161; Brecher and Wilkenfeld 2000, CD-Rom; Chari 2003, p.3).[82] Since the Gates Mission was clearly motivated by fear of nuclear war, this would indicate that mutual nuclear weapons possession resulted in lower levels of violence in this crisis, although through third-party mediation rather than through classic deterrence.

It is important to note that this concern was not shared by all governments involved; rather, "the sense of alarm over the crisis was far greater in Washington than in Islamabad, and it was greater in Islamabad than in Delhi." (Krepon and Faruqee 1994, p.vi) Indeed, it is uncertain whether India believed that Pakistan even had deliverable

[82] Ganguly (1997) makes almost no mention of the US role, citing a meeting between India's and Pakistan's Foreign Ministers in late April as key to defusing the crisis (pp.94-95). However, the timing of observable steps to reduce tensions more closely fits the hypothesis that the Gates Mission played the crucial role in defusing the crisis (Chari 2003, p.17).

nuclear weapons. Moreover, although the US was aware of Pakistani nuclear preparations, India was not (Perkovich 1999, p.310). Thus, the US Military Attaché to New Delhi, Colonel Sandrock, later noted that "among those with whom I spoke – and I spoke with some fairly senior people – there was no indication whatsoever that they considered a potential nuclear use by Pakistan in the 1990 crisis, nor did they consider that if we go to war, there is that potential." (Krepon and Faruqee 1994, p.41) Finally, there were no indications that India was preparing for a possible Pakistan nuclear attack (Joshi 1999, p.315) so that, "from India's perspective nuclear weapons had no role to play in this crisis." (Chari 2003, p.3)

Although the scholars mentioned above say that India paid little or no attention to Pakistani nuclear capability, others, especially in Pakistan, dispute this. As one observer noted:

> "a widely held Pakistani conviction is that India was actually deterred from attacking Pakistan in the spring of 1990 during a flare-up in Kashmir by the fear that Pakistan might use the bomb against it. '[Former US National Security aide] Robert Gates told the Indians that we were mad enough to use the bomb and they believed him,' says hawkish defense writer Mushahid Hussain." (Smith 1992, p.25)

Pakistani leaders at the time concur with this assessment. In a 1992 interview, General Beg said, "I can assure you that if there were no such fear [of nuclear weapons], we would probably have gone to war in 1990." (Perkovich 1999, p.312) The main reason for these divergent views is likely that each side has strategic reasons for preferring one or the other interpretation. India did not want a perception to grow that it was deterred

from taking action, as this would encourage Pakistani adventurism in Kashmir. On the other hand, Pakistan would very much like the perception to grow (and to believe themselves) that India was deterred by Pakistani nuclear capability, as this would strengthen their hand in the future by offsetting India's conventional military superiority. As will be shown in the examination of the 1999 Kargil Crisis below, this is exactly the lesson that Pakistan took away from the 1990 Kashmir Crisis. Overall, despite Indian denials, it seems fair to say that that presence of nuclear weapons did lower the level of violence in this crisis, supporting H6. The problem for nuclear optimists is that this effect came through third-party (US) mediation rather than mutual recognition of the dangers of nuclear war. Hersh states that nuclear adversaries themselves seemed "willing to run any risk – including nuclear war – to avoid a disastrous military, and thus political, defeat in Kashmir." (pp.63-64) While Hersh may have exaggerated the threat of war breaking out in the spring of 1990, Ambassador Oakley stated that the evidence suggests that had the crisis not been ameliorated by the fall, "the momentum [for war] would be so strong that it couldn't be stopped." (Bajpai et al. 1994, p.8)

Democracy may have played some role but, if so, in exacerbating rather than ameliorating the level of violence, because both countries had very weak democratic leaders. Democracy, never strong in Pakistan, had only been weakly reestablished. Benazir Bhutto had been elected in 1988 and her "ascent to power was a big step in the restoration of democracy in Pakistan, begun cautiously by President Zia in 1985, and continuing, unsteadily, in the 1990s." (Hagerty 1998, p.135) However, she was the weakest in a troika that actually ran the country, the most powerful of whom was Chief

of Army Staff General Beg, and she was ultimately deposed in August 1990 (ibid., p.136). She had almost no power in security matters, as illustrated by the fact that she was not consulted or informed by Beg or President Ghulam Ishaq Khan on the decision to go nuclear in May 1990 (Smith 1992, p.25; see also Subrahmanyam 1993, p.185). Moreover, because of her weak political position, Bhutto felt she had to take a strong line against India over Kashmir in 1989-90 "because of rising anti-Indian sentiment within Pakistani society." (Ganguly 2001, p.92) Thus, on 13 March Bhutto visited a training camp in Pakistan-occupied Kashmir and promised a 'thousand-year war' to free Kashmir (Perkovich 1999, p.307).

India, too, had a weak government led by Prime Minister Singh and supported, in part, by the Hindu-Nationalist BJP party. The BJP had always advocated a hard-line toward Pakistan and this pushed Singh to make inflammatory declarations, including one in mid-March warning that Pakistan "cannot get away with taking Kashmir without a war." (Hersh 1993, p.64) Thus, the combination of a weak coalition government in India and the need for support from an extremist party meant that democracy in this case did not have the predicted effect of lowering levels of violence, providing no support for H2. Indeed the effect of the democracy in this case was to worsen the situation (Krepon and Faruqee 1994, p.22; Ganguly 2001, p.93; Chari 2003, p.18). Finally, trade levels between the two states was very low (Sridharan 2000, p.65), and neither state had a significant stake in the world economy due to import substitution policies both had been following, providing support for H3.

India-Pakistan Nuclear Tests

On 11 May 1998 India rocked the world with three nuclear tests, following with two more two days later. Although outside experts subsequently disputed the claimed yields of the weapons, no one disputed India's claim to be a nuclear power. After three weeks of intense negotiations and discussions, Pakistan, predictably, followed with its own set of nuclear tests 28 and 30 May. As with the Indian tests, outside experts disputed Pakistani claims about the yields of the tests, but not the fact that Pakistan had become a declared nuclear-weapons state. During this crisis, wild rhetoric flew on both sides which heightened tension along the border, and for a brief moment just before their nuclear tests, senior officials in Pakistan may have believed they were going to be preemptively attacked by the Israeli Air Force (in cooperation with India) in a repeat of Israel's successful raid on Iraq's Osirik nuclear reactor in 1981. However, it quickly became apparent that there would be no such attack, and ultimately the crisis wound down soon after the Pakistani tests. Paradoxically, although nuclear weapon detonations were the direct cause of this crisis, they played no role in its resolution or its failure to escalate into violent conflict.

Although the nuclear blasts in May 1998 "shocked" the world, they really should not have done so. India's decision to become an overt nuclear power had been building for many years, and it was only intense international pressure that had staved off tests in December of 1995 (Nayar and Paul 2003, p.228). Although many experts argued that "opaque" nuclear deterrence was sufficient for India (and Pakistan), the reality was that

India's ambiguous nuclear position had many costs that were becoming more and more intolerable. International efforts to bind India ever more tightly in a web of treaties that would reduce its nuclear options alarmed many in the Indian security community and increased the pressure to test. The Nuclear Non-proliferation Treaty (NPT) had been indefinitely renewed in 1995, as had the Comprehensive Test-Ban Treaty (CTBT) in 1996, both against intense Indian opposition. On the CTBT, India could only muster the support of Bhutan and Libya so the treaty was passed in the UN General Assembly 158-3 (Perkovich 1999, p.384). Beyond these threatening treaties, India's relations with the US were constantly at risk due to its ambiguous nuclear position and US law regarding nuclear proliferation.[83]

Added to this international pressure was internal political instability. Throughout the 1990s India experienced weak coalition governments that found it difficult to resist domestic pressure for India to become a declared nuclear power (Tellis 2001, p.101). This was illustrated by India's position on the indefinite extension of the NPT, as "India faced enormous international pressure to sign the treaty but even greater domestic pressure not to." (Perkovich 1999, p.380) Finally, India desired greater respect in the international community, particularly from the major powers. As was obvious to any observer in 1998, all the permanent members of the UN Security Council (the P-5) were declared nuclear powers, recognized by the NPT. One expert noted that, in an interview with the highly-respected former Indian Prime Minister Gujral,

[83] I saw this first-hand from 1996-1998 while working on Indo-US relations as politico-military officer in the United States Pacific Command. At that time is seemed clear to me that India ought to test its nuclear weapons so the US could openly acknowledge the reality of India's nuclear weapons capability and move on.

> "I had just asked: 'What did testing nuclear weapons accomplish for India?' The answer, Gujral explained, was basic and profound. 'The world gives respect to countries with nuclear weapons. Do you think it is an accident that the five permanent members of the Security Council have nuclear weapons?' Gujral insisted that India would never use nuclear weapons offensively, or in a first-strike. He did not really think of them as weapons. Rather, nuclear weapon capability manifested India's world-class greatness. Nuclear weapons marked India's arrival as a major power." (Perkovich 2003, p.5)

The reasons for India's 1998 tests will likely be debated without resolution (Tellis 2001, p.103). However, one thing is certain: India was not deterred from testing by the presence of Pakistan's ambiguous (at that time) nuclear capability. Thus, on 11 and 13 May India tested five nuclear devices, triggering a crisis for Pakistan. The tests included a hydrogen bomb, which was likely a failure, and of an atomic bomb using non-weapons-grade plutonium, which was likely a success and greatly increases the amount of plutonium available for making weapons (Perkovich 1999, pp.429-30).

The situation in South Asia grew more tense following the Indian nuclear tests as "a cacophony of rhetoric and unsubstantiated claims emerged from both India and Pakistan in the month of May..." (Tellis 2001, p.3) Some of the most inflammatory rhetoric came from hard-line elements of India's ruling BJP party. For example, one characteristic news report on 25 May 1998 noted that "Home Minister Lal Kishinchand Advani, who has just taken charge of the Jammu and Kashmir cell at the Centre [New Delhi], will launch a policy of 'hot pursuit' to quell the proxy war by Pakistan in the state [Kashmir]. Ministry sources said Advani has finalized a two-pronged strategy to keep up the Bharatiya Janata Party's aggressive position on Kashmir, especially in the wake of the

Pokhran nuclear tests." (Iype 1998, online)

Such ill-conceived and aggressive rhetoric[84] alarmed leaders in Pakistan. They became much more alarmed on 27 May, when Pakistani intelligence alerted the government that that Israeli jets were coming in from India to attack Pakistani nuclear facilities. At Pakistan General Headquarters, "many senior officers seemed convinced that the threat was real." (Jones 2002, pp.187-89) This was made more plausible because of an earlier Pakistani intelligence report immediately after the Indian nuclear tests which claimed that "ten Israeli planes had disappeared from an airfield in Israel." (ibid. p.190; see also Cheema 2000, p.177; Rizvi 2001, p.954-55) By the next day, Islamabad had decided that there was no attack, but the decision test went forward: on 28 May 1998 Pakistan tested several nuclear devices. The immediate reaction in New Delhi was mixed. Some officials attempted to play down Advani's "hot pursuit" rhetoric from 25 May, but other officials made even more alarming statements. Satya Pal Jain, a junior member of Parliament, declared, "we are ready for war."" (Cooper 1998, p.A33)

The war of words quickly died, however, and by 11 June 1998 the crisis had passed.

Neither side had any intention of attacking the other. India's decision to test was focused on international prestige factors, not Pakistan, and Pakistan's response was similarly focused on political factors. Thus, nuclear weapons did not deter this crisis, nor were

[84] Such rhetoric by Indian leaders was no doubt encouraged by doubts of Pakistan technical capability. As discussed above, one expert noted that many Indian observers did not think Pakistan capable of producing nuclear weapons, even after they tested! (Tellis 2001, pp.40-41)

they responsible for lowering levels of violence in the crisis, providing no support for H6.

Democracy played a significant role in this crisis (in May 1998, India (and Pakistan nominally) were democratic), although it seems to have heightened tensions and the potential for violence, rather than have lowered the level of violence. After the tests, polls found that 91% of Indians supported the tests (Perkovich 1999, p.416). The situation was similar in Pakistan, where polls showed that 70% wanted Islamabad to respond to India with tests of their own (Rizvi 2001, p.953). In a meeting with President Clinton before the decision, Pakistani President Sharif said, "I don't think I'll last in office more than two or three days if I don't make a test." (Waller 1998, p.47; see also Perkovich 1999, p.419) Thus, although there was no violence in this crisis, it seems likely that, if there had been, democracy would have been at least partly responsible, contradicting H2.

Trade seems to have played no role in limiting this crisis either, providing mixed support for H3. On the one hand, H3 is supported as India and Pakistan had low levels of bilateral trade; "in 1998, trade with Pakistan was 0.44 percent of India's total trade, and trade with India was two percent of Pakistan's total trade." (Sridharan 2000, p.66) However, another aspect of this crisis undermines support for the logic of H3. By openly testing nuclear weapons and declaring itself a nuclear weapons state, India brought down upon it painful economic sanctions, particularly from the United States. These sanctions subsequently cost India at least $2.5 billion (Perkovich 1999, p.437). One could argue

that New Delhi foresaw that the sanctions would be temporary, as indeed the US sanctions were largely rescinded by late 2000 (Cohen 2001, p.179; see also Synnot 1999, pp.27-34; Wirsing 2003, p.88), but the evidence suggests that the economic costs were not even discussed by decision-makers (Perkovich 1999, p.412). Thus, India's trade with the world did not seem to have any impact on its decision to trigger a crisis, nor did it lower levels of violence once the crisis had been triggered. Similarly, Pakistan, which faced much more dire consequences from economic sanctions than did India, gave little thought to, or willfully ignored, the economic costs of testing (Rizvi 2001, p.955). Ultimately, this marginal dyadic nuclear crisis provides little support for the nuclear optimists while demonstrating that trade and democracy cannot be counted on to reduce levels of violence in every crisis.

Kargil

Less than one year after testing nuclear weapons and declaring themselves nuclear powers,[85] India and Pakistan found themselves embroiled in what would become their fourth interstate war, belying the predictions of nuclear optimists like Waltz that war would not occur between nuclear powers (Hoyt 2003, p.137). In fact, as noted in Chapter 4, this crisis led them to alter their theory of nuclear deterrence to say that nuclear powers may fight only limited wars (Knopf 2002, p.53). The fact that it led to the most significant alteration in nuclear deterrence theory in four decades illustrates the importance of this crisis to scholars in the field of international relations. However, as

[85] The international community does not legally recognize India and Pakistan as nuclear powers.

with the 1990 Kashmir II crisis the role of nuclear weapons in this war is disputed, with Indian accounts significantly downplaying the role of nuclear weapons and Pakistani accounts eagerly claiming that India was deterred from escalating the conflict by Pakistan's nuclear capability. Ultimately, the available information indicates that Kargil was a critical failure of nuclear deterrence in two important ways. First, it was the first crisis between nuclear powers to escalate to war, so the presence of a nuclear dyad failed to deter Pakistan's provocation and India's violent response. Second, it seems quite possible that the violent conflict would have escalated regardless of the risk of nuclear war were it not for US intervention in July 1999.

The roots of the Kargil war are the same as those in the Kashmir II crisis, described above. After 1990 the insurgency in Kashmir continued, and Pakistan continued to provide support and training to the insurgents. By 1999 tens of thousands of Kashmiris had been killed and many more had fled the violence and became refuges in other parts of India. Hopes for peace rose in February 1999 when leaders of the two states met in Lahore to discuss their differences. Unfortunately, even as the so-called "bus diplomacy" was taking place, Pakistani troops were infiltrating into India-held territory near Kargil.[86] This Pakistani duplicity is likely due to the weak control Pakistan's democratically-elected Prime Minister, Nawaz Sharif, had over his generals in Rawalpindi (who would oust him in a coup five months later). Although Sharif publicly supported the army's actions in Kargil, it seems likely he was either totally uninformed of the operation or unaware of its magnitude (Jones O. 2002, p.103). One scholar described the situation in Pakistan at the time of the decision to undertake the Kargil

Operation as "an environment combining some of the anxieties of a garrison under siege with the turmoil of a three-ring circus – not one, in any event, conducive to calm, detached and exhaustive examination of all the factors involved." (Wirsing 2003, p.47) In India, the generals were under control, as always, but the civilian government was in flux. The coalition government led by the BJP had fallen in March, and Prime Minister Vajpayee was leading a caretaker government until new elections were held in August. Vajpayee hoped to win the new elections; and weakness on Kashmir would reduce his party's chances.

Added to this mix of instability and hope was the two South Asian states' new nuclear weapons status, which led to a "stability-instability paradox."[87] This was clearly illustrated by General Musharraf's 12 April 1999 remarks in which he said that there was virtually zero chance of a conventional war between India and Pakistan, but that "proxy war was highly probably given the nuclear balance between them." (Kargil Review Committee Report[88] 1999, p.183) Musharraf's comments clearly illustrate a fatal misconception Pakistan had, rooted in nuclear deterrence theory, that Pakistan's demonstrated nuclear capability meant that India would not respond to Pakistani actions with overt conventional military operations. Even the official Indian government report on the Kargil war, loathe to give any credence to Pakistan's nuclear capability as a deterrent to Indian action, grudgingly admitted in hindsight that "it would appear that Pakistan's decision to launch a major proxy war in Kashmir could have been related to

[86] The first Pakistani casualty of the Kargil operation died of exposure in October (Jones O. 2002, p.53).
[87] This means that "the greater the stability of the 'strategic' balance of terror, the lower the stability of the overall balance at its lower levels of violence." (Snyder 1965, pp.198-99)
[88] Hereafter referred to as KRCR.

its achieving nuclear deterrent capability." (ibid. p.67) Most neutral observers agree that Pakistan believed its nuclear capability vis-à-vis India gave it an umbrella under which it could engage in extremely provocative action in Kashmir (Tellis et al. 2000, pp.30, 49; Cohen 2001, pp.185-86; Hoyt 2003, p.131).

While providing an opportunity for a Pakistani military operation, it does not explain why Pakistan undertook the incursion into Kargil. Many reasons have been forwarded, from a desire to interdict Indian supply lines (Tellis et al 2000, p.38) to a desire to alter the Line of Control (LOC) in Pakistan's favor (KRCR 1999, p.89). At this time there is insufficient information to be certain why Pakistan initiated this operation. However, the evidence strongly suggests that Pakistan's decision was not thoroughly deliberated and seemed not to fit into any pattern of long-term strategy. Indeed, the Pakistani Ambassador to the United States, Meleeha Lodhi, noted that "the Kargil affair has exposed systematic flaws in a decision-making process that is impulsive, chaotic, erratic and overly secretive...." (Wirsing 2003, p.47) As a senior US official noted, ultimately "we will probably never know for sure the exact calculus of decision making in Islamabad. Each of the players has his own reasons for selling a particular version of the process....What is clear is that the civil-military dynamic between Sharif in Islamabad and Musharraf in Rawalpindi was confused and tense." (Reidel 2002, p.3)

What is certain, however, is that Pakistan was not deterred by India's nuclear capability or the threat of escalation to nuclear war, from using regular army troops, albeit thinly disguised, to take control of Indian-held territory. It is also certain that India was not

deterred by Pakistan's nuclear capability or the threat of escalation to nuclear war, from mounting a massive military operation to retake the positions occupied by Pakistani troops. This Indian military operation initially involved some 20-30,000 ground troops sent into battle in Kargil after the intruders were discovered in early May 1999 (Hagerty 2003, p.100). A second major escalation occurred a few weeks later, when the Indian Air Force began launching air strikes against Pakistani positions on the Indian side of the LOC, the first use of Indian airpower against Pakistan since the 1971 war (Synnot 1999, p.36). Some observers note that India took care to limit its use of airpower to the Indian side of the LOC to avoid a Pakistani escalatory response,[89] an assessment which proved accurate. However, India could not be certain that there would not be an escalatory response even with this limitation. During the deliberations on whether to use airpower in Kargil, Indian Air Force Chief, Air Chief Marshal Tipnis, "made the rational point that the use of the air force would change the nature of the military conflict: that if India decided to deploy its air force in Kargil, India should be well prepared to anticipate the expansion of the war beyond Jammu and Kashmir, and respond to expanded Pakistani offensives in other parts of India." (Dixit 2002, p.55) Thus, India decided to escalate to a tactically-critical higher level of force, regardless of the risk of further escalation by Pakistan.

Fortunately the gamble paid off and Pakistan did not escalate the war. However, its army continued to defend the positions in Indian-held in territory in Kashmir that it occupied, exacting a heavy toll of casualties on the Indian Army that strove to evict them.

[89] Hagerty (2003) noted that in late May India promised US Deputy Secretary of State Strobe Talbot that they would not to cross the LOC or escalate if the US would deal firmly with Pakistan (p.101).

Throughout the month of June diplomatic efforts were getting nowhere, and "the situation was deteriorating fast. The two parties were engaged in an intense conflict along the Kargil front and both were mobilizing their forces for larger conflict. Casualties were mounting on both sides. Our [United States] intelligence assessments were pointing toward the danger of full-scale war becoming a real possibility." (Riedel 2002, pp.4-5) Indian mechanized and artillery divisions had moved into forward positions all along the border with Pakistan, and Pakistani military forces were similarly preparing to attack into India's weak spot, the Punjab (Hagerty 2003, p.101; see also Lancaster 1999, p.A1, Chengappa 1999, pp.14-17). Along with preparation for expanded conventional military operations, there is evidence that both states were increasing the alert readiness levels of their nuclear forces (Chari 2001, p.21) while Pakistan's Foreign Secretary issued a nuclear threat indicating that Pakistan "would not hesitate to use any weapon in our arsenal" if India violated Pakistani territory (Wirsing 2003, p.49).

In early July two key events occurred. First, the Indian military succeeded in taking two of the most vulnerable Pakistani-held positions, Tololung and Tiger Hill [90]. While the Indians subsequently claimed that these tactical victories put them in a dominant position, in fact the rest of the Pakistani positions would have been much more difficult, perhaps even impossible, for India to retake due to the terrain. However, the psychological impact on Pakistani Prime Minister Sharif was important because his generals had assured him that all of the Pakistani positions were unassailable (Jones O. 2002, pp.99-100). Prime Minister Sharif arrived in Washington on 4 July 1999 for

intensive talks with US President Bill Clinton. During the talks, Sharif tried to get US support, but Clinton held firm that Pakistan must pull back to the LOC first. Bruce Riedel, the senior South Asia expert on the National Security Council and present for all of the discussion, noted that Sharif "seemed a man possessed with fear of war." (Riedel 2002, p.11) After failing to get US support, Sharif agreed to pull back to the LOC; but he was in poor spirits and not eager to return to Pakistan; "the Prime Minister knew he had done the right thing for Pakistan and the world, but he was not sure his army would see it that way." (ibid. p.14) Thus, skillful and firm US diplomacy seemed to play a more significant role in stopping the escalation of the Kargil war than did nuclear deterrence, as illustrated by the fact that 4 July 1999 marked the end of the crisis (Brecher and Wilkenfeld online). Further evidence is provided by Indian Foreign Secretary at the time, JN Dixit, who later noted that, although there is no "authentic confirmation," the "general impression" is that India would have expanded the conflict within 72 hours if the Clinton talks on 4 July had failed (Dixit 2002, p.70).

Overall, then, the presence of a dyadic nuclear relationship incontrovertibly failed to meet the expectations of nuclear deterrence theory and did not support H6 in three key ways: it failed to deter Pakistan from risking a war by seizing Indian territory; it failed to deter India from responding with a massive military campaign to oust the Pakistani infiltrators; and it failed to deter India from significantly escalating the conflict by introducing the use of airpower. Moreover, although not incontrovertible, it seems likely that nuclear weapons possession by the adversaries would have failed to deter India from

[90] These positions were actually nearly impregnable, but less so than the other positions due to their greater vulnerability to artillery fire.

escalating the conflict further had US mediation failed on 4 July 1999.[91] Given the state of the Kargil War at that time, the main escalatory options available to India were air strikes against targets across the LOC, naval action against Pakistan around the port city of Karachi or opening a second front in Sindh, the southwest of Pakistan, as it had done in the 1965 war. Any of these actions would have had unpredictable consequences and could well have escalated to a nuclear exchange, especially considering that both states had increased the alert readiness of their nuclear arsenals.

In addition to not supporting H6, Kargil also largely undermined H2, as both India and Pakistan were democracies at the time of the crisis, yet they experienced the highest level of violence: war. Even worse for democratic peace advocates, public opinion on both sides during the Kargil war supported hard-line policies which would worsen the conflict. In Pakistan, Prime Minister Sharif had been elected as a hawk on Kashmir (Haqqani 2003, p.47). In India, "there was a general consensus in Indian public opinion, and even among the middle and younger ranks of the officers of the armed forces, that India should cross the Line of Control and hit Pakistani forces at their staging posts and supply depots." (Dixit 2002, p.76) This was especially problematic for India given that Kargil occurred in the middle of an election and "opinion polls indicated that Vajpayee was in a precarious position: The outcome of the election was far from certain and anything that could be interpreted as defeat in Kashmir would clearly reduce his chances

[91] It should be acknowledged that several scholars downplay the significance of the US role (Hagerty 2003; KRCR 1999). However, these same observers credit Indian resolve and conventional military operations with the resolution of the crisis, not nuclear deterrence.

of winning another term."[92] (Jones O. 2002, p.94) This suggests that in some cases, democratic (electoral) pressures increase, rather than decrease, the thrust to war. However, H2 did receive some support due to the fact that Pakistan's decision to initiate the Kargil infiltration seems to have been an army plan on which Prime Minister Sharif had little or no input. This suggests that, had the civilian regime in Pakistan succeeded in subordinated the military, the Kargil war would not have occurred. However, the nature of the conflict in Kashmir, and most notably both India and Pakistan's strong ideational motivations to continue it, means that even with democratic leaders in power Pakistan, as in India, violence will remain an ever-present possibility.

Finally, trade did not seem to have any effect on this conflict. The protagonists had very little bilateral trade (Sridharan 2000, p.66), which supports H3. Moreover, there is little evidence to suggest that either Pakistan or India specifically considered how their interstate trade would be affected by the decisions they made during this crisis. Overall, Kargil provides little support for the central statistical findings in Chapter 4, and has "made it clear to the outside world that there is a high risk of nuclear conflict in the subcontinent, and seemed to belie the assurances of local officials and experts that they invariably would handle nuclear capabilities with responsibility." (Jones R. 2001, p.35) Indeed, Kargil would be followed two years later with another grave crisis, though this one did not escalate to actual warfare.

[92] In addition to undermining support for H2, this supports the hypothesis that India would have escalated the conflict had Pakistan not agreed to pull back after Sharif's meeting with Clinton.

Indian Parliament Attack

With the Kargil war over just a year earlier, India and Pakistan were thrust into another serious dyadic nuclear crisis after a terrorist attack on the Indian Parliament in December 2001. Fortunately, the security guards on duty were alert as the crisis may have become even more dangerous had any senior Indian political leaders been killed. Nevertheless, this attack on the heart of the Indian government led to the most serious military standoff between these two states since the 1971 Bangladesh war: over one million troops went eyeball-to-eyeball along the border. After a little less than a month Islamabad blinked when Pakistani President Musharraf publicly announced that Pakistan would crack down on terrorist groups in Pakistan. Because this crisis occurred so recently, there is relatively little published on it and much remains to be uncovered. However, from the information available it would seem that India was at least partially deterred from launching an immediate attack on Pakistan, similar to that launched by the United States on Afghanistan, by Pakistan's nuclear capability. However, without a concession by Islamabad it is quite possible that India would have launched an attack, regardless of Pakistan's nuclear capability.

The crisis triggered by the terrorist attack on 13 December 2001 was unexpected only in its immediate timing. The end of the Kargil war had brought no resolution to the key issues dividing India and Pakistan, especially Kashmir. Indeed, a close look at Kargil and its aftermath suggests that "it is by no means axiomatic that another conflict between the two countries is either unthinkable or would be terminated without escalating across

the nuclear threshold." (Chari 2003, pp.15-16) Rather than make war unthinkable as nuclear proliferation optimists would predict, war between India and Pakistan remained possible, and perhaps even probable. Former Indian Army Chief V.P. Malik highlighted this when he said, "there is the possibility of limited wars under the nuclear threshold – whether limited in time, space or level of force." (Dhume and Slater 2002, p.20) It would need only a spark to ignite the smoldering embers surrounding Kashmir.

After the attacks on the World Trade Center and the Pentagon on 11 September 2001, US President George W. Bush stated that the United States would make no distinction between terrorist groups, and the states that harbor them. This dramatically changed the context of the conflict over Kashmir; the Indian government, seeing an opportunity to legitimize its own efforts to end cross-border terrorism from Pakistan, quickly endorsed the US policy. Subsequently, it was fortunate that a crisis did not break out on 1 October 2001 when the Pakistan-based Jaish-e-Muhammad (JeM) attacked the legislative assembly in Srinagar killing, 38 people and leading to the resumption of cross-border artillery duels which had been in abeyance for over a year (Hagerty 2003, p.103).

However, JeM's second attack in two months, this time on the Indian Parliament, did ignite a serious dyadic nuclear crisis for India and Pakistan. This led to an unprecedented military buildup along the Indo-Pakistani border (Hoyt 2003, p.133) and brought Indo-Pakistani relations "to perhaps their lowest ebb in three decades." (Blank 2003, p.196) Ultimately, India moved 500,000 troops, including three armored strike corps, to the Pakistani border, and Pakistan responded with 300,000 troops (Hagerty 2003, p.104).

India went so far as to announce publicly the largest military exercise "in 15 years in the Rajasthan desert and the plains of Punjab to evaluate its defense capability in the event of a nuclear attack by Pakistan." (The Hindu, 30 December 2001, online) This mobilization, along with attention from the United States, put enormous pressure on Pakistani President Musharraf to take steps to end cross-border terrorism in India. Thus, on 12 January 2002 he gave a public speech in which he banned extremist groups, including the JeM and LeT, and declared that Pakistan must rid itself of religious extremists and groups that export terrorism (Whitlock and Chandrasekaran 2002, p.A1). Although this speech did not give India everything it demanded, it significantly reduced tensions, and marked the end of this brief crisis.

This case raises two main questions for students of deterrence: what role did nuclear weapons play in India's decision not to launch a retaliatory or preemptive attack against Pakistan; and what role did they play in Musharraf's decision on 12 January 2002 to, partially, back down? Regarding the first question: although there is no definitive information at this time, decision-makers in New Delhi were no doubt aware of the risk of escalation to nuclear war. However, there were many indications from New Delhi that it would not be deterred from attacking Pakistan by the latter's nuclear capability. For example, India's Defense Minister, George Fernandes, publicly stated often that India would not be deterred by Pakistan's nuclear capability. On 3 January 2002 he said that Pakistan would never use its nuclear weapons against India "for the simple reason that they would be inviting a second strike that could be devastating given Pakistan's size." (The Hindu, 4 January 2002, online) He went even further several days later when he

said, "we can take a bomb or two, or more, but when we respond there will be no Pakistan." (Blank 2003, p.185) There is a tendency to dismiss such rhetoric as sheer hyperbole. However, there are multiple indicators that this was more than idle rhetoric. For example, the Indian Chief of the Army Staff, General Vij, "is on record stating that a major commando operation in January 2002 'to hit and seal off major terrorist launching pads in Pakistan occupied Kashmir' was called off at the last moment." (Chari 2003, p.21) Moreover, retired Indian officers and military experts continued to outline Indian thinking about various ways to mount a limited attack into Pakistani territory, while acknowledging "the danger that any such strike could escalate from a limited action to an all-out war." (Dhume and Slater 2002, p.20) Finally, Indian willingness to risk nuclear war was indicated a few months later when another terrorist attack in May 2002 dramatically raised tensions again; "the threat of nuclear exchange [was] taken so seriously by the US government that Washington took the exceptional step of withdrawing the families of diplomatic staff from New Delhi." (Blank 2003, p.184) Thus, it would seem that India's fear of escalation to nuclear war was not a factor which compelled it not to strike militarily at Pakistan after the 13 December attack.

The final piece of evidence that India was not restrained from attacking by Pakistan's nuclear capability is the fact that Musharraf blinked on 12 January 2002. The question is, given a nuclear deterrent force which allowed him to credibly threaten to wreak nuclear destruction on major Indian cities, why did Islamabad back down? Based upon the limited available information, several observers assess that it was a combination of India's threatening military posture and US diplomacy (Bajpai 2002, p.124; Haqqani

2003, pp.49-50). Another observer emphasized only the role of US pressure on Pakistan (Chari 2003, p.25), particularly after the US took the exceptional step of banning JeM and another militant group, Lashkar e-Taiba, on 26 December 2001, a dramatic shift of US policy (Economist, 5 January 2002, p.47)). Either of these reasons indicate that Pakistan lacked confidence in the ability of its nuclear capability to prevent an India attack. On the other hand, it is also true that Musharraf did not make significant concessions on 12 January. Although he banned the two extremist groups and criticized extremism, he refused to hand over 20 suspected terrorists that India had demanded. Moreover, he went on to say, "Kashmir runs in our blood. No Pakistani can afford to sever links with Kashmir. The entire Pakistan and the world know this. We will continue to extend our moral, political and diplomatic support to Kashmiris. We will never budge an inch from our principled stand on Kashmir." (Haqqani 2003, p.34) After the speech, Pakistan arrested 2,000 militants and closed more than 300 offices, but few were prosecuted (Hagerty 2003, p.104), and most were released after short periods of detention (Blank 2003, p.196).

A critic could thus say that Musharraf did retain confidence in his nuclear deterrent, since he made only minimal concessions. However, two factors undermine this criticism. First, even though Musharraf did not ultimately follow through very strongly on his words of 12 January, the words spoken on 12 January were still a dramatic change in Pakistani policy. A western diplomat noted that it bought Pakistan some time because India could not "in front of the world, take military action against Pakistan without first giving him a chance to show he is serious about eliminating terrorist organizations."

(Whitlock and Chandrasekaran 2002, p.A1) Second, India knew that it could not expect too much from Islamabad. Even though a military dictator, Musharraf could take only limited actions against extremist elements in Pakistan for the simple reason that they are a politically powerful group which could unseat him either through mass protests or violence.[93] Thus, the Indian government knew that it was not in its interests to push Musharraf too far (Economist, 5 January 2002, p.47). Ultimately, then, it would seem that Pakistan's nuclear capability would not have prevented an Indian attack, providing no support for H6.

As with several of the India-Pakistan crises discussed above, H2 receives mixed support. In India, democracy seems to have exacerbated the source of tension with Pakistan, because for the ruling BJP party, "Kashmir seems to be regarded as an electoral issue rather than a national crisis." (Blank 2003, p.186) This has led the government to take a very strong stance against Pakistan, making it more difficult to reduce tensions. By contrast, in Pakistan the power of the military seems to be one of the main reasons for the ongoing violence in Kahsmir, leading one scholar to observe that "the diminution of military ascendancy in Pakistan's domestic politics is crucial for the normalization of relations between the two South Asian nations." (Haqqani 2003, p.51) While it is quite possible that genuinely democratic elections in Pakistan would result in a hard-line government coming into power in the short run, it is impossible to be certain of the long-term implications. It is clear, however, that the military in Pakistan is one of the major causes of conflict between India and Pakistan over Kashmir.

[93] Indeed, Musharraf barely survived two assassination attempts by extremists in December 2003.

Trade seems to have played no role in this crisis, as India and Pakistan continue to have little bilateral trade and remain only lightly engaged in the world economy (Geller 2003, p.24), providing support for H3. Additional support for H3 came a few months later when India-Pakistan tensions rose again in the aftermath of the terrorist bombing in May 2002. With tensions extremely high, India's software industry began to feel pressure from its clients in the United States, leading one journalist to report:

> "quite simply, India's huge software and information technology industry, which has emerged over the last decade and made India the back-room and research hub of many of the world's largest corporations, essentially told the nationalist Indian government to cool it. And the government here got the message and has sought to de-escalate ever since. That's right — in the crunch, it was the influence of General Electric, not General Powell, that did the trick." (Friedman 2002, p.13)

As India's connections with the world economy grow, trade may loom larger in its decisions regarding conflict with Pakistan. However, Pakistan's backward economy, coupled with the central role of its military, suggest that India's rivalry with Pakistan will continue to overshadow the pacifying effect of its growing economic interdependence.

Conclusion

The South Asia experience is a critical test of nuclear deterrence theory, due to the absence of a variety of other factors that could explain the 'long peace' between the United States and the Soviet Union during the Cold War. This examination of five dyadic nuclear crises since 1987 seriously undermines the theory and suggests that mutual nuclear weapons possession will not prevent future wars between India and Pakistan, up to and including a nuclear exchange which could kill millions of South

Asians. Relying on nuclear weapons to keep to the peace, at least in South Asia, is a recipe for disaster. Trachtenberg (1999) asserted that it was the resolution of the question of Berlin, more than any other factor, which explained the absence of war between the US and the USSR. This examination of five India-Pakistan dyadic nuclear crises suggests that the conflict over Kashmir closely parallels that of Berlin in the Cold War. The key to peace, and almost certainly the avoidance of nuclear war, on the sub-continent could well rest in finding a mutually satisfactory solution to the problem of Kashmir; it certainly will not come from nuclear arsenals.

Chapter 8

Conclusion

Chapter 8 is the concluding chapter of this dissertation and is composed of three main parts. The first is a comparative analysis of the qualitative findings on the 17 dyadic nuclear crises presented in Chapters 5, 6 and 7. The second part presents the findings of the qualitative and quantitative analyses on four key hypotheses presented in Chapter 3. The chapter concludes with a brief summary of the implications of this study for public policy.

Comparative Analysis of 17 Dyadic Nuclear Crises

A comparison of the findings of Chapters 5, 6 and 7 indicates that nuclear weapons can have an important impact on the outcome of dyadic nuclear crises, preventing high levels of violence. This point is most clearly illustrated by the Cuban Missile Crisis. However, such an examination also starkly indicates that nuclear weapons cannot be relied upon for peace, as illustrated most clearly by the India-Pakistan Kargil War. Moreover, other factors such as trade, democracy, and international legitimacy have often played a more significant role in crises than nuclear weapons. In the pages to follow, I will assess the relative importance of these four independent variables on levels of violence in crises and crises outcomes, beginning with nuclear weapons.

The Ussuri River and Kargil crises demonstrate that nuclear states can – and do – fight, at least limited, wars with other nuclear states. The key question is: was it exceptional or will it happen again? Specialists in South Asia remain divided on this question, and opinions are in flux. For example, Hagerty (1998) found that nuclear deterrence was working in South Asia. When queried after the Kargil War, he replied that Kargil re-affirmed his belief that nuclear deterrence was working in South Asia as illustrated by India's failure to open a second front on more favorable terrain to the south (personal communication, August 2000). However, he now advocates a strong US role to solve the Kashmir dispute before another crisis breaks out "that could lead to terrible devastation." (Hagerty 2003, p.111) Thus it would seem that this South Asian specialist, formerly sanguine about the prospects for nuclear peace, now perceives that Kargil was not an exception and could well happen again.

Overall, the effect of mutual nuclear weapons possession in the 17 cases examined falls into three categories. First, in one case (the Cuban Missile Crisis) mutual nuclear weapons possession stopped escalation and prevented war, as predicted by nuclear proliferation optimists. Second, in eight cases (the Korean War, Berlin Deadline, Berlin Wall, Ussuri River, October-Yom Kippur, Kashmir III, Kargil, and Indian Parliament Attack crises) it introduced a general level of caution among state leaders, but failed to stop leaders from one or both sides from escalating the conflict. Third, in eight cases (the Suez Nationalization, Congo II, Six Day War, War of Attrition, Angola, Afghanistan, Punjab War Scare II, and India-Pakistan Nuclear Test crises), nuclear weapons played no appreciable role in the crisis.

The only certain success of mutual deterrence from the threatened use of nuclear weapons is the Cuban Missile Crisis. Although for many years it seemed that the USSR alone had backed down to avert war, new evidence uncovered in the 1990s makes it clear that both Kennedy and Khrushchev were willing to make concessions to avoid war (Lebow and Stein 1994, p.144).

Of the eight cases in the second category, escalation stopped in five because of concessions by one side. This happened twice over Berlin early in the Cold War: the Berlin Deadline (1957-59) and the Berlin Wall (1961). In these cases, the evidence strongly suggests that the United States would have gone to war with the Soviet Union had the latter not conceded to the Western interest in maintaining a non-communist West Berlin. Thus, although there was no violence and leaders on both sides were certainly eager to avoid nuclear war, it was Khrushchev's recognition that the United States would go to war, and his subsequent decision to back down, which avoided nuclear war. Although deterrence successes, the facts indicate that nuclear weapons did not make war unthinkable for US policy-makers.

The third case in this category is the Ussuri River crisis of 1969. In this case Soviet nuclear capability did not deter a much-weaker China from initiating a major border skirmish, nor did Chinese nuclear capability deter a much larger Soviet response. An even larger Soviet attack was staved off for some time due to fear of getting bogged down in a ground war in Asia rather than fear of Chinese nuclear weapons. Finally, after

months of continued low-level skirmishes the Chinese made concessions in the face of growing Soviet nuclear threats. Thus this case seems to be a successful case of nuclear compellence, but not of nuclear deterrence.

Very similar to the Ussuri River crisis was the Kargil crisis of 1999. In this case Pakistan initiated a border skirmish with the more powerful India, although the intrusion was much less direct – relying on army regulars disguised as Kashmiri "freedom fighters." India responded by initiating a major military operation, including an escalation to the use of airpower. As the border fighting continued, the US became involved, ultimately leading to Pakistan's decision to withdraw. It was this withdrawal, prompted by US mediation, and not Pakistan's nuclear capability, that prevented further escalation by India. Finally, in the India Parliament Attack crisis of 2001-2, Pakistan backed down in the face of a clear willingness by India to escalate the conflict.

In three other dyadic nuclear crises nuclear weapons played an even less important role, introducing a general level of caution but not causing either side to back down. For example, in Korean War II (1951) the Soviet Union was uninterested in becoming directly embroiled in a war with the United States, but the evidence suggests it was due more to Soviet fatigue from WWII than to fear of US nuclear capability. Despite this reluctance, Stalin did provide a large amount of munitions and other logistical support and, more provocatively, jet fighters and aircrew to North Korea (costing the USSR 345 planes and 200 pilots). MacArthur's futile pleading with Washington for permission to

use nuclear weapons against the Chinese and North Koreans notwithstanding, nuclear weapons had little impact on this crisis.

In the 1973 October-Yom Kippur War the US went to its highest nuclear alert status since the Cuban Missile Crisis following a letter from Brezhnev threatening unilateral Soviet intervention in the war. However, despite the US action, and the tension it created in Moscow, nuclear weapons had little impact on this crisis. The Soviet threat did not affect US policy in the crisis, which was aimed at pressuring the Israelis to release the encircled Egyptian Third Army in the Sinai. The US nuclear alert, in turn, did not impact Soviet policy, as Moscow never had any intention of intervening in the war. Thus, although nuclear weapons seemed a significant part of this crisis, in reality they did not appreciably lower levels of violence or significantly affect the outcome of the crisis.

The last case to fit into the second category – wherein nuclear weapons introduce a general level of caution, but fail to stop one or both sides from escalating – is the 1990 Kashmir III crisis. In this case, India and Pakistan had become embroiled in a crisis over Pakistan's support for opposition groups in Kashmir. India did not take Pakistan's nuclear capability seriously as tensions escalated, but the United States became alarmed that an inadvertent nuclear war could take place. President George Bush Sr. sent a high-level delegation to South Asia to defuse tensions, and it succeeded. Thus, nuclear weapons indirectly limited violence in this crisis. However, without US intervention, it seems likely that mutual nuclear weapons possession would have failed to prevent further escalation and war.

Finally, there were eight dyadic nuclear crises in which nuclear weapons played almost no role whatsoever – the third category among the 17 cases specified above. In the Suez Nationalization War of 1956 and the Six-Day War of 1967, the Soviet Union's intervention came after the crisis had passed its zenith, and had little impact, despite its ominous wording.[94] Moreover, in both of these cases the US and the USSR shared the goal of ending the violence. In the 1969-1970 War of Attrition, involving Israel and the USSR, neither nuclear capability nor concern about escalation to nuclear war seems to have played a significant role. Rather, both sides escalated the conflict, but US efforts to stop the violence restrained Israel from further escalation and led to the end of the crisis. The Congo II (1964), War in Angola (1975-76), and Afghanistan Invasion (1979-80) crises were all very marginal dyadic nuclear crises due to the fact that they were cases of extended deterrence where neither the US nor the USSR had sufficient stake in the crisis to make a serious commitment in opposition to the other nuclear power. The last two marginal dyadic nuclear crises were the Punjab War Scare II of 1986-87 and the India-Pakistan Nuclear Tests in 1998. In neither of these crises did either party intend to attack the other, and they arose largely from misconception. When it became clear that neither side intended an attack, these crises wound down quickly. Ironically, the crisis in 1998 was *caused* by nuclear weapons!

The preceding paragraphs highlight the fact that mutual nuclear deterrence has had a very slim record of success in lowering levels of violence in crises, with only one clear

success out of 17 cases. In eight other cases, mutual nuclear weapons possession did not prevent serious escalation or did not lower levels of violence in the crisis. For most of these cases, the key factors were either US involvement or the decision by one side to back down. In the remaining eight cases, nuclear weapons seemed to play no appreciable role, so these can be considered marginal dyadic nuclear crises. Table 8.1 lists all 17

Crisis	Lower Violence Directly Attributable to Nuclear Dyad	Lower Violence Not Directly Attributable to Nuclear Dyad	Marginal Case
Korea II		X	
Suez			X
Berlin Deadline		X	
Berlin Wall		X	
Cuban Missiles	X		
Congo II			X
6-Day War			X
War of Attrition			X
Ussuri River		X	
Yom Kippur		X	
Angola			X
Afghanistan			X
Punjab Scare			X
Kashmir III		X	
Indo-Pak Tests			X
Kargil		X	
Indian Parliament		X	

Table 8.1
Record of Nuclear Deterrence in 17 Crises

dyadic nuclear crises and whether violence was reduced due to the presence of a nuclear dyad. This surprising finding is a result of considering not whether one opponent in a

[94] Israel attained nuclear capability during the Six-Day War, but this nascent capability could not be used against the Soviet Union, and was conceived of as a last resort attack on one or two Arab cities in the event the State of Israel was about to be destroyed, the "Samson Option." (Hersh 1991)

nuclear crisis backed down, thus averting escalation, but whether both opponents were willing to back down. Thus, several cases, such as the 1956 Suez Nationalization War or the 1969 Ussuri River crisis, are coded as deterrent successes by many studies, but in fact nuclear deterrence would not have prevented war because at least one side was clearly willing to risk nuclear war to meet its objectives.

However, mutual nuclear weapons possession has had more impact than Table 8.1 suggests. First, as noted above, it has induced caution, to varying degrees, into the decision-making process in dyadic nuclear crises. Second, it has provided great impetus for rival states to seek solutions to the issues that divide them. The best example is the success of the US and the USSR in finding a de facto solution to the problem of West Berlin and West Germany by 1963 (although formal resolution did not come until 1971). As a democratic, capitalist outpost in the middle of socialist East Germany, West Berlin was a major thorn in the side of Soviet leaders. As a rallying point for western resistance to Soviet influence, West Berlin became an indispensable city for the United States-led western alliance. Similarly, a re-armed West Germany was essential to US interests, while a major threat to Soviet interests. After several dramatic crises, the two sides managed to create a stable compromise which prevented further crises from breaking out (Trachtenberg 1999, p.399). Although West Berlin remained a lonely Western outpost, vulnerable to vastly superior Soviet forces, it was never again the source of a crisis between the US and the USSR. The nuclear situation had not changed, so this change in the frequency of crises over Berlin cannot be attributed to nuclear weapons, but rather to

resolution of the source of conflict. This has great implications for US foreign policy toward both emerging and existing nuclear states, which will be discussed below.

Democracy is the second independent variable considered in the examination of these 17 crises. Three major conclusions can be framed with respect to the impact of democracy on violence in crises. First, none of the dyadic nuclear crises involved a democratic dyad.[95] Thus, this study supports democratic peace theory. Second, stable democracy was found to reduce the level of violence in some crises, most dramatically illustrated in the War in Angola (1975-76) when the US Congress abruptly stopped the Ford Administration from escalating US involvement. In several other crises there was evidence that democracy played a positive role in reducing violence. For example, although not the determining factor, rising public dissatisfaction with casualties at the Bar-Lev line was beginning to impact the Israeli government during the War of Attrition (1969-70).

Moreover, several cases provide strong evidence that democratic governments can play a key role in preventing their militaries from escalating violence in a crisis. The most notable example is the Cuban Missile Crisis, where the evidence is clear that the US military wanted to attack Soviet forces in Cuba and was only held back, with difficulty, by the democratically-elected Kennedy Administration. To a much lesser degree, in the Punjab War Scare II (1987-88) Prime Minister Rajiv Gandhi also withstood entreaties from his top military leader to launch a devastating attack on Pakistan. Pakistan also

[95] Although Nawaz Sharif was elected, he was not fully in control of the military and Pakistan was by no means fully democratic. The ICB codes Pakistan as a civil-authoritarian government during this crisis

provides strong support for this finding due to its military's support of adventurism versus India over the contested province of Jammu and Kashmir. This is most clearly demonstrated in the Kargil crisis, which seems to have been a military initiative the extent of which Prime Minister Sharif, with his weak control over the military, was largely unaware. This was also evident in the 1990 Kashmir III crisis, as shown by the fact that the Gates Mission to Islamabad found that the military had misled President Ghulam Ishaq Khan into believing a war with India would be a smashing Pakistani victory, hoping to get his support for a war.

The third major finding about democracy and crises is that when the source of conflict between rival democratic states is an issue of central identity to both states, democracy can exacerbate rather than reduce tensions. This is most clearly seen in the case of India and Pakistan in their dispute over Kashmir. In two of the three dyadic nuclear crises centered on the issue of Kashmir (Kashmir III and Kargil), democratically elected leaders have been pushed into elevating rather than lowering tensions. In all three Kashmir cases, US intervention made the primary contribution, rather than democracy or nuclear deterrence, to lowering the level of violence and ending the crises. This serves as a caution to those who advocate democracy as a recipe for peace. While this often seems to be the case, in certain circumstances democracy could actually lead to increased conflict and violence.

In addition to nuclear deterrence and democracy, the effect of interstate trade was considered for each of the 17 crises. The findings regarding trade are very clear: *none of*

the states involved in dyadic nuclear crises had significant levels of bilateral trade. Moreover, in *none of the dyadic nuclear crises did both nuclear powers have significant levels of international trade.* Thus, it would seem clear that one path to peace would be increased interstate trade. In addition, trade vulnerability played a significant role in ending the crisis or reducing the level of violence in only two of the 17 cases. This was most clear in the Suez Nationalization War, when financial pressure from the United States forced Britain to end the war. It was also evident in the War of Attrition when the US was able to pressure the Israelis to accept a cease-fire in August 1970 by threatening to withhold military supplies. Ultimately, trading states seem not to find themselves in dyadic nuclear conflicts; and trade vulnerabilities can be used to pacify conflict, if it exists and other states are willing to use it.

Table 8.2 presents an overall comparison of the findings from the qualitative analysis of

Crisis	Year	Violence Level	Democracy	Interdependence	Nuclear Weapons Lower Violence?
Korean War II	1951	War	No Effect	No Trade	No
Suez Nationalization-War	1956	War	No Effect	**Trade Lowers Violence**	No
Berlin Deadline	1958	None	No Effect	No Trade	Caution
Berlin Wall	1961	None	No Effect	No Trade	Caution
Cuban Missile	1962	Minor Clash	Some Effect	No Trade	**Yes**
Congo II	1964	Minor Clash	No Effect	No Trade	No
6-Day War	1967	War	No Effect	No Trade	No
War of Attrition	1969	War	Some Effect	**Trade Lowers Violence**	No
Ussuri River	1969	Serious Clash	No Effect	No Trade	Caution
Yom Kippur	1973	War	No Effect	No Trade	Caution
War in Angola	1976	War	**Stops Escalation**	No Trade	No
Afghanistan	1979	War	Some Effect	No Trade	No
Punjab War Scare II	1987	None	Some Effect	No Trade	No
Kashmir III	1990	Serious Clash	No Effect	No Trade	**US Intervention**
Indo-Pakistani Nuclear Tests	1998	None	No Effect	No Trade	No
Kargil	1999	War	Military Rule Worsens	No Trade	**US Intervention**
Kashmir IV	2001	Minor Clash	Military Rule Worsens	No Trade	No

Table 8.2*

Comparison of Democracy, Trade and Nuclear Weapons on Violence in Crises
Crises in bold were those in which the use of nuclear weapons considered

* Rows with no effect underlined and boldfaced are those in which none of the three variables considered were primarily responsible for ending the crisis or reducing levels of violence. Where one effect is underlined and boldfaced, that variable was central to the end of the crisis, or of maintaining low levels of violence.

Chapters 5, 6 and 7, and leads to three conclusions about dyadic nuclear crises. First, nuclear weapons have rarely played a central role in reducing violence or in ending a crisis. Second, democracy, outside of democratic dyads, has had an uneven effect in reducing violence. Third, increased globalization is likely to lead to fewer dyadic nuclear crises, and increasing bilateral trade between states is likely to result in less violence than mutual possession of nuclear weapons.

Combined Quantitative and Qualitative Analysis

Having presented the qualitative findings across the 17 dyadic nuclear crises, I will now compare the qualitative analysis with the quantitative findings of Chapter 4. Table 8.3

Crisis	Year	US	Russia	UK	France	PRC	Israel	India	Pakistan
Korea II	**1951**	**X**	**X**						
Suez	**1956**		**X**	**X**					
Berlin Deadline	1958	X	X	X					
Berlin Wall	1961	X	X	X	X				
Cuban Missiles	1962	X	X						
Congo II	1964	X	X						
6-Day War	**1967**	**X**	**X**				**X**		
War of Attrition	**1969**		**X**				**X**		
Ussuri River	**1969**		**X**			**X**			
Yom Kippur	**1973**	**X**	**X**				**X**		
Angola	1975	X	X						
Afghanistan	**1979**	**X**	**X**						
Punjab Scare	1987							X	X
Kashmir III	**1990**							**X**	**X**
Indo-Pak Tests	1998							X	X
Kargil	**1999**							**X**	**X**
Indian Parliament	2001							X	X

Table 8.3
All Dyadic Nuclear Crises

lists all dyadic nuclear crises. The crises in boldface type are those in which at least one nuclear state experienced high levels of violence (serious clashes or war). The fact that nine of 17 crises resulted in high levels of violence illustrates the problem of relying on quantitative analysis alone. Thus, in this section I will examine what a combination of the two methods reveals about the main hypotheses of this study: H1, H2, H3 and H6.

The first hypothesis (H1) posits that dyadic nuclear crises would not occur between democratic states. The quantitative analysis noted the pattern of dyadic nuclear crisis frequency and found that five of the eight nuclear powers considered in this study – France, India, Israel, the UK, and the US – were full-fledged democracies for the entire time they possessed nuclear weapons, and there has *never* been an international crisis between them. Some observers may note that India and Pakistan experienced three dyadic nuclear crises when both states had had formal elections. However, in none of the three crises did Pakistan meet the Freedom House definition of free. Moreover, the qualitative analysis found that in each crisis the Pakistani Army had more power over foreign policy than did the civilian leaders. This provides strong support for the proposition that *democratic dyads are far more peaceful than non-democratic nuclear dyads*.

Hypothesis 2 posits that democracies will experience lower levels of violence in international crises. The quantitative analysis in Chapter 4 found considerable support for this, with democracies having a 51% likelihood of experiencing a lower level of violence in crises than non-democracies. This variable had the strongest impact (at 51%)

and the strongest significance (at .000) of any of the variables considered in the statistical analysis. The findings of the qualitative analysis of 17 dyadic nuclear crises also support H2; in six of the 17 crises democracy played a role in reducing levels of violence. The most dramatic example was the War in Angola (1975-76), where a vote in the US Congress abruptly halted the crisis. Moreover, democracy played a role in reducing the level of violence (or potential for violence) in Afghanistan (1979-80), the War of Attrition (1969-70), and the Berlin Wall (1961). The flip side of this hypothesis is that military regimes are more violent in crisis, and there was clear evidence of this in four crises. The most alarming was the Cuban Missile Crisis (1962), wherein US military leaders wanted to invade Cuba and were prevented from doing so only by the resolve of President Kennedy. Had the US military invaded Cuba, there would very likely have been a nuclear exchange, for the Soviet commander in Cuba had nuclear missiles and had been pre-delegated the authority to use them should there be a US invasion and he could not contact Moscow. In the Punjab War Scare II crisis (1987-88) the senior Indian military leader designed the military exercise that triggered the crisis and strongly advocated an invasion of Pakistan. However, Prime Minister Gandhi had firm control over his military and was able to say no to General Sundarji. Finally, in the last two India-Pakistan crises, Kargil and the Indian Parliament Attack, the crises seem to have been created by the Pakistani military. Overall, *the quantitative and qualitative analyses clearly indicate that democracy is a far superior path to non-violence in crises than are nuclear weapons.*

Hypothesis 3 posits that states in dyadic nuclear crises will have low levels of interstate trade. It was not possible to test this quantitatively with the ICB data set, but other studies have found a clear correlation between higher levels of trade and more peaceful relations (e.g., Mansfield 1994, O'Neal et al 1996, Rosecrance 1986 and 1999). The qualitative analysis found total support for this hypothesis: none of the states involved in dyadic nuclear crises had significant levels of bilateral trade. Moreover, opposing nuclear states' trading blocs did not have significant levels of inter-bloc trade. In addition, there were two dyadic nuclear crises in which trade vulnerabilities contributed significantly to restraining involved states and lowering violence levels. The most obvious example was the Suez Nationalization War of 1956 where British fiscal vulnerability effectively ended the war. Israeli need for US trade, especially military hardware, resulted in a cease-fire in the War of Attrition (1969-70) that the Israeli government would not have agreed to but for their trade vulnerability. Thus, *as with democracy, interdependence seems to be a much more powerful path to effective crisis management than mutual nuclear weapons possession.*

Hypothesis 6 posits that dyadic nuclear crises will exhibit a lower level of violence than non-dyadic nuclear crises. The quantitative analysis of Chapter 4 found that states in dyadic nuclear crises were indeed 47% more likely to experience a lower level of violence. However, the qualitative analysis undermines this finding in two key ways. First, as indicated in Table 8.1, many dyadic nuclear crises experienced lower violence for reasons quite apart from nuclear weapons, which suggests that the statistical analysis overstated the deterrent effect of nuclear weapons. Second, there were several crises in

which one nuclear state experienced high levels of violence while the other nuclear state experienced little threat of direct military conflict (e.g., the Soviet Union in Afghanistan in 1979). In these cases the statistical analysis underestimated the deterrent effect of mutual nuclear weapons possession. One could assess that these two problems might cancel themselves out, but the discussion presented in the comparison of the qualitative findings indicates that the quantitative analysis exaggerated the impact of nuclear deterrence. The conclusion is inescapable: nuclear weapons, per se, do not bring peace. They bring a general level of caution that has helped states avoid war, but that caution has also failed to prevent war in every case. Indeed, there was only one true success, the Cuban Missile crisis (1962).

Implications for Public Policy

The findings presented above strongly support vigorous international efforts to prevent nuclear weapons proliferation. Moreover, given that 16 of 17 dyadic nuclear crises have occurred within protracted conflicts, preventing proliferation by states involved in protracted conflicts should be given an even higher priority. The evidence from the India-Pakistan case has particularly ominous implications for nuclear proliferation by states such as North Korea and Iran. Pakistan, the weaker of the two states in their protracted conflict, achieved nuclear weapons capability in 1987, and since that time the rate of crises between India and Pakistan has skyrocketed. With five crises in 15 years, one of which was a war, nuclear weapons seem to have destabilized the subcontinent.

Both North Korea and Iran are similar to Pakistan with respect to nuclear proliferation. North Korea has been in a state of de facto war with South Korea and the United Nations for over 50 years. Attempts to build tunnels under UN defensive lines, commando infiltrations by midget submarines, and occasional confrontations at the DMZ all indicate the strong desire of North Korea to alter the status quo on the Korean Peninsula. With 37,000 US troops in the area and a very strong South Korean army, North Korea's ambitions have been frustrated. However, should it achieve a nuclear capability, evidence from the Pakistan case suggests that the Korean Peninsula could become much less stable for North Korea would be tempted to engage in adventurism under the perceived protective umbrella of its nuclear capability.

Two other factors shown by this study to have a strong impact on lowering violence in crises, democracy and interstate trade, are completely absent in the case of North Korea. Even more ominous, this study has found that certain states are much more likely to become involved in violent crises. Both China and Israel were found to experience higher levels of violence in crises when their governments suffered from a lack of legitimacy in the international community and among their immediate neighbors. Both of these factors apply to the xenophobic Kim Regime in North Korea. Thus, considering every significant variable examined in this study, nuclear proliferation in North Korea is an alarming possibility.

Nuclear proliferation by Iran would be similarly alarming. Although isolated by the international community to a lesser degree than North Korea, the revolutionary

government of Iran has no diplomatic relations with the world's sole superpower, the United States. Its relations with other states vary, but the threat of renewed isolation due to the extremism that its revolutionary government sometimes embraces remains ever present.

Although often cited as the most democratic state in the Muslim world, Iran is not democratic. The February 2004 election, with the ban on opposition candidates, is but one indication. Another is the case of the Canadian reporter beaten to death for taking pictures behind a prison. With its eroding legitimacy, the current regime will likely resort to more oppression, furthering their isolation. Fortunately, unlike Korea, Iran does have significant interstate trade. However, it has no trade with the world's largest economy, the United States, and Iranian bank accounts in the US have remained frozen since the revolution in 1979. This is unlikely to change as long as the current regime is in power. Overall, the findings of this study strongly suggest that the international community must undertake every possible measure to prevent nuclear proliferation in Iran.

Ultimately, the findings of this study are clear. In order to promote peace, the international community should work vigorously to prevent the spread of nuclear weapons, encourage democracy, and encourage international trade. Alfred Nobel dreamed that making war significantly more devastating would lead to peace. Perhaps not surprisingly, given human nature, it appears that the better way is not to make war more, or "too," destructive, but to make peace more attractive.

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Appendix A

Coding Changes

ICB Actor-Level Data Set

Modified Variable	Original ICB Variable	Coding changes from Original
CRISMG2[96]	CRISMG	1-5=0; 6-8=1
EXSAT2[97]	EXSAT	1-2=1; 3=2; 4-5=3; 6-7 excluded
FOROUT2[98]	FOROUT	1-7=0; 4-5=1
ISSUE2[99]	ISSUE	1=1; 2-4=2; 5=excl
IWC2[100]	IWC	1=1; 2-10=2
MAJRES4[101]	MAJRES	1-7=0; 8+=1
REGIME2[102]	REGIME	1=1; 2=2; 3-5=3
REREVER[103]	REGIME	1=5; 2=4; 3=3; 4=2; 5=1
TRIGG2[104]	BREAK	1-5=0; 6=excl; 7=1; 8=2; 9=3

ICB System-Level Data Set

CRISMG2	CRISMG	1-6=0; 7-8=1
FOROUT2	FOROUT	1-3, 6-7=1; 4-5=2
ISSUES2	ISSUES	1-2=0; 3-4=1; 5=3
IWCMB2	IWCMB	1-2=1; 3-10=2

[96] CRISMG2 is a dummy variable, with 1 meaning a military maneuver or violent act
[97] EXSAT2 is coded to detect variation in satisfaction levels
[98] FOROUT2 is a dummy variable, with 1 meaning a forced outcome
[99] ISSUE2 is a dummy variable, with 1 indicating security and/or military issues
[100] IWC2 is a dummy variable, with 1 meaning crisis is not an intra-war crisis
[101] MAJRES4 is a dummy variable, with 1 meaning violent response
[102] REGIME2 collapses 3 values for military regime from REGIME into 1 value
[103] REGIMEREV reverses coding order or REGIME2, so that Dem=1 and Military regime=3
[104] TRIGG2 collapses the 9 values for TRIGGR into 4 values; direct violent act=4, indirect violent=3, non-violent military act=2, and the rest=1

Appendix B

Tested Hypotheses

H1: Dyadic nuclear crises will not occur between democratic states

H2: Democratic States will experience lower levels of violence in crises

H3: States in dyadic nuclear crises will have low levels of interstate trade

H4: The more serious the issue at stake for a state in crisis, the more violence the state will experience in the crisis

H5: States in protracted conflicts will experience higher levels of violence in crises regardless of nuclear capabilities or whether the crisis is a dyadic nuclear crisis

H6: Dyadic nuclear crises will exhibit a lower level of violence than non-dyadic nuclear crises

H7: States in dyadic nuclear crises will experience less violent crisis initiation triggers

H8: States in dyadic nuclear crises will respond to crisis triggers less violently

H9: States in dyadic nuclear crises will use violence less frequently as a principal crisis management technique

H10: States in dyadic nuclear crises will use lower levels of violence when violence is their primary crisis management technique

H11: Nuclear states in monadic nuclear crises will experience lower levels of violence

Appendix C

A List of All Dyadic Nuclear Crises And Involved Nuclear Weapon States

CRISIS	YEAR	COUNTRY							
		USA	RUSSIA	BRITAIN	FRANCE	CHINA	ISRAEL	INDIA	PAKISTAN
Korean War II	1951	X	X						
Suez Nationalization War	1956	X	X	X					
Berlin Deadline	1958	X	X	X					
Berlin Wall	1961	X	X	X	X				
Cuban Missiles	1962	X	X						
Congo II	1964	X	X						
Six Day War	1967	X	X				X		
War of Attrition	1969		X				X		
Ussuri River	1969		X			X			
October-Yom Kippur	1973	X	X				X		
War in Angola	1975	X	X						
Afghanistan Invasion	1979	X	X						
Punjab War Scare II	1987							X	X
Kashmir III	1990							X	X
India-Pakistan Nuclear Tests	1998							X	X
Kargil	1999							X	X
Indian Parliament Attack	2001							X	X