Chicken Pax Atomica: the Impact of Nuclear Weapons on Conflict Between Interstate Dyads.

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CHICKEN PAX ATOMICA: THE IMPACT OF NUCLEAR WEAPONS ON CONFLICT BETWEEN INTERSTATE DYADS

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Political Science

by

James Franklin Pasley
B.A., Southwestern University, 1993
M.S., Southwest Missouri State University, 1994
December 1999

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ACKNOWLEDGMENTS

I would like to thank all the members of my committee for their thoughtful insights and professional assistance in the production of this final work. The most vital to me of these members was my major professor and dissertation chair, Eugene R. Wittkopf, who guided me with a steady hand and encouraging words. I consider Professor Wittkopf to be one of the pre-eminent scholars in International Politics and it was an honor to work with him. I also have special appreciation for William Clark, Christopher Kenny, and Mark Schafer for their assistance in my development and execution of my quantitative methodology; and for the avatar of LSU culture, Kevin V. Mulcahy, whose humor and sophistication shed light in the occasional intellectual void of social science. In addition, I wish to thank Kelli A. Greene for her genuine encouragement and interest, as well as for the myriad copies she was kind enough to prepare for me.

Even larger than the contributions of these individuals, though, has been the constant support of my two parents, James N. and Ruth Pasley. I certainly could not have achieved the academic heights I have been able to reach had it not been for all the sacrifices they made on my behalf. I can never repay them, but as one small indication of my appreciation for all they have given, I dedicate this dissertation and the degree it permits to them.
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ABSTRACT

Nuclear weapons, long considered the bête noire of human existence are examined quantitatively and qualitatively in this dissertation to ascertain if the heinous effects they threaten ultimately serve to promote deterrence between pairs of states. The findings suggest that nuclear weapons do have a significant impact on conflict when present on both sides of a dyadic dispute. In such symmetrical nuclear pairs conflict levels are quantitatively shown to be reduced, suggesting that the conflict inhibiting qualities of these weapons long espoused by nuclear optimists are legitimate. Further evidence is presented in the form of a qualitative analysis of conflict between India and Pakistan over the region of Jammu and Kashmir. In this individual dyad the introduction of nuclear weapons again appears to have manifested lower levels of conflict between these heated adversaries. The implication of this research is that the steady spread of nuclear weapons may serve to dampen conflict throughout the international system.
CHAPTER ONE: INTRODUCTION: THE THREAT AND PROMISE OF NUCLEAR WEAPONS

"The reputation of power is power."
--Thomas Hobbes

Nuclear weapons promote interstate peace. The statement seems counter-intuitive initially, as the reader grapples with the seemingly divergent concepts of nuclear weaponry and peace. Yet since their creation in 1945 nuclear weapons have not been the bane of human existence many feared they would become. Indeed such weapons have not been used in conflict since the end of World War II and a number of scholars have theorized that the destructive potential displayed by these weapons has ensured peace between the great powers ever since (Gallois 1961; Sandoval 1976; Waltz 1981; Bueno de Mesquita and Riker 1982; Mearsheimer 1990; Weltman 1995). Others are not as sanguine, suggesting that the spread of nuclear weapons is something to be actively and vigorously curtailed (Morgenstern 1959; Ikle 1960; Doty 1960; Nye 1981; Bailey 1991; Spector 1990, 1995; Kraig 1999). Still others have called for the complete abolition of nuclear weapons (Gilpin 1962; Schell 1982, 1984; Ellsberg 1992). This dissertation tests the claims of the first group of scholars, sometimes referred to as nuclear optimists, to ascertain if the presence of nuclear weapons has led to any reduction in conflict between pairs of states.
The basic notion put forward by the nuclear optimists that overwhelming military strength pacifies enemies is not a new concept. The ancient military strategist Sun Tzu (1963, 67) argued for the necessity of evasion when one's opponent had overwhelming force saying that when this was the case: "avoid him." Indeed nuclear pairs of states clearly appear to have avoided one another in terms of armed conflict, as there has never been a case of interstate warfare between two nuclear powers. But why? In order to understand why it is helpful to review how states operate within the international system.

The fundamental dynamics of international politics regularly act to restrict the extent to which a state can reach its aims at the expense of other states. Nuclear weapons have amplified many of these characteristics. As observers starting with Thucydides have pointed out, in a world of autonomous states, each will act to check the most objectionable efforts of others. As a result, most attempts to make excessive gains have been self-defeating. This is the basic lesson of the balance of power (Waltz 1979). A state that seeks domination may gain a series of successes, but doing so will lead others to see the state as such a menace that they must temporarily scuttle their disputes to defeat it, lest they later be dominated by it. This results in a coalition of weaker forces banding together to put down the dominant hegemon. By seeking dominance rather than
accepting lesser gains, Napoleon and Hitler forfeited the positions they had previously secured. These ignoble attempts to dominate Europe might have triumphed if the aspiring hegemon had adopted somewhat different tactics.¹

Even on a scale less grand, states that consistently augment their power and continually intrude on the interests of others are likely to encounter expanded opposition. Although states sometimes bandwagon and strive to align themselves with rising powers, more often they balance against such threats (Walt 1985). Of course not every action meets with a rapid and similar counteraction. For example, taking advantage of their rather isolated geographic locales, both the United States and Russia annexed their hinterlands in the nineteenth century with minimal opposition from other states. But such free expansion is not the norm within the international system. The fact that the world consists of independent states that seek goals that conflict with those of each other means that states may find it difficult to gain most of what they want. Additionally, according to Realist scholars, to succeed too well is to invite others to increase their efforts to combat, contain, and control the state. Realist thinkers such as Hans Morgenthau (1979) acknowledged these dynamics

¹. For instance, if Hitler had not decided to declare war on Russia and the United States before he had complete control of Western Europe his attempt to dominate Europe might have proven more effectual (Schroeder 1987).
when they advocated restraint, the use of quiet diplomacy, and the sacrifice of peripheral interests when necessary in order to display respect for the vital interests of others and reduce conflict with them.

Security might seem like a basic mission, but even the effort to ensure that others will not be able to threaten the state may be self-defeating. International politics is characterized by the security dilemma. Realists suggest that absolute security for one state tends to lead to absolute insecurity for others. Therefore, efforts aimed at freeing the state from foreign dangers generally influence other states to take counteractions that are likely to reduce the other state's security to a level lower than it was before it launched its initial effort. In some cases, the result can be a spiral of misperceptions, antagonism, and war. When statesmen grasp these dynamics, they do not try to maximize their power to make them safe, but instead they seek to maximize their security (Waltz 1979; Luttwak 1987).

Nuclear weapons have served to magnify these international difficulties facing states, and thus succeed in limiting the options available to nuclear-capable states paired in conflict with one another. The danger of escalation, coupled with the clear impossibility of winning a nuclear conflagration, means that leaders realize that serious challenges to a nuclear adversary's vital interests
could end in Armageddon. Therefore, conflict stalemate is naturally promoted between nuclear powers because in such pairings victory is unrealizable.

Thus, in theory at least, nuclear powers are deterred from escalating conflicts with one another because of the potentially dire consequences such an escalation could produce. This dissertation tests that hypothesis through a combination of quantitative and qualitative means.

The dissertation consists of six chapters. Following this introduction the second chapter discusses the theoretical underpinnings of the nuclear peace. As will be discussed in detail in the second chapter, Kenneth Waltz (1981), among others (Bueno de Mesquita and Riker 1982; Mearsheimer 1990) has argued that "the measured spread of nuclear weapons is more to be welcomed than feared." Waltz believes that the gradual spread of nuclear weapons will promote peace and reinforce international stability because nuclear weapons induce caution between adversaries who possess them. In short, "more may be better." The second chapter will explore the theoretical arguments behind this intrepid assertion.

The third chapter is the quantitative section of the dissertation. It tests the hypothesis that nuclear weapons have had a pacifying effect on conflict between pairs of states through employment of two multiple regression models. The dependent variable of conflict escalation
(operationalized in terms of level of conflict and number of fatalities) is tested against the presence of nuclear weapons (both symmetrically and asymmetrically) in the dyad and six other independent factors theoretically surmised to have had a significant impact on conflict: military parity, level of democratization, regime stability, trade, geographic proximity and alliance membership.

The next two chapters provide the qualitative backbone of the dissertation. The fourth chapter is a case study of the evolving relationship between India and Pakistan. The decades old animus between these two states has led some to suggest that now that both sides have openly and successfully tested nuclear weapons, the Indian subcontinent is a tinderbox waiting to explode (Erlanger 1998). For instance, following the nuclear weapons tests by India and Pakistan in 1998 President Clinton declared, "I cannot believe that we are about to start the twenty-first century by having the Indian Subcontinent repeat the worst mistakes of the twentieth century" (Hirsh and Barry 1998, 23). This notion deserves scrutiny as the events of the Cold War suggest that the presence of nuclear weapons may have prevented conflict between nuclear rivals. Indeed a number of analysts argue that the introduction of nuclear

2. India conducted its tests on 11 May 1998 producing one or more blasts totaling about 25 kilotons. Pakistan responded with tests of its own on 28 May 1998 producing one or more blasts totaling about 12 kilotons (Hirsh and Barry 1998, 24).
weapons to the Indian subcontinent will lead to conflict pacification. "There is no way that there is going to be another war here," according to Colonel Narendra Singh Mehta of the Indian Armed Forces. "There may be some local exchanges of fire, the sort of thing that's been happening here for years, but nuclear weapons have made full-scale war unthinkable" (Burns 1998, 3). Many scholars and defense analysts support this view of South Asia (Subrahmanyam 1986; Harrison and Kemp 1993; Perkovich 1993; Sundarji 1993; Beg 1994; Arquilla 1997; Arif 1995; Lavoy 1995).

Thus the impact of nuclear weapons on Indo-Pakistani conflict will be reviewed. Through an examination of the historical record this chapter serves to trace Indo-Pakistani relations over the past fifty years, beginning with their 1947 war over control of Jammu and Kashmir, up to the present nuclear stalemate between the two. It focuses on the four major conflicts between India and Pakistan over the disputed territory of Jammu and Kashmir. This dissertation will display that the Indo-Pakistani dyad was pacified by the introduction of nuclear weapons in 1974.

The Indo-Pakistani relationship is particularly important because it provides a qualitative window through which one can observe the impact of all three types of dyadic relations between states. Over the past fifty years the Indo-Pakistani dyad has moved from a non-nuclear one (1947-1974 when India ascended to its present status as a
nuclear capable state); to an asymmetrical dyad (1974-1986); to a symmetrical dyad (though Pakistan became an official member of the nuclear club with its overt testing of such weapons in May of 1998, it has been considered a de facto member since 1986 (Spector 1990)).

Armed with the results from the previous two chapters, Chapter Five examines current US policy with respect to nuclear proliferation and then discusses what alterations may need to be made in it as we move into the twenty-first century. Chapter Five attempts to apply the theories and findings presented in the preceding chapters to real world situations, investigating the potential impact of nuclear weapons on two dyads of recent concern by US security planners: the Korean dyad and the Greco-Turk dyad. This chapter will examine whether or not the presence, or even the threat of the presence of nuclear weapons has, or could have a pacifying effect on relations in these dyads. US policy recommendations with respect to these dyads are presented. The major question for this chapter is whether the continued proliferation of nuclear weapons will be a hindrance or a help to maintaining stability throughout the world and what the implications are for US foreign policy in the future.

Chapter Six provides a brief summary of the conclusions of the dissertation. Additionally, it elucidates the potential impact of technological advancements in weaponry
in the next millennium to ascertain what role nuclear weapons will play, if any, in the arsenals of the future. Both the qualitative and quantitative evidence presented in the preceding chapters are drawn upon to frame a cogent answer to this question.
CHAPTER TWO: CRISIS AND NUCLEAR WEAPONRY

"Since I do not foresee that atomic energy is to be a great boon for a long time, I have to say that for the present it is a menace. Perhaps it is well that it should be. It may intimidate the human race into bringing order into its international affairs, which, without the pressure of fear, it would not do."

--Albert Einstein

The abrupt end to the forty-five year long Cold War between the United States and the Soviet Union caught everyone off guard. Scholars of international relations failed to forecast such a placid and sudden end to communist control of the Soviet Union and Eastern Europe as occurred between 1989-1991. In fact, most had asserted theories that stated only a major war between the two great powers would ultimately leave one the victor and the other the vanquished. Yet this did not occur. Why? Why did scholars of international relations fail to predict such a peaceful cessation of tensions? Historian John Lewis Gaddis (1992-93) has berated students of the discipline of international relations for their failure to do so, claiming that theories of international relations are lacking in both their descriptive and predictive power.

This dissertation endeavors to reassert traditional international relations theory by qualitatively and quantitatively examining the impact of the one major element which made the Cold War international system unique: the
presence of nuclear weapons. The impact of nuclear weapons on interstate relations will be examined to ascertain if weapons have a pacifying effect on nuclear interstate interactions. The dissertation's central question is simple but critical to our understanding: Does the presence of nuclear weapons retard conflict escalation between pairs of states?

**Nuclear Optimism**

The possible pacifying effect of nuclear weapons on interstate relations has been heralded most strongly by neorealist Kenneth Waltz. Waltz has put forward the view that the spread of nuclear weapons is not necessarily a threat to world security. Waltz (1981), among others (Gallois 1961; Sandoval 1976; Bueno de Mesquita and Riker 1982; Mearsheimer 1990; Weltman 1995), argues that "the measured spread of nuclear weapons is more to be welcomed than feared." Waltz theorizes that the gradual spread of nuclear weapons will promote peace and reinforce international stability because nuclear weapons induce caution between nuclear adversaries. In short, "more may be better."

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3. A nuclear weapon is an apparatus whose explosive energy is a derivative of fission, fusion, or a combination of the two nuclear processes. Nuclear fission is the splitting of the nucleus of an atom into two or more parts. Nuclear fusion joins light isotopes of hydrogen, usually deuterium and tritium, which liberates energy and neutrons (Cochran et al., 1984).
Though Waltz may be the loudest voice of nuclear proliferation optimism, support for the potential pacifying effect the spread of nuclear weapons throughout the international system might induce has existed almost as long as the weapons have. Jacob Viner (1946) was the first to openly argue for the potential peace nuclear weapons might bring. Viner (1946) theorized that the spread of nuclear weaponry throughout the world would make conflict less likely between states because of the high price of military victory. Arthur Less Burns (1957) elaborated on Viner's theory, arguing that in the absence of a sudden technological breakthrough, the spread of nuclear weapons could stabilize international relations. Morton Kaplan (1957, 52) concurred with Viner and Burns, stating that as long as a "surprise knockout blow was technically impossible" nuclear weapons dispersed among a large number of states would ensure a more peaceful world.

The 1960s brought additional advocacy for proliferation optimism. F.H. Binsley (1963, 354-55) wrote that nuclear weapons "constitute for the first time a true deterrent, one that will never be relied upon so long as it exists -- and this is likely to be forever." French General Peter Gallois (Dulles and Crane 1964, 215) added his support, arguing that "If every nuclear power held weapons truly invulnerable to the blows of the other, the resort to force by the one to the detriment of the other would be impossible." At the
same time, Richard Rosecrance (1963) suggested that worries about the strategic consequences of nuclear proliferation were exaggerated. Rosecrance (1963, 188) argued: "The nth country 'problem may not turn out to be a problem."

Rosecrance (1969, 103) added six years later: "If the threat of minor war makes the two greatest states redouble their efforts in tandem to prevent major war, it is even conceivable that nuclear dispersion could have a net beneficial impact."

The 1970s brought Robert Sandoval's (1976) porcupine theory of nuclear proliferation. According to this theory, states even with modest nuclear capabilities would "walk like a porcupine through the forests of international affairs: no threat to [their] neighbors, too prickly for predators to swallow" (Sandoval 1976, 19). It was only after all of this that Kenneth Waltz (1981) added his theories to those of the nuclear optimists, suggesting that the mere presence of nuclear weapons leads to extreme caution, thereby decreasing the likelihood of conflict as more states acquire them.

Following Waltz, additional scholars have weighed in as nuclear proliferation optimists. Bruce Bueno de Mesquita and William Riker (1982) contend that nuclear proliferation serves the interests of peace. Martin van Creveld (1993) asserts that "nuclear weapons prevent the regional states that have them from fighting each another." John Weltman
(1995, 219) theorizes that "the spread of nuclear weapons...to new powers will tend over time to induce caution and moderate conflict." In fact, nuclear proliferation optimists mostly agree that the presence of nuclear weapons generates caution in military and political decision-makers irrespective of the geographic location, system of governance, or the political culture of the countries in question (Freedman 1988).

Indeed all weapons, as Robert Jervis (1989) has argued, change the status of states in ways that make them more or less secure. For example, as Waltz (1995) notes, "If weapons are not well suited for conquest, neighbors have more peace of mind." Likewise, nuclear weapons arguably produce their own effects by providing a strong deterrent against aggression (Hinsley 1963; Lavoy 1995; Weltman 1995). Nuclear weapons' deterrent value rests on their ability to punish (Gray 1979, 1990; Waltz 1990). Nuclear weapons provide a state with the ability to damage or destroy things the aggressor holds dear to such an extent that gains the aggressor had hoped to achieve are outweighed (Waltz 1990; Gray 1998). It is believed that this strong punitive aspect of nuclear weapons is what makes them such a powerful deterrent against state aggression (Sandoval 1976; Gray 1979, 1990, 1998; Waltz 1990; Van Creveld 1993; Lavoy 1995).
Pax Atomica

Thus, during the Cold War, the overwhelming destructive capabilities of the nuclear weapons arsenals of the United States and the Soviet Union provided each of these two superpowers with a strong deterrent against military conflict between themselves. Would a like peace have existed in an international system void of such weapons? Probably not, according to a number of scholars (Gaddis 1990; Mearsheimer 1990; Waltz 1990; Lavoy 1995; Weltman 1995; Gray 1998; Payne 1998a, 1998b). The uncertainties of a world made up merely of states with access to conventional weapons are increased because conventional warfare, unlike a nuclear conflagration, can be perceived as winnable. For this reason, the likelihood of warfare between states increases "because the uncertainties of their outcomes (wars) make it easier for the leaders of states to entertain illusions of victory at supportable cost" (Waltz 1990, 58).

The US-Soviet relationship is particularly important because it represents the longest symmetrical nuclear relationship in the history of the world. It is additionally unique because, despite the roughly equal military standing between the two states during the Cold War period, the United States and the Soviet Union never directly engaged in warfare. The lack of interstate warfare during the Cold War has been attributed to the presence of nuclear weapons (Jervis 1989; Gaddis 1990; Mearsheimer 1990;
Waltz 1990, 1993; Glaser 1998; Harkavy 1998; Payne 1998a, 1998b). Indeed the nuclear era seems to be peerless in modern history because of this absence of great power conflict. Stephen Cambone and Patrick Garrity (1994-95, 77) note: "The past five decades have marked a unique period in human history (at least since the establishment of the modern state system in 1648), in which war between the dominant powers has not occurred and in which one of those powers actually conceded and dissolved itself peacefully."

In eras when military victory was possible, a state could challenge its adversary in the expectation that if the latter did not retreat, the state could resort to war (Jervis 1989; Lavoy 1998). During the Cold War and continuing through to today, the knowledge that war would be suicide coupled with the bargaining advantage possessed by the side defending the status quo means that would-be expansionists should be loath to instigate confrontations. In addition, because in the past the balance of power could be upset if a significant actor shifted from one camp to the other (Rosenau 1969; Waltz 1993), the security interests of both the United States and the Soviet Union were often deeply involved with those of their allies (Jervis 1989). The series of pre-World War I confrontations provide evidence of this. The main reason why Britain supported France in the Moroccan crises was the fear that if it did not, France might desert the Entente and leave England
dangerously isolated (Jervis 1989). The same dynamics were at work in July 1914. France had to support Russia and Britain had to support France and Russia because a failure to do so might break up the Entente and leave them exposed to German dominance. Similarly, Germany could not afford to see Austria-Hungary leave the alliance or, more probably, disintegrate (Betts 1987).

In the nuclear era, by contrast, security is provided by second-strike capability; defections by allies are therefore less damaging. Thus, neither France's withdrawal from the military arrangements of NATO nor China's realignment precipitated a superpower crisis. Therefore, during the Cold War years, the superpowers did not permit their allies to drag them into excessively dangerous situations (Betts 1987).

However, conflict at some level still took place between the Soviets and the United States once the advent of mutual second-strike capability occurred (Brecher and Wilkenfeld 1989; Brecher 1993), but the crises between the two superpowers generally were considered less serious according to some scholars (Betts 1987; Jervis 1989; McCall 1992). According to Robert Jervis (1989) most of the

4. However, Richard Betts (1987) argues that even during the 1950s American war planners acted as though the Soviet Union did have second strike capability.

5. McCall (1992), for instance, provides case histories for what he argues are the most serious US-Soviet Cold War crises: Iranian crisis of March 1946; Berlin
tensions were generated by third actors and were driven more by the superpowers' desire to project a general image of high resolve than by any specific stake.

It has been suggested that because of the extreme destructive potential of nuclear weapons the superpowers during the Cold War were forced to recognize the necessity of accommodation and cooperation. Both the United States and the Soviet Union were compelled to engage in what David Tarr (1991) has called adversarial cooperation. Tarr (1991, 10) argues that for the two superpowers "the motive for accommodating the other arose not so much from the congruence of values and interests, but in recognition that the alternatives to cooperation could be too costly or dangerous to pursue." The boat of nuclear risk in which both the United States and Soviet Union sat was kept steady, therefore, by an adversarial cooperation. Both superpowers, as Thomas Schelling (1960) first suggested, shared a strong aversion to tipping over the boat. Thus, the United States and Soviet Union seemed to "learn" as the years of the Cold blockade and air lift (1948-1949); Berlin Wall crisis (August 1961); Cuban Missile Crisis (October 1962); and the Middle East War and alert (October 1973). McCall (1992, 28) argues that these incidents "constitute the most serious confrontations between the United States and the Soviet Union that involved the risk of military conflict in the post-World War II era." Of these crises, only the 1973 Middle East War occurred at a time of rough nuclear parity between the United States and Soviet Union. Even the Cuban Missile Crisis took place, according to Robert Jervis (1989, 36) "when the Soviets had weak nuclear forces" and was "in part motivated by the urgent Soviet need to gain something like parity."
War progressed that because neither side could determine its own security unilaterally, cooperation was needed (Nye 1987, 371-402).

Thus the first implication of the nuclear age is that military victory is perceived as not possible between nuclear states. From this it follows that if leaders are rational, wars among nuclear powers should not occur. Indeed, since 1945 they have not. This is especially significant in the case of the United States and the Soviet Union during the Cold War because the absence of fighting between the two main international rivals is rare. Indeed, it seems to be unprecedented. Paul Schroeder (1985) writes, "Since the second century A.D. under the Pax Romana, the Western world has known no long periods of general peace. The modern record was 38 years, 9 months, and five days... from the aftermath of Napoleon's defeat at Waterloo to the effective beginning of the Crimean War...That record was broken...on May 15, 1984." Joseph Nye's (1987) counting rule is somewhat less stringent, but still yields merely a previous record of forty-three years of peace (between the Franco-Prussian War and World War I), a record that continues to be surpassed as the years continue to mount since the end of World War II.

This is not to say that nuclear weapons are the only possible cause of peace, they just seem to be the strongest. Nevertheless, other hypotheses for the long peace enjoyed
since the end of World War II have been put forward as well. First, it has been suggested that bipolarity may have brought peace by providing an easy and unambiguous identification of potential enemies and by diminishing the ability of allies to drag the leading powers into conflict (Gaddis 1990). When there are only two major powers in the system, each knows that only the other one can threaten its standing. Yet a bipolar world in which military victory is possible can be unstable, as the examples of Athens and Sparta and Rome and Carthage indicate. What separated the Cold War bipolarity from these earlier instances is the presence of nuclear weaponry.

Second, the processes of political and economic modernization might have brought peace even without nuclear weapons (Gaddis 1990). Trade provides many of the economic benefits that previously came with conquest, as Japan's success indicates. Territory, the prime spoil of war, has become at least somewhat devalued. Indeed nuclear weapons may have led to the refocusing of the possible spoils of war away from territory. Such devices make the acquisition of territory irrelevant as use of nuclear weapons makes the irradiated territorial gains uninhabitable.

Finally, the most basic explanation of the Soviet-American peace is simply that neither side had a strong motive to change the status quo (Gaddis 1990). While both would have preferred a somewhat different world, they
already had reached the pinnacle of superpower status. Thus it did not take a great deal of restraint to keep the peace.

There may be something to be said for this last argument. But even though neither the United States nor the Soviet Union was strongly driven to eliminate the other, they did have important conflicts of interest and clashing security requirements. Furthermore, the basic insight of systems theory is that we cannot equate results with intentions: for wars to occur it is not required that the actors seek such an outcome (Waltz 1955). Previous wars have broken out even though the major states were not pressing to overturn the status quo; without nuclear weapons these processes could be replicated. John Gaddis's (1990, 56) analysis is persuasive:

Wars, in the past, have started over far lesser provocations than have been present since 1945. World War I itself began as the result of a single political assassination. The Crimean War grew out of a quarrel between France and Russia over the custody of holy places in Palestine. Spain and England went to war in 1739, or so we are told, over the cutting off of a single sailor's ear. One need only to compare these trivialities, with all their bloody effects, to such postwar episodes as the Iranian crisis of 1946, the Czechoslovak coup and the Berlin blockage in 1948, the North Korean invasion of South Korea in 1950, the fall of Dienbienphu in 1954, the Quemoy-Matsu incidents of 1954-55 and 1958, the Hungarian uprising and the Suez crisis of 1956, the Berlin confrontations of 1958-59 and 1961, the Cuban missile crisis of 1962, the mining of Haiphong harbor and the bombing of Hanoi in 1972, the Defcon 3 nuclear alert during the 1973 Middle East war, the invasion of Afghanistan in 1979, and the Korean airliner incident of 1983.
The absence of interstate warfare or any significant conflict between the great powers following these myriad events would seem to reinforce the proposed pacifying effects of nuclear weapons (at least among the nuclear powers). In the case of the two superpowers, nuclear weapons seemed to foster a stalemate, where neither the United States, nor the Soviet Union was ever willing to challenge directly the other, in order to become the sole power in the world. Instead the status quo was maintained because the risks of a nuclear conflagration were simply too exorbitant. In other words, both of the superpowers preferred to deter rather than to compel one another.6

Whereas deterrence supports the status quo by merely requiring an adversary to continue to refrain from forbidden acts, compellence obligates an adversary to alter its behavior, either through the discontinuance of an activity or by initiating a behavior which otherwise would not be undertaken.7

6. George, et al. (1971) present empirical arguments concerning the conditions under which the superpowers attempted to compel one another during the first half of the Cold War.

7. Schelling (1960a) suggests that deterrence is usually easier to achieve than compellence as an adversary's behavior is attempting to be maintained and not changed. Thus, it is a much less overtly threatening posture and therefore, more suited to activities between nuclear rivals.
Crises and Nuclear Weapons

The general effect of nuclear weapons on crises has been to widen the gap between the value of the interests in conflict and the potential costs of the war. The separation between potential costs and potential outcomes was not as wide, or at least not as clear to prospective combatants, in the years prior to the nuclear age. The destructive power nuclear weapons pose is clear. Overall, the perceived impact of nuclear weapons on crisis situations basically has been twofold: first, it is generally assumed that nuclear weapons lead states to behave in a more prudent and constrained fashion, and second it has been argued that nuclear weaponry provides a tacit raising of the "provocation threshold", thereby lengthening the crisis escalation "ladder" adversaries must climb before arriving at interstate warfare (Kahn 1960).

Referring to the first of these two results of the nuclear age, it seems reasonable to suggest that states in general have worked quite hard to keep risks low during crises since 1945. Physical constraints, for example, are constructed laggardly in order to receive feedback as to the opponent's probable response before completion. A notable case of such a gradual commitment was the East German step-by-step closure of the border between east and west Berlin in 1961. Loopholes are also manufactured by opposing sides to create a possible retreat as during the Cuban missile
crisis when Kennedy implicitly solicited Kruschev to be the savior for world peace, or when Kruschev proposed a US pledge not to invade Cuba would lead to the withdrawal of the Soviet missiles (Blight and Welch 1995).

Snyder and Diesing (1977, 452) suggest that crisis decision-making has evolved as well because of the creation of nuclear weapons. They compare the crisis decision making of July 1914 with that of the Cuban missile crisis arguing that in 1914 "the crisis activity was almost entirely diplomatic activity, carried on by diplomats who viewed military forces only as instruments to be used in war. They had plans only for war; they had no complex crisis 'contingency plans' such as are commonplace today."

Additionally, civilian leaders largely were uninformed regarding the plans their military had devised. Snyder and Diesing (1977, 452) note that while the Russian and the German civilian leadership understood that mobilization meant war, "they did not really believe this with enough certainty to integrate it into their diplomacy because they were not aware in detail of the logical and logistical compulsions that made it true. Their ignorance was one of the primary immediate causes of World War I."

This is in sharp contrast to the mixed military and diplomatic activities of the Cuban missile crisis. Both President Kennedy and Defense Secretary McNamara exercised a great deal of control over military planning and activity.
Ultimately, as Graham Allison (1969) documents in his thorough investigation of the crisis, they were able to subordinate military activity to their "political aims and tactics." Additionally, much more than in 1914, the United States and Soviet Union "spoke" to one another not only through words, but through deliberate calculated actions.

The second broad impact of the nuclear age, the raising of the threshold of provocation, has served to increase the number of moves available to states in order to retard the precipitation of war. Since 1945, however, an arena of "force short of war" has evolved wherein states may employ a range of "physical maneuvers" to demonstrate resolve (Kahn 1960; George and Simons 1994).

This second factor may seem to be in conflict with the first development of the nuclear age, that of increased caution in crises. If states are particularly cautious because of the nuclear threat, it might be expected that they would be more wary about engaging in maneuvers that could bring them closer to war. This creates a notable nuclear paradox with such weaponry not only inducing caution within a state, but simultaneously suggesting that a rational opponent will behave cautiously as well, "and therefore will tolerate a considerable amount of pressure and provocation before resorting to acts that seriously risk nuclear war" (Snyder and Diesing 1977, 453).
Opaque Proliferants

Yet how can states successfully deter adversaries with nuclear weapons when they outwardly deny their possession of them? Opaque proliferants succeed in their efforts to deter by what McGeorge Bundy has called "existential deterrence." While Bundy first used this phrase in writing about superpower relations during the Cold War, his description of it clearly applies to opaque nuclear powers as well. Bundy (1984, 8-9), among others (Brodie 1973, Jervis 1984) argued that conflict between the superpowers would be riddled with "terrible and unavoidable uncertainties" which have "great meaning for the theory of deterrence":

They create what I will call existential deterrence. My aim in using this fancy adjective is to distinguish this kind of deterrence from the kind that is based on strategic theories or declaratory policies or even international commitments. As long as we assume that each side has very large numbers of thermonuclear weapons which could be used against the opponent, even after the strongest pre-emptive attack, existential deterrence is strong. It rests on uncertainty about what could happen, not what has been asserted.

For Bundy (1983, 4), existential deterrence was "strong in every major crisis between the superpowers since 'massive retaliation' became possible for both of them in the 1950s"

8. Though Bundy created the phrase, Trachtenberg (1985, 139) may provide the most succinct definition for it: "The mere existence of nuclear forces means that, whatever we say or do, there is a certain irreducible risk that an armed conflict might escalate into a nuclear war. The fear of escalation is thus factored into political calculations: faced with this risk, states are more cautious and more prudent than they would otherwise be."
and was "particularly powerful during the Cuban missile crisis."

Deterrence of any sort is dependent upon the adversary's perception of its opponent's capabilities and resolve to employ them. Yet the dilemma this poses for opaque proliferants is whether they can deter aggression without the overt demonstration of nuclear prowess in which the declared nuclear powers have engaged. For Hagerty (1995/96, 90) the answer is yes: "like all nuclear weapon states, opaque proliferants signal resolve to one another through a process of strategic bargaining, which runs along a communication spectrum from formal negotiations to the transmission of intentions via deeds rather than words." Schelling (1960, 53) claims that signaling falling into the latter category is called tacit bargaining, "in which communication is incomplete or impossible." Opaque proliferants slip into this latter category of communication because of their desire for secrecy (Joeck 1990). Formal

9. There is some disagreement among theorists regarding the relative weight that should be given to weapons in calculations of deterrence. For instance, Bundy (1984, 9) writes that "the uncertainties which make existential deterrence so powerful have the further consequence that what either government says it might do, or even believes it might do, in the event of open conflict cannot be relied on either by friends or by opponents as a certain predictor of what it would actually do." In contrast, Rhodes (1989, 85) argues "the mere existence of an ability to inflict or withhold tremendous pain is logically not sufficient to result in coercive power...For nuclear deterrence to operate, the opponent must also believe that the coercer is committed to a strategy that has some unacceptable probability of resulting in nuclear war if deterrence fails."
negotiations tend to require for discussion, "exchanges of detailed information that opaque proliferants are loath to provide" (Hagerty 1995/96, 90). Instead opaque proliferants communicate their resolve through a variety of tacit behaviors such as passing messages through intermediaries or through state-controlled or state-influenced media. Schelling (1976, 85) describes this signaling as "passive deterrence," achieved by "just letting it be known, perhaps through an innocent leak of information, that a government...simply had nuclear weapons, letting every potential addressee of this 'deterrent threat' reach his own conclusions about what kind of misbehavior, if any, might provoke nuclear activity." So there is not an absence of communication between one or more opaque nuclear proliferants. Rather there is a less formal, less direct communicative engagement. Hagerty (1995/96, 90) argues that this creates a unique language for understanding between such proliferants: "Over the years, this discourse establishes certain deterrent understandings that may not be as clear as those between the transparent nuclear powers, but which are compelling all the same. As these understandings develop, it becomes exceedingly unlikely that decision-makers in opaque nuclear states will fail to understand the possibilities that confront them."

While such deterrent intentions must be communicated clearly in some fashion, just as important is the credible
demonstration of capabilities. This would seem to be an impractical task for opaque proliferants, as how can they maintain their ambiguous status without making "visible" their capabilities (if any). Largely this dilemma has been solved by the nonproliferation community. Pressure is applied by the international community to "pressure recalcitrant proliferants into nuclear chastity... by publicizing their nuclear transgressions" (Hagerty 1995/96, 91). For instance, in the case of proliferation in South Asia, US policymakers openly have suggested in recent years that both India and Pakistan could build and deliver nuclear weapons rapidly in the event of a crisis. Such pronouncements, however driven by an interest to pressure proliferants into reversing course, serve instead, according to Hagerty (1995/96, 91), to "stamp their nuclear programs with a seal of credibility that they would otherwise lack."

Though the likelihood of a pre-emptive nuclear strike between new nuclear states is considered a possibility by some security analysts (Roberts 1993; Blair 1994), the logic of nuclear deterrence suggests that such an occurrence is very unlikely (Hagerty 1995/96). Preemption is viable, 

10. As examples see CIA Director Robert Gates' remarks to the Nixon Library Conference, Washington D.C., March 12, 1992; the testimony of former CIA Director R. James Woolsey before the House Armed Services Committee on Foreign Affairs, Subcommittee on International Security, International Organizations, and Human Rights, July 28, 1993; and Davis (1994) who served as Under-Secretary of State for International Security Affairs in the Clinton administration.
according to Waltz (Sagan and Waltz 1990, 15-16), "only if the would-be attacker knows that the intended victim's warheads are few in number, knows their exact number and locations, and knows that they will not be moved or fired before they are struck. To know all of these things, and to know that you know them for sure, is exceedingly difficult."

John J. Weltman (1981/82, 190) concurs with Waltz, noting that nuclear weapons create uncertainty for an adversary because they are easy to hide and move: "Failure to eliminate even a single deliverable weapon would thus be to risk catastrophe and short distances mean that no sophistication in means of delivery is required for a successful countervalue response."

Indeed when real world events are considered the arguments of nonproliferation seem to pale in comparison to the logic of nuclear deterrence. For some security analysts (Schneider 1994; Hagerty 1995/96) the Gulf War poses the potential obstacles any state would need to surmount in order to achieve a successful first strike. For instance, UN inspectors discovered more than twenty Iraqi nuclear installations following the war, while allied bombing target lists were able to identify only two (Hagerty 1995/96). Also, more than 1,000 hours of allied air strikes left much of the Iraqi nuclear infrastructure untouched (Schneider 1994). Further, according to a study released by the US House of Representatives Armed Services Committee, evidence
cannot confirm that coalition forces destroyed even a single SCUD missile (Gordon 1993). Such a failure illustrates the ease of deception in concealing nuclear delivery systems and why opaque nuclear states may deter conflict as well as overt nuclear capable states.

Games of Chicken

The way that actors perceive the costs and benefits of a crisis will have an impact on their behavior during the crisis. The structure of the situation will affect the incentives to persist in, or seek a way out of, the confrontation. If the situation is perceived as being extremely dangerous, as is the case in games of Chicken, the actors involved are likely to exercise more caution than they might if the crisis is seen as relatively cost-free. It is also possible that a perception of danger will increase the search for mutual accommodation.

With this in mind it is now useful to examine the two types of dyadic crisis interaction known as Chicken and the Prisoner's Dilemma. The main difference between the two is that in a Prisoner's Dilemma mutual non-cooperation brings about the second worst outcome as seen by decision makers, while in Chicken mutual non-cooperation brings about the worst outcome. The differing outcomes of the Prisoner's Dilemma and Chicken are displayed in Figure One. In Prisoner's Dilemmas, the only way a side loses completely is if it cooperates and its adversary does not (producing a 5,0...
This makes cooperation a tenuous goal. In games of Chicken, however, cooperation is promoted because persistent non-cooperation will bring about a loss for both sides (0,0). Because nothing is gained by persistent non-cooperation, one or both sides often choose to swerve thereby ending the conflict completely. Conflicts between nuclear states are considered to be games of Chicken as non-cooperation would bring about the potential destruction of both competitors.

**Prisoner's Dilemma**

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<th>Cooperate</th>
<th>Defect</th>
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<tr>
<td>Cooperate</td>
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<tr>
<td>Defect</td>
<td>5,0</td>
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**Chicken**

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<th>Swerve</th>
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<td>Straight</td>
<td>5,1</td>
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**Figure One: Prisoner's Dilemma and Chicken**

In their review of international conflicts, Snyder and Diesing (1977) note that conflicts, when portrayed as games, can be characterized as being either symmetric or non-symmetric. Their finding of interest is that there was a sharp difference in behavior between parties in Prisoner's Dilemmas and parties in Chicken (and asymmetric games).
Parties in Chicken and asymmetric games do not prefer the outcomes that come with mutual firmness, and thus the party that can show it will continue to stand firm will usually prevail. In Prisoner's Dilemma situations, each party prefers war (or the non-cooperative outcome) to accepting the other's demand. This outcome is intuitively believable, for as Snyder and Diesing (1977) suggest:

When this is realized [that both parties prefer war to concession in Prisoner's Dilemma], the parties know they must reduce their goals to something the other can accept, or the outcome is likely to be war. There occurs an internal reassessment of goals, plus probing the opponent, to determine what is essential and what can be sacrificed, and what the opponent is willing to give up. The communication of reduced goals to the opponent is the turning point, after which the parties make reciprocal concessions leading to compromise. In the Chicken cases..., one or both parties prefer to yield than risk war. Therefore when one party establishes superiority of resolve it can force the other to give way completely, and usually does so.

Thus situations that are seen by the actors as Prisoner's Dilemmas are more likely to endure because there is less risk that they will bring about the worst outcome. While a situation seen as Chicken will bring about great pressure to either (1) convince the other party that the non-cooperative mode will continue or (2) work to bring about the cooperative outcome. As an example, the Cuban Missile Crisis can be seen as a game of Chicken, with Kennedy's non-cooperative move being continued preparations for an invasion while Kruschev's non-cooperative move was continued installation and preparation of the missiles (Bundy 1988).
If both persisted in their actions, war was likely, and as a result there were efforts to find a way out of the confrontation (Blight 1990).

When actors find themselves in a Prisoner's Dilemma, they will attempt to avoid mutual defection and at the same time attempt to avoid being exploited. One way to do this is to change the stakes of the contest by increasing the cost, or appearing to increase the cost, to the other side of mutual confrontation. In a sense, one actor is trying to convince the other that mutual confrontation is the worst outcome rather than mutual confrontation (mutual defection) being the second the worst outcome. Thus, one would expect to see actions taken with the intent of convincing an opponent of just this, leading to a greater and more intensive search for alternative outcomes (other than mutual confrontation) when crises are seen as Chicken than when they are seen as Prisoner's Dilemmas. An expected corollary to this would be "Crises seen as Chicken will bring about a greater search for alternative outcomes than those perceived as Prisoner's Dilemmas." The reason for this follows from the earlier discussion. Mutual confrontation under Chicken brings about the worst outcome. Thus, parties will be more likely to persist in confrontational behavior in the structure of a Prisoner's Dilemma rather than Chicken.

Interstate nuclear dyads produce these games of Chicken. The presence of nuclear weapons serve to
incorporate the element of deterrence and thereby aid in preventing conflict escalation. Thus, the conflict process between nuclear states is different from non-nuclear dyads as the participants in a nuclear dyad may be deterred not only from nuclear war, but also from escalation in general. Thomas Schelling (1966, 35) notes that common conceptions of deterrence "seem to depend on the clean-cut notion that war results -- or is expected to result -- only from deliberate yes-no decisions. But if war tends to result from a process, a dynamic process in which both sides get more and more deeply involved, more and more expectant, more and more concerned not to be a slow second in case war starts, it is not a 'credible first strike' that one threatens, but just plain war." In other words, states need not threaten an immediate full-scale nuclear attack on the other side in order to deter it. Instead, they can threaten to take actions that could lead to an undesired conflagration by a series of steps that cannot be entirely be foreseen. Empirical evidence bears out this argument: Alexander George and Richard Smoke (1974) found that one important cause of deterrence failure was the challenger's belief that he could control risks. In games of Chicken, this is not the case. Therefore, the logic of nuclear dyads indicate that they should be less prone to conflict than other interstate couplings.
Conflict Escalation and Nuclear Weapons

While it is clear that the deterrent value of nuclear weapons on crises in general is impressive among all the nuclear powers (warfare has not occurred between two nuclear powers since the creation of such weapons of mass destruction), it is less evident what specific impact nuclear weapons may have had on conflict escalation. Might the impact of nuclear weapons be felt also in terms of their coercive capabilities? In other words, is it reasonable to conceptualize nuclear arms not only as deterrent weapons, but as defensive weapons as well? The answer might be yes if one differentiates use from utilization. While the actual use of nuclear weapons would be strictly for punitive effect, the utilization of the threat of use of nuclear weapons could be used as a defensive measure to repel or stop an enemy from taking further action.

Nuclear weaponry's strong punitive nature provides an easy understanding as to why nuclear devices are often classified under the deterrent heading. Deterrence's goal, after all, is to dissuade an enemy from initiating an action by threatening a highly credible punitive response. In other words, deterrence in most instances threatens punishment. However, US nuclear doctrine in the 1970s and 1980s expanded the definition of deterrence by arguing that US nuclear doctrine should be expanded to include deterrence by denial.
as well as deterrence by punishment.\textsuperscript{11} The aim of deterrence by denial is to hold at risk strategic assets (counterforce targets), especially those assets "whose destruction would deny [the enemy] military success" (Payne 1998a).

Defense, on the other hand, is focused upon protection once an action has begun. A state's defensive capability is its ability to limit the costs an adversary can impose on it (Snyder 1961; Powell 1990). Defense seeks to stop or reverse an action, goals nuclear weapons have not typically been associated with.

But while nuclear weapons are best described as deterrent weapons (Waltz 1990), when conflict does arise between two states nuclear weapons might have some defensive value in terms of their coercive potential (Feldman 1995). To be clear, the actual "use" of nuclear weapons would not be considered a defensive move, but rather a state's efforts to "utilize" nuclear weapons as a bargaining method during a conflict could be considered a defensive gesture. This latter employment could be defined as an example of coercive diplomacy, which is limited to defensive actions (George 1991).

Alexander George (1991, 5) clearly restricts coercive diplomacy to defensive use as he describes it as "efforts

\textsuperscript{11} The classic description of the distinction between deterrence by denial and deterrence by punishment is presented by Glen Snyder (1961). See also Slocombe (1981), (Gray 1984) Sloss and Milot (1984), and Payne (1996).
(made) to persuade an opponent to stop and/or undo an action he is already embarked upon."

While the threat of the use of nuclear weapons for coercive diplomacy has rarely occurred in overt instances (George (1994) describes the Potsdam Declaration as one such instance), it seems reasonable to assert that nuclear weapons might have influenced state behavior in more subtle ways. The ominous threat such weapons provide might elicit more pacific reactions, or at least a more cautionary approach, between adversaries during a conflict as each seeks to prevent an escalation toward Armageddon.

Thus, it is important to examine what impact the presence, or lack thereof, of nuclear weapons might have in conflict situations in order to identify if the characteristics of such weapons not only may have served to prevent interstate warfare, but also to have dulled conflict in general among pairs of states. This study is notable in that the impact nuclear weapons have had on conflict escalation between interstate dyads (if they have had any) has not yet been explored quantitatively at all, and qualitatively outside of the US-Soviet dyad. This probably is the case for two major reasons: first, the relative dearth of nuclear weapons states since the first use of the weapons in 1945; and second, their non-use following the end of World War II. Since that time there have been only nine states identified as having nuclear weaponry (Spector 1990):
the United States (1945); the USSR (1950); the UK (1953); France (1960); China (1964); Israel (1970); India (1974); the Republic of South Africa (1980); and Pakistan (1986). Such a limited number of states has not provided scholars much data with which to work.

This study argues that the relative scarcity of data on dyadic relations between nuclear weapons states can be overcome by simply altering the dependent variable from the mere presence of interstate warfare between states to a scaled interstate dispute score which serves to measure and compare the level of conflict between states involved in dyadic confrontations. Thus, the impact of nuclear weapons can be directly measured to understand if such weapons truly have had a pacifying effect on interstate conflict.
CHAPTER THREE: THE IMPACT OF NUCLEAR WEAPONS ON CONFLICT ESCALATION

This chapter addresses through statistical analysis whether or not nuclear weapons have had an identifiable and significant impact on crisis escalation. It is hypothesized that the symmetrical presence of nuclear weapons in dyads will lessen conflict escalation. The methodology and the means by which this chapter will scientifically address this inquiry now follow.

Methodology

The most solidly proven contribution of scholars' of international politics to the social science world at-large has been the notion first asserted by Immanuel Kant (1970) that democracies do not fight one another. This so-called "democratic peace" phenomenon has time and again survived the strict rigors of quantitative analysis to ascend in the realm of international politics as the discipline's most identifiable law.

The democratic peace proposition, however, augurs caution when presenting its findings regarding democracies, by noting that while democracies refrain from warfare in dyadic relations with one another, when faced with a state of a differing type (i.e. autocracy, anocracy, etc.) democracies are just as likely as other types of states to engage in conflictual behavior. Thus, democratic states are pacific only in their dealings with like states. In fact,
four of the five most conflictual states during the 170 years between 1912-1982 were democracies (Chan 1983). Only Russia/USSR was a non-democracy among France, India, Israel, and the United Kingdom.

Might the same be the case with respect to nuclear weapons' states? In order to ascertain if there is a significant difference in conflict escalation among differing types of states three categories of dyads have been created: symmetrical nuclear dyads (two nuclear states), asymmetrical nuclear dyads (only one nuclear state), and symmetrical non-nuclear dyads (two non-nuclear states).

The conflict observations will be taken from the Militarized Interstate Dispute (MID) data set (Gochman and Maoz 1984; Jones, Bremer and Singer 1997). Those disagreements between states considered to be interstate disputes must contain at least one of the following three events: 

"(1) an explicit threat to resort to military force; (2) a mobilization, deployment, or other display of military force; or (3) an actual resort to military force" (Senese 1997, 4). For these events to be included, they "must be explicit, overt, non-accidental, and government sanctioned" (Gochman and Maoz 1984, 586).

The current MID data set includes interstate dispute data through 1992 (Jones, Bremer and Singer 1997). The year 1950 has been chosen as the beginning point for data
analysis in this paper because this was the first full year in which more than one state in the international system had nuclear weapons. Both the United States and the Soviet Union had the atomic bomb in 1950, firmly rooting the two superpowers as Cold War adversaries. Within this time period of 1950–1992, 1,042 conflict dyads are available for study.

**Dependent Variable: Conflict Escalation**

Escalation processes have been analyzed previously in concert with deterrence (Bueno de Mesquita and Riker 1982; Zagare 1992), arms races (Richardson 1960) and the bargaining process (Schelling 1960, 1966; Kahn 1965; Young 1968; Smoke 1977). Schelling (1960, 1966) suggests that one of the effects of escalation is to persuade an opponent to back down by playing on the fear that continued and/or future escalation will lead to disastrous results. Thus, escalation is often conceptualized as a game of competitive risk taking, with actors attempting to demonstrate their superior ability to tolerate risk (Schelling 1960, 1966; Kahn 1965, Maoz 1985, 1990; Geller 1990).

Disputes between states are rarely, if ever, static occurrences (Ray 1974). Such confrontations often evolve from one stage of conflict to another involving an augmentation in hostilities as the initial spark of the confrontation creates a larger conflagration. Thus, this dissertation employs two measures for its dependent
variables. First it uses the highest level of conflict reached between pairs of states as a dependent variable. This score (see Table One), referred to as the level of hostility, is a scaled reference point allowing the

<table>
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<th>Table One: MID Dispute Level Codes</th>
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<tr>
<td>1 = Nonmilitary act</td>
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<tr>
<td>2 = Threat to use force</td>
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<tr>
<td>3 = Threat to blockade</td>
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<tr>
<td>4 = Threat to occupy territory</td>
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<tr>
<td>5 = Threat to declare war</td>
</tr>
<tr>
<td>6 = Threat to use nukes</td>
</tr>
<tr>
<td>7 = Show of troops</td>
</tr>
<tr>
<td>8 = Show of ships</td>
</tr>
<tr>
<td>9 = Show of planes</td>
</tr>
<tr>
<td>10 = Alert</td>
</tr>
<tr>
<td>11 = Nuclear Alert</td>
</tr>
<tr>
<td>12 = Mobilization</td>
</tr>
<tr>
<td>13 = Fortify border</td>
</tr>
<tr>
<td>14 = Border Violation</td>
</tr>
<tr>
<td>15 = Blockade</td>
</tr>
<tr>
<td>16 = Occupation of territory</td>
</tr>
<tr>
<td>17 = Seizure</td>
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<tr>
<td>18 = Clash</td>
</tr>
<tr>
<td>19 = Raid</td>
</tr>
<tr>
<td>20 = Declaration of war</td>
</tr>
<tr>
<td>21 = Use of CB weapons</td>
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<tr>
<td>22 = Interstate warfare</td>
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quantitative differentiation between levels of conflict. MID dispute level types range from 1 (a nonmilitary act) to 22 (interstate warfare).

The level of hostility in a dispute is an important marker for distinguishing it from other disputes. For example, it seems reasonable to assert that a threat to blockade an area is less hostile than an actual naval blockade, just as a mere threat to use force is less hostile than an actual raid into another state's sovereign territory. Thus, the higher a dispute escalates, the more dire its consequences can be.

As a second marker, dispute severity also was used as a dependent variable for conflict escalation. The severity of interstate disputes was measured by the number of battle fatalities registered by both states. An increase in the number of fatalities is considered to display conflict escalation because "an increase in severity is usually associated with an increase in the intensity of actions taken by combatants, in terms of militarized uses of force" (Senese 1997, 7). In other words, higher battle fatalities are considered to be characteristic of a more serious conflict. The MID data set employs seven levels of fatalities in its coding procedures: 0, 1 to 25, 26 to 100, 101 to 250, 251 to 500, 501 to 999, and >999 battle deaths.  

12. MID does not provide the actual fatality numbers for disputes.

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Independent Variables

Eight independent variables are examined in this chapter. The first two of these directly relate to the focus of the dissertation: presence of nuclear weapons. It is hypothesized that those dyads in which both of the paired states have nuclear weapons will produce less conflictual outcomes than those dyads in which only one nuclear power is present, or in which none is present. This is because in symmetrical nuclear dyads there is greater destructive potential than in the other two types of dyads. Further, asymmetrical nuclear dyads are hypothesized to be less conflictual than non-nuclear dyads again because of the deterrent value of such weapons.

Two dummy variables have been created to measure the effect of nuclear weapons on conflict escalations. First, a symmetrical dyad variable has been created. In this variable dyads in which two nuclear states are present are coded as "1" and all other cases as "0". Second, an asymmetrical dyad variable has been created. For this dummy variable those dyads in which only one nuclear state is present are coded as "1" with all others coded as "0". A dummy variable need not be created for the independent category of non-nuclear dyads because its value is determined by the first \( k - 1 \) dummies entered into the regression equation. In other words, the independent
category (also known as the reference category) is equal to the $Y$ intercept.

The data set provides 1,042 conflict dyads between the years of 1950-1992. 56 of these conflicts involve a symmetrical pairing of nuclear powers. 291 dyads are asymmetrical in nature. These dyads include one nuclear power and one non-nuclear state. The remaining 695 cases are dyads in which no state with nuclear weapons was present.

The third predictor variable to be used in this study is democracy. Numerous studies have been undertaken to explore the effect of democratic institutions on conflict resolution among states (Chan 1984; Maoz and Abdolali 1989; Bremer 1992, 1993a, 1993b; Dixon 1993; Russett 1990, 1993,1995; Senese 1997). Strong agreement among scholars has arisen that democratic dyads produce more peaceful outcomes than other dyadic groupings. The coding of states as being democratic or not is based on scores taken from the Jaggers and Gurr’s (1995) Polity III data set which has been employed in recent studies on the effects of democracy on conflict (Reiter and Stam 1998; Ward and Gleditsch 1998). Polity III rates individual states' level of democracy on an 11-point (0-10) scale (Jagger and Gurr 1995). This is a continuous interval measure ranging from a score of "0" least democratic to a score of "10" or most democratic.
Fourth, a variable has been created to measure the impact of dyadic maturity on conflict escalation. This variable will attempt to capture the impact of stability on interstate relations. The assumption here is that more mature polities will recognize the potential costs of escalation as well as the ability to call on past experience to reduce the likelihood of conflict severity. Scholars have noted a tendency for states in transition, specifically, states whose regimes are in flux, to be more likely to engage in military ventures than those whose governments remain stable (Mansfield and Snyder, 1995).\(^{13}\) The logic of this argument states that those countries which are in a state of flux are more prone to military action because their leaders are seeking to rally their publics around a patriotic cause in order to save their faltering position. This rally around the flag effect (Miller 1995; Levy and Vakili 1992) is intended to provide the leader with the necessary internal support to stay in power.

Therefore, a variable of dyadic maturity (or stability) has been created by measuring polity persistence in years. This variable will be dichotomized, as has been common practice in previous studies (Bremer 1992; Senese 1997), as

\(^{13}\) While the findings of Mansfield and Snyder (1995) are generally supported, a study by Gleditsch and Ward (1997) does challenge them. However, this dissertation finds the work of Mansfield and Snyder (1995) to be more compelling.
mature/not mature based on a twenty year threshold. Again the data will be drawn from the Polity III data-set which extends from 1800-1994. If both the regimes in a dyad have persisted for at least twenty years the dyad will be considered mature; otherwise the dyad will be considered not mature.

As a fifth independent variable, proximity will be studied. The impact of geographical proximity has been shown in previous studies to be significant on the escalation of hostilities between states not only because of the animosity close interactions can produce, but also because of the monetary expense of such efforts (Bremer 1992; Diehl 1985; Russett 1993; Vasquez 1993; Senese 1997). War fighting is a costly business after all, and therefore the monetary impact of moving troops and equipment often serves as a strong deterrent. Proximity serves to lessen these costs, thereby augmenting the chances for interstate bloodshed. As Senese (1997) argued, "States are less constrained for participation (in warfare) when the venue of combat is geographically proximate."

In order to determine the effects of proximity on conflict escalation the Correlates of War (COW) contiguity data set has been used. Five divisions of state-to-state contiguity are delineated by the COW data: contiguous by land, or separated by 12, 24, 150, or 400 miles or less of water (those over 400 miles are not considered contiguous).
Geographically proximate rivals are classified as those that are contiguous by land or separated by 150 miles or less of water.¹⁴ Proximate dyads are coded as "1" and all others as "0".

Sixth, the impact of alliances on interstate relations will be examined. The inclusion of data on alliances is needed and appropriate because of its possible relation to joint conflict. Alliance members generally have been shown to engage infrequently in conflict with one another (Mihalka 1976; Bueno de Mesquita 1981; Weede 1989; Kim 1991; Bremer 1992). In order to ascertain whether dyad pairs are alliance members the Correlates of War alliance data is used (Small and Singer 1982). Weede (1991) and Bremer (1992) both find that the major effect of alliance on conflict can be captured in an allied/not allied dichotomy. Therefore, allied dyads are coded as "1" and all others as "0".

Seventh, a variable measuring trade relations for each of the dyadic pairs of states has been created. Realist thinkers have argued that the relative gains of one trading partner could ultimately threaten the survival, or at least the international standing, of the other (Gowa and Mansfield 1993; Grieco 1988). Liberals, on the other hand, have

¹⁴. This delineation is used by Senese (1997, 11) who defends it by noting, "An earlier study (Bremer 1992) shows the major effect of proximity on conflict to be captured by a 'contiguous by land or sea' versus 'not contiguous' distinction." In both these studies (Bremer 1992; Senese 1997) 150 miles was shown to be the proper cut-off point in accounting for proximal significance.
suggested that the absolute gains accumulated by both trading partners may create security externalities, which would both increase trade and decrease conflict (Snidal 1991).

There is no strong scholarly consensus, however, on the impact of trade on international conflict. Several studies of interstate conflict and trade have shown that conflict is negatively related to international trade (Gasiorowski and Polachek 1982; Polachek 1980; Pollins 1989). Yet Russett (1967) and Barbieri (1996) produce quite different findings. Russett (1967, 198) found that trade partners were "twice as likely to fight" than those which were not. Barbieri (1996) concludes that trade interdependence increases the probability that dyads will experience militarized disputes. These mixed findings suggest any hypothesis with respect to the impact of trade on conflict levels between interstate is imperiled. Thus, it is assumed that trade will have a significant impact on dyadic conflict, yet in what direction remains uncertain.

The majority of trade data are derived from the International Monetary Fund's Direction of Trade Statistics electronic tape.¹⁵ Data were reconfigured from national

¹⁵. Data are made available by Katherine Barbieri (1996b). Data were collected for all sovereign states within the interstate system, as defined by the Correlates of War (COW) Project, for the period 1870-1992. Barbieri (1996a, 31) notes concerning the data: "In many instances, the electronic version of the IMF data tape reports trade flows as zero or missing, but these trade values are reported in their annual publications. Missing data were
accounts to dyadic trade flows using the importing countries' reported trade figures. When these figures were absent, the exporter's reports were used. The values that each state reports to import from each partner were added to derive the dyadic total. Each state's total imports and export figures were combined to arrive at each nation's total trade.

Unlike the case of trade, one key variable affecting the decision to escalate has reached a status of general consensus among researchers. A number of studies have shown that an actor's relative military capabilities is the most vital variable affecting the decision to escalate (Garnham 1976a, 1976b; Organski and Kugler 1980; Bueno de Mesquita 1981; Leng and Gochman 1982; Gochman and Maoz 1984; Bremer 1992; Geller 1993). Military capabilities are important to consider because they determine the level of potential costs which can be doled out by either side (Small and Singer 1982). Empirical evidence suggests that states of relatively equal military capability are more likely to go to war with each other than states with disparate capabilities (Bremer 1992).

So as a eighth marker, an independent variable measuring military capabilities has been created. This

investigated and supplemented with The International Monetary Fund's International Financial Statistics (1956-1998) and The Direction of Trade Statistics Yearbook (1956-1998)."
capability score was obtained from the Correlates of War (COW) data set (Small and Singer 1982). Military capabilities are measured by six indicators: military expenditures, military personnel, iron/steel production, energy consumption, total population, and urban population. These indicators are combined in the COW data set to create an index reflecting a state's percentage of the total capabilities in the world for each year. From this index, a variable is created to serve as a reflection of the ratio of military capabilities of the two actors per dispute. The stronger state is represented in the numerator and the weaker state in the denominator. The ratio will vary from 1.0 (the actors' capabilities are equal) to any positive number less than 1.

These eight independent variables were regressed against the dependent variable measures of level of hostility and severity of hostility in order to ascertain the impact of each on conflict escalation.

Results

The two-tailed regression results show (Tables Two and Three) that nuclear dyads significantly reduce conflict escalation between states in terms of level of conflict but not in terms of fatalities. The Y intercept value of 13.961 is the mean response if all the independent variables equal zero. If such was the case the model predicts an outcome of nearly 14 on the twenty-two point MID scale.
Table Two: The Effect of Nuclear Weapons on Conflict Level

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimate</th>
<th>t-Score</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERCEPT</td>
<td>13.961</td>
<td>16.422</td>
<td>.01</td>
</tr>
<tr>
<td>Asymmetrical</td>
<td>.605</td>
<td>1.502</td>
<td>.13</td>
</tr>
<tr>
<td>Nuke Symmetry</td>
<td>-1.555</td>
<td>2.026</td>
<td>.04</td>
</tr>
<tr>
<td>Democracy</td>
<td>-.502</td>
<td>1.199</td>
<td>.15</td>
</tr>
<tr>
<td>Maturity</td>
<td>-1.932</td>
<td>3.137</td>
<td>.01</td>
</tr>
<tr>
<td>Proximity</td>
<td>.676</td>
<td>1.876</td>
<td>.06</td>
</tr>
<tr>
<td>Allied</td>
<td>-1.871</td>
<td>2.009</td>
<td>.05</td>
</tr>
<tr>
<td>Trade</td>
<td>.001</td>
<td>1.763</td>
<td>.08</td>
</tr>
<tr>
<td>Capabilities</td>
<td>2.765</td>
<td>2.392</td>
<td>.02</td>
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</tbody>
</table>

N = 840
R² = .06

Table Three: The Effect of Nuclear Weapons on Conflict Fatalities

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimate</th>
<th>t-Score</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERCEPT</td>
<td>.295</td>
<td>1.643</td>
<td>.10</td>
</tr>
<tr>
<td>Asymmetrical</td>
<td>.078</td>
<td>.937</td>
<td>.34</td>
</tr>
<tr>
<td>Nuke Symmetry</td>
<td>-.024</td>
<td>.156</td>
<td>.88</td>
</tr>
<tr>
<td>Democracy</td>
<td>-.077</td>
<td>.590</td>
<td>.56</td>
</tr>
<tr>
<td>Maturity</td>
<td>-.182</td>
<td>1.462</td>
<td>.14</td>
</tr>
<tr>
<td>Proximity</td>
<td>.449</td>
<td>5.999</td>
<td>.01</td>
</tr>
<tr>
<td>Allied</td>
<td>-.147</td>
<td>.775</td>
<td>.44</td>
</tr>
<tr>
<td>Trade</td>
<td>-.001</td>
<td>.762</td>
<td>.45</td>
</tr>
<tr>
<td>Capabilities</td>
<td>.192</td>
<td>.782</td>
<td>.43</td>
</tr>
</tbody>
</table>

N = 789
R² = .06

Beginning with the two predictor variables of concern to this dissertation, the nuclear symmetry variable reduced the level of conflict between states by 1.55 and was significant at the .04 level. This indicates that a pairing of symmetrical nuclear dyads leads to a 1.55 reduction in the level of conflict on the twenty-two point MID scale. In
the case of asymmetrical nuclear dyads an increase in conflict likelihood was found, though it was not significant.

This divergence in findings between symmetrical and asymmetrical dyads suggests that nuclear deterrence is nullified in asymmetrical situations. This is most likely the case because symmetrical nuclear relationships promote extraordinary caution between countries, with both states preferring to err on the side of caution and de-escalate the conflict rapidly. The heightened tension of mutual Armageddon experienced by nuclear pairs does not exist (at least for the nuclear state) in an asymmetrical dyad as the non-nuclear state can only threaten with conventional forces. This, in turn, may reduce the deterrent value of the nuclear weapons altogether, as the non-nuclear side may feel that as long as it seeks only limited objectives, the nuclear state will not decide to employ its weapons of mass destruction for fear of international outrage.

The 1982 invasion and occupation of the Falkland Islands (referred to as the Malvinas Islands by the Argentineans) by Argentina provides a clear example of an asymmetrical nuclear dyad which escalated to the pinnacle of interstate warfare. A limited aims strategy promoted by

16. Other research has noted the 1973 Arab Israeli war as an instance of asymmetrical escalation, though it clearly was not dyadic in nature. Despite Israel's "undeclared" status, it was generally understood that it had begun production of nuclear arms at its Dimona factory in the Negev desert in 1968. Thus, by 1973 it was assumed that
Argentina's desire to recapture what it considered to be lost sovereign territory overrode any apprehensions the Argentinean junta in charge of the country might have had about a potential nuclear response to their military actions. The Argentinean leaders expected the British not to respond militarily to their action, and even if they did, they believed that they could still wage a limited war (Lebow 1985). It has been argued that the junta believed nuclear weapons would never be used in such a small regional theater because of the wrath which would befall Great Britain was it to do so (Lebow 1985).

An alternate explanation is that asymmetrical nuclear dyads permit bullying by the nuclear power. Nuclear capability allows the nuclear powers to react more strongly to conflict challenges by non-nuclear states. Thus when the United States decided to capture Manuel Noriega it invaded Panama to do so. Such a decision almost certainly would not have been made had Panama possessed nuclear weapons.

Most of the other independent variables were found to have a significant effect on conflict between states. The most powerful results were from the "Mature" variable (p = .01) which measured regime longevity. This variable indicates that the likelihood of conflict is decreased in dyads whose two states have had long and stable regimes.

Israel possessed twenty to twenty-five nuclear weapons (Paul 1994).
This was expected, as previous studies have shown that mature regimes tend to behave more prudently in conflict situations (Bremer 1992; Senese 1997).

Surprisingly, however, the presence of democratic institutions in dyads was not shown to produce significant effects (p = .425) on conflict escalation, though the sign is in the expected direction. While this finding is antithetical to Democratic peace research, it is important to recall that the dependent variable in this study is different. Democratic peace researchers are focused upon the presence of interstate war as a dependent variable, while this dissertation has expanded this to include any sort of conflict between states. This dissertation's findings are similar to those of Paul Senese (1997) who found that democratic dyads, while unlikely to escalate all the way to war, were just as likely as other types of dyads to escalate to threat and displays of force. Senese (1997, 1) finds: "Once a democratic pair has entered a militarized dispute, it is about as likely (possibly a little more so) to escalate that dispute through further stages of antagonism short of war, as is a non-jointly democratic dyad."

Geographic proximity was shown to have significant effects (p = .06) on dyadic escalation. This reconfirms the earlier research mentioned previously which asserted that states bordering one another are more likely to escalate
conflicts than those that do not. Thus, neighbors in conflict are more likely to escalate than distal dyadic combinations.

This clearly has important significance for current conflictual regional dyads. Since proximity appears to promote conflict escalation, might nuclear weapons be effectual in offsetting discord between neighbors, especially when other pacifying influences such as alliance and regime maturity are not present? This question will be addressed in the next chapter by qualitatively examining the Indo-Pakistani dyad.

Alliance membership was shown to significantly (p = .05) reduce the likelihood of conflict escalation between dyads. Again, this was to be expected, as the institutional constraints placed on alliance members were believed to reduce the likelihood of conflict escalation between them.

Military capabilities were shown to have a significant (p = .02) impact on conflict escalation as well. As the military capabilities of two states approach relative equality, the likelihood of escalation increases. This finding confirms earlier research, suggesting that evenly matched rivals are more likely to escalate than dyads containing two militarily divergent states. This is most likely the case in conventional instances because neither side is deterred. Relative conventional military equality precludes either party from clearly appreciating ahead of
time which side would prevail. Thus, the conflict escalates. The symmetrical effects of nuclear dyads produce pacifying results, though, because in such instances escalation of the conflict would lead to both sides losing. This is the reason why deterrence is successful in symmetrical nuclear dyads and not in symmetrical conventional dyads.

Trade was shown to have a very minimal impact in terms of its marginal significance \( (p = .08) \), as well as its magnitude of effect, on conflict escalation. As the level of trade between two states increased, so too did the likelihood of conflict escalation. These results are somewhat counter-intuitive, but, again, some earlier research has produced similar findings.

Employment of the second dependent variable (conflict fatalities) largely did not produce significant results. In fact, the only variable displaying a significant effect on fatality levels was geographic proximity \( (p = .01) \). This suggests that geographically proximal states tend to produce higher numbers of fatalities during dyadic conflicts with one another than other types of state couplings. This makes sense as proximity provides more and easier opportunities for contact with one's adversary.

Despite the fact that the remaining variables were not significant, their \( b \) values all were in the same direction as was in the case when conflict level was the dependent
variable, with the exception of trade. This movement from a positive to a negative b-value of the trade variable indicates that while trade may lead to marginally higher levels of conflict escalation between interstate dyads, the fatality levels between trading partners are reduced (though insignificantly). What this may indicate is that trading partners are inclined to escalate conflicts between one another, but rarely carry such escalation to a point of interstate war, where fatality levels would be higher. Recall also that previous research has produced mixed results with respect to trade and conflict. Irrespective, it seems reasonable based on the b-values and significance levels to assert that trade has a very minimal effect on conflict escalation between interstate dyads.

Summary

In total, these results suggest some positive effects for the presence of nuclear weapons in conflict dyads, but only when nuclear weapons appear on both sides. Nuclear symmetry must exist for any pacifying effects to occur. In such symmetrical nuclear dyads conflict levels are significantly reduced, though fatalities are not. Notably, however, asymmetrical dyads appear to be less stable. Indeed the regression results show that conflict and fatalities are increased in asymmetrical nuclear dyads, though these results are not significant.
So nuclear weapons can be a successful deterrent to conflict escalation when they occur in symmetrical interstate relationships. Thus, nuclear weapons appear to have played a significant role in placating relations between the great powers during the Cold War. Clearly, the presence of nuclear weapons on both sides of a dyad do not prevent conflict, but they do appear to limit it. Thus the spread of nuclear weapons throughout the international system may indeed produce some of the pacifying effects theorized. What is important is where these weapons spread. Introduction of nuclear weapons to only one side of an unstable regional rivalry (thereby creating a nuclear asymmetry) could produce disastrous results. Yet it appears that should both sides of a dyadic rivalry possess nuclear weapons, the level of conflict between the two will be reduced.
The Indo-Pakistani dyad is most often described as one either now imperiled by the presence of nuclear weapons on both sides, or placated by them. Few regions in the world, if any, present a more consistent and concentrated period of conflict between neighbors than in this section of southern Asia. Indeed international life itself was breathed into Pakistan as a result of conflict with India. Additional wars followed over the next twenty-five years and several conflicts have escalated to the brink of interstate war since their last major conflagration in 1971. The years of conflict between these two rivals has bred contempt for one another which is only exacerbated by cultural differences. The cultural fault lines along which Samuel Huntington (1993) has suggested will erupt the battlefields of the post Cold War era are clearly present between Hindus in India and Muslims in Pakistan. Conflict has become quotidian to the two neighbors and central to the rivalry between the two is their dispute over control of the Himalayan region of Jammu and Kashmir. Indian Hindus and Pakistani Muslims each claim ownership over this alpine boundary region and it is where the fiercest tensions between the two antagonists have manifested themselves.

There have been four major conflict situations between India and Pakistan in their dyadic history over the disputed
region of Jammu and Kashmir. The first two of these conflicts evolved into interstate warfare, while the latter two fell short of it. The goal of this chapter is to ascertain if the presence of nuclear weapons played a role in the pacification of the latter two conflict instances in the Indo-Pakistani relationship. This will occur by means of a case study examination of India and Pakistan's most contentious territorial dispute -- control over the Jammu and Kashmir region.

Following a background presentation which discusses how nuclear proliferation became a reality in this region of the world, the methodology for this case study is presented. Then analysis of the four major conflict situations between India and Pakistan over the Jammu and Kashmir area occurs and conclusions presented.

**Background: Indo-Pakistani Security Policy**

India's defense and security policy initially rested almost entirely in the hands of the first prime minister, Jawaharlal Nehru (Khalid 1988). He defined international security in terms of economic development and saw international insecurity as a product of the Cold War. Leadership of and participation in the Nonaligned Movement (NAM) seemed to Nehru to be an appropriate policy response on both counts. To his surprise, however, his own good intentions were not good enough. War broke out with China in 1962 after a rancorous buildup, ending the era of Hindi-
Chini bhai bhai (Hindus and Chinese are brothers), which had followed the 1955 Bandung conference. Nehru's vision of international harmony led by the two largest civilizations on Earth, India and China, was shattered. China's nuclear test a mere two year's later exacerbated India's sense of vulnerability (Chellaney 1998-99). By that time, Nehru had died, and his vision of peace between India and China effectively died with him.

In addition to China, India faced another serious threat from Pakistan, which launched attacks in 1947 and 1965 in hopes of seizing Kashmir, but the cessation of hostilities never resolved the problem. Six years following the 1965 attack, India was able to reduce the security threat from Pakistan. When, through its own mismanagement of internal problems, Pakistan faced a civil war, India was able to intercede on East Pakistan's side, assist in the creation of Bangladesh, and thereby eliminate what had been a two-front threat from Pakistan. In order to counter the possibility that China would help Pakistan once war broke out in 1971, India also reached a strategic agreement with the former Soviet Union, the Treaty of Peace, Friendship and Cooperation. By the end of the 1971 war, Pakistan was reduced to half its former size, and China faced the possibility of having to deal with the Soviet Union as well in any future conflict with India (Khalid 1988). Through
adroit diplomacy and a judicious use of force, India had achieved an enviably secure strategic position.

Pakistan was not so fortunate. Throughout its history, Pakistan's foreign policy has been dominated by the determination to incorporate Kashmir into the republic; its security policy, in turn, has been formed by the perceived threat from India (Ghumman 1990). A number of miscalculations by both Indian and Pakistani leaders led to the conflict over Kashmir, which occurred immediately following partition. Subsequently, statements by Nehru, as well as resolutions at the United Nations, supported holding a plebiscite within Kashmir to allow the Kashmiri people to choose between joining India or joining Pakistan. Pakistan's leaders convinced themselves that the Muslims of Kashmir would choose to join Pakistan, if given the chance. Frustrated through the 1950s by a lack of diplomatic progress at the United Nations and with New Dehli, Pakistan launched an attack against the Indian section of Kashmir in 1965. India already had made it clear that it would respond to such an attack as if it were against the Indian nation. Once Pakistan launched the well-advertised Operation Gibraltar, India simply made good on its warning and counterattacked across the international border. After a decisive Indian victory at Chawinda, a cease-fire was negotiated which left the states of Kashmir effectively the same as before the conflict.
According to Pakistani analyst Neil Joeck (1997, 265), "as neither China nor the United States assisted Pakistan in its aims in 1965 or prevented India from breaking up Pakistan in 1971, nuclear weapons came to be seen as the best available means to ensure that such an Indian policy would never become real." When India detonated a nuclear device in 1974, Pakistan's determination to arm itself with nuclear weapons was powerfully reinforced. Joeck (1997, 265) continues, "Just as China's detonation of a nuclear device 2 years following the 1962 war sharpened India's interest in nuclear weapons, so too did India's detonation of a nuclear device in 1974 accelerate Pakistan's program."

Pakistan's security environment continues to be characterized by the Kashmir issue and the fear that India will try to divide Pakistan further. Fearing that outside assistance, whether from the United Nations, the United States, or China, will be inadequate, Pakistan's nuclear program has become now the focus of its security policy, standing as a powerful symbol of Pakistani independence. Joeck (1997, 265) concludes, "From Pakistan's view, nuclear weapons are the only guarantee that India will not attack again and 'finish the job' begun in 1971, either through overt means or by exploiting Pakistan's chronic domestic disputes."

The 1998 overt nuclear testing by India and Pakistan did not make them nuclear newcomers. As was mentioned
earlier, in 1974 New Dehli detonated a nuclear-fission device with a yield in excess of ten kilotons (kt) -- not much less than that of the Hiroshima bomb (Singh 1998). This was the result of a massive nuclear research effort undertaken by India following China's 1964 nuclear test. A.B. Vajpayee, a future Prime Minister of India, said as a parliamentarian in 1964 that (Sharma 1998, 30), "the answer to an atom bomb is an atom bomb, nothing else." As for Pakistan its efforts to develop a nuclear arsenal began in earnest following its defeat in the war with India in 1970-71, and were accelerated following India's 1974 test. Yet the seeds of the efforts of such a nuclear program were being sown in the minds of Pakistani policymakers by the 1960s (Anwari 1988). Zulfiqar Ali Bhutto, Pakistan's future Prime Minister, argued (Weismer and Krosney 1981, 48), "If Pakistan restricts (its) nuclear programme it would...enable India to blackmail Pakistan with (its) nuclear technology. Our problem, in its essence, is how to obtain such a weapon in time before the crisis begins."\(^{17}\)

\(^{17}\) It is notable that China, who later became a major supplier of nuclear technology to Pakistan, was largely absent from providing nuclear assistance to Pakistan as its program began. In fact, France was singled out as Pakistan's most important nuclear partner until American pressure led Paris to cancel the sale of a plutonium-reprocessing plant in 1978 (Weismer and Krosney 1981). This has led to suggestions that China's inability to extend nuclear support to Pakistan in the 1965 and 1970-71 wars may have been one of the factors prompting the Pakistani program (Weismer and Krosney 1981). By the mid-1980s, however, China had become a major contributor to Pakistan's nuclear and ballistic armament programs (Gelb 1984a, 1984b).
Thus the 1998 nuclear tests by India and Pakistan came long after both states initiated their military-nuclear efforts. These tests occurred after the production of substantial quantities of fissile material and well after the deployment of a first-generation of nuclear-capable delivery vehicles. This is not the sequence followed by the "official" nuclear-weapon states, where nuclear testing took place at the earliest feasible moment. Both the Indian and Pakistani authorities went out of their way to underline that their tests were the capstone to long-established weaponization and delivery-vehicle programs. On 17 May 1998, Dr. A.P. J. Abdul Kalam, the scientific advisor to the Indian Minister of Defense, stated that "weaponization is now complete," adding that India's Prithvi ("Earth") and Agni ("Fire") ballistic missiles were capable of carrying "any type of warhead" (Albright 1998). Similarly, Dr. A.Q. Khan, who has been key to Pakistan's nuclear and ballistic-missile ambitions, indicated on 31 May 1998 that mass-production of the Ghauri intermediate-range ballistic missile (IRBM) had started, and that Pakistan could deploy nuclear warheads on the Ghauri within days (Albright 1998).

Both Pakistan and India have tested, with varying degrees of success, two categories of fission bombs: atom bombs with power sufficient to wipe out a medium-size city (a 12 kt weapon by India and 15 kt weapon by Pakistan); and sub- (or very low) kiloton devices presumably serving as
battlefield nuclear weapons (Hotz 1998). India has also indicated that it has tested a 43 kt hydrogen bomb. Such a low yield for a fully fledged thermonuclear weapon would indicate that India has a good mastery of "down-scaling" techniques, which make it possible to derive, from a comparatively small test, a set of data corresponding to that of a much more powerful explosion (Hotz 1998). Conversely, if the device had "fizzled", further testing could be necessary.

The number of weapons available can only be estimated from what is known of the relevant Indian and Pakistani sources of fissile material. India may have produced some 400 kilograms of plutonium reprocessed from fuel irradiated in the Cirus and Dhruva reactors, from which 70-80 nuclear devices could have been manufactured (Heisbourg 1998-99). Given the age, breadth and depth of the Indian nuclear program, this should be considered a minimum, rather than a maximum figure (Heisbourg 1998-99). Other sources suggest that India may dispose up to 1.95 tons of plutonium derived from its six unsafeguarded CANDU-type nuclear reactors -- in other words, enough to produce more than 400 warheads (Steer 1998). In comparison, in late 1998 the UK possessed fewer than 200 operational nuclear warheads (The Military Balance 1998-99). India also has a tritium-production capability for hydrogen bombs. Pakistan's nuclear weapons are currently produced from centrifuge-generated highly enriched
uranium at the Kahuta facility. Kahuta, which has been in operation since 1981, is based on a design absconded by Khan from the Anglo-German-Dutch URENCO facility at Almelo in the Netherlands (Leonard and Scheinman 1993). Fissile material may amount to between 400kg and 600kg, allowing for the manufacture of some 20-30 weapons (Albright 1998; Steer 1998).

Over the years, India and Pakistan have acquired a broad array of aircraft which could readily be (and may, in a number of instances, already have been) configured for nuclear missions (The Military Balance 1997-98). With 88 Jaguar and 147 MiG-27 fighter-bombers and an abundance of fighters which could play an escort role (among them 64 MiG-29s, 35 Mirage 2000s and 238 MiG-21s), India can afford to dedicate a substantial number of aircraft to nuclear missions (Bailey and Morimoto 1998). Pakistan is not quite so well-endowed, but it certainly has enough aircraft to conduct a nuclear mission successfully: 34 F-16A/B and 15 Mirage IIIEP aircraft could form the nucleus of an atomic strike force, with a dozen squadrons of Chinese and French-made aircraft providing fighter cover (Bailey and Morimoto 1998). A large proportion of these Pakistani and Indian aircraft are based close to the border between the two countries, in the vicinity of Lahore (Sargodha) and New Dehli (Hindan and Ambala) (Norris and Arkin 1998). Each nation's capital is within easy reach of the other's
aircraft. The largest economic centers of the two countries, Karachi (eight million inhabitants) and Mumbai (12 million) are also within operational range (Bailey and Morimoto 1998). Indeed, one of the most troubling characteristics of the Indo-Pakistani theater is the short distance between each potential contender's prime political, military and economic targets. New Dehli and Islamabad are some 600 kilometers apart, Mumbai and Karachi around 1,000km (Delpech 1998-99).

At the tactical level, India has created the family of Prithvi missiles from the SA-2. India has 75 Prithvi 1, which has a range of 150km and a 1,000kg payload (Heisbourg 1998-99). Several are stationed at Jullundur, less than 100km from the Pakistani border. Much of the Pakistani Punjab, including Lahore, is within the range of these forward-based missiles. Longer-range versions (250 km and 350 km respectively) are also being produced, though with the trade-off of smaller payloads of 500kg (Heisbourg 1998-99). Notably, this lighter payload remains sufficient for nuclear-weapon delivery.

India is also working on a sea-borne missile called the Sagarika ("Oceanic"), which may be ballistic or air-breathing (Hill 1998). Heisbourg (1998-99) has suggested that India may have gained submarine-missile experience while leasing a nuclear-powered guided-missile submarine (SSGN) from the Soviet Union between 1988-91 (The Military
Balance 1991-92). Despite this, Francois Heisbourg (1998-99, 81), an Indian military expert, argues that "unless it bought one off the shelf, it is difficult to imagine how such a capability could become available before 2005 at best, assuming that it would be indigenously developed."

Pakistan's missile program is in many respects quite similar to India's. Pakistan tested the road-mobile Ghauri missile (also known as the Hatf 5), on 6 April 1998 (Fulghum 1998). This test followed soon after the Hindu nationalist Bharatiya Janata Party (BJP)'s success in Indian elections in March 1998. The missile has a range of over 1100 kilometers (Sidhu 1998). In terms of tactical ranges, Pakistan has produced the Hatf 1 (100km) and Hatf 2 (300km), both with a 500kg payload (Norris and Arkin 1998).

In sum, India and Pakistan are both rapidly moving towards a diversified nuclear dyad composed of aircraft and ballistic missiles, although India will possess, for geographical reasons, a more extensive coverage of Pakistan than Pakistan will have of India. Such diversified forces on both sides enhance the deterrent capability of both sides.

Methods

It is believed that by surveying how tensions have evolved over the decades between India and Pakistan with respect to the Kashmir issue that the impact nuclear weapons have or have not had on conflict between the two neighbors
can be assessed. Clearly in the first two conflict instances over Jammu and Kashmir, tensions escalated to the level of interstate warfare, while in the latter two they did not. But what role did nuclear deterrence play in the two most recent conflict situations, if any, in preventing escalation? This question will be addressed by two methods. First, the independent variables used in the quantitative section of this dissertation will be examined more closely. Alliance participation, geographic proximity, level of trade, military capabilities, presence of nuclear weapons, regime stability, and regime type all are considered in four cases of conflict between India and Pakistan: 1947, 1965, 1990, and 1999. All four instances are focused around the issue of the disputed territory of Jammu and Kashmir. The level of escalation and number of deaths again will be used as dependent variables in order to ascertain if the presence of nuclear weapons affected the level of conflict between India and Pakistan.

Two of the independent variables have remained static throughout the whole Indo-Pakistani relationship and therefore only will be addressed once and not for each of the four cases in question: alliance membership and geographic proximity.

Second, comments by decision-makers of consequence (both political and military leaders) on both sides of the Indo-Pakistani disputes will be included to appreciate how
the presence of nuclear weapons affected their choices. Such commentary by those in power provides a window to view what the major actors in the dispute were thinking at the time, as well as how the presence of nuclear weapons may have impacted the course of the conflict.

**Alliance Membership**

At no time in their history have India and Pakistan been members of the same formal alliance. This is notable because as this dissertation displayed in the previous chapter and as have other researchers have found in their studies, like alliance membership lessens the chance for conflict between states (Mihalka 1976; Bueno de Mesquita 1981; Weede 1989; Kim 1991; Bremer 1992).

Because India and Pakistan have been rivals throughout their history it seems very unlikely that any alliance partnership would be forthcoming between the two. Pakistan, in an effort to displace some of India's military advantages in manpower and technology over the years, has sought and achieved technology exchanges with India's other main regional rival, China. This has served to exacerbate tension with India and further precludes the likelihood of any Indo-Pakistani partnership.

Thus, the lack of like alliance membership between India and Pakistan does not permit a diminution in the likelihood of conflict such a partnership could produce. Instead, the two remain unbound by such institutional ties
and thereby forfeit the positive effects on conflict this variable has displayed in past interstate relationships.

**Geographic Proximity**

All wars to date have been fought in geographical terrain and produce spatial outcomes (though this will likely change in the next millennium as computer viruses and other technological warfare pose new threats to state security). The three wars between India and Pakistan all left spatial legacies which continue to dictate relations among the two countries. From the occupation of a large territory to the control of a portion of some obscure glacier, geographical claims have and continue to drive tensions in South Asia.

These tensions are augmented in the case of the Indo-Pakistani dyad because the two rivals share a border with one another. As was noted in the previous chapter, geographic proximity has been shown in this and other studies to have a significant impact on conflict escalation (Bremer 1992; Diehl 1985; Russett 1993; Vasquez 1993; Sengese 1996, 1997). Geographically proximal dyads are more likely to escalate conflict than geographically distal ones. The salience of a territorial disagreement (in the case of India and Pakistan their dispute over Jammu and Kashmir has served as a spur) tends to stimulate militarized disputes between

18. This idea will be expanded in the concluding chapter.
neighbors (Diehl 1992; Vasquez 1995). Thus, conflict situations between India and Pakistan are more likely to escalate because they border one another.

1947-48 Dispute Over Jammu and Kashmir

Between August and September 1947 the situation in Kashmir deteriorated rapidly when the Muslim subjects of the Maharajah rose in open revolt and were soon joined by fellow tribesmen from the Northwestern Frontier Provinces (Burke 1973). The Maharajah fled from Srinagar and in desperation, agreed to accede to India on October 26, 1947. As soon as India received the instrument of accession, it dispatched airborne troops to Srinagar (Morris-Jones 1982).

The rebellion was quelled and the Pakistani tribesmen were pushed out of Srinagar. By the end of 1947 there was a stalemate in the conflict. India was in control of over two-thirds of Jammu and Kashmir, while the rest remained in Pakistan's hands. The government of India was convinced of the legality of its position, arguing that India could not have tolerated the Pakistani attempt to influence forcibly the internal and external policies of any friendly neighboring state (Lamb 1966). In the case of Kashmir, the treaty of accession had given India the responsibility for the defense of Kashmir (Gupta 1966). In those circumstances, on January 1, 1948, India lodged a complaint under Article 35 of the UN Charter to persuade Pakistan to stop the aggression by withdrawing its regular troops and
denying the "invaders" the access to, and use of, its territory for operation against Kashmir (Gupta 1966).

The Security Council passed two resolutions after hearing from both India and Pakistan. The first resolution of January 17, 1948 asked the parties involved "not to aggravate the situation but to do everything to improve it" (Burke 1973, 22). The second resolution of January 20, 1948, established a mediatory commission that eventually came to be known as the United Nations Commission on India and Pakistan (UNCIP). During the next month, a draft resolution based on the consensus of opinions of the majority of the members of the Security Council, was worked out jointly by Canada and Belgium, calling for "the immediate cessation of all violence and fighting, the withdrawal of all forces and armed individuals who had entered the state, the return of all citizens who had left the state, the establishment of an administration commanding the confidence and respect of the people, and the holding of a plebiscite accepted under UN supervision at the earliest possible date" (Khan 1983). The UN mediation process finally brought the war to a close on January 1, 1949. The best estimate of casualties is a combined total of 1500 dead (Singer and Small 1972). The war also led to a substantial loss of territory for India, nearly 5,000 square miles (Lamb 1966).

This initial war between India and Pakistan should not have been shocking to international observers at the time.
Of four independent factors believed to increase the likelihood of conflict and war between states, all four forecast an intensification of hostilities in the Indo-Pakistani dyad in 1947. As noted earlier, the two's lack of like alliance membership and geographic proximity both pointed to conflict augmentation. Additionally, Pakistan's non-Democratic regime status, as well as the lack of regime maturity in both Islamabad and New Dehli suggested that tensions would escalate.

**Table Four: 1947-48 Indo-Pakistani Conflict**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Value</th>
<th>Escalation Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ally</td>
<td>No</td>
<td>INCREASE</td>
</tr>
<tr>
<td>Proximal</td>
<td>Yes</td>
<td>INCREASE</td>
</tr>
<tr>
<td>Democratic</td>
<td>No</td>
<td>INCREASE</td>
</tr>
<tr>
<td>Mature</td>
<td>No</td>
<td>INCREASE</td>
</tr>
<tr>
<td>Capability</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Trade</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Nuclear</td>
<td>No</td>
<td>NA</td>
</tr>
</tbody>
</table>

Outcome: **WAR**

Table Four provides a listing of all the independent variables believed to impact escalation, as well as the outcome of the conflict: interstate war. This eventual outcome was to be expected based on the variables listed in Table Four. There were no independent restraints on the
Indo-Pakistani dyad and as a result it escalated into a large war.

1965 Dispute Over Jammu and Kashmir

In the period 1964-65, there was considerable anxiety in Pakistan that its military advantage which had been built up through alliance with the West could be eroded in the wake of India's massive military rearmament by both the West and the Soviet Union. Indeed, by September 1965, when military aid was halted to both countries, US economic aid to India had exceeded aid to Pakistan by six billion dollars (Thomas 1992) (India's population, however, was four times that of Pakistan so that on a per capita basis, it received only half as much as Pakistan). It was argued, conspicuously by Prime Minister Zulfiqar Ali Bhutto, that Pakistan must act before the military balance tilted in India's favor and the window of opportunity closed forever (Lamb 1966). The advocates of war were supported by General Mohammed Musa, the Commander-in-Chief of the Army, who pointed out that despite an overall disparity because of India's military build-up, Pakistan still had "theater superiority" (Korbel 1966). In other words, a localized war fought specifically in Kashmir could still be won (Thomas 1992). Thus it appears that fears over conventional inferiority fueled Pakistan's second war with India over Jammu and Kashmir.
The curtain raiser before the actual warfare in Kashmir was played out in the dispute over the Rann of Kutch in the spring of 1965. Indian troops were decidedly disadvantaged. All the local advantages were with the Pakistanis. The Rann was well connected with roads from Pakistan and the border was close to Pakistan's forward positions, making it easy to move troops and supplies to the battle-front (Brines 1968). Thus, when fighting broke out on April 9, 1965, the Pakistanis launched a massive tank attack and had no difficulty in routing the Indian outposts. The Indians, recognizing the overwhelming tactical disadvantages, chose to retreat rather than lose lives and equipment. In Pakistan the military "victory" confirmed its perception of India's lack of nerves (Hasan 1978).

The euphoric leaders of Pakistan completely misread India's mood (Brines 1968). They had tested India's nerve and having found it wanting, now launched their plans for "Operation Gibraltar" to recover Kashmir. A secret committee headed by Bhutto decided on a Rann of Kutch type local campaign confined to Kashmir. According to the plans, Pakistan would send out 'Mujahiddin' and commandos across the border with Kashmir. Given the enormous popular discontent in Kashmir, their very presence would encourage the Kashmiris to rise in revolt. Pakistan's army would then appear to be seen as coming to the aid of the Kashmiris fighting Indian brutalities. The Kashmir dispute would be
back on the table and India would be forced into accepting
arbitration as it had done in the Rann dispute (Hasan 1978).

The whole plan backfired because the two assumptions on
which "Operation Gibraltar" was based proved wrong. Far
from the Kashmiri Muslims rising in rebellion, they actually
apprehended the "Mujahiddin" when they crossed into Kashmir
in August 1965, and promptly handed them over to the Indian
authorities. The Indians refused to confine the fighting to
Kashmir and showed little hesitation in violating the
international frontier (Lamb 1966). The desperate but
daring move by India to cross the international frontiers
saved Kashmir. The war which began on September 5th and
produced over 1,000 battle-deaths, ground to a halt 12 days
later as the US placed an embargo on arms to the
subcontinent. Both sides accepted a Security Council
resolution for a cease-fire soon thereafter (Thomas 1992).

19. India also sought an active end to the conflict as
a result of Chinese threats of "grave consequences" unless
India dismantled certain fortifications China claimed it had
erected between Sikkim and Tibet (the Chinese also demanded
the immediate return of 800 sheep and 60 yaks which they
claimed had been removed from Chinese territory). This
ultimatum ultimately led to warnings from the superpowers
and the US arms embargo (Ganguly 1986).

20. This was largely brokered by the Soviet Union as
the United States had alienated the two combatants with its
arms embargo. The Soviets arranged negotiations between
India and Pakistan in Tashkent beginning and concluding in
January 1966. The Tashkent Declaration produced important
territorial concessions by both sides. Thus the major
reason the war ended was because of superpower influence
(Ganguly 1986).
Ganguly (1986, 92) concludes:

The 1965 war demonstrated the continuing importance of the irredentist/anti-irredentist factor in Indo-Pakistani relations. Pakistan had resorted to war primarily because it believed that if it did not act in a decisive manner, the state of Kashmir would be integrated into India and international interest for Pakistan's concerns would dwindle. Here we see the continuing importance...of ideology. The Pakistanis had maintained that without their Kashmir their nation would be incomplete and simultaneously demonstrate the success of Indian secularism.

As was the case with the 1947 tensions, the 1965 Indo-Pakistani conflict over Kashmir was replete with indicators that it would escalate towards interstate warfare.

**Table Five: 1965 Indo-Pakistani Conflict**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Value</th>
<th>Escalation Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ally</td>
<td>No</td>
<td>INCREASE</td>
</tr>
<tr>
<td>Proximal</td>
<td>Yes</td>
<td>INCREASE</td>
</tr>
<tr>
<td>Democratic</td>
<td>No</td>
<td>INCREASE</td>
</tr>
<tr>
<td>Mature</td>
<td>No</td>
<td>INCREASE</td>
</tr>
<tr>
<td>Capability</td>
<td>.69²¹</td>
<td>INCREASE</td>
</tr>
<tr>
<td>Trade</td>
<td>47.5²²</td>
<td>MINIMAL</td>
</tr>
<tr>
<td>Nuclear</td>
<td>No</td>
<td>NA</td>
</tr>
</tbody>
</table>

Outcome: **WAR**

---

²¹. This is a relative capability measure for military forces between India and Pakistan. In the instance of 1965, Pakistan had 69% the capability of India.

Following the escalation formula put forward in the previous conflict instance, all the main independent factors indicated an escalation of hostilities (see Table Five). In the case of the 1965 conflict all six of the variables applicable to this conflict promoted conflict intensification between India and Pakistan. In addition to the two pervasive variables of "ally" and "proximity" the dyad was again not a grouping of two democracies; it was not a coupling of two mature regimes; the two's relative military capabilities were fairly high; and there was a significant amount of trade between the two.23 With all six of these factors pointing away from a de-escalation of the crisis, it is not surprising that tensions between the two rivals ultimately resulted in interstate war.

Ultimately a wider and more protracted conflict was prevented by superpower intervention. US arms embargoes on both India and Pakistan and Soviet efforts to promote negotiations between the two produced a rather rapid end to this war. A number of observers have concluded that the war effort could have been sustained by both sides for several more weeks (Lamb 1966; Ganguly 1986; Thomas 1992). Yet outside pressure brought the conflict to a halt.

23. With respect to trade this dissertation's findings were ambiguous (as past studies have been) about trade's effect on conflict. Again, there was a slightly significant increase in the level of conflict between trading partners, but no significant impact on the level of fatalities between trading partners engaged in conflict with one another.
Six years after the 1965 conflagration and seven following China's ascendancy to nuclear capability, India tested successfully a nuclear device of its own. Former Pakistani President Zia suggested in 1988 that after 1974 India's unclear nuclear status helped to foster deterrence between the two South Asian rivals (Spector 1990, 100):

With respect to their [nuclear capabilities], if they create ambiguity, that ambiguity is the essence of deterrence. The present programs of India and Pakistan have a lot of ambiguities, and therefore in the eyes of each other, they have reached a particular level, and that level is good enough to create an impression of deterrence.

This suggests that contrary to the quantitative evidence, the asymmetrical nuclear relationship in the Indo-Pakistani relationship did appear to play a positive role in deterring conflict between the two states. The twelve years of nuclear asymmetry were relatively uneventful in Kashmir and though tensions between India and Pakistan remained consistently strained, conflict levels never reached beyond 18 out of 22 on the MID index. India and Pakistan remained an asymmetrical dyad until roughly 1986, when it became clear to New Dehli that Islamabad was a clandestine nuclear power. Pakistan enjoyed a status of "opaque" nuclear power for a couple years after this time in the eyes of the United States before Reagan administration officials finally admitted that Pakistan was a de facto member of the nuclear club (Spector 1990). Thus, in future conflicts, both states would enjoy nuclear capability.
Major conflict over the Jammu and Kashmir region abated for a time after 1965. It might be asserted that Pakistan learned through its interstate warfare failings with India that such efforts were futile. Also, India's demonstration of its so-called "peaceful" nuclear capability in 1974 may have further atrophied Pakistani efforts at recapturing Kashmir. But in addition to the nuclear presence, the bipolar structure of the Cold War period probably played a role as well. Neither the United States, nor the Soviet Union were interested in an unstable South Asia. Thus, as was made evident in 1965, they would take the steps necessary to curtail conflict between India and Pakistan. But cultural competitions are not so easily excised, especially from neighbors, and so twenty-five years later, following the collapse of the Soviet Union and the subsequent end of the bipolar international structure, Indo-Pakistani tensions were renewed over Kashmir. Yet by then Pakistan had developed nuclear devices of its own and the world feared that the first war between nuclear powers was inevitable. However, the symmetrical presence of nuclear weapons appears to have prevented an escalation of the conflict in 1990. Deterrence was forced upon the two rivals, not by their superpower supporters as was the case during the Cold War, but by the overwhelming destructive capability of their nuclear weapons.
1990 Dispute Over Jammu and Kashmir

The Indo-Pakistani dispute over Kashmir erupted for the third time less than a decade ago. Richard J. Kerr, deputy director of the Central Intelligence Agency said of the 1990 dispute in South Asia: "It was the most dangerous nuclear situation we have ever faced since I've been in the U.S. government. It was far more frightening than the Cuban Missile Crisis" (Hersh 1993).

However, some have suggested that the presence of nuclear weapons actually atrophied the 1990 conflict, arguing that the crisis adds additional support "to the already impressive evidence that the chief impact of nuclear weapons is to deter war between their possessors" (Hagerty 1995/96). It has also been suggested that the 1990 dispute lends credence to proliferation optimists and not its critics (Karl 1996/97; Burns 1998).

Again, New Dehli clearly understood Pakistan was now a nuclear capable state having acknowledged Pakistan's nuclear progress before 1990. General K. Sundarji, Indian army chief during the conflict said four years previously in 1986: "There are enough indicators to suggest that Pakistan has achieved or is close to achieving a nuclear weapons capability." So while Pakistan maintained a somewhat...

24. The general's quote, appearing in India Today, 15 February 1986, p. 78, was the general consensus of most strategic observers at the time. A US Special National Intelligence Estimate found that, by 1986, Pakistan was a de...
opaque nuclear status to the international community at-large, India assumed that it had the capacity to produce a few nuclear devices.

The 1990 crisis saw its development in February of that year when Muslim insurgents (typically supported by Pakistan) sparked violence against what they perceived to be the corrupt and repressive Indian rulership in Kashmir (Perkovich 1996). A war of words followed and escalated rapidly. By 13 March 1990 Prime Minister Bhutto had traveled to Kashmir where she promised a "thousand year war" in support of the Kashmiri militants. VP Singh quickly retorted that India would react decisively to any Pakistani intervention telling the Indian parliament (Manorahan 1990), "There should be no confusion. Such a misadventure would not be without cost." By 10 April 1990 Singh's rhetoric had become more harsh. Addressing the leadership in Islamabad from New Dehli Singh said (Housego and Meraj 1990, 5): "Our message to Pakistan is that 'you cannot get away with taking Kashmir without a war...those who talk about one-thousand years of war should examine whether they will last one-thousand hours of war.' By this time, India had mobilized troops into the Indian controlled area of Kashmir. Indian diplomats claimed that forces on both sides were on a higher state of alert, though they were "several levels lower than would indicate imminent hostilities" (Hussain 1992).

... facto nuclear power with enough fissile material to produce several nuclear weapons (Spector 1988).
In fact India and Pakistan were far from escalating the conflict past some minor border clashes into the realm of interstate warfare. The Stimson Center in Washington DC brought together some key US participants in the crisis (notably the US ambassadors in New Delhi and Islamabad, Bill Clark and Robert Oakley), as well as Indian and Pakistani diplomats, experts, and senior military officials in February 1994 to review and analyze the 1990 crisis. Uday Bhaskar (1997), an Indian defense analyst summarizes some of the findings from the 1990 crisis as follows:

1. The threat of a nuclear confrontation was not great, nor were India and Pakistan eager to have another conventional war because of fears of escalation.

2. During the crisis the Indian military leadership deliberately refrained from moving armor associated with its strike forces out of peacetime cantonments, and welcomed US defense attaches to confirm this.

3. During the crisis the Pakistani military leadership deliberately refrained from moving its two strike corps to the front and refrained from using forward operating bases for its air force -- critical indications of an impending attack.

In general, the Stimson Center Report found, according to Bhaskar (1997, 319), that the "sense of alarm over the crisis was far greater in Washington than in Islamabad, and it was greater in Islamabad than in Dehli."

Yet why was neither side interested in escalating the conflict further? Mushahid Hussain (1992, 195), adviser to then Prime Minister Nawaz Sharif, provides a powerful summary to the 1990 conflict saying, "the only reason such
(an) eyeball-to-eyeball confrontation between the Pakistani and Indian armies did not convert into military conflict was because of the nuclear factor."

Again the factors believed to contribute to conflict in the case of the 1990 Indo-Pakistani tensions are presented in Table Six. India and Pakistan displayed disparate levels of democratic institutions during 1990. The Polity III data set rates states' level of democratization from 0 to 10, with 10 being the most democratic. India scored an 8 on this scale in 1990, while Pakistan managed only a 3. This disparity in democratization would suggest that the likelihood of conflict escalating to interstate warfare was higher in the 1990 Indo-Pakistani conflict than it would have been if it had been a democratic dyad at the time.

The Indo-Pakistani dyad also did not contain two mature regimes. The Islamabad government was edging slowly toward democracy at the time but still had not stabilized itself, jumping from military control to republican government again and again. As was demonstrated in the quantitative section, this lack of stability suggests Pakistan might be more likely to escalate conflicts.

Indeed all the factors, except for the presence of nuclear weapons, point to an increased likelihood of escalation in the conflict (see Table Six). Yet the conflict fizzled out with few casualties and a general sense
that a larger conflagration had been avoided. These indicators, coupled with the long history of turmoil between

Table Six: 1990 Indo-Pakistani Conflict

<table>
<thead>
<tr>
<th>Factor</th>
<th>Value</th>
<th>Escalation Impact</th>
</tr>
</thead>
<tbody>
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<td>Ally</td>
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</tr>
<tr>
<td>Proximal</td>
<td>Yes</td>
<td>INCREASE</td>
</tr>
<tr>
<td>Democratic</td>
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</tr>
<tr>
<td>Mature</td>
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<td>Capability</td>
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<td>Trade</td>
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</tr>
<tr>
<td>Nuclear</td>
<td>Yes</td>
<td>DECREASE</td>
</tr>
</tbody>
</table>

Outcome: Clash

these two neighbors over Jammu and Kashmir, suggests that the presence of nuclear weapons (the one factor new to the dyad) may have promoted conflict de-escalation in 1990 between India and Pakistan.

Following the cessation of tensions between India and Pakistan in 1990 a number of strategic analysts proclaimed the success of nuclear deterrence on the Indian subcontinent. For instance, an article whose authors include two of India's prominent nuclear strategists (Morgan et al. 1995, 164) states that, "India has been content to demonstrate capability, put basic infrastructure in place, and leave deterrence implicit and somewhat ambiguous...It
appears that atomic capabilities on both sides in the Indo-
Pakistani conflict have so far led to a moderation in 
actions between the two states." Indian nuclear strategist,
K. Subrahmanyam (1993, 184) also concludes:

> The awareness on both sides of a nuclear capability that can enable either country to assemble nuclear weapons at short notice induces mutual caution. This caution is already evident on the part of India. In 1965 when Pakistan carried out its "Operation Gibraltar" and sent in infiltrators, India sent its army across the cease-fire line to destroy the assembly points of the infiltrators. That escalated into full-scale war. In 1990 when Pakistan once again carried out a massive infiltration of terrorists trained in Pakistan, India tried to deal with the problem on Indian territory and did not send its army into Pakistan-occupied Kashmir.

Elsewhere (Hagerty 1995/96, 109) fellow Indian nuclear analyst K. Sundarji agrees with Subrahmanyam, saying of India's leaders: "The reason why they've hesitated to take recourse to their stated, avowed strategy of reacting in the plains conventionally is because of the nuclear option...I've got no doubt in my mind at all." Pakistani analysts concur with these views. For instance, Abdul Sattar (1994-95, 3) writes of the "indispensable contribution" Pakistan's "nascent nuclear capability has made to deterrence of aggression and maintenance of peace." Pakistani generals Ishaq and Beg agree with this analysis, with Beg saying, "Far from talk of nuclear war, there is no danger of even a conventional war between India and
Pakistan...As compared to previous years, there is no possibility of an India-Pakistan war now.  

1999 Dispute Over Jammu and Kashmir

The 1999 Indo-Pakistani conflict over Kashmir put the statements supporting nuclear deterrence in South Asia to yet another test. India blamed the renewed conflict over Kashmir on Pakistan, claiming Islamabad sent hundreds of soldiers over the so-called Line of Control (LOC) dividing Jammu and Kashmir between the two powers. Pakistan maintained throughout the conflict that none of its soldiers were involved. Instead, Pakistan said that Muslim militants from various countries chose Kashmir in their campaign to bring the world's Muslim regions under religious rule (Bearak 1999a). Pakistan suggested that this campaign is in part a legacy of the proxy war that the United States waged against Soviet forces in Afghanistan during the 1980s.  

During those years the United States trained and armed thousands of Muslim guerrillas who opposed the Soviet troops because they viewed them as anti-Islamic infidels. Indeed,


26. Afghanistan is a popular whipping boy for Pakistan. In the words of an anonymous high-ranking Pakistani official, "Afghanistan is the source of 97% of our problems" (Perkovich 1996, 419). Drugs, terrorism, fundamentalism, and refugees are all Pakistani problems it is content to associate with Afghanistan.
many of the guerrillas were using not only tactics that Americans had taught them, but also the weapons the United States gave them (Dugger 1999a). For instance, in June 1999 an Indian helicopter was shot down using an American-made Stinger missile. Now, having succeeded in driving the Soviet forces from Afghanistan and establishing a form of religious rule there, Islamabad suggested that the warriors were turning their attention to Kashmir (Bearak 1999a).

Tensions remained high between India and Pakistan over the Kashmir issue for the next two months as the Indians shelled the militants' Kashmiri mountain-top holdings. Yet again, tensions waned as Pakistan announced it intended to cease support for the Islamic militants and agreed to a pullback. India reacted favorably to this and the conflict was de-escalated.

Clearly the threat of nuclear weapons was on the mind of the Pakistani leadership during this crisis and probably played an major role in the Pakistani withdrawal. Pakistani Prime Minister Sharif, following the announcement of the de-escalation of the crisis and the pull-back of forces by both sides, admitted in a televised address to his country that

27. US intelligence officers reportedly have admitted that approximately one dozen Stinger missiles are unaccounted for in this region (Bearak 1999a).

28. Of course what it was Pakistan was pulling back remained unclear as Islamabad had stressed throughout the conflict that none of its forces were involved. Even after tensions had de-escalated Pakistan refused to accept the bodies of slain soldiers India claimed were Pakistani (Bearak 1999d).
the nuclear aspect to the crisis had been an important concern (Bearak 1999d, 6): "People are not aware of the anxiety we passed through during the past one and a half months. This is no secret that the threat of a big war with India was looming by the way things had deteriorated between India and Pakistan. Missiles with nuclear weapons were directed toward us and our air force was put on alert."

The goal of the Pakistani leadership seems to have been to put the issue of Kashmir back on the front page. In fact opposition groups in Islamabad complained that as soon as Kashmir was again the focus of the world, Prime Minister Sharif appeared to wilt (Bearak 1999c). There appears to be some merit to these accusations. There did appear to be a shift in world focus (with the exception of Indo-Pakistani publications) to the problems in Kashmir following the relaxation in tensions between NATO and Serbia in mid to late June 1999 (Graham and Absse 1999). Sharif attempted to capitalize on this renewed South Asian focus by participating in a hastily arranged meeting with President Clinton in Washington to discuss the Kashmir crisis on July 4th. Following the meeting, Sharif said that the President assured him that he would take a personal interest in settling the Kashmir situation. In fact, in a written statement, President Clinton did say that once the "sanctity" of the cease-fire line is restored he "would take a personal interest in encouraging an expeditious resumption
and intensification" of the high-level talks begun between India and Pakistan in Lahore during February 1999 (Graham and Abse 1999, 15). Prime Minister Sharif responded by saying that (Bearak 1999, 6), "an assurance by the leader of a power like America is not insignificant."

The leading opposition party in Islamabad, the Pakistan People's Party (PPP), called for the resignation of Prime Minister Sharif following his decision to order a withdrawal. However, the PPP is itself in disarray and unlikely to mount a successful challenge to Sharif's authority. Pakistani military leaders, on the other hand, appear to support Sharif's decision to reduce tensions. This is important in Pakistan, where military support lends stability and credence to a government fortunate enough to garner it.

The 1999 crisis between India and Pakistan basically had all the same elements of the previous crises, with the continued presence of nuclear weapons and the addition of democratic institutions on both sides (Table Seven). While

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29. The statement also said that President Clinton intended to "pay an early visit to South Asia." This after the President had canceled plans to visit India and Pakistan in 1998 following both side's testing of nuclear devices (Graham and Abse 1999, 15).

30. The Pakistan People's Party leader is the former Prime Minister, Benazir Bhutto, who lives abroad and faces arrest if she returns because she has been convicted of corruption.
nuclear weapons likely played a large role in conflict de-escalation in the case of the 1999 conflict, the impact of democratic institutions cannot and should not be ignored. Yet, ironically, democracy did not seem to support a

<table>
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<th>Table Seven: 1999 Indo-Pakistani Conflict</th>
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<td><strong>Factor</strong></td>
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<td>----------------</td>
</tr>
<tr>
<td>Ally</td>
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<tr>
<td>Proximal</td>
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<tr>
<td>Democratic</td>
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<tr>
<td>Mature</td>
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<tr>
<td>Capability</td>
</tr>
<tr>
<td>Trade</td>
</tr>
<tr>
<td>Nuclear</td>
</tr>
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</table>

Outcome: **Clash**

cessation of the conflict in this instance. Publics in both India and Pakistan were fervently in favor of a continuing engagement and even of escalating the crisis if necessary (Dugger 1999b). A 5 July 1999 poll by one of India's major newspapers found 87.5% favored a continuation of the conflict, 5.1% supported peace talks with Pakistan, 3.4% desired a unilateral cease-fire, and 2.2% wanted to allow US mediation (India Today 1999, 1). This suggests that democratic institutions, though present on both sides, might not have led to a conflict de-escalation.
Moreover, in the case of India, there was intense pressure on the government to take whatever means necessary to dislodge the insurgents. India's ruling political party at the time, the Bharatiya Janata Party (BJP), received severe criticism for not discovering the extent of the guerrilla's incursion into Kashmir until May. By that time, the guerrillas had captured the high ground and dislodging them was too much for ground forces alone (Bearak 1999a). This pressure was notable especially because the BJP are considered to be defense hawks and it is the BJP who have championed India's nuclear testing and capabilities. With elections set for the Fall, the BJP was chastised as bumbling by their political opponents. Analysts suggested that the BJP might seek to recapture its reputation through escalating the conflict into a war. George Perkovich, a South Asian specialist, was quoted as saying (Bearak 1999a, 3), "There has been a fundamental assault on their [the BJP] credibility. The BJP can't afford to lose in this confrontation. They're under intense pressure to use their military."

Yet again, given the first real opportunity to de-escalate the crisis, the BJP took it and agreed to a mutual withdrawal of forces (Dugger 1999a). The conflict easily could have persisted on both sides based not only on political and public pressure, but also in military terms. Colonel SVE David India's army deputy commander at Dras said
of Pakistani forces, "If you come 8,9 kilometers inside your enemy's territory, why do you bloody run away like a dog with its tail down? They should have fought it out longer. They had the supply lines" (Bearak 1999d, 3). Yet tensions de-escalated in spite of this.

These factors, coupled with the clear awareness of political and military leaders in both India and Pakistan of the nuclear factor seems to indicate that these weapons prevented their 1999 conflict over Jammu and Kashmir from escalating further. Without the deterrent aspect of nuclear weapons both governments might have handled the increased political and public pressure differently and mired themselves in a protracted conflict costly to both sides.

Alternate Explanations for De-escalations

At least three alternate explanations have been posited regarding why the 1990 and 1999 conflicts did not escalate beyond some minor clashes between Indian military forces and Pakistani-backed guerrilla forces in Kashmir. One argument suggests that both India and Pakistan "learned" that conflict escalation leading to war does not produce beneficial outcomes to either side. While this may be accurate in the case of Pakistan, who lost both previous Kashmiri wars against India, it seems less plausible when applied to India. Indeed in some cases, India may have learned that war with Pakistan does pay. India won its 1965 war over Jammu and Kashmir with Pakistan with an aggressive,
offensive maneuver. Hagerty (1995/96, 111) suggests in this regard: "Their [India] lesson may have been that there are certain intolerable circumstances under which the forceful application of offensive military doctrines can ease the security threat from a smaller but determined neighbor. Thus... nuclear deterrence provides the most persuasive explanation of why New Dehli did not go on the offensive in 1990." Moreover, if Pakistan had "learned" that conflict did not pay, then why was it the initiator in the two most recent conflicts? The evidence suggests that this first alternate explanation lacks predictive power.

A second hypothesis posited for the de-escalation of Indo-Pakistani tensions in 1990 and 1999 was that conventional, instead of nuclear capabilities deterred the two rivals from a larger conflagration. Yet both sides' conventional capabilities, while improved from the two previous instances of war, did not produce relatively more conventional capability for either side than in the past. In other words, their relative military capabilities were similar to past levels. Again Hagerty (1995/95, 111) argues: "Elements of both conventional and nuclear deterrence operated in 1990, but the sine qua non of conflict resolution was the nuclear factor." The same could be said for the 1999 conflict as well.

Finally, a factor exclusive to the 1999 conflict was the presence of democratic institutions. This would seem to
be the strongest argument for conflict abatement outside of the presence of nuclear weapons in the dyad. But as was noted previously, public support was evident on both sides of the border for a continuation of the conflict (Dugger 1999b). There was no strong public call for a cessation of tensions. Internally, the opposition party of consequence in Pakistan called for the government to stay the course with respect to the crisis and not to withdraw. Though the Prime Minister did appear to receive support from the military leaders for his decision to withdraw, it seems likely that their support of such a decision was because of the nuclear threat posed by India.

So why did Islamabad begin the conflict at all? What Pakistan seems to be engaged in with respect to Kashmir is a sort of miniaturized proxy conflict with India. Pakistan supplies weapons and advisors to radical Islamic forces in Kashmir to fight with India, but makes no overt effort to engage Indian forces directly. Such surrogate activity and not direct confrontation could be construed as evidence of the powerful nuclear stalemate atomic weapons have engendered in South Asia.

Results

The results of this case study indicate support for the theory that nuclear weapons have had a pacifying effect on Indo-Pakistani relations. On the two occasions of conflict where neither side had nuclear weapons the turmoil escalated
to a level of interstate warfare (22), while during the occasions when India was open nuclear power and Pakistan was an opaque one, as well as during the most recent discord where both were out of the nuclear closet the level of conflict did not rise above 18 (clash). With respect to the level of fatalities, the same pattern holds true (see Table Eight). Much higher casualty levels were witnessed when

Table Eight: Indo-Pakistani Conflict Over Jammu and Kashmir

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<tr>
<td>Ally</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Proximal</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Dem Dyad</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Mature</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Capability</td>
<td>NA</td>
<td>.69</td>
<td>.66</td>
<td>.64</td>
</tr>
<tr>
<td>Trade</td>
<td>NA</td>
<td>47.5</td>
<td>185.4</td>
<td>NA</td>
</tr>
<tr>
<td>Nuclear</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Conflict</td>
<td>22</td>
<td>22</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Combined</td>
<td>&gt; 1,500</td>
<td>&gt; 1,000</td>
<td>&lt; 50</td>
<td>&lt; 500</td>
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</tbody>
</table>

neither side had nuclear weapons in comparison to when one or both openly admitted to having such weapons.

Lending additional credence to the nuclear peace notion in the case of the Indo-Pakistani dyad is the fact that so many of the other independent factors surveyed pointed to an
increased likelihood of escalation on all four occasions. The lack of alliance structures, close geographic proximity, the presence of one or more immature regimes, and relatively similar military capabilities all serve to augment the chances of conflict escalation towards war. The absence of a democratic dyad in every instance but that of 1999 also increased the likelihood of conflict escalation in the case of the first three conflict situations.

Further, as has been discussed in previous sections, both India and Pakistan have taken extreme steps to ensure that the other side would not view their own moves as antagonistic. In the two most recent crises when nuclear weapons were present in the dyad, both India and Pakistan deliberately refrained from operating from forward bases (in the case of India) or from moving military strike corps to the front (in the case of Pakistan). Such action was not taken in the two earlier conflict instances, when the conflict escalated to the level of interstate war.

All of this suggests that nuclear weapons have had a pacifying impact on the Indo-Pakistani dyad. This is fortunate, as the prospects for placing the South Asian nuclear jinn back into its silo for good seem slim.

Prospects for Nuclear Reversal

The contrasts between states that have reversed their nuclear programs and India and Pakistan are clear. The most important change for South Africa, Brazil, Argentina,
Belarus, Ukraine, and Kazakhstan was in security policy. According to Neil Joeck (1997, 271), in the case of those six states, "change became possible when national leaders were convinced that the security threats to the nation did not require a nuclear deterrent. Coupled with that dramatic change in security perceptions was the incentive of economic development and growth. All six states anticipated substantial rewards if they gave up nuclear weapons, and few economic rewards in keeping them." Nuclear weapons, or nuclear weapons programs, were very important for security under certain circumstances, but the penalty in keeping them once the security issue had changed became equally important. Joeck (1997, 271) concedes, however, that perception of threat was the overriding factor:

It would not be correct to conclude that national security in these states simply had a price tag, which the West finally paid. Even when the economic hardships were severe, if the perception of threat was high, the burden was accepted. But, it clearly was the case that, once state security ceased to be connected with nuclear weapons, the economic incentives in reversing the nuclear programs became compelling.

For India and Pakistan, the security threat has not changed, and the economic inducements to remove nuclear weapons have not been persuasive.\textsuperscript{31} The psychological investments that both sides have made in their nuclear programs also continue to be powerful incentives not to

\textsuperscript{31} Admittedly, in India's case its nuclear arsenal is used for security not only against Pakistan, but also against China.
reverse course. For India, the symbol of nuclear power, in addition to the raw need for new reservoirs of energy, provides a strong disincentive to cede to Western demands. India, of course, could have as much nuclear energy as it could afford if it were to sign the NPT, but that symbolic retreat would probably be too great a political price to pay for the Indian governments of the near future. For Pakistan, nuclear weapons are clearly more important than the rather unsubstantial energy addition provided by nuclear power. The nuclear program serves to bind Pakistanis together in a way few other state symbols can. Even Islam divides the nation between Sunni and Shia.

Also, unlike other cases of reversal, in South Asia the issue of transition from authoritarianism to democratic governance is not a factor. As one of the world's oldest democracies, India's nuclear policy is popularly supported and has survived numerous political transitions. Although relatively new, Pakistan's struggling democracy also has supported the nuclear program and promises to continue to do so. This is distinct from Argentina and Brazil, where public debate had been suppressed under the military and ultimately promoted the decision to reverse. In contrast, India's and Pakistan's programs enjoy strong public support suggesting that a reversal of nuclear policy is unlikely to occur (Dugger 1999b).
While most analysts seem to agree with the findings of this dissertation that the presence of nuclear weapons in the Indo-Pakistani dyad has led to conflict pacification the prospect of nuclear permanency on the Indian subcontinent has left others nervous. Indeed, some analysts still pose questions concerning the stability the Indo-Pakistani dyad will enjoy now that both states have become overt members of the nuclear club (Erlanger 1998). Three potential differences between the stable US-Soviet nuclear dyad and the newly formed Indo-Pakistani nuclear dyad have been posited.

First, unlike the US-Soviet situation, India and Pakistan share a common border. The suggestion here is that a common geographic boundary breeds animosity between states and increases the likelihood of conflict. In fact, as was addressed earlier in the quantitative section of the dissertation, the impact of geographical proximity has been shown in previous studies to be significant on the escalation of hostilities between states (Bremer 1992; Diehl 1985; Russett 1993; Senese 1997). Yet, since the introduction of nuclear weapons to the dyad, the strains of geographic proximity in the Indo-Pakistani relationship have yet to be felt in a magnitude greater than those of the relatively geographically distal US-Soviet relationship. It seems reasonable to suggest that nuclear weapons have dulled conflict between India and Pakistan, as none of their crises
since India first detonated a nuclear device in 1974 has escalated to a level higher than 18 on the MID index. In the years before the introduction of nuclear weapons into the Indian subcontinent the Indians and Pakistanis fought three wars against one another. Thus, nuclear weapons seem to have lessened, if not negated, the escalation effects of geographic proximity in the case of India and Pakistan.

Second, the relative dearth of nuclear weapons possessed by either India or Pakistan has led some to suggest that the lack of survivable nuclear forces on both sides might promote a first-strike (Erlanger 1998). The United States and Soviet Union overcame such a threat to deterrence by deepening their arsenals to achieve relative symmetry, but more importantly by developing strategic triads to diversify the locale of their weapons. Both the United States and the Soviet Union created a multiform force structure by developing a range of delivery systems to ensure the survivability of their nuclear forces. The two sides developed nuclear delivery systems which were land-based (ICBMs), air-based (bombers), and sea-based (submarines). India and Pakistan have no comparable strategic triad. Such a diverse strategic insurance policy may be developed in time, but at this point neither side appears to have enough nuclear weapons to threaten an initial attack. This is very different from the US-Soviet dyad where both sides had nuclear arsenals large enough to
wipe the other side completely off the face of the Earth. India and Pakistan merely have sought to achieve a "minimum deterrent" force (Burns 1998). Such a limited force seeks only to deter a nuclear attack and does not provide the fire-power needed to enable either side to initiate a nuclear exchange without fear of reprisal. Therefore, a nuclear symmetry exists between the two. If the Indian and Pakistani nuclear arsenals vastly deepen over time, then it may be appropriate for a strategic triad similar to that of the superpowers to be developed in these two countries. But for now, the absence of such a triad is reasonable and does not lessen the impact of nuclear deterrence for either side.

Also the logic of preemption recently has been called into question with empirical evidence. Surveying all wars since 1816, Dan Reiter (1995) found that only 3 of 67 (approximately 4%) were preemptive in origin. The nuclear era has seen at least one instance of preventative conflict -- that of the 1981 Israeli bombing of Iraq's Osirak nuclear facility, though it was taken without fear of nuclear reprisal.32 Hagerty (1995/96, 114) notes: "In situations where nuclear retaliation has been a possibility, no leader of a nuclear weapon state has chosen to launch a preemptive first strike."

32. The Allied coalition's 1991 air war against Iraq during the Gulf War might be a second instance, but here as well there was no fear of nuclear reprisal by Iraq.
Third, some fear that the fifteen years it took the United States and the Soviet Union to develop a reliable command and control center are not affordable in the Indo-Pakistani dyad. Yet in the case of both India and Pakistan the primary delivery systems for their nuclear weapons are bombers (Albright 1993, 1998). Such airborne delivery systems remove the chances of an accidental missile launch that the superpowers had to face during the Cold War and still face today. For instance, in 1995 Russian warning systems interpreted the launch of a Norwegian scientific rocket as a possible nuclear attack prompting President Yeltsin to extract the nuclear launch codes from the Russian equivalent of the "nuclear football." A disaster was averted when it was realized in Moscow that the Norwegians had months earlier notified the Kremlin that such a launch was going to take place at the time specified. India and Pakistan have sought to avoid such an accident by not employing computerized delivery systems. Also, strict command and control procedures prevent a Strangelovian scenario (Delpech 1998-99).

So while all three of these concerns may have some merit, mostly their importance is over-emphasized in the context of the Indo-Pakistani dyad. The fact is that

33. The former director of Pakistan's Inter-Services Intelligence Agency, has dismissed the survivability issue as a US preoccupation (Giles and Doyle 1996).

34. Both India and Pakistan are developing ballistic missile capability however. (Singh 1998).
nuclear weapons have existed in the Indian subcontinent since 1974 and the instances of conflict between the two have lessened since that time with twenty-seven conflict instances occurring before 1974 and only nine since then (Jones, Bremer and Singer 1997). The closest the two countries came to war since 1974 was in 1990 and it is generally agreed that in this instance, nuclear weapons served to dull the escalation of the crisis (Perkovich 1993; Arif 1995; Hagerty 1995/96; Karl 1996/97).

Conclusion

Conflict in general between India and Pakistan seems unlikely to abate in the near future. Indeed, theirs has been a relationship of conflict. But with the introduction of nuclear weapons to South Asia, this conflict has diminished in magnitude. Border incursions and clashes have persisted and most likely will continue, but there is no reason that the apparent nuclear peace which has kept both sides from escalating in the past won't continue to maintain at least a limited peace in the future. Indeed, the Western powers should accept the nuclearization of the Indian subcontinent and work to promote a stable deterrence structure, instead of attempting to stuff the nuclear genie back into its bottle.

From the perspective of Indian and Pakistani officials, efforts to discourage the two South Asian states from
adopting nuclear capabilities is attributable to racism.

India's former external affairs secretary, K. Shaker Bajpai (1993, 24) summarizes the feeling of the subcontinent:

East-West deterrence is said to have preserved world peace for 40 years but the rationale is not always considered safe for other confrontations: others cannot be trusted to act as sanely, soberly, Caucasianally. Even if the world's controlling powers will not accept that deterrence would apply universally, Pakistan and India provide one case where it would.

Indeed, fears over the inability of regional powers to control their nuclear weapons seem exaggerated. As Martin van Creveld (1993, 122) writes, "...there seems to be no factual basis for the claims that regional leaders do not understand the nature and implications of nuclear weapons."

Later, van Creveld (1993, 123) asserts:

An even more critical reason why regional leaders tend to be at least as careful in handling nuclear weapons as those of the superpowers is the fact that many of the countries in question are quite small, adjacent to one each other, and not separated by any clear natural borders; often they share the same local weather systems and draw their water from the same river basin. Hence the question of how escalation, radiation, and contamination may be avoided appears even more baffling in their case than in that of the US and the former USSR, which used to be located on different hemispheres and which for decades prepared to fight each other on terrain belonging to third parties. As agreements concluded between India and Pakistan demonstrate, there can be no doubt that regional leaders are aware of these disincentives to the use of nuclear weapons.

In fact van Creveld believes that the treaties and regimes to which the threat of nuclear proliferation has given rise hide as their real objective the perpetuation of the "old" nuclear powers. Van Creveld (1993, 124) writes, "Regional
powers and their leaders have been described as unstable, culturally biased, irresponsible, and whatnot. To this end, weapons and technologies that used to be presented as stabilizing when they were in the hands of the great powers were suddenly described as destabilizing when they spread to other countries."

Yet as the Indo-Pakistani dyad indicates, the leaders of regional powers tend to be extremely cautious with their nuclear capabilities. Still, concerns over the stability of the Indo-Pakistani nuclear peace persist. Geographical constraints between the subcontinent's nuclear contenders are by far the most demanding that have been encountered by any nuclear antagonists on a permanent basis since the advent of nuclear weapons. For the first time, both capitals are within four or five minutes of a missile strike. Washington and Moscow were within more than a half hour of each other, while Paris and London were within a dozen minutes of a Soviet strike. Thus, the more established nuclear powers should offer technology and assistance to promote communications and peace-of-mind to India and Pakistan.

There will always be the threat of an Indo-Pakistani conflagration erupting into a nuclear exchange. But at the same time, this nuclear threat seems to be one major component, if not the major component, behind twenty-five years of peace between these bitter rivals. As Shai Feldman
(1995, 179), a senior research associate at the Jaffe Center for Strategic Studies, suggests, "It is difficult to see how escalation of the conflict over Kashmir could have been avoided were it not for the two countries' fear of nuclear escalation." Nuclear deterrence seems to have worked in South Asia. Thus, while the likelihood of conflict escalating out of control between India and Pakistan remains a possibility, it seems unlikely at best.
The nuclear club, whose membership began with the United States over fifty years ago, today alarms policymakers and the public alike with the prospect of its continuing expansion (Thayer 1994, 1995). As this dissertation has displayed, there are at least nine existing or former nuclear weapons' states in the world today (see Appendix A). The dissertation has examined the impact of nuclear weapons on conflict situations both qualitatively and quantitatively and now the knowledge extracted from those earlier chapters will be applied to advising what policies the United States should adopt with respect to nuclear weapons as the twenty-first century arrives. Should the United States continue its vigorous efforts to prevent nuclear proliferation, or are changes in this policy warranted? For instance, several scholars have advocated openly the spread of nuclear weapons to Germany and Ukraine (Mearsheimer 1990, 1993; Van Evera 1990/91; and Posen 1993). They argue that the acquisition of nuclear weapons by these two states would deter Russian aggression in the region.\(^{35}\) Yet is a limited spread of nuclear weapons the correct

\(^{35}\) Such continued efforts to prevent Russian influence in Europe hearkens back to the Cold War saying that for Europe to be stable NATO needed to keep the Germans down, the Americans in and the Russians out. Expansion of the nuclear club to Germany might only succeed in the third element.
course for the United States? This chapter will address this question by exploring the potential impact of managed nuclear proliferation to regional troublespots. Specifically, the prospects for allowing or promoting nuclear proliferation to two dyads of great historical tension will be analyzed in this chapter. The two prospective cases are the Korean dyad and that of Greece and Turkey. But before considering the potential merits and shortcomings of the spread of nuclear weapons to these dyads, US policy towards nuclear weapons is assessed.

US Policy Towards Nuclear Weapons

As the United States prepares for the twenty-first century it must consider what strategic course it will take with respect to nuclear weapons. Presently the United States is embarked on a path focused on nuclear reduction at home, and the strict prevention of the spread of such weaponry abroad. While it is clear that the US nuclear arsenal is overbuilt from its Cold War competition with the Soviet Union, US efforts to keep the spread of nuclear weapons in abeyance may not only be futile, but not even in its best interest.

36. In the 1950s the United States laid the foundations of the current nonproliferation regime, with President Eisenhower's Atoms for Peace initiative. The focal idea was that the promotion of nuclear energy for peaceful purposes could be used to gain nonproliferation commitments from nations. This gave rise to the IAEA (International Atomic Energy Association) in 1957, and eventually to the NPT (Nuclear Non-Proliferation Treaty) in 1968.
From the standpoint of nuclear proliferation, the United States has nothing immediately to fear. In the near term, the use of nuclear weapons by an Nth country is unlikely to endanger US territory, as no such country possesses both long-range nuclear capable delivery vehicles and intentions or reason to harm the United States (Schelling 1982; Leventhal and Alexander 1986; Karp 1996; Vogele 1997).

The United States has fought vigorously to prevent the spread of nuclear weapons and nuclear technology. But revelations of the breadth and depth of Iraq's clandestine nuclear program after the Gulf War served to strengthen criticisms of the nuclear control regime and promoted efforts aimed at improving it. Since these discoveries of the covert Iraqi nuclear activities the United States has 37.

37. The real risk is if prospective proliferants are sold weapons or nuclear weapons technology because nuclear weapons are difficult to manufacture. The problems with nuclear weapons lie not in their design, but in the procurement of the plutonium, uranium and sometimes tritium, which, depending on the particular type of nuclear reaction one is seeking, are needed for the successful constitution of a nuclear weapon. This aspect in the creation of a nuclear device poses problems because none of these substances exist in nature. Plutonium is created as a byproduct of a nuclear reactor fueled with uranium (Spector 1990). Uranium-235 is present as only .7% of naturally occurring uranium, which is predominantly composed of the isotope uranium-238. The proportion of uranium-235 can be increased (normally up to 90% or more for nuclear weapons) through a process of "enrichment" which separates isotopes on the basis of their mass (Spector 1990). The United States no longer produces tritium, though we still need it for our nuclear weapons for boosting purposes. The U.S. still has a tritium stockpile from the Savannah River Reactor (which stopped producing tritium in 1986).
redoubled its efforts to promote anti-proliferation initiatives. 1995 saw the renewal without limit of the Nonproliferation Treaty; the Missile Technology Control Regime expanded to over twenty-five members with US prodding; and the Comprehensive Test Ban Treaty was completed in 1996. Additionally, the United States has refocused some of its bilateral engagements directly around the area of nonproliferation. For instance, agreements with China and North Korea have attempted to strengthen nonproliferation rules and norms. Also, the United States has threatened to adopt a more active anti-proliferation enterprise known as "counterproliferation." Such an effort would seek to position the United States "as global judge, jury and executioner against weapons of mass destruction" (Muller and Reiss 1995). 38 The notion of such a proactive, aggressive stance emerged in the Bush administration following the Gulf War and has been espoused by the Clinton administration as well as a means of coping with rogue states such as North Korea (Pilat and Kirchner 1995). However, US military action with the specific intent of blunting the progress of a potential proliferant has yet to occur. 39

38. Such a focus on pre-emptive action is reminiscent of the Israeli strike against the Iraqi nuclear facility in Osirak (Spector 1990).

39. The post-Gulf War destruction of some of Iraq's nuclear production capabilities might qualify, but this
So what is the correct course for the US to take with respect to nuclear weapons at home and abroad? Presently, three potential US policy options with respect to nuclear proliferation could be considered. First, the United States could seek the complete abolition of nuclear weapons from the planet. Yet the pacifying aspects of nuclear weapons which this dissertation has presented suggests that such a "nuclear free" option would be as foolish (Bailey and Barish 1999) as it would be infeasible to achieve. Nevertheless, such an idea does have its supporters (Gilpin 1962; Schell 1982, 1984; Ellsberg 1992) and a RAND study conducted in 1993 notes as the potential benefits of such a retro international structure (Millot et al. 1993, 10):

Establishing a "no-nuclear" norm would legitimate the highly intrusive challenge inspections necessary to assure compliance with nonproliferation and provide warning of potential breakouts from the regime. The warning gained by intrusive inspections would give the international community time to respond with a graduated series of economic and political sanctions. It would also provide an opportunity to build international consensus for military operations by the former major nuclear powers through the use of advanced conventional weaponry against nascent nuclear arsenals should that step become necessary.\textsuperscript{40}

\textsuperscript{40} The notion of conventional war to preserve an anti-proliferation agreement seems to defeat the purpose of the deal. Lawrence Sigal (1998, 3) quotes Korean analyst Donald Gregg as saying in this vein, "If you fight a war to preserve the NPT, that's like burning a village in Vietnam to save it."
All of this sounds remarkably unrealistic. Now that the nuclear genie has escaped its confines to venture out into the world it is difficult to imagine a scenario allowing for its re-corking. In fact the goal of a nuclear free world should not be to legitimize international inspections, but to abolish the need for them. This would require a level of international trust not seen before in the history of the world. In short, it seems like fantasy.

Second, the United States could persevere with its current policy with respect to nuclear proliferation and maintain a restrictive two-tiered international system of "haves" and "have-nots." This approach seeks to convince the present "have-nots" that there is little reason for them to join the exclusive nuclear club. This is achieved through extended deterrence security guarantees, and when necessary, sanctions against potential proliferant states, or potentially counterproliferation efforts. It also requires that the other nuclear powers assist in maintaining the exclusivity of the club by not sharing nuclear technology with the "have-not" states.

For some analysts, however, international treaties the United States and others have supported in an attempt to curtail proliferation are not an effective route. Fareed Zakaria (1998, 28) argues:

International treaties usually reflect reality rather than shape it. For the past fifty years the real engine behind nonproliferation was the Cold War. During their global struggle the United States and
the Soviet Union had at least one goal in common: maintaining their nuclear preponderance. To reduce instability brought about by new nuclear challengers, they promised protection to some countries and threatened punishment to others. It worked; despite access to high technology, many countries chose not to go nuclear.

Zakaria (1998, 28) goes on to suggest that the United States must tailor its nuclear policy to individual countries, noting, "Under international law, all states are alike. In the real world they are not." For Zakaria, rogue states such as Iraq and North Korea should be dealt with strictly, while "stable, legitimate regimes" such as in Israel, India and Pakistan (the latter two of which have achieved nuclear prowess despite US efforts) should be allowed to achieve nuclear capability.

Following through with this idea, as a third policy direction the United States could opt for some form of relaxation of its proliferation policy and permit either a limited spread of nuclear weaponry to states deemed acceptable, or it could step away entirely from proliferation controls and allow the free spread of nuclear weapons across the globe. The latter end of this spectrum of choice seems too radical. Irrespective of the pacifying impact of nuclear weapons the United States should not allow a proliferation free-for-all because it will limit US foreign policy options.41 This is what nuclear deterrence

41. Also, a rapid spread of nuclear weapons could lead to an increased opportunity for nuclear terrorism (Pilat 1998-99; Stern 1998-99).
succeeds in doing after all, preventing escalation by limiting the rational options states might choose in dealing with an adversary. Consider the Gulf War, for instance. Had Iraq had nuclear weapons in 1991 it seems unlikely that the United States would have chosen to attempt to expel Iraqi forces from Kuwait. Instead, the US probably would have acted as a shield for Saudi Arabia, preventing any further Iraqi incursions over the Arabian peninsula. Thus, while a US-Iraqi nuclear dyad would have prevented an escalation, it would have limited US policy options by creating a nuclear stalemate.

Therefore, the more reasonable policy course would be for the United States to permit a "managed" spread of nuclear weapons to select states. Such a spread might be limited to regional trouble-spots and/or areas in which the United States is not interested in operating. While it could be argued that such a permissive stance by Washington might lead to new nuclear states whose regimes eventually could be hostile to the United States, this would seem to be a risk worth taking if it will lead to regional pacification.

Two regional dyads of some tension where a policy of "managed" proliferation might provide such dividends are the Korean and Greco-Turk dyads. These two regional rivalries will now be examined to ascertain if they and the United States might benefit from their nuclearization.
Nuclearization of the Korean Peninsula

The nuclearization of the Korean peninsula has been an active fear of US policymakers for almost half a century. US efforts to curb South Korean efforts to produce a nuclear weapon led to a temporary introduction of American nuclear power to the region, though this was later removed in a separate effort to hold North Korea's nuclear program in abeyance. Yet might the threat of nuclear Armageddon have positive effects on relations between the two Koreas? This section explores their relationship and assesses the impact the threat of nuclear weapons has had and continues to have on it. The prospect of a nuclear race on the peninsula will be examined not only within the context of North-South relations, but also the proliferation effects it might have on neighboring states (such as Japan and Taiwan) who greatly fear North Korean nuclear capability. Following a historical review of the relationship between the two Koreas, both North and South Korean efforts at manufacturing nuclear weaponry will be examined.

Nuclear Nexus

In 1956 the recently formed North Korean state entered into an agreement with the Soviet Union on nuclear research as part of which North Korean scientists were reportedly shuttled to the Dubna Nuclear Research Institute for training. Five years later, following China's first successful test of a nuclear device, North Korea established
its first nuclear research center at Yongbyon with Soviet assistance. South Korea believes that China has shared nuclear-weapons technology with Pyongyang as well (Spector 1990).

The 1960s witnessed sustained tension between the North and South as the North's leader, Kim Il Sung, sought reunification with the South through subversion and violence. The most extreme action occurred in January 1968 when the North sent a 31 person commando team to Seoul in an effort to assassinate South Korean president Park Chung Hee. The team was captured only 500 yards from President Park's residence (Spector 1990). A second assassination attempt in 1974 missed the South Korean president again, but killed his wife.

These rising tensions spurred efforts by the South to develop its own nuclear weapons program in the mid-70s. US pressure on Seoul to abandon such efforts led to its signing of the nuclear Non-Proliferation Treaty in 1975, though evidence suggests that South Korean nuclear production activities may have continued up until 1979 (Shorrock and Gadacz 1985). Eventually, guarantees of a US nuclear umbrella swayed the South Koreans from continuing a vigorous program to develop nuclear weapons.

Meanwhile, in the North, Kim Il Sung initiated efforts to build the infrastructure needed for a nuclear weapons program after 1980. The major result of these efforts was
the construction of an indigenous 30-megawatt reactor (considerably larger than the Soviet-supplied reactor which was in the 1 to 5 megawatt range) near Yongbyon by 1987 (Spector 1990). Some time in late 1988 or early 1989 US satellite intelligence photographs revealed that the North had begun construction of a plutonium extraction plant near the Yongbyon nuclear complex. Because plutonium could not have been used for North Korea's "peaceful" nuclear program, it was assumed that the site was being used to produce the material necessary for nuclear weapons (Chanda and Islam 1989). US analysts were divided over how quickly North Korea could have produced a bomb. The Department of Defense, using worst-case scenario projections, believed that the North might have nuclear weapons capability by the mid-1990s. However, others in the intelligence community felt that such an estimate greatly exaggerated the North's scientific and technical competence, suggesting that Pyongyang would not have the bomb before the end of the 1990s (Spector 1990).

Whatever the case, these efforts by North Korea elicited attempts by the South in 1989 to promote exchange and talks, and later that same year three-hundred visitors from each side of the DMZ were allowed to cross the dividing line for a brief visit for the first time since the end of the Korean War (Chang 1993).
The United States also was spurred to seek confidence building measures with the North Koreans. President George Bush announced "good faith" policies in 1990 aimed at attempting to sway North Korea into full adherence with the Nuclear Non-Proliferation Treaty (North Korea was a signer in 1985). Such adherence would have allowed for inspections by members of the International Atomic Energy Association (IAEA). These "good faith" policies promoted by Bush were twofold: first the United States pledged to drop its force levels in South Korea from 44,000 in 1990 to 37,000 by 1992; second, the United States pledged to remove its ground and sea-launched nuclear weapons from the area of the Korean peninsula (Sigal 1998).

These actions by the Bush administration led to a December 1991 North-South agreement on non-aggression, exchanges, and cooperation, and even more impressively, the first policy-level talks since the end of the Korean War in

42. North Korea's signing of the NPT in 1985 was considered by many at the time to be a significant breakthrough in preventing it from nuclearizing. By signing, North Korea agreed to accede to inspections within 18 months, but by the deadline's passing in 1987 no inspections had taken place and, as was previously mentioned, US intelligence satellites discovered an undeclared nuclear reactors at the Yongbyon Nuclear Research Center (Lehman 1993, 263).

43. The IAEA, founded in 1957, is a Vienna-based UN-affiliated organization with over 110 members. By the 1960s it had begun a series of on-site inspections, audits, and controls known as "safeguards." The goal of IAEA safeguards is to deter the diversion of nuclear materials from peaceful uses to military purposes through the hazard of timely detection (Spector 1990).
January of 1992. Despite the fact that events since then have called into question North Korea's willingness to fully comply with IAEA inspections, the West has witnessed more openness by North Korea than ever.

Under an agreement (Agreed Framework) reached with North Korea in March of 1994, the United States was allowed visits to the remote mountainous site at Kumchangri, about twenty-five miles northwest of Yongbyon, a nuclear research center that has been under inspection by the IAEA for five years. In exchange for the supposed shutting down of their nuclear weapons program and for cooperating with inspectors the North Koreans were promised billions of dollars in energy assistance, including two new nuclear reactors (Sigal 1998). Such an agreement reflected not only the desperation of the US in preventing a North Korean nuclear weapons capability, but also apparent evidence that the Pyongyang government was hurting economically now that assistance from the Soviets and China was drying up in the post Cold War atmosphere (Sigal 1998). North Korea, probably the most jingoistic state in the world, was having to abandon its philosophy of juche (self-reliance).

IAEA inspectors were allowed in and then kicked out of North Korea over the next five years as Pyongyang postured for economic assistance even as it threatened to become a nuclear power. In May of 1999 American nuclear inspectors in North Korea discovered that an underground site that the
United States suspected was being used for nuclear weapons production was revealed to be only a "huge, empty tunnel" (Shenon 1999). There was no evidence that the "hole" was being prepared for construction of a nuclear reactor. This suggested that the North Koreans were not as capable of developing nuclear weapons as analysts had feared. Moreover, it seemed more evident that Pyongyang was using the threat of nuclearization in an attempt to garner economic assistance.

The North Koreans had initially demanded a payment of $300 million (Shenon 1999) from the United States for the right to conduct a one-time inspection of the tunnel. But they dropped the demand after the United States offered new promises of food aid, which the State Department insists is for relief purposes unrelated to the nuclear agreement.

Such an outpouring of effort to promote openness and peace on the Korean peninsula likely would not have occurred minus the threat of North Korea achieving a nuclear arsenal. Indeed it seems that fears over the possible nuclearization of North Korea spurred such efforts. However, unlike the Indo-Pakistani dyad, the nuclear threat posed by both sides on the Korean peninsula remains opaque. That is to say, neither side clearly has nuclear capability. In fact, it appears that both sides presently do not have a nuclear stockpile. Nevertheless, the threat that a nuclear capability by one or both sides may be achievable has
promoted more efforts aimed at cooperation between the two sides.

What is suggested by all of this is that nuclear proliferation (or at least the threat of it) on the Korean Peninsula may be an acceptable outcome for the United States in the future. This may seem a radical statement at first, but relations between the North and South have never been as docile as they have been in the 1990s when the threat of nuclear proliferation to the area loomed largest. Other factors commonly associated with more peaceful dyadic relations between states are also absent in this region. For example, North Korea and South Korea are not alliance partners; North Korea and South Korea have a history of conflict; North Korea and South Korea are not both democracies; and finally, North Korea and South Korea share a common border. In terms of military capabilities the North has enjoyed a clear advantage in man-power since the mid-1980s. Currently the North has over one million man army, while the South has about 650,000 in its army. Yet such a difference in size may be misleading. David Kang (1994–95, 343) suggests that the South has numerous military advantages over the North:

Empirically, the South Korean military is larger, better-equipped, better-trained, and more versatile than the North Korean military. Numbers of troops and tanks are crude metrics and do not reveal the superior training, C^3I, and logistical support that the South enjoys over the North. Just as tellingly, the North has virtually no amphibious capability. Given the Inchon landing of 1950 and the inherent
difficulty in moving straight down the peninsula, it is quite likely that the North understands the value of amphibious assaults, and presumably any version of a northern invasion would presumably include an amphibious assault, if only to draw off forces from the DMZ. Yet this is not the case.

Paul Bracken suggests much the same in his analysis of the two Korea's military capabilities. But for Bracken (in Mack 1993, 94), it is the logistical factors which threaten to curtail the apparent numerical strength of the North Korean army:

Another feature of the system in the North is the undersized military support staff -- logisticians, transportation experts, food suppliers, and arms-makers...North Korea lacks the critical institutional ingredients to pull these forces together to support the middle line in its decision-making. There has never been any attempt to logistical capabilities to see if they would function in a crisis. North Korea's road network north of the DMZ does not have the capacity to carry the logistical forces necessary to support the large operating corps of a million-man army.

So a true military comparison between the two Koreas is difficult to portray. North Korea has a clear numerical advantage, but the South seems to have an advantage in terms of capabilities. What this suggests is that the two Koreas may be more militarily equal than is sometimes suggested and

44. This dissertation, using COW data (see Chapter Three military parity variable) ultimately assessed there to be roughly a 2 to 1 advantage in favor of the North, though this has lessened in the 1990s, with the North enjoying a roughly 1.7 to 1 advantage over the South. Other analyses support this diminution in the military balance between the two Koreas. Masaki (1994-95) for instance, uses Armored Division Equivalent (ADE) methodology, and finds a change in the military balance between the two Koreas from 1.68 to 1 in 1980 to 1.36 to 1 by the mid-1990s.
as has been noted previously, military parity tends to increase conflict levels between states.

Thus, might the addition of nuclear weapons serve to promote more peaceful relations on the Korean peninsula? Review of Table Nine suggests that most of the independent variables which tend to heighten conflict escalation are present in the Korean dyad. The lack of alliance partnership, geographic proximity, the absence of a democratic dyad, and the lack of a mature dyad (South Korea has experienced a number of regime transitions) all increase the likelihood of escalation should conflict arise between the two neighbors.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Value</th>
<th>Escalation Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ally</td>
<td>No</td>
<td>INCREASE</td>
</tr>
<tr>
<td>Proximal</td>
<td>Yes</td>
<td>INCREASE</td>
</tr>
<tr>
<td>Democratic</td>
<td>No</td>
<td>INCREASE</td>
</tr>
<tr>
<td>Mature</td>
<td>No</td>
<td>INCREASE</td>
</tr>
<tr>
<td>Capability</td>
<td>.62</td>
<td>AVERAGE</td>
</tr>
<tr>
<td>Trade</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Nuclear</td>
<td>Opaque</td>
<td>UNCLEAR</td>
</tr>
</tbody>
</table>

Outcome: ?

But nuclearization of the Korean dyad probably still is not the appropriate course to take at this time. It is
undeniable that in spite of all of these factors a certain level of peace has been kept between the two Koreas because of the US military presence there. Certainly US forces stationed on the border with the North have had some deterrent impact on Pyongyang (Sigal 1998). So while the threat of Northern nuclearization undoubtedly has helped to maintain the peace there as well, the US military tripwire is a factor with which North Korea is unlikely to risk tampering.

Nevertheless, both the US and South Korea have been responsive to North Korea's nuclear opacity (Sigal 1998). What is important to keep in mind with respect to the Korean situation is that, again, neither side has ever been proven to be able to produce nuclear weapons, nor has either side been shown to possess nuclear weapons. Yet, still, the pacifying impact of the threat of building such weapons seems to have helped maintain civility between the North and South. Korean expert Bruce Cummings (1997, 5), when speaking of the relationship between the two Koreas, sums up the deterrent power of nuclear weapons even in a case where neither side has been identified as having them: "In the realm of ambiguity, it is less important to actually possess nuclear weapons than to foster the belief that you may possess them, or may eventually possess them." This is what makes the Korean dyad a particularly unique case. The South, as well as their US partners, have responded not to
the appearance of nuclear weapons in the North, but to the mere threat of their appearance. This suggests that the deterrent capabilities of nuclear weapons are more far-reaching than most expected. Opacity may work in the sense that while other states may not believe that a potential proliferant has nuclear capability, they do not want to undertake conflictual behavior which might lead said state to accelerate its efforts toward nuclearization. Thus the opaque state is appeased by status quo powers in an attempt to prevent it from acquiring nuclear capability.

The implications of all of this for the Korean Peninsula is that the nuclearization of North Korea need not be encouraged because of the apparent positive effects of its nuclear opacity and because of the US military presence. Indeed, the effects North Korean nuclearization would have on other neighbors would likely lead to the spread of nuclear weapons not only to South Korea, but also to Japan and Taiwan (Lehman 1993; Hughes 1996; Dibb 1997-98). If this were to occur US influence in the region likely would be diminished as US security guarantees would be less needed in Seoul and Tokyo. This ultimately may be the direction events in Asia take as the hegemonic status of the United States is diminished slowly. US internationalist efforts will be refocused then exclusively to Europe as long as NATO remains intact.
Thus the best scenario for the Korean Peninsula, at least for US internationalists, would be for North Korea to maintain an opaque nuclear status, thereby never officially engendering a need for its neighbors to develop nuclear weapons of their own, while simultaneously benefiting from the deterrent aspects of nuclear weapons. Such a structure would be tenuous, however, as it is unclear how long North Korea would maintain (as well as how long others would tolerate it maintaining) a strictly opaque status.

Ultimately the US may turn inward again and decide to remove its forces from the Korean Peninsula. If such a period of isolationist fervor does recapture US foreign policymakers, then nuclearization of the two Koreas might be the proper course to follow. Without the deterrent presence of US forces, the escalatory factors present within the Korean dyad would bode inauspiciously for future conflicts between the two. Thus, at that time a symmetrical nuclear dyad on the Korean Peninsula would be appropriate.

**Turkey and Greece**

A rivalry even more bitter and centuries older than that of the Chicago Cubs and St. Louis Cardinals, the Greece-Turkey relationship has yet to be stabilized. Historical antagonisms have persisted between the two countries in spite of their status as NATO allies. Neither side has actively sought to procure nuclear weapons, but what impact would such weapons have on relations between the
two? This section intends to explore this issue, suggesting that the Greece-Turkey dyad is similar in some notable respects to that of both the Indo-Pakistani and Korean dyads. In all three cases there is a history of animosity and military action against one another as well as the presence of a common border.

What sets the Greece-Turkey relationship apart is the duo's participation in a common alliance. Yet NATO membership failed to prevent Turkey's invasion of Greek-controlled Cyprus in 1974. Might the presence of nuclear weapons have produced a different outcome and might such weapons prevent future escalations? This section intends to explore that possibility by examining the Greece-Turkey dyad more closely. It will focus on the most contentious issue between the two, that of control over the island nation of Cyprus. The Cyprus issue led to Greece's temporary departure from NATO in the mid-1970s and threatens today to push these strained allies into military action against one another. Might nuclear weapons be of help, or are other alternatives available?

Background

The relation between Greece and Turkey throughout history has been an unambiguous one to say the least. The United States, following World War II, took over from Great Britain the formidable task of maintaining Western influence in this part of the world, while keeping Greece and Turkey
from trying to slaughter one another. The U.S. used the admission of the two into NATO as a means to this end. The bipolar world of the Cold War also helped to maintain U.S. influence over the two, thanks to the threat of the looming Soviet Union just next door.

President Truman on March 12, 1947, proclaimed American readiness to come to the rescue of the two countries by pledging financial aid for economic or military purposes. The official policy statement, later known as the Truman Doctrine, clearly recognized the threat: "the very existence of the Greek state is today threatened by the terrorist activities of several thousand armed men, led by Communists, who defy the government's authority at a number of points, particularly along the northern boundaries." As for Turkey, its "integrity is essential to the preservation of order in the Middle East" (Lenczowski 1980, 795).

As members of NATO, Turkey and Greece would be important to SACEUR (Supreme Allied Command in Europe) -- both as a deterrent to a Soviet attack and as a threat to the Soviets' southern flank. If the region's military potential were integrated into a security framework, the Soviet Union would have to commit significant forces to protect its southern flank. A security commitment to Turkey therefore, would constitute a far more effective deterrent than previous arrangements for resisting Soviet attack, not only along the Middle East's entire northern tier -- which
provided a buffer for European and U.S. oil interests in the Persian Gulf — but in Europe as well.

But the Turks also felt that they needed to join. As President Bayar told Assistant Secretary of State George McGhee, Turkey "wants to give a guarantee, and it would like to receive a guarantee" (Lenczowski 1980, 38). The deal was done and both Turkey and Greece joined NATO in the 1950s to everyone in the NATO's approval.

Greece and Turkey were in quite different circumstances in the spring of 1947. The Greeks were in the middle of a civil war and thus, for the Athens government, the waning support from Great Britain meant turning to a new Western source, the United States, a must. The Turks, on the other hand, while consciously seeking an American presence on Turkish territory as a counter-weight to its ever-lurking Soviet neighbor, were tougher negotiators.45

The U.S. military and economic aid soon rocketed upward. Congress originally authorized $400 million in aid for both countries in 1947. This grew to well over $6 billion by the end of the 1960s (Couloumbis 1983). American

45. Turkish internal stability was quite good at the time. Political cohesiveness and economic conditions were "tolerable to good." The Turks thus, had less dependence on the United States when compared to Greece at the time. At the same time however, U.S. interest was first in supporting Greece financially. The Truman Doctrine was prompted by U.S. official perceptions that the "Communist rebellion" in Greece would prove successful without massive American intervention. Such a loss would then lead to the possible isolation, encirclement, and loss of Turkey for the West. See, Iatrides (1981, 256-258).
military presence in the two countries followed the acceptance of the two nations into NATO in September 1951 in Ottawa. Bilateral base agreements were signed in February 1953 and June 1954 that bound the United States with Greece and Turkey, respectively (Harris 1972).46

Turkey and Greece were of utmost importance for the U.S. during the Cold War period. Their stability however, was not only put into jeopardy by expansionist Russia, but by their own disputes. These disputes have persisted into the post-Cold War period. Foremost among them is the quarrel over the future of Cyprus, where a unilateral attempt by Greek's of the island's majority population in 1974 to declare union with Greece prompted Turkey to invade. The island is now partitioned between the two.

So incensed was Greece by NATO's failure to mediate judiciously, as it judged it, between the two disputing parties, that the Greek government withdrew from the military structure of NATO between 1974 and 1978. Turkey was also upset because of a U.S. arms embargo of Turkey between 1974 and 1977 as a mark of disapproval of the Turkish invasion of Cyprus. Those years, when Greece had withdrawn from the military structure of NATO, mark the

46. These agreements provided for America's right to establish bases; to overfly Greek and Turkish territories; and to provide for the legal status and local accountability of U.S. forces in the host countries.
period of NATO's greatest anxiety for the integrity of its southern flank.

In August 1984, UN Secretary Javier Perez de Cuellar arranged indirect talks between the two Cypriot parties to discuss the constitutional framework for a Federal Republic of Cyprus. The talks broke down, however, over the questions of international guarantors and the timetable for the phased-withdrawal of foreign troops, and the positions of both Greek and Turkish Cypriots hardened. Since 1994, Turkey has maintained 30,000 troops on Cyprus (Jacovides 1994).

Settlement of the Cyprus issue is unlikely. Former Turkish Prime Minister and current president, Suleyman Demirel says "Turkey will never give up Cyprus."47 The Turkish controlled section of Cyprus has voted for independence and is now called the Turkish Republic of Northern Cyprus. Currently, Turkey is the only state to recognize Northern Cyprus as a separate entity. However, should one of Turkey's new sister states of the former Soviet Union choose to do so (as Ankara hopes), then Turkey's claim to Cyprus will only harden.

Current relations between Turkey and Greece have basically been shaped by the 1974 invasion of Cyprus by Turkey. On July 20th of that year, Turkish troops burst

onto the Mediterranean island, justifying the action by espousing its goal as being to "re-establish the status quo" (Stavrou 1986, 83). The "status quo" according to the Ankara government had been disturbed by a military coup organized by the military junta controlling Greece at the time. Neither junta lasted and the Turks established a military presence on Cyprus.

The strategic value of both countries to the U.S. and NATO is considerable even today, but was especially so during the Cold War period. Both states bordered countries unfriendly to the West (Albania, Yugoslavia, and Bulgaria in the case of Greece; Bulgaria and the Soviet Union, in the case of Turkey). Turkey, by controlling the straits, held back the Soviet naval presence in the Black Sea from the Soviet fleet (the Fifth Escadra) operating in the Mediterranean Sea. Greece held the next level of defenses separating the Soviet navy in the region by controlling the Aegean and Dodecanese islands.

The end of the Cold War however, has not diminished the strategic importance of the two nations to United States and the West. Turkey has already proven its worth in the 1991 Gulf War with Iraq. The Turkish contribution to the anti-Iraqi coalition included: moving 100,000 troops along its border with Iraq, thereby posing the threat of a second front to the Iraqis; effective closure of the Iraqi pipeline to the Mediterranean (through which Iraq exported 54 percent
of its oil); extension until December 1991 of the Defense and Economic Cooperation Agreement, which gives the United States access to military bases in Turkey; and use of NATO airbases within range of military targets in Iraq (Kuniholm 1991). 48

Greece does not have the record of cooperation with the United States that Turkey possesses, 49 but the U.S. and NATO are continuing to militarily supply Greece, most likely as a counterweight to Turkey. Both Greece and Turkey have been armed by NATO in the early 1990s, possibly in an attempt to

48. In return for Ankara's assistance, the U.S., as part of the Southern Region Amendment assistance program (which has allowed for transport of slightly outmoded American weapons), along with Germany, have supplied the Turks with military equipment as a quid pro quo. This arms package included: 600 M-60 tanks, 400 Leopard tanks, 700 armored personnel carriers, 40 Phantom fighters, as well as a compliment of Cobra helicopters, missile destroyers and Roland surface-to-air missiles (Kuniholm 1991, 36-7).

49. In fact, Greece under Papandreou seemed to be a U.S. enemy if one merely reviews the rhetoric. Papandreou criticized the U.S. as being "the metropolis of imperialism" and praised the Soviet Union and some of its political stratagems. Greece refused to participate in sanctions introduced following the 1979 Soviet invasion of Afghanistan and the 1981 Solidarity in Poland. And Greek officials, including the Prime Minister, sided with the Soviet explanation of why in September 1983, it shot down Korean Air Lines Flight 007. Yet under Papandreou's leadership Greece signed the Defense and Economic Cooperation Agreement (DECA) with the United States. This agreement gave the U.S. access to specified military facilities in Greece for a period renewable every five years. Most recently, Greece has not been supportive of the NATO effort in Kosovo. So Greece seems to be saying one thing and then doing another. Greece seems to be seeking to keep its Russian neighbor happy while allowing the U.S. in to help protect it from said neighbor (Haass, 1986).
prevent the ethnic fighting occurring on both nations' borders (in former Yugoslavia and Armenia-Azerbaijan) from spreading southward. According to a 1994 published United Nations register for conventional weapons, Greece and Turkey accounted for 73% of the global army imports in tanks, 48% of the armored personnel carriers, 42% of the warships and 22 percent of the combat aircraft (Kokkinides 1994).50

Most recently the NATO conflict in Kosovo illustrated that Greece and Turkey tend to view the world from their own unique cultural perspective. Samuel Huntington (1997) has written extensively concerning the cultural fault lines emerging throughout the world as being the markers for conflict in the post Cold War era. In the case of Greece and Turkey this takes the form of a clash between the Christian and Muslim cultures, which according to Huntington (1997), is the fault line along which conflict is most likely to erupt in the twenty-first century. As Huntington would predict, Greece and Turkey had sharply different interests in the Kosovo tensions, dictated in part by their unique cultures. Turkey supported action to assist the Kosovar Muslims, while Greece identified more with the Serb Christians. NATO served to constrain the two rivals' interests.

50. A major reshuffling of NATO forces has also led to military hardware being shipped to Greece and Turkey. NATO agreed in 1992 to give poorer allies in the Mediterranean thousands of tanks, big guns and armored vehicles no longer needed, according to NATO officials, in central Europe. Around 4,000 pieces of equipment were given to Greece, Turkey, Spain, Portugal, Denmark and Norway (Doughty 1992).
tensions in this case by keeping both states out of the conflict, but whether it can continue to do so is uncertain.

Indeed future institutional constraint is of particular concern now that there are serious questions concerning the continued viability of the Atlantic alliance because the threat it originally was created to defend against, the Soviet Union, has collapsed. Even if NATO does continue, the bonds of alliance it created as a cooperative defense structure against the Soviet Union no doubt will weaken over time as long as an identifiable threat for it to rally against fails to appear. This, coupled with Greek efforts to prevent Turkey's entry into the European Union (EU) might serve to diminish the pacifying impact of alliance on the Greece-Turkey dyad.

In fact at least one analyst has argued that the inclusion of Greece and Turkey in the NATO alliance proved to be somewhat destabilizing to their relations. Ronald Krebs (1999, 369), speaking of the two's NATO membership, suggests the following problems with it:

First, it externalized these small powers' security, encouraging a shift in foreign policy focus from the Soviet threat to regional interests, and prompting the emergence of the conflict at the zenith of the Cold War. Second, as Greece and Turkey engaged in contest over Cyprus, alliance arms transfers helped transform this limited conflict into a broader and deeper enmity. Third, in the context of this deteriorating relationship, those features of alliance theoretically conducive to cooperation failed to achieve that end.
As NATO moves through a period of uncertainty, the idea that Turkish involvement in the EU and full membership in the WEU could serve to anchor and stabilize Turkish-Greek relations could gain momentum. This is an idea that has been espoused for some time to no avail. For instance, Ian Lesser of Rand suggested in 1992 (iv):

Should Turkey remain isolated from the process of European integration, the outlook for peaceful relations in the Aegean (and in the Balkans as a whole) will worsen. The prospects for recapturing the spirit of the 1988 Davos meetings and reinvigorating Turkish-Greek détente will turn on the development of confident political leadership in both countries.

But the prospects for full Turkish participation in emerging economic and security arrangements in Europe still seem to be poor. As Europe moves toward a common foreign and security policy, it will be less willing to accept the burden of a direct exposure in the Middle East, which full Turkish membership in the EU or WEU would bring. Thus, Turkey will continue to share with the United States a pronounced stake in the viability of NATO as a link to the European security order.

51. Turkey became an associate member of the European Economic Community in 1963 with the understanding that full membership would be granted after a certain transitional period (Halefoglu 1986, 3). Feeling that its service as a strong NATO ally had earned it the right to elevate its status, Ankara applied for full membership in the EC in 1987. However, citing shortcomings in the level of democratization and respect for human rights in Turkey, the European Commission agreed in 1989 to defer consideration of the application until at least 1993. Since that time it Turkish membership into the EU has been denied continually.
Ankara hoped to sway Western support for its entry into the EU by assisting coalition forces in the 1991 Gulf War. Turkey hoped that its efforts in the 1991 Gulf War would strengthen its position for entry into the European Union, which Greece has adamantly opposed. There were reports that former Turkish President Turgut Ozal, following the Gulf War, asked President Bush to plead Turkey's case with the EU. The Turks wanted him to stress their value to the West in dealing with the Arab world. Ozal did so, though without success.

Despite continuing efforts by Ankara, Turkish admission into the EU seems unlikely for at least a couple of reasons. The EU's stated reason for postponement of Turkish entry was the need to "deepen" the Community in its current form as envisaged by the Maastricht Treaty. However, issues of human rights in Turkey have played a part as well. Claims of Turkish mistreatment of its Kurdish minority have been trumpeted by Western Europe as reason enough to deny Turkish membership (Krebs 1999).

Indeed, though Turkish trade with Europe dwarfs that with other areas, many Turks feel the Europeans view them with prejudice. Europe still shows little interest in Turkey's membership in the EU and many Turks believe that this is because they are Muslims. Then Prime Minister Tansu Ciller herself suggested in the Winter 1994 issue of Strategic Review that "organizations like the European
Community should open themselves up to an applicant like Turkey, rather than preserve the EC (in the words of one European official) as 'a Christian club.' Here again the tensions of cultural disparity were registered, likely building additional resentment among the Turks for Christian Europe (Huntington 1997).

Clearly, though, Turkey would be an economic burden to the rest of the European Union. Morton Abromowitz (1993, 167), the U.S. ambassador to Turkey from 1989 to 1991, pointed out in 1993 that as one of the poorest states of Europe, Turkey would need a decade of rapid growth before its EU membership would be considered seriously. Such growth still has yet to occur for Turkey as it remains one of the poorest European states (Krebs 1999).

Turkey is facing internal challenges as well. The PKK (Kurdish Workers Party) continues its fourteen year long guerrilla war against Ankara. In its beginnings, the PKK totaled a meager 200 fighters and was not supported by the Kurdish minority within Turkey. Some early 1990s totals of

52. See Ciller 1994, p. 9. Former Turkish Prime Minister Tansu Ciller adopted the idea of the EC being a "Christian Club" as a theme, to pressure Turkey's acceptance. Speaking on Ankara TV in 1993 she said, "If the EC overcomes its fear of being transformed from a Christian club and accepts Turkey as its full member, it will be uniting dissimilar civilizations and therefore guarantee that new walls will not be erected." Her efforts proved fruitless however. From, Foreign Broadcast Information Service. (West Europe), (FBIS-WEU), #93-203, (22 October 1993): 70.
the PKK numbered it as having some 15,000 guerrilla forces, all well-armed as a result of Syrian and Iranian support.\footnote{53}

More of concern to secularist Ankara than anything else though, has been the success of the pro-Islamist Welfare Party (WP) in national elections. The WP first made electoral headway in the 27 March 1994 nationwide municipal elections. The WP emerged as the biggest winner taking mayorships in 30 of Turkey's 76 provinces.\footnote{54} This was followed by the WP winning more votes and seats in the Turkish parliament in December 1995 elections. Six months later the WP created a coalition government with a secularist party and assumed a short-lived control of the country (Huntington 1997). In 1998 the secularists took control of Turkey again and have maintained it, though the threat of the WP remains real (Krebbs 1999).

Greece and Turkey are forced by geography into remaining neighbors. They will both probably never get along. Their historical differences bring too much baggage

\footnote{53. More current figures are not available. The aspirations of the Kurds in Turkey are somewhat unclear. Most observers seem to agree that those who are seeking outright independence would settle for "normal democratic rights in the West" -- the right to bilingual schooling in their native tongue as well as Turkish, to broadcast and publish in Kurdish, to organize their own cultural activities, etc. (Rouleau 1993, 122).}

\footnote{54. The WP won 18.4 \% of the total vote, doubling its votes since the last general election. However, former Prime Minister Tansu Ciller's True Path Party still won the most total votes with 22.5\%. The vote did not affect the composition of the parliament, where the WP held only 40 of the 450 seats (Kohen 1994, 2).}
on behalf of both nations for one to ever believe that the two will become cooperative friends. The Turkey-Greece relationship then is all about toleration. NATO helped to maintain this level of mutual toleration for fifty years. Could nuclear weapons help to maintain it in the next century?

Table Ten: Escalation Factors for Greco-Turk Dyad

<table>
<thead>
<tr>
<th>Factor</th>
<th>Value</th>
<th>Escalation Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ally</td>
<td>Yes</td>
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</tr>
<tr>
<td>Proximal</td>
<td>Yes</td>
<td>INCREASE</td>
</tr>
<tr>
<td>Democratic</td>
<td>Yes</td>
<td>DECREASE</td>
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<tr>
<td>Mature</td>
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<tr>
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</tr>
<tr>
<td>Trade</td>
<td>106.6</td>
<td>INCREASE</td>
</tr>
<tr>
<td>Nuclear</td>
<td>No</td>
<td>NA</td>
</tr>
</tbody>
</table>

Outcome: ?

Table Ten indicates that most of the independent factors in the Greco-Turk dyad do not favor escalation of disputes. Both are alliance members, both are democratic, and both are mature. However, both are also neighbors, have a high level of military parity and are solid trading partners, all factors encouraging escalation. Thus the evidence is mixed. In such an instance, where there is not a strong impetus for conflict control, nuclear weapons are
not called for. What could change this situation in the future would be the demise of NATO and the failure to integrate Turkey into any other European institutional structure. Then a dyadic nuclear situation between Greece and Turkey might prove beneficial. Otherwise, the introduction of nuclear weaponry to the Balkans seems unnecessary and unwise.

**US Policy Recommendations**

Having now surveyed both the Korean and Greco-Turk dyads it is useful to summarize US policy recommendations with respect to nuclear weapons for these two cases. While both dyads present a history of disdain and aggression, only the Korean dyad reveals itself to be potentially benefited by the introduction of nuclear weapons, though a continuance of North Korea's opaque status and a US military presence is what is recommended for the near term. North Korean nuclearization could possibly lead to South Korean, Japanese and Taiwanese production of nuclear weapons, and though this might further solidify cautious, pacific relations among the major powers in the region, US influence would be diminished greatly. While this may be the ultimate direction of things for Asia, most US internationalists are not eager to pull-back from the continent. The continued nuclear opaqueness of North Korea would allow the United States to preserve its influence in the region into the twenty-first century, while simultaneously promoting pacific relations in the Korean
dyad. While this seems to be the best course to follow, it is likely only a matter of time before nuclear weapons spread in Asia, at which time the United States should accept its lesser role after working to ensure that nuclear symmetry is achieved in the region.

In the case of the Greece-Turkey dyad, further integration of Turkey into western institutional structures likely will ensure the stability of the Turkish economy, and therefore, the continued success of Turkish secularism. This probably will keep the two neighbors from escalating future conflicts with one another. Turkey's refusal to develop nuclear capabilities may also assist in retarding Iranian and other Middle Eastern states' efforts at joining the nuclear club by potentially forestalling a nuclear domino effect in the Middle East.

Thus, in neither coupling should nuclear weapons be actively promoted, but in the Korean dyad the addition of nuclear weapons could be acceptable. In the case of the Korean dyad what remains to be seen is if North Korea is truly serious about developing a nuclear capability, or if it is merely posturing in order to gain international assistance for its floundering economy. With respect to Greece and Turkey, neither state seems interested in acquiring a nuclear capability anyway.
CHAPTER SIX: THE FUTURE OF NUCLEAR WEAPONS

"There will one day spring from the brain of science a machine or force so fearful in its potentialities, so absolutely terrifying that even man, the fighter, who will dare torture and death in order to inflict torture and death, will be appalled, and so abandon war forever. What man's mind can create, man's character can control."

--Thomas Alva Edison

This concluding chapter restates the findings of the dissertation and examines the future of nuclear weapons. It explores some of the new military technologies that will be emerging in the twenty-first century to determine if nuclear weapons' importance will persist.

What this dissertation argues is that nuclear weapons can have a significant impact on conflict by often serving to de-escalate tensions between interstate dyads. This appears to present itself exclusively, though, in cases of symmetrical nuclear dyads. In other words, for the beneficial deterrent aspects of these weapons to occur both sides of the interstate dyad must possess the weapons. In asymmetrical conflict instances, the presence of nuclear weapons displays no significant impact on interstate dyads.

On an individual dyad level the beneficial aspects of nuclear weapons were evident in the case of the Indo-Pakistani pairing where escalatory factors such as a history of conflict, geography, institutions, trade, and
Conventional military capabilities appear to have been overcome by the addition of nuclear weaponry to the region. Indeed since the introduction of atomic weapons to South Asia, both sides appear to have exercised additional restraint in their conflicts with one another.

Ironically, however, the weapons so feared in the second half of the twentieth century may be playing a lesser role by the second-half of the next century. The lessons of nuclear knowledge cannot be expunged from human learning, but the future promises not only new weapons, but new ways of conducting warfare which may leave nuclear weapons antediluvian in comparison. Thus, as the twenty-first century arrives so too may a revolution in military affairs (RMA) alter strategic thinking in the United States and around the world.\(^{55}\)

**RMA**

Coined by Andrew Marshall, long-time Director of the Office of Net Assessment in the Department of Defense, the phrase "Revolution in Military Affairs" connotes a drastic change in military affairs resulting from a combination of

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55. It should be noted that while this dissertation argues that the RMA ultimately may make nuclear weapons obsolete by rendering them moot by technological advance, some strategic thinkers fear that the RMA will promote proliferation as weaker states strive to combat technology with terror (Betts 1998; Carter, Deutch and Zelikow 1998). Whatever the direction, though, it still seems likely that conflict will lessen, either because technology makes weapons so effective that warfare becomes a futile exercise, or because the spread of weapons of mass destruction accomplishes the same by deterring adversaries.
technological changes and operational and organizational innovation (Jablonsky 1994). Marshall's hypothesis that a new revolution in military affairs may be in progress or just over the horizon is based on the proposition that a number of critical technologies are maturing now that, if applied properly, might change the way wars are fought, and whoever is quickest to identify and exploit such a revolutionary potential could radically alter the military equation in world politics. If the US fails to exploit the RMA, others might, thereby improving their military positions considerably, perhaps at the expense of US interests (Kipp 1996).

RMAs have come in various flavors over the centuries. The major elements of this one are technological (Bartlett et al., 1996). The central theme that connects them is their reliance on information (Toffler and Toffler 1993). The details of the postulated elements of the RMA have evolved somewhat over the years, partly because the ideas have become more refined and partly as a result of petty bickering among the military services over turf and budgets. Four areas have emerged in the modern RMA: precision strike and delivery; information warfare; robotics and nanotechnology; and space technology.

**Precision Strike and Delivery**

Precision strike is the ability to bring the right kind of firepower to bear at the right time and place to destroy
virtually any kind of critical target. The concept is a logical extension of the precision part of the Gulf War air campaign and traces its antecedents at least as far back as the use of laser-guided bombs in Vietnam (Davis 1996; Orme 1997-98). With more types of precision-guided weapons in current inventories and in the works, more advanced guidance and navigation schemes available, and critical supporting technologies maturing rapidly, large inventories of very accurate weapons should be within the reach of major industrial powers and any other countries with the wherewithal to purchase them in the relatively near future. Equally critical are the intelligence collection, communications, data processing, and command and control systems necessary for large-scale, timely use of precision-guided weapons. Improvement in sensor technology, computer hardware and software, and large-scale communications technology might make possible precision strike on a scale that would quantitatively and qualitatively change the nature of warfare (Jablonsky 1994). Adding "precision delivery" acknowledges the importance of delivering things other than weapons (e.g., humanitarian relief supplies) accurately.

Conventional munitions have made remarkable advances in lethality by combining real-time information with precision-guided technology. Bombing has become so precise "that weapons systems can routinely attack not just the building
or the rooms, but the corner of the room that will bring everything down -- even the vent shaft that will put the bomb inside the shelter" (Davis 1996, 46).

The effectiveness of NATO's air campaign against Serbia in 1999 evidenced the dominance of the superior technology produced by the current RMA. NATO conducted over 34,000 sorties and deposited approximately 22,000 bombs on Serbia (many guided by lasers) and yet NATO did not suffer a single casualty in the seventy-eight days of the air campaign (Gelman 1999).

**Information Warfare**

New technologies make it possible to gather, process, and move vast amounts of information very quickly. In future military operations, they may make it possible for military commanders to know virtually everything about their enemies as well as their own forces and be able to continuously replan and direct forces in near-real time. How much of this "situational awareness" and real-time command and control is really valuable remains to be seen, but the idea of being able to do better in this arena is central to the RMA (Davis 1996).

Dependence on information technologies could create vulnerabilities, however, that an adversary might be able to exploit. Protecting one's own information-related operations while attacking an enemy's is likely to be even more fundamental to military success than in the past. This
geographic expansion of the battlefield will compel military commanders to think more globally (Davis 1996).

The other major component of information warfare is the potential vulnerability of high-tech civilian societies (banking and financial systems, telecommunications networks, and computer reliant technologies) to electronic attack. This could ultimately lead to an expanded conception of national security (Davis 1996).

**Robotics and Nanotechnology**

Robotic devices are no longer simply used for mass producing automobiles. Robotic weapons were used as recently as the Gulf War. Pioneer RPVs (small, unarmed pilotless planes controlled by computer operators miles away) flew some 330 sorties once Desert Storm commenced. Pioneers tracked Iraqi mobile missile launchers as they were returned to their bases, checked on bomb damage, searched for mines in the Gulf, and surveyed Iraqi troop movements (Toffler and Toffler 1993).

Yet the robotics of the near future will discover its most beneficial potential as it is miniaturized to microscopic levels. The notion of molecular machines was first put forward by the renowned Nobel physicist Richard Feynman in the late 1950s (Feynman et al., 1965). 56 The

56. By 1957 Dr. Feynman had concluded: "Principles of physics, as far as I can see, do not speak against the possibility of maneuvering things atom by atom. It is not an attempt to violate any laws; it is something, in principle, that can be done" (Swain 1999).
first scanning tunneling microscope, which can detect individual atoms, was built in 1981 by Gerd Binnig and Heinrich Rohrer at the IBM Zurich Research Laboratory (Roland 1991a). Following this breakthrough, K. Eric Drexler (1986, 1991) created the term "nanotechnology" to refer to the technology of controlling matter at the scale of nanometers -- billionths of a meter.

Techniques of miniaturization have exploded in the past decade with patents for micro-machines and nanobots accelerating the potential benefits of robotics by shrinking devices to incredible levels. Researchers announced in July of 1999 that they had discovered a method for creating computer transistors at the molecular level (Markoff 1999). Such an advance would increase the processing capability of computers 100 billion times over their present 1999 capabilities. This research could lead to the production of machines at the molecular, or even atomic level, which could in turn create like devices. Toffler and Toffler (1993, 120) suggest of such machines: "If micro-machines are

57. The two scientists received a Nobel Prize for this work in 1986. Later, in April 1990, IBM researchers spelled out the company name by moving individual atoms of xenon. This proved the technological potential of nanotechnology to custom-build molecules atom by atom (Roland 1991b).

58. Researchers at UCLA and Hewlitt Packard created the so-called Rotaxane Molecule. The researchers suggest that "this could lead to a world in which supercomputing power is so pervasive and inexpensive that it literally becomes an integral part of every man-made object (Markoff 1999, 1A).
small enough to manipulate individual cells, nano-machines can manipulate the molecules of which cells are built."

According to a survey of twenty-five scientists working on nano-tech, within the next ten to twenty-five years we will not merely be able to create devices at the molecular scale, but we will be able to make them self-replicating -- meaning we can breed them. Thus, modern technology may soon produce self-producing war machines. Toffler and Toffler (1993, 121) note: "a generation from now, says a physicist at RAND Corporation, 'we start looking at sensors [the size of a pinpoint] that...can burrow into communications systems, or sensors that can lie there for twenty years, just ticking away, ready to be remotely activated."

What the ultimate product of nanotechnology may be is difficult to say. Most researchers are very auspicious about the technological benefits nanotechnology could produce for society. Some have even suggested that it may lead to the "'end of economics,' ushering in an age of almost unlimited abundance of marvelous new things" (Roland 1991b). It might also lead to a further devolution in

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59. The potential benefits of nanotechnology are awe-inspiring, though caution with any future technologies seems always a wise course. Nevertheless, a vast range of salutiferous achievements could be realized through nanotechnology if forecasters familiar with it are accurate, including: the end of disease, inexpensive space travel, and in the minds of the most sanguine seers, immortality (Drexler 1986; Du Charme 1995; Kurzweil 1999).

60. Sounds good to me.
conflict, not only because of the economic boom such devices
could produce for states, but also because their destructive
potential would be greater than that of nuclear weapons and,
thus, so would their deterrent capability.

**Space Technology**

Currently the most vital and yet least appreciated
facet of the new RMA is the growing military dependence on
space technology. While space systems have long been
important to US national security, trying to integrate them
into routine military operations has been a source of
perennial frustration (Gray 1996).

Space offers both unique opportunities and requires
special skills and capabilities to exploit fully. By their
very nature, space capabilities offer even modest nations
global capability to communicate and collect information.
Moreover, with the burgeoning commercial markets for
satellite communications, navigation, and remote sensing,
the buy-in price for even small countries (or, for that
matter, non-nation states) to take advantage of some of the
opportunities that space can offer is likely to be greatly
reduced (Jablonsky 1994).

In addition to anti-satellite technologies the most
evident effort at militarizing space has been US efforts to
acquire a ballistic missile defense (BMD) system. The
original space-based concept of BMD arrived during the
Reagan administration in the form of the heavily lambasted

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Strategic Defense Initiative. The lack of feasibility (both monetarily and scientifically) of this project, coupled with the demise of the Soviet threat gave way to a lesser BMD system during the Bush administration known as Global Protection Against Limited Strikes (GPALS). GPALS purpose was in its name: to provide global protection from limited strikes, whatever their source. It was unique from the original SDI Phase One conception in that it was designed to repel only limited strikes and not an all out nuclear attack from the Soviet Union. It was more directed to the 1990s world in which the threat of horizontal proliferation and the possibility of limited attacks, (not a large-scale nuclear strike by the Soviet Union), was the perceived threat of U.S. policy-makers.

Such a space-based system was never developed and deployed however. Future space-based interceptor systems will face much the same fate unless the cost can be made less prohibitive and a credible threat arises to push the US Congress into some action in this regard. The Clinton administration's current course with respect to missile defense is to develop ground-based interceptors for theater defense.

61. GPALS is not deterrence, but protection of the United States, U.S. forces deployed overseas, U.S. power-projection forces -- as well as U.S. friends and allies -- against accidental, unauthorized and/or limited strikes, whatever their source (McDowell 1991). Previously, the SDI had sought defenses that could strengthen deterrence of a massive Soviet ballistic missile strike. Thus, GPALS was a major change in the role that strategic defenses were to perform.
and national defense. Such devices, while terrestrially based, would employ space-based satellites to assist in target acquisition (Jablonsky 1994).

The larger question of whether a BMD system would damage the deterrent value of nuclear weapons is a serious one. It seems in principle that such a system would be detrimental to nuclear deterrence as the side with such defensive capabilities would hold a clear strategic advantage over its adversary. That thinking holds in theory, but in reality there really is not much disincentive for the United States not to procure a limited ballistic missile defense capability. A limited defense such as GPALS would pose no threat to a large nuclear power such as the Soviet Union because it has a powerful second-strike capability which would keep nuclear deterrence strong between itself and the United States. A BMD system would make a difference in US dealings with smaller nuclear powers, but it would only remove the deterrent threat from the weaker party, allowing more strategic options for US policymakers.  

62. Such systems will be devised using kinetic energy weapons (KEWs) such as Exo-Endoatmospheric Interceptors (E2Is) and Ground-Based Interceptors (GBIs) equipped with non-nuclear warheads that destroy targets by the force of their impact with the target (Cooper 1991, 5).

63. Indeed in 1993 former Secretary of Defense Les Aspin declared (as part of the Clinton administration's 1993 Bottom-Up Review) that the primary threat to US security in the twenty-first century stemmed from nuclear pariah states. He concluded that "the new possessors of nuclear weapons may not be deterrable" (Karl 1996). If this is the case, there
detrimental is in regional situations where strategic superiority could destabilize the dyad, such as in South Asia, or in the event that the Korean Peninsula was nuclearized.

Development of ballistic missile defense systems outside of the United States is quite limited however. Israel is the notable exception having been a strong partner to the Untied States in developing Arrow interceptors. Arrow interceptors are designed to intercept ballistic missiles in flight and are somewhat similar to the Patriot, but use a more advanced technology (Payne 1991). Israel has no nuclear-capable regional competitor, so their development of defensive missile capabilities does not harm deterrence in this case.

Time’s Arrow

The impact of these technological improvements on state behavior could be profound. What this dissertation has indicated already is that the unique accomplishment of splitting the atom assisted in promoting more cautious, and, thus, more pacific behavior between states with that technological capability. It seems reasonable to envision that as technology advances over the coming decades, so too might constraints on escalation. Of course it depends upon the form this technology takes. As has been noted, advances in defensive systems could potentially threaten regional

is all the more reason for the United States to develop a limited nuclear defense.
stability. But the trend in technology suggests that this will not be the case. In fact, the process of evolving technology tends to improve capabilities in an exponential fashion, which tends to promote more order within the system. MIT professor Raymond Kurzweil (1999, 32) observes, "Innovators seek to improve things by multiples. Innovation is multiplicative, not additive..." Kurweil (1999) thus concludes the following with regard to the evolution of life forms, and of technology:

--An evolutionary process is not a closed system; therefore, evolution draws upon the chaos in the larger system in which it takes place for its options for diversity; and

--Evolution builds on its own increasing order.

--Therefore, in an evolutionary process, order increases exponentially.

Figure Two: The Law of Accelerating Returns as Applied to an Evolutionary Process

Thus, technology, like any evolutionary process, builds on itself, and by doing so, increases order within the system in which it operates. Indeed, from a conflict perspective, it seems reasonable to assert that as technology has been improved, warfare has lessened in frequency within the international system. This notion is based on Correlates of War (COW) data tracking the frequency and character of war in the international system since 1816. By breaking time-periods into roughly thirty year blocks until the end of the Cold War the number of initiated wars declines precipitously
over time in relation to the number of states in the system. In fact, since 1918 the frequency of war outbreak "actually declines from four per state per decade prior to World War II to two per state per decade since [and even less since the Berlin Wall was dismantled in 1989]. And if we control not for the number of states but the number of pairs, the decline appears even more dramatic" (Singer 1991, 57). As Table Eleven clearly indicates, the frequency of warfare in

<table>
<thead>
<tr>
<th>Years</th>
<th>Period</th>
<th># of Wars</th>
<th># of States</th>
<th>Avg. Wars per state</th>
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<td>1816-1848</td>
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<td>33</td>
<td>28</td>
<td>1.18</td>
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<tr>
<td>1849-1881</td>
<td>Resurgent Imperialism</td>
<td>43</td>
<td>39</td>
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<td>The Great Depression</td>
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<td>1945-1988</td>
<td></td>
<td>43</td>
<td>117</td>
<td>.37</td>
</tr>
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</table>

the international system per state per year declines in every approximate thirty year time-period occurring since the Concert of Europe.\(^{65}\)

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64. Post Cold War figure adjusted for a thirty year time period.

65. Such optimism has been challenged by some scholars who suggest that the proper measure should not be the number of wars that start, but the number of wars presently under way (Small and Singer 1982; Wallensteen and Sollenberg...)

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Part of this may be attributable to the destructive potential of nuclear weapons (at least after 1945), as well as the growing accuracy and effectiveness of modern weaponry. As the intensity, accuracy and effectiveness of weaponry is advanced and augmented by technology, so too may be the likelihood of order in the international system.

While interstate warfare and conflict unlikely will ever abate completely, they probably will be lessened in frequency and intensity by the march of technological progress.

Conclusion

In an evolving system, as is the case with the current state-centric international system, the passage of time generally reflects the growth of order within the system. Successful behaviors are learned or mimicked as the system members adapt to what has proven to be beneficial behavior in the past. Thus successful institutions are generally adopted, as has been the case for democracy following the victory of the democratic institutional structures of the West during the Cold War.

Indeed there is a proliferation of democratic institutions throughout the world, which many have suggested will lessen the chances for conflict between states. This

1995). Still, as Kegley and Wittkopf (1997, 365) note, "The so-called outbreak of peace in the post-Cold War [era] is not mythical, however, as only four large-scale wars were under way between states in the 1989-1994 period (Wallensteen and Sollenberg 1995, 345)."
so-called End of History thesis, eloquently proposed by Francis Fukuyama (1993), argues that lesser states tend to emulate more successful ones and because the West scored a Pyrrhic victory in the Cold War, Fukuyama suggests that the democratic institutions of the winners will be copied throughout the world. In fact, there is some evidence of this institutional mimicry with democracy seeming to spring up in every corner of the world.

Yet this appears not to be the solitary facet of successful countries that states are seeking to copy. Like Fukuyama, Kenneth Waltz, as has been noted, argues for the impressionability of states suggesting that states who are successful are those that are best able to adapt. This Darwinian notion of state evolution suggests that democratic institutions will not be the only aspect copied by others. In fact a secondary proliferation has become one not of institutions, but rather, weapons (specifically, nuclear weapons). Waltz (1995) notes, "Self-help is the principle of action in an anarchic order, and the most important way in which states must help themselves is by providing for their own security." Therefore the proliferation of nuclear weapons is inevitable, as states strive to ensure their own survivability. Thus with the international system dictating a proliferation of nuclear weapons to more and more states, Waltz (1995) argues that war will become less
likely because the weaponry (nuclear warheads) will be less suited for waging it.

The evidence this dissertation has presented suggests that there is merit to this argument. But as was the case with democratic states, such pacificity occurs only within dyadic relations between like states. That is, pairs of nuclear states produce lower levels of conflict than other types of interstate couplings. Thus it is regional nuclear asymmetries that should be of concern to US policymakers. Should North Korea ever evolve from nuclear opacity to overt nuclear capability the response to provide South Korea with like capability should be swift. And of more concern to US policymakers than a dyad of two nuclear states such as India and Pakistan should be interstate rivalries in which there is only one nuclear capable state (such as the case of China and Taiwan) or none at all (as might be evidenced by Iraq and Kuwait in 1991).

Certainly, the proliferation of nuclear weapons should not be taken lightly. But doom and gloom forecasts about the terrors these weapons will unleash on the world are overstated. As nuclear weapons spread in the next decades many fear that the likelihood of a nuclear mishap or exchange will increase (Schelling 1982; Martin 1997; Beres 1998; Falkenrath 1998-99). Yet, thus far, countries of varying regime type, GNP, size, and geographic locale have possessed and continue to possess these weapons with none of
the nuclear horror stories so often trumpeted having occurred. Granted, the spread of nuclear weapons should not be something to be wantonly encouraged, as the presence of nuclear weapons in typically conflictual dyads may not be warranted in every case (the current Greece-Turkey dyad for instance). But it is also not something that need be overly feared. Nuclear weapons have helped to maintain peace within the international system since 1945, and they most likely will continue to do so into the twenty-first century until the next wave of innovation crashes over us and sweeps them into the vast ocean of obsolescence in which swim so many of the technological terrors of the past. Until that time, however, beati sunt possedentes.
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## APPENDIX A

**THE NUCLEAR CLUB**

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>1945 -- present</td>
</tr>
<tr>
<td>Russia (USSR)</td>
<td>1950 -- present</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>1953 -- present</td>
</tr>
<tr>
<td>France</td>
<td>1960 -- present</td>
</tr>
<tr>
<td>China</td>
<td>1964 -- present</td>
</tr>
<tr>
<td>Israel</td>
<td>1970 -- present</td>
</tr>
<tr>
<td>India</td>
<td>1974 -- present</td>
</tr>
<tr>
<td>Republic of South Africa</td>
<td>1980 -- 1990</td>
</tr>
<tr>
<td>Pakistan</td>
<td>1986 -- present</td>
</tr>
</tbody>
</table>
APPENDIX B

56 SYMMETRICAL NUCLEAR DYAD CONFLICT INSTANCES

<p>| | |</p>
<table>
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<th></th>
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**291 Asymmetrical Nuclear Dyad Conflict Instances**

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VITA

James Franklin Pasley was born and raised in Little Rock, Arkansas. From an early age he displayed an affinity and aptitude for geography and games of strategy. During his youth he received awards and recognition for his writing and piano recitals. At age 13 he earned the rank of Eagle Scout. As a collegiate undergraduate he was selected to participate in The American University's Washington Semester Program. While in Washington D.C. he served as The American Defense Institute's National Defense Intern. He has participated in and presented papers at numerous conferences in his field ranging from Minneapolis, Minnesota, to Kiel, Germany. He intends to accept employment either in academia or government, but will continue to pursue his abstruse love of creative writing, which assists in his quest for understanding and serves as his raison d'être.
DOCTORAL EXAMINATION AND DISSERTATION REPORT

Candidate: James Franklin Pasley

Major Field: Political Science

Title of Dissertation: Chicken Pax Atomica: The Impact of Nuclear Weapons on Conflict Between Interstate Dyads

Approved:

[Signatures]

EXAMINING COMMITTEE:

[Signatures]

Date of Examination:

September 24, 1999