



저작자표시-비영리-변경금지 2.0 대한민국

이용자는 아래의 조건을 따르는 경우에 한하여 자유롭게

- 이 저작물을 복제, 배포, 전송, 전시, 공연 및 방송할 수 있습니다.

다음과 같은 조건을 따라야 합니다:



저작자표시. 귀하는 원저작자를 표시하여야 합니다.



비영리. 귀하는 이 저작물을 영리 목적으로 이용할 수 없습니다.



변경금지. 귀하는 이 저작물을 개작, 변형 또는 가공할 수 없습니다.

- 귀하는, 이 저작물의 재이용이나 배포의 경우, 이 저작물에 적용된 이용허락조건을 명확하게 나타내어야 합니다.
- 저작권자로부터 별도의 허가를 받으면 이러한 조건들은 적용되지 않습니다.

저작권법에 따른 이용자의 권리는 위의 내용에 의하여 영향을 받지 않습니다.

이것은 [이용허락규약\(Legal Code\)](#)을 이해하기 쉽게 요약한 것입니다.

[Disclaimer](#)

**Master's Thesis**

**Nuclear Stability in South Asia:  
India and Pakistan**

남아시아 핵안정도에 관한 사례연구:  
인도와 파키스탄 사례

**August 2014**

서울대학교 국제대학원  
국제학과 국제협력 전공  
**Lai Man Lam**

**Nuclear Stability in South Asia:  
India and Pakistan**

A thesis presented

by

**Lai Man Lam**

to

Graduate Program in International Cooperation  
for the Degree of Master of International Studies

**Graduate School of International Studies**

**Seoul National University**

**Seoul, Republic of Korea**

**August 2014**

남아시아 핵안정도에 관한 사례연구:  
인도와 파키스탄 사례

지도교수 신성호

이 논문을 국제학 석사학위 논문으로 제출함

2014년 5월

서울대학교 국제대학원

국제학과 국제협력 전공

Lai Man Lam

Lai Man Lam 의 석사학위 논문을 인준함

2014년 7월

위원장 김태균

부위원장 조창범

위원 신성호

**Nuclear Stability in South Asia:  
India and Pakistan**

**Thesis Advisor      Prof. Seong-Ho Sheen**

**Submitting a master's thesis of International Cooperation**

**May 2014**

**Graduate School of International Studies**

**Seoul National University**

**International Cooperation**

**Lai Man Lam**

**Confirming the master thesis written by Lai Man Lam**

**July 2014**

**Chair      Prof. Taekyoon Kim      \_\_\_\_\_ (Seal)**

**Vice Chair Prof. Chang-Beom Cho \_\_\_\_\_ (Seal)**

**Examiner Prof. Seong-Ho Sheen      \_\_\_\_\_ (Seal)**

**Copyright © 2014 by Lai Man Lam**  
**All Rights Reserved**

## **Abstract**

### **Nuclear Stability in South Asia: India and Pakistan**

Lai Man Lam  
Department of International Studies, International Cooperation Major  
The Graduate School of International Studies  
Seoul National University

With the detonation of the first atomic bomb in Hiroshima in 1945, the era of nuclear has begun. Now, with the growth of technical capabilities, concerns about the spread of nuclear weapons are increasing. What the consequences nuclear proliferation will do to the world is thus a compelling question. In response, the international society has reached a consensus of anti-proliferation. However, contentions over the effects of nuclear proliferation continue among scholars. Debate has renewed on whether nuclear weapons are a stabilizing factor in international politics. With the increasing number of nuclear-weapon states in recent decades, scholars and policy analysts have turned in earnest to the effects of nuclear weapons on inter-state relations. Two schools of thought, proliferation “optimism” and “pessimism”, provide competing arguments on the likely consequences of spreading nuclear weapons.

For nuclear optimists, the spread of nuclear weapons is not worrying; in fact, it might actually have soothing and deterring effects on regional conflicts. Nuclear pessimists disagree and argue that the spread of nuclear weapons increases the probability that nuclear weapons will be used. Both sides have attempted to muster historical evidence to support their cases. Yet, historical cases are rare and the evidence is not always conclusive. This debate has been given an additional boost by the decision of both India and Pakistan to become overt nuclear weapons states in 1998. Would ameliorating effects of nuclear weapons rain over the region? Or would nuclear weapons further destabilize the regional order?

To refresh the debate, this study will analyze the India-Pakistan relationship before and after the nuclear age, and assess the effectiveness of nuclear deterrence between them. It is noteworthy that the finding of this paper is limited to the case between India-Pakistan, and shall not be applied generally in discussing the nuclear relationship of other nuclear-weapon states.

**Keywords:** nuclear proliferation, India, Pakistan, deterrence, inter-state relations

**Student ID:** 2011-24195



## **Acronyms**

Confidence-building Measures (CBMs)

Weapons of Mass Destruction (WMD)

No-first Use (NFU)

Nuclear Weapon States (NWS)

The Treaty on the Non-Proliferation of Nuclear Weapons/the Non-Proliferation Treaty (NPT)

## Table of Contents

<b>Abstract</b> .....	i
<b>Acronyms</b> .....	iii
<b>Chapter I INTRODUCTION</b> .....	1
1. Research Background .....	1
2. Research Question .....	3
3. Literature Review .....	4
4. Analytical Framework .....	14
<b>Chapter II OVERVIEW OF NUCLEAR PROLIFERATION</b> .....	17
1. Conceptualizing Proliferation .....	17
2. The Nuclear Decision – Why Nations Go Nuclear? .....	19
3. The Spread of Nuclear Weapons .....	22
<b>Chapter III INDIAN AND PAKISTANI NUCLEAR WEAPONS</b> .....	26
1. India as a Nuclear Power .....	26
2. Pakistan as a Nuclear Power .....	31
3. Comparative Analysis of India and Pakistan’s Nuclear Doctrines .....	37
<b>Chapter IV NUCLEAR DETERRENCE ON THE SUBCONTINENT</b> .....	39
1. Roots of Conflicts .....	39
2. Evolution of The India-Pakistan Relationship .....	41
3. The Robustness of Nuclear Deterrence .....	60
<b>Chapter V CONCLUSIONS</b> .....	69
1. Conclusions .....	69
2. Implications .....	71
<b>Bibliography</b> .....	74
<b>국문초록</b> .....	79

## Chapter I INTRODUCTION

### 1. Research Background

With the detonation of the first atomic bomb in Hiroshima in 1945, the era of nuclear has begun. Now, with the growth of technical capabilities, nuclear weapons continue to spread. What are the likely consequences of nuclear proliferation? In response, there has long been a consensus against the phenomenon from the international society. Despite the unanimous anti-proliferation sentiment, debates over the effects of nuclear proliferation continue within the academia of international relations. Scholars have been divided about the effects of spreading nuclear weapons. One set of scholars, the proliferation optimists, believe that nuclear weapons can ameliorate effects of inter-state conflicts.<sup>1</sup> Proliferation pessimists disagree, arguing that the spread of nuclear weapons increases the probability that these weapons will be used.<sup>2</sup>

---

1. Proliferation optimism has largely come to be identified with the writings of Kenneth Waltz. See, in particular, *The Spread of Nuclear Weapons: More May Be Better*, Adelphi Paper No. 171 (London: International Institute of Strategic Studies [IISS], Autumn 1981); and in Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate Renewed* (New York: W.W. Norton & Company, 2003).

2. Representative of the proliferation pessimism literature are Lewis A. Dunn, *Controlling the Bomb: Nuclear Proliferation in the 1980s* (New Haven, Conn: Yale University Press, 1982); Yair Evron, *Israel's Nuclear Dilemma* (I thaca, N.Y.: Cornell University Press, 1994); and Scott D. Sagan, in his writing with Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate Renewed* (New York: W.W. Norton & Company, 2003).

Both sides of the argument have attempted to gather historical evidence to support their cases. However, historical cases are rare and the evidence is not always conclusive. This debate has been given an additional boost by the decision of emerging nuclear states, especially those on South Asia, becoming overt nuclear states. In fact, South Asia's geography is an important issue and is generally considered the most critical factor accentuating nuclear danger in the subcontinent. The proximity of the South Asian nuclear adversaries is believed to make dangers of inadvertent use of nuclear weapons even greater than is normally the case. In addition to geography, the state of civil-military relations, the nature of command and control systems, and the limitations of safety mechanisms are thought to increase the threat of unintended use of nuclear weapons.

Nuclear relationship between India-Pakistan is thus worthy of investigating, seemingly due to their overt nuclear risks (e.g. proximity, civilian-military relations). Moreover, they share a common border and have been plagued with a bitter relationship resulted from unresolved territorial disputes. For proliferation pessimists, the fragile relationship between the nations may arouse fear that they will be unable to resist using their nuclear weapons against each other. Yet, for proliferation optimists, nuclear weapons may have caused them to deal with each other cautiously. South Asia's nuclear debates remain

dramatically opposing. In hopes of renewing the debate, this research aims at investigating *effects of nuclear proliferation on the inter-state relation between India and Pakistan*. Will nuclear proliferation destabilize the subcontinent and increase the risk of war? Or is the fear of nuclear destruction strong enough to convince them not to go war? Simply put, does nuclear deterrence work?

## **2. Research Question**

*“Nuclear proliferation can stabilize the regional status quo between India and Pakistan.”* is the main research question. Yet, further elaboration on the definition of stabilizing is needed. For proliferation optimists like Kenneth Waltz, two nuclear-armed adversaries have not launched a nuclear war against one another because they fear a reciprocal strike, thereby balancing each other and stabilizing their relations. According to them, the definition of stability is the prevention of a total or full-scale war, the contenders are willing to make any sacrifice in lives and other resources to obtain a complete victory, as distinguished from limited war.<sup>3</sup> However, Waltz’s analysis only explains why nuclear adversaries have not yet launched a nuclear attack and all-out war against one another. There is still inadequate consideration on how tensions across the conflict spectrum have

---

3. See, the modern concept of total war in, Carl von Clausewitz, *On war*, ed. Michael Howard and Peter Paret (New Jersey: Princeton University, 1984).

increased since two states both weaponized. In fact, many nuclear proliferation pessimists use the stability-instability paradox to argue how regions with rival nuclear powers become increasingly unstable. They maintain that the current definition of stability is yet to satisfy the stability-instability paradox.

The stability-instability paradox posits that two nuclear-armed adversarial states, believing that neither will initiate a nuclear strike, can and will increasingly engage in offensive posturing and limited conflict with one another.<sup>4</sup> Hence, although nuclear weapons may prevent a full-scale war, it can increase limited conventional war and in turn, contribute instability at the lower level in the form of more aggressive posturing between major regional powers. To address the vacuum, the stabilizing effects of nuclear weapons investigated in this research encompass not only the prevention of a total war, but also the decreasing possibility of limited conventional war.

### **3. Literature Review**

The spread of nuclear weapons is probably inevitable from the time the United States developed and used the first atomic bomb in World War II. As now, proliferation is a

---

4. Peter R. Lavoy, "The Strategic Consequences of Nuclear Proliferation: A Review Essay," *Security Studies* 4, no. 4 (1995).

matter of capabilities and incentives. The ability to make the bomb is longer monopolized by America, given the natural diffusion of scientific and technological knowledge; and the rapid emergence of postwar tensions assured that other nations would be determined to deny the United States a nuclear monopoly.

### *Nuclear Optimism*

Then, should we worry about the spread of nuclear weapons? At first glance, this appears to be an absurd question. After all, nuclear weapons are the most powerful weapons ever created by man. For decades during the Cold War, the fear of nuclear war became a subject of terror in public. Nonetheless, insofar, we have lived for over the past half-century in relative peace. Seeing the puzzles, scholars have now become more vocal in questioning the threat posed by the spread of nuclear weapons. Neo-realists of international politics known as “proliferation optimists” have argued that these seeming contradictions are interlinked. According to them, the peace we have come to know is the product of weapons of mass destruction, specifically nuclear weapons, and the deterrence resulting from the existential terror these weapons create. In their view, general war has become impossible because of the cataclysm it entails. Thus, proliferation optimists believe that the spread of nuclear weapons is beneficial as it deters great power war and

results in greater levels of international stability.<sup>5</sup>

Many modern key pillars of proliferation optimism arguments can be found in early Cold War debates about nuclear strategy. These pillars include the ideas that a small nuclear arsenal capable of targeting an enemy's cities is sufficient for deterring a powerful adversary and that nuclear wars, because they would be so devastating for everyone involved, will never be fought. While other strands of deterrence have emphasized counterforce targeting, nuclear vulnerability, nuclear brinkmanship, inadvertent nuclear escalation, and limited nuclear wars.<sup>6</sup> Shortly after the first bombs dropped on Hiroshima and Nagasaki, U.S. strategists began to consider what the atomic bomb meant for international peace and security. The first answer given is that nuclear weapons are "absolute weapon" that are terrifyingly destructive, invulnerable to enemy attack, and that render great power war obsolete.

Jacob Viner was the first person to articulate this position. He laid the basis for subsequent claims about a minimum nuclear posture being sufficient to deter a more

---

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

6 Lawrence Freedman, *The Evolution of Nuclear Strategy*. 3rd American ed. (New York: Palgrave Macmillan, 2003).



powerful adversary.<sup>7</sup> Viner stated, “the atomic bomb, unlike battleships, artillery, airplanes, and soldiers, are not an effective weapon against its own kind. A superior bomb cannot neutralize the inferior bomb of an enemy.” He further argued that the overwhelming destructive power of nuclear weapons would induce great caution in leaders and possibly produce peace among the major powers. The proliferation optimism received further elaboration few months later by Bernard Brodie. In his book *The Absolute Weapon*,<sup>8</sup> Brodie detailed the features of the minimum deterrence and proliferation optimism position. He argued nuclear weapons are invulnerable, ruling out the possibility of an enemy launching a disarming first strike. He also claimed that nuclear weapons have such terrifying effects that they would make war too costly to wage, and potentially lead to peace.

In his 1979 book, *Theory of International Politics* and the subsequent works, Kenneth Waltz might have provided the most organized case for proliferation. Descending from previous strategic thinkers, he argued the spread of nuclear weapons has beneficial effects on international politics. While most of his colleagues take a relatively limited perceptive

---

7. Jacob Viner, “The Implications of the Atomic Bomb for International Relations,” in *Proceedings of the American Philosophical Society*, delivered November 16, 1945.

8. Bernard Brodie, *The Absolute Weapons: Atomic Power and World Order* (New York: Harcourt Brace Jovanoich, 1946).

focusing on selective proliferation (largely to other Western nations), Waltz advocates an encompassing vision allowing for the spread to rogue areas such as the Middle East. Waltz maintained that states, fearing a catastrophic nuclear war, will be deterred from going to war with other nuclear-armed states. As more and more states acquire nuclear weapons, therefore, there are fewer states willing to wage war. The spread of nuclear weapons, according to Waltz, leads to greater levels of international stability. Looking to the empirical record, he contended that the introduction of nuclear weapons in 1945 coincided with an unprecedented period of peace among the great powers. While the United States and the Soviet Union engaged in many proxy wars in peripheral geographic regions during the Cold War, they never engaged in direct combat.

Waltz also argued that the requirements for deterrence are not high: contrary to the behavior of the Cold War superpowers, a state need not build a large arsenal with multiple survivable delivery vehicles in order to have a rational nuclear deterrence on its adversaries. Rather, he claimed that a few nuclear weapons with (1) credible second-strike forces that appear to be able to survive an attack and launch one of its own for retaliation, (2) survival forces that are not hair-trigger alert and responsive to false alarms, and (3) reliable command and control; and weapons must not be not susceptible

to accidental and unauthorized use are sufficient for deterrence.<sup>9</sup> These are easy conditions to achieve, especially because the forces of new nuclear states are smaller and easier to control than the very large nuclear arsenals built during the Cold War. Not even nuclear accident is a concern according to Waltz because leaders in nuclear-armed states understand that if they ever lost control of nuclear weapons, the nuclear retaliation they would suffer in response would be catastrophic. Nuclear-armed states, therefore, have strong incentives and cautions to maintain control of their nuclear weapons.<sup>10</sup>

While Waltz agreed the possibility of war remains, but that nuclear weapons have drastically reduced the probability of its being fought by states having them. Waltz articulated the different strategic impacts brought by a conventional and a nuclear world: in a conventional world, a country can sensibly strike first if it believes that success is possible. In contrast, nuclear weapons negate the advantages of conventional superiority because escalation in the use of conventional force risks receiving a nuclear strike. In a nuclear world, a potential attacker is deterred if it believes that the attacked may retaliate. Thus, uncertainty of response, instead of certainty, is required for deterrence. The costs of

---

9. Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons – A Debated Renewed* (New York: W. W. Norton & Company, 2003), 20.

10. *Ibid*, 132.

miscalculation, together with the potential “unacceptable damage”, have turned nuclear weapons dominate strategy.

### *Nuclear Pessimism*

Such optimistic views of the effects of nuclear proliferation have not escaped criticism. Proliferation pessimists are profoundly skeptical of inferring a positive nuclear future from the Cold War's history. First, much of their existing empirical support comes from the Cold War, which saw almost an entirely different international structure - bipolarity. In fact, bipolarity provides rooms for mitigating risks since decision-making will be centered on two dominant actors, and the motivations and intentions will be relatively simplified.<sup>11</sup> Furthermore, there were several unique factors entrenched to the Cold War bipolarity that helped stabilize the situation. These included cautious leadership, lack of shared frontiers and records of previous war. Also, the two superpowers had adequate technical means to prevent accidental detonation or unauthorized launch, and national-security survival was never their concerns.<sup>12</sup>

---

11. Thanos P. Dokos, *Countering the Proliferation of Weapons of Mass Destruction: NATO and EU Options in the Mediterranean and the Middle East* (London: Routledge, 2008).

12. *Ibid.*, 29

This critique draws upon the problem of the “*n*th-country” that highlights contextual variables differentiate the nuclear relationship between the superpowers from any others. According to nuclear pessimists, the stability of the U.S.-Soviet nuclear deterrence was a function of geopolitical characters of the Cold War. Proliferation outside this context, however, would occur in regions of the world where politico-military conditions are prone to conflict. A tradition of inter-state conflict within these regions will also facilitate states to consider military force, even nuclear weapons, to wage war, rather than in terms of deterrence.<sup>13</sup> According to Scott Sagan, the assumption that states behave in a basically rational manner is merely an assumption that is not empirically well-tested. He provides an alternative organization perspective that views government leaders as intending to behave rationally, yet sees their beliefs, the options available for them, and the final implementation of their decisions as being influenced by powerful forces within the nation.

There are two central arguments of the organization theory.<sup>14</sup> First, the premise of organization theory is that the behavior pattern of professional military organizations is

---

13. Yair Evron, *Israel's Nuclear Dilemma* (Ithaca, N.Y.: Cornell University Press, 1994).

14. Scott D. Sagan, “The Perils of Proliferation: Organization Theory, Deterrence Theory, and the Spread of Nuclear Weapons,” *International Security* 18, no. 4 (1994).

important for stable deterrence. From their typical behavior pattern, it is highly unlikely that military organizations will fulfill the operational requirements for rational nuclear deterrence. This is because of common biases, inflexible routines and parochial interests on the part of professional military organizations. Second, it is suggested that only tight and sustained civilian control of the military can help in balancing the logic of the behavior pattern of professional military organizations. It is also generally believed that future nuclear states will lack mechanisms of civilian control of the military. Additionally, the leaders of new nuclear nations, like those of the existing nuclear nations, will face the “always/never” dilemma: their weapons must always be usable when they want, but never otherwise.<sup>15</sup> This dilemma leads political leaders to assign commanders (thus ensuring that the weapons are always ready to go), or assert central control over these weapons (so that nuclear weapons are never use without authorization). This dual system can lead to two dangers. First, states that have “assertive” command and control system are tempting targets for preemptive attacks since their rival may see the advantage of a first strike, while those that emphasize “delegative” systems face risks for unauthorized use of nuclear weapons.

---

15. It was Feaver who first proposed this dilemma. See, in “Command and Control in Emerging Nuclear Nations,” *International Security* 17, no. 3 (1002/3).

### *On-going Debate*

Both nuclear optimism and pessimism hold their logics. Waltz contended that proliferation will lead to greater stability. The destructive consequences brought by the weapons made it less likely for states to “run major risks for minor gains”. It also forces states to act more cautiously because of the possible costs. More importantly, it made wars unwinnable. The second-strike nuclear force, serving as a credible retaliatory force, is able to counter an intended attack by raining unacceptable damage upon a would-be aggressor. Nuclear deterrence thus decreases the likelihood of war and improves the prospect for peace. On the other hand, nuclear pessimists are skeptical about the claims drawn upon the historical record. Much of the existing empirical support comes from the Cold War, which saw an entirely different international structure. The new era of pessimism also pinpoints the major potential for instability: the dominance of military organizational structures in new nuclear states. Sagan believes that military dominated states will likely lead to deterrence failures and possible war.

Conclusion is yet to be drawn. Future studies should rely more on an empirically-evident, case-by-case approach in response to the debate of nuclear proliferation.

#### **4. Analytical Framework**

Nuclear deters. But, how does it work? Nuclear deterrence strategy is military deployments and threats, with the specific objective of deterring potential aggressors. Deterrence theory consists of six key elements according to Patrick Morgan: “the assumption of a very severe conflict, the assumption of rationality, the concept of a retaliatory threat, the concept of unacceptable damage, the notion of credibility and the notion of deterrence stability.”<sup>16</sup> The core of the theory is that a state will be deterred from launching a nuclear attack, if it has good reasons to fear retaliation. It also emphasizes the centrality of survival. This is related to the assumption of rationality, in which states will not want to suffer the risk of absorbing nuclear strikes. Assumptions of cost-benefit calculating, risk-assessing behavior by decision-makers and a survivable second-strike capacity serve as the bases of nuclear deterrence.

Under these fundamental assumptions, a qualitative assessment of the nuclear deterrence between India and Pakistan will be conducted. India and Pakistan declared as a nuclear weapons state in 1998. However, it is also obvious that by the late 1980s, India and Pakistan had already become nuclear capable states. Thus, India-Pakistan nuclear

---

16. Patrick M. Morgan, *Deterrence Now* (Cambridge: Cambridge University Press, 2003).



relationship has evolved along three periods. The first, phase took place before both states acquired nuclear weapons (i.e. until early 1970s). It was followed by times when two states were still under conditions of opaque proliferation (i.e. before 1998), and finally, when both states became an “open” nuclear weapon states (i.e. 1998 onward).

The conflict behavior between India and Pakistan is compared along the three periods. Key propositions of the Indo-Pakistan conflicts prior to the nuclear age will be examined, before discussing how the later crises evolved and showing that nuclear weapons are critical in reversing crises for further escalations. Four fundamental assumptions are maintained in this research:

1. Nuclear weapons are primarily for preventing wars by injecting the fear of escalation, and are not an instrument of fighting or hoping to win wars.
2. The deductive logic of rationality implicit in deterrence theory is no less valid in South Asia, including India and Pakistan, than in any other strategic equation.
3. The theory is confined to relationships between nuclear possession states and centers on strategic stability. The result is not applicable on the relationship between nuclear weapons states and non-nuclear weapons states.

4. This study works under the framework when the deterrence relationship between India and Pakistan is situated, rather than on deterrence theory and its applicability per se. Thus, results drawn upon shall not be duplicated on the relationships of other nuclear weapon-states (NWS).

## Chapter II OVERVIEW OF NUCLEAR PROLIFERATION

### 1. Conceptualizing Proliferation

#### *The Nature of Proliferation*

Most studies refer nuclear proliferation to the acquisition of a nuclear explosive device by a country or group previously without such a device. While it provides a simple concept, the definition does not reflect adequately among diverse outcomes encompassed by the categorization “going nuclear”. In contrast, proliferation should be defined in terms of nuclear capabilities, delineating various levels of proliferation. Under this circumstance, there are two dimensions of nuclear proliferation. First, the horizontal proliferation refers to nation-states that do not have, but are acquiring nuclear weapons or developing the capability and materials for producing them.<sup>17</sup> This dimension defines the scope of proliferation, indicating the number of countries to which a given level of nuclear capability has spread. Second, the vertical proliferation refers to states that possess nuclear weapons and are increasing their stockpiles of these weapons, improving the technical sophistication or reliability of their weapons, or developing new weapons.<sup>18</sup> This dimension defines the depth of proliferation, indicating the level of nuclear

---

17. Victor W. Sidel, and Barry S. Levy, “Proliferation of Nuclear Weapons: Opportunities for Control and Abolition,” *Am J Public Health* 97, no. 7 (2007).

18. *Ibid.*

capability achieved by a given country.

### *Categories of Proliferators*

There are several ways to distinguish potential *n*th countries.<sup>19</sup> It can be referred according to its domestic power: Is the particular country a potential great power, an aspiring regional power, or a minor power? What is its level of technological sophistication and economic development? Is it politically unstable? One aspect which draws attention is the extent to which many candidate nuclear-weapon states are politically unstable, less developed third world countries. In addition to differentiating among potential *n*th countries in terms of their military, political, economic and technological characteristics, it would be valuable to identify the most critical candidate nuclear-weapons states in terms of impact upon the scope and pace of proliferation of their decision to go nuclear. Finally, whether terrorist groups could come into possession of nuclear weapons deserves considerations. There appear to be various ways a terrorist could acquire a nuclear weapon, ranging from theft to gifts from a radical government.

---

19. *Ibid.*, 6

## **2. The Nuclear Decision – Why Nations Go Nuclear?**

A nation becomes a NWS following its first test explosion is a conventional labeling. It contains important diplomatic distinctions between nuclear and non-nuclear states.<sup>20</sup> But the decision to incept a nuclear program can be chains of events that start years before. Forces in domestic politics, technology level and so forth would all play a role in the decision process. Thus, the study of decision making naturally involves a large number of variables. Yet, historical evidence has still provided insight into general proliferation patterns. It is useful to keep in mind that these common characteristics are not necessarily mutually exclusive, and may sometimes overlap:

### *Security Calculations*

This is one of the most common motivations for states going nuclear. These usually start from national insecurity that a state is experiencing. In nearly all cases, a nation that has gone nuclear has faced an acute security threat from a nuclear-armed adversary that also had a substantial conventional military capability.<sup>21</sup> Another strategic concern arises from the belief that even a rudimentary nuclear-weapon capability would enable a country to deter a nuclear rival. By accessing into nuclear weapons, a state could expect a

---

20. Jacques C. Hymans, “When Does a State Become a “Nuclear Weapon State”?” *Nonproliferation Review* 17, no. 1 (2010): 161.

21. Thomas W. Graham, “Winning the Nonproliferation Battle,” *Arms Control Today* 21, no. 7 (1991): 9.

more stable, long-term deterrence relationship with its adversary; particularly when the adversary has asymmetrical conventional strengths. Furthermore, going nuclear can fulfill a country's desire to foster its own bargaining position and resolve. This is particularly true should any confrontation erupt with its rival states.<sup>22</sup>

### *Technological Determinism*

Every nation that might plausibly have started nuclear weapons programs did so: Germany, Great Britain, the United States, the Soviet Union, and France. This reflects that the decision to develop nuclear weapons is not just a decision of certain governments, but a general technological domineering.<sup>23</sup> Now, the growth of sophisticated industrial and engineering capabilities in threshold states create more conditions of latent proliferation, because advances in the technology of peaceful nuclear energy comprise also the capability and potentials to produce higher-grade weapon materials.

### *National Prestige*

National prestige is also a frequently cited driver for the acquisition of nuclear

---

22. Robert A. Strong, "The Nuclear Weapon States: Why They Went Nuclear," in *Nuclear Proliferation In The 1980s*, ed. William H. Kincaid and Christoph Bertram (London: The Macmillan Press Limited, 1982), 11.

23. Deborah Shapley, "Nuclear Weapons History: Japan's Wartime Bomb Projects Revealed," *Science* 199, no. 4325 (1978): 155.

capabilities. Apart from precise applications of nuclear weapons to possible wartime scenarios, the attainment of nuclear threshold status may offer a state robust national prestige since nuclear weapons are simply regarded as a demonstration of a state's technological sophistication. This in turn, can translate into another form of security."<sup>24</sup>

If small nuclear forces have debatable military value, going nuclear may nevertheless be justified by the international recognition it contains. This prestige may result from real or imaginary military power, from the demonstration of scientific and industrial strength associated with nuclear power status, or from the increased superpower attention that nuclear nations may receive. Nations that acquire nuclear arms for domestic or international recognition are relatively less likely to use those weapons than states that are motivated by pressing security problems.

#### *Domestic Political and Economic Considerations*

Going nuclear may serve the interests of particular domestic individuals and groups. Specifically, a country facing serious external threats at a time of low domestic morale might turn to dramatic technological breakthroughs as a morale-building device.

---

24. George Quester, "Conceptions of Nuclear Threshold Status," in *Security With Nuclear Weapons?* ed. Regina Cowen Karp (Oxford: Oxford University Press, 1991).

Alternatively, confronted by internal political crises, a nation might have decided to launch a major nuclear-weapon program to divert domestic attention from its internal problem (e.g. economic upheaval and political legitimacy crises). And when a hostile international response was resulted, it would then be possible to enhance cohesion using nationalistic sentiments.<sup>25</sup>

Finally, some nations could be tempted to go nuclear by their budgetary limitations to direct their defense funds at nuclear weapons rather than into non-nuclear options. To this group, the tremendous explosive power of nuclear weapons incurs relative lower incremental cost after initial weapon development. This reason is more evident among newly emerging nuclear states after the Cold War. After all, a regional nuclear power does not necessarily have to achieve military equality with the big nuclear powers like the U.S. or Russia, since their goal is mainly to achieve minimum deterrence but not at par with superpowers.

### **3. The Spread of Nuclear Weapons**

*The Post-war Nuclear Age (1945-1964)*

---

25. Lewis A. Dunn and William H. Overholt, "The Next Phase in Nuclear Proliferation Research," in *Asia's Nuclear Future*, ed. William H. Overholt (Colorado: Westview Press Inc., 1977).



After the Japanese surrender on August 15, 1945, many people called for a ban on nuclear weapons in order to avoid a nuclear arms race and the risk of future catastrophes. Both the U.S. and the Soviet Union declared that they were in favor of putting the atomic bomb under reliable international control. Despite these declarations, the big powers were indeed never ready to give up their own nuclear weapons programs. By the end of 1946 it was clear to everybody that the effort to prevent a nuclear arms race had failed. By 1949, the Soviets' nuclear weapon was already able to catch up with American.<sup>26</sup> The U.S. and the Soviet Union remained the exclusive states with nuclear weapons only until 1952, when the United Kingdom tested its first bomb in 1952. And in 1960, France followed suit. Four and a half years later, in 1964, China became the fifth nuclear power after having received only reluctant assistance from the Soviet Union.

### *The Prevention of Nuclear Proliferation*

In the early 1960s, many military experts and political leaders started to believe that the proliferation of nuclear weapons was bound to continue. In an attempt to avert such a development, America and the Soviet Union took the lead in negotiating an international agreement that would prohibit the further spread of nuclear weapons without banning the

---

26. Martin McCauley, *The Rise and Fall of the Soviet Union* (London: Routledge, 2014).

utilization of nuclear energy for peaceful purposes. The result was the Treaty on the Non-Proliferation of Nuclear Weapons, also known as the Non-Proliferation Treaty (NPT), which opened for signature on July 1, 1968.<sup>27</sup>

By the mid-1970, the NPT had separated between two categories of states: nuclear weapons states – that is, the five countries that were known to possess nuclear weapons at the time when the Treaty was signed (United States, Soviet Union, United Kingdom, France and China). And, non-nuclear weapons states – that is, all other signatories of the Treaty. According to its provisions, nuclear weapons states on signing the NPT agree not to release nuclear weapons to help other states acquire or build nuclear weapons. Meanwhile, non-nuclear weapons states signatories agree not to acquire or develop nuclear weapons or other nuclear explosive devices. The NPT is now the most widely accepted arms control agreement.

### *The Second Nuclear Age*

The second wave of proliferation is seen as the spread of nuclear weapons to countries

---

27. *Treaty On the Non-Proliferation Of Nuclear Weapons (NPT)* (assessed April 15, 2014); available from <http://www.un.org/disarmament/WMD/Nuclear/NPT.shtml>.

where domestic politics are unstable with periodic seizures of power.<sup>28</sup> These countries dismissed the NPT as an instrument that served to maintain the existing world order. Others simply wanted to reserve the option of developing their own nuclear arsenal. The first country outside the NPT to cross the nuclear threshold was India, which exploded a nuclear device in an atmospheric test in 1974.<sup>29</sup> In 1998, both India and Pakistan conducted several nuclear underground tests. Israel, on the other line, became a nuclear capable state in the mid-1980s. Thus, by June 2003 there were at least three countries – India, Israel, and Pakistan – that were both in possession of nuclear weapons and non-parties to the NPT. In addition, North Korea had withdrawn from the NPT, and finally announced in 2006 that it had the capability to construct nuclear weapons.

The root of the second nuclear age lies on Asia. With the expansion of Asian military capabilities including in the field of weapons of mass destruction (WMD), the global security order will inevitably have to evolve amidst the rise of South Asia.

---

28. Paul Bracken, *Fire in the East: The rise of Asian Military Power and the Second Nuclear Age* (New York: Harper Collins, 1999).

29. Mohan J. Malik, "Nuclear Proliferation in Asia: The China Factor," *Australian Journal of International Affairs* 53, no. 1 (2010).

### **Chapter III INDIAN AND PAKISTANI NUCLEAR WEAPONS**

Among the factors that have contributed to the evolution of South Asia's nuclear deterrence architecture, some of the most significant remain directly linked to Beijing. As it will be shown, China's supply of nuclear and missiles technologies to Pakistan – and thereby further incentives for Indian nuclear weapons programs – has been vital in the evolution of India-Pakistan nuclear development.

#### **1. India as a Nuclear Power**

##### *India's Nuclear Decision*

Indian nuclear policy is basically framed within the regime objectives of national self-sustenance. China was once an important influence on India exercising its nuclear option. Initially, India's nuclear capability was aimed mainly at deterring aggression from China. It was the adversarial nature of the Sino-Indian relationship starting from the early 1960s that drove India's nuclear weapons program. India's obsession with China was accelerated by India having lost its 1962 war with China. The defeat fueled India to materialize its nuclear program, in order to neutralize the superior conventional strength

of its more powerful adversary.<sup>30</sup> Shortly after the Chinese 1964 test, Homi J. Bhabha, the father of India's nuclear program, believed that "with the help of nuclear weapon... a state can acquire what we may call a position of absolute deterrence even against another having a many times greater destructive power under its control."<sup>31</sup> Driven by this belief, India conducted its first nuclear weapon explosion in 1974.

The Indian device of 1974, known as "Smiling Buddha", was claimed as a "peaceful nuclear explosion" but it was actually part of an accelerated nuclear program. China, a great practitioner of balance-of-power politics, responded the Indian test by providing nuclear weapons designs and technology to India's rival, Pakistan via an agreement formulated in September 1974.<sup>32</sup> The rationale behind the scene was to build Pakistan as a military counterweight to India. Consequently, Indian technological advantages over Pakistan in the 1980s were effectively neutralized by Chinese missile technology transfers to Pakistan in the 1990s.<sup>33</sup> India has thus always perceived this Sino-Pakistani nuclear axis as threatening, and little had changed over three decades later when India

---

30. *India's Nuclear Blunder* (accessed April 21, 2014); available from <http://nationalinterest.org/commentary/indias-nuclear-blunder-8946>.

31. Homi J. Bhabha, "The Implications of a Wider Dispersal of Military Power for World Security and the Problems of Safeguards," in *Proceedings of the Twelfth Pugwash Conference on Science and World Affairs*, ed. Homi J. Bhabha. Udaipur (India: Taylor & Francis, 1964).

32. P. L. Bhola, *Pakistan's Nuclear Policy* (New Delhi: Radiant Publishers, 1993).

33. Swaran Singh, "The China Factor in South Asia's Nuclear Deterrence," in *The India-Pakistan Nuclear Relationship*, ed. E. Sridharan (London: Routledge, 2007), 294.

carried out its full-scale nuclear tests in 1998. In a subsequent, former Indian Prime Minister Atal Bihari Vajpayee highlighted New Delhi's "deteriorating security environment" and emphasized on the longstanding mistrust between the two countries.<sup>34</sup>

It is noteworthy that while the India-China relationship is bothered by territorial disputes, their relationship remains relatively stable and can be seen as an oligopolistic competition. They compete but still cooperate to ensure a stable environment. That was why India would bear a nuclearized China. However, unlike the oligopolistic model between China and India, the India-Pakistan relationship is closer to a spiraling competition model, where the competition exceeds that of collaboration.<sup>35</sup> Resentment between India and Pakistan has been accumulated since the 1947 partition, with the continuing mistrust within the disputed territories of Kashmir. Consequently, India found it unbearable to live adjacent with two hostile nuclear powers. All these have provided incentives for the Indian leaders to pursue a serious nuclear capability, and formulate a stable nuclear deterrence that is now mainly targeting at Pakistan.

---

34. Atal Bihari Vajpayee, "Nuclear Anxiety: Indian's Letter to Clinton On the Nuclear Testing," *The New York Times*, May 13, 1998.

35. Rajesh M. Basrur, "Nuclear India at the Crossroads," *Arms Control Today* 33, 7 (2003).

### *India's Nuclear Policy*

Apart from the ability to communicate retaliatory threats effectively, nuclear deterrence also involves another crucial dimension: nuclear use doctrine. A nuclear doctrine consists of a set of principles to instruct when and why a country might use nuclear weapons.<sup>36</sup> The nuclear doctrine of India was perhaps the first of its kind among the known nuclear weapon states of the world. Preceding to the release of its doctrinal draft, India's Prime Minister Vajpayee formally announced "a policy of Non-First-Use (NFU)... Ours will be a minimum credible deterrent, which will safeguard India's security,"<sup>37</sup> In August 1999, the Indian government released the draft of its nuclear doctrine, asserting the same position and emphasized that India would pursue a policy of "retaliation only".<sup>38</sup> This draft effectively became India's nuclear doctrine on January 4, 2003.

The fundamental purpose of Indian nuclear weapons can be seen as to deter the use and the threat of use of nuclear weapons by any state of entity against India and its forces. India will not be the first to initiate a nuclear strike but will respond with retaliation

---

36. Rifaat Hussain, "Deterrence and Nuclear Use: Doctrines in South Asia," in *The India-Pakistan Nuclear Relationship*, ed. E. Sridharan (Lodon: Routledge, 2007).

37. *PM's Statement In Parliament On "Bilateral Talks With United States* (accessed April 23, 2014); available from <https://www.fas.org/news/india/1998/12/981215-parl15dec.htm>.

38. Mohammed B Alam, "India's Nuclear Doctrine: Context and Constraints," *Heidelberg Papers in South Asian and Comparative Politics*, no. 11 (2002).

should deterrence fail. Another essential element of the doctrine is a strong civilian control of the nuclear weapons through the “nuclear command authority” headed by the prime minister. For the Indian authority, maintaining the dominant position of the head of government is essential to ensure “leadership credibility”, a critical component of the deterrent. Furthermore, the nuclear arsenal is in a state of de-alert and is not deployed in an operation mode during peacetime.<sup>39</sup> New Delhi’s advocacy of a NFU policy as a nuclear risk-reduction measure aims at undermining the deterrent value of Pakistan’s nuclear arms. During the Islamabad round of foreign secretary-level talks between the two nations in October 1998, New Delhi reportedly offered a pledge of NFU to Islamabad to promote CBMs.<sup>40</sup>

The pledge went in vain given India’s overwhelming superior conventional forces, and the only way for Pakistan to avoid becoming a victim of Indian belligerence is to maintain the threat of a nuclear response to an Indian conventional military attack on the country. Pakistan’s acceptance of an Indian offer of NFU will leave the nation vulnerable to the possibility of it being overrun by India in a conventional war. New Delhi offered

---

39. *Draft Report of National Security of Advisory Board on Indian Nuclear Doctrine* (accessed April 21, 2014); available from <http://mea.gov.in/in-focus-article.htm?18916/Draft+Report+of+National+Security+Advisory+Board+on+Indian+Nuclear+Doctrine#command>.

40. Hussain, 158.



the NFU pledge to Pakistan can be seen as to bolt Islamabad in a situation that Pakistan will lose its nuclear deterrent value. However, India did not consider that with this offer does not address the security dilemma: that a smaller Pakistan will face at the hands of a military superior India after Islamabad pledges itself not to have resources to nuclear threats to ensure its survival.

## **2. Pakistan as a Nuclear Power**

### *Pakistan's Nuclear Decision*

Indian obsession with China is matched by Pakistani obsession with India. Pakistan asserts the origin of its nuclear weapons program lies in its adversarial relationship with India.<sup>41</sup> The two countries have engaged in three major wars and series of conflicts, centered mainly on the state of Jammu and Kashmir. Pakistan's defence and foreign policies have been India-centered from the beginning; for over half a century Pakistani security dilemma has focused on how to balance-counter and fight the Indian threat.<sup>42</sup> Learning from the realist paradigm, the Pakistan's security tried to address the dilemma by adopting two conventional approaches: alliances with major world powers to enhance

---

41. *Nuclear: Pakistan* (accessed April 23, 2014); available from <http://www.nti.org/country-profiles/pakistan/nuclear/>.

42. Rasul B. Rais, "Conceptualizing Nuclear Deterrence: Pakistan's Posture," in *The India-Pakistan Nuclear Relationship*, ed. E. Sridharan (London: Routledge, 2007), 52.

defence capability, and from the 1970s onward, nuclear deterrence to offset India's conventional superiority. Pakistan had a very limited resource base for balancing Indian threats. It looked for allies in the international system and found the U.S. was willing to assist itself against India. Yet, this alliance was shaped more by the strategic needs of the U.S. than by Pakistani security needs. In fact, the U.S. and other Western allies imposed embargo against Pakistan during its war with India in 1965, which remained operative in 1971 when India and Pakistan fought their third war.<sup>43</sup>

The 1971 tragedy taught Pakistan that alliances were subject to relations with superpowers. Pakistan came to realize that it could only secure itself against India through national military capabilities. By the early 1970s, Pakistani decision-makers started to see nuclear capability as the best option for counterbalancing India since the conventional means were costly and short-lived.<sup>44</sup> Nuclear deterrence emerged as a national consensus in Pakistan, and the bomb was seen as the absolute weapon to defend the national security. Shortly after the concession of East Pakistan in the 1971 war, Zulfikar Ali Bhutto, who later became President and Prime Minister, initiated the nuclear

---

43. Sartaj Aziz, *Between Dreams and Realities: Some Milestones in Pakistan's History* (Karachi, Pakistan: Oxford University Press, 2009).

44 Rais, 54.

weapon program.<sup>45</sup> By the late 1980s, Pakistan was believed to be fully equipped with nuclear weapons. This was confirmed by the then Army Chief, who openly stated that “both the nuclear option and the missiles act as a deterrent and in turn contribute to the total fighting ability of the Army, which acts as a deterrent to the enemy.”<sup>46</sup>

In early May 1998, India conducted a total of five nuclear explosions. In response, Pakistan detonated five explosions on 28 May and a sixth on 30 May 1998. To address the tests, Pakistan stressed that they were necessary to Pakistan’s national self-defense and to deter Indian aggression.<sup>47</sup> With these tests Pakistan abandoned its nuclear ambiguity, and declared it as a nuclear weapon states in 1998.

### *Pakistan’s Nuclear Policy*

Unlike India, Pakistan’s strategic doctrine is undeclared. But prominent officials have offered insights concerning its basic tenets. Describing the guiding principle as minimum

---

45. Feroz H. Khan, *Eating Grass: The Making of the Pakistani Bomb* (Stanford, CA: Stanford University Press, 2012).

46. This was stated by Pakistan’s Army Chief in October 1989 and was reported in *Jane’s Defence Weekly*, October 14, 1989.

47. Carey Sublette, “Text of Prime Minister Muhammad Nawaz Sharif Statement at a Press Conference on Pakistan Nuclear Tests,” *A Guide to Nuclear Weapons*, May 29 1998. Accessed April 23, 2014. Available from The Nuclear Weapon Archive.

credible nuclear deterrence,<sup>48</sup> high-level officials' statements point to four policy objectives for their nuclear weapons: deter all forms of external aggression; deter through a combination of conventional and strategic forces; deter counterforce strategies by securing strategic assets and threatening nuclear retaliation; and stabilize strategic deterrence in South Asia.<sup>49</sup> Pakistani officials have indicated that this nuclear position is designed to preserve territorial integrity against Indian attack, and counter its main rival's conventional superiority.<sup>50</sup>

Pakistan has pledged no-first-use against non-nuclear-weapon states, but has not ruled out first use against a nuclear-armed aggressor, notably India.<sup>51</sup> The first-use option has its own credibility for Pakistanis: it implies that Pakistan will not wait for India to strike first with nuclear weapons. Rather, it will keep its options open as to stage a war at which it would use its nuclear weapons. For a country with limited resources and less capable conventional means, it is sensible for it to insist the option of being the first to use nuclear

---

48. A January 13, 2010, statement describing a National Command Authority meeting refers to Pakistan's "policy of credible minimum deterrence."

49. Mahmud A. Durrani, "Pakistan's Strategic Thinking and the Role of Nuclear Weapons," *Cooperative Monitoring Center Occasional Paper 37*, 2004.

50. Naeem Salik, "Minimum Deterrence and India Pakistan Nuclear Dialogue: Case Study on Pakistan," *LNCV South Asia Security Project Case Study*, March 2006. Accessed April 24, 2014. Available from Landau Network Centro Volta.

51. Memorandum from Air Commodore Khalid Banuri, Director of Arms Control and Disarmament Affairs in the SPD.

weapons since it entails all the benefits of ambiguity. The first-use option would offset Indian conventional advantage by signaling that even in the event of conventional attack, Pakistan may retaliate with nuclear weapons. With the declaratory policy of possibly using nuclear weapons first, India would be deterred from conventional war. In fact, Pakistan's nuclear policy credibility would be suspect should it commit itself to using nuclear weapons only in retaliation to a nuclear attack by India. It is for this reason that Pakistan refused to accept India's offer of a bilateral no first use treaty since it would benefit India only.

The question that follows is when Pakistan will use its nuclear weapons. Using nuclear at a time when it has lost a conventional war would be imprudent. India could retaliate or even opt for non-retaliation. By going for the second option India would gain international support against Pakistan. For the first option, Pakistan's striking first at the start of a war would invite Indian nuclear retaliation combined with its conventional attack. Pakistan has to be more cautious in calculating the costs and conditions of a first strike. In late 2001, Pakistan's nuclear command authority suggested four thresholds for the use of nuclear weapons if deterrence of India's attack fails: Space threshold indicates India attacks Pakistan and conquers a large part of its territory, military threshold

indicates India destroys a large part either of its land or air forces, economic threshold indicates India proceeds to the economic strangling of Pakistan, and domestic destabilization threshold indicates India drags Pakistan into political destabilization.<sup>52</sup>

Another dimension of Pakistan's nuclear doctrine is the authority over its nuclear weapons. The Pakistani army feels that it cannot allow a civilian administration to be responsible for the country's nuclear course. It is believed that elected governments are susceptible to international pressures. Therefore, the Pakistan army will not permit them to have ultimate decisions on national security. Ever since the initiation of its nuclear program, Pakistan's nuclear weapons have been in military custody and the country's civilian rulers have had no control over them.<sup>53</sup> The threat to Pakistan territorial integrity by a massive Indian conventional attack is the most obvious circumstance which could compel Pakistan to use nuclear weapons. The core of this option is mutual destruction of the adversary and itself. It is by such determination that Pakistan would hope to deter any Indian conventional or nuclear attack.

---

52. *Nuclear safety, nuclear stability and nuclear strategy in Pakistan* (accessed April 24, 2014); available from <http://www.pugwash.org/september11/pakistan-nuclear.htm>.

53. Gurmeet Kanwal and Monika Chansoria, *Pakistan's Tactical Nuclear Weapons - Conflict Redux* (New Delhi: Knowledge world publishers, 2014).

### 3. Comparative Analysis of India and Pakistan's Nuclear Doctrines

In principle, India and Pakistan's nuclear doctrines emphasize a "credible minimum deterrent". Yet, their definition highlights differences. For India, "minimum" is subject to changes in response to its strategic environment. Pakistan, on the other hand, may not have the flexibility to carry a minimum deterrence that can be subject to security changes.

Tactically, India is close to deploying a nuclear triad that consists of land based ballistic missiles, sea based assets and air borne platforms,<sup>54</sup> while Pakistan's current capacity in this regard is limited to land based and aircraft delivery systems.<sup>55</sup> Strategically, India's perspective for its nuclear doctrine encompasses wider range including South Asia, while Pakistan's perspective as presently evident that it is India-specific. Based on their respective objectives of nuclear weapons, deterrence could possibly be placed in two categories, i.e., narrow and broad. Since the intent of Pakistan is to deter a particular type of military operation, this would be called "narrow deterrence". On the contrary, if the objective of a state's nuclear capability is to deter an all-out war, it would be categorized

---

54. *India Inches Closer to Credible Nuclear Triad Test* (accessed July 11, 2014); available from <http://thediplomat.com/2014/05/india-inches-closer-to-credible-nuclear-triad-with-k-4-slbm-test/>.

55. Paul K. Kerr and Mary B. Nikitin, "Pakistan's Nuclear Weapons: Proliferation and Security Issues," *Congressional Research Service*, March 19, 2013. Accessed April 24, 2014. Available from CRS Report for Congress.

“broad deterrence”.<sup>56</sup> This resembles to the India’s doctrine since the backdrop of its nuclear deterrent is to protect the Indian state from the use or threat of use of nuclear weapons by any state or entity.

---

56. Lawrence Freedman, *Deterrence* (Cambridge: Polity Press, 2004), 26.



## **Chapter IV NUCLEAR DETERRENCE ON THE SUBCONTINENT**

On one hand, it is clear that emerging South Asian nuclear system is both smaller and less complex than was the case in the U.S. or the Soviet Union during the Cold War. It is also clear, however, that the South Asian nuclear relationship is inherently more tightly coupled because of geographical proximity. With inadequate warning system and short flight times emerging in the region, the time length for decision making is highly compressed and the risk of an accidental war is high. India and Pakistan have shared a border and the intensity of disputes could have outcomes altered by nuclear weapons. Thus, while confidence-building measures (CBMs) to control conflicts are necessary, there is a need to go beyond CBMs and explore possibilities of a more long-term stabilizing deterrence relationship as a necessary step towards comprehensive conflict resolution between the two countries.

### **1. Roots of Conflicts**

The disputed territory of Kashmir has been a political and strategic battlefield between India and Pakistan for over fifty years. Kashmir is the northwestern region of the Indian subcontinent. Great Britain had controlled the area known as British India from

1858-1947.<sup>57</sup> The British left the region in 1947 and granted independence to a Muslim Pakistan and a secular India along sectarian lines. Hindus were supposed to live in India, while Muslims lived in Pakistan. Meanwhile, various former British-controlled states were able to choose which state to join. However, the Maharaja of Kashmir, the Hindu head of a majority Muslim state sandwiched between the two countries, could not decide. He declared Jammu and Kashmir's independence as a separate nation in 1947, but Pakistan immediately launched a guerrilla war to free Muslims there from the Hindu rule. The maharaja then pledged India for aid and agreed to comply with India in the late 1947, and Indian troops cleared the Pakistani guerrillas from much of the area.<sup>58</sup> Kashmir has since then become the main source of conflicts between India and Pakistan.

The 1947-48 war, also known as the First Kashmir War ended in stalemate. Pakistan forces held significant portions of the northern sector of Kashmir, and it created “Azad Kashmir” in territory it held. A “line of control” (LoC) was established separating the armed forces of India and Pakistan.<sup>59</sup> It is not a legally recognized international boundary but is a de facto border. Since the cease-fire in 1948, tensions between India and Pakistan

---

57. Chandan Dasgupta, *War and Diplomacy in Kashmir: 1947-1948* (New Delhi: Sage Publications 2002).

58. Sagan and Waltz, 89.

59. *Kashmir Profile* (accessed April 25, 2014); available from <http://www.bbc.com/news/world-south-asia-11693674>.

have led to series of military clashes and additional wars. In Kashmir, occasional military infiltrations across the LoC continued throughout the 1990s. From time to time, Pakistan sends Islamic militants not only to Kashmir, but to other Indian states as well in order to create terror by bombing trains, Hindu religious structures.

## **2. Evolution of The India-Pakistan Relationship**

Upon nuclearization of the subcontinent, Indo-Pakistani crisis behavior has acquired a drastic shift. Despite bitter mistrust over Kashmir, the past two decades have witnessed no fewer than six crises against the background of a vigorous nuclear arms race.<sup>60</sup> Overall, the pattern of India-Pakistan relation has shifted from full-scale wars (1947-71) in the pre-nuclear era, to recurrent crises (before 1998) during their opaque proliferation; and to cautious postures after becoming an overt NWS (1998 onward). I will first summarize some central propositions of prior wars in the pre nuclear era, before discussing how the later crises evolved. By comparing their crisis behavior, it can show that nuclear weapons are critical in preventing full-scale wars, as well as limiting conventional wars between the nations.

---

60. Sumit Ganguly and Devin T. Hagerty, *Fearful Symmetry: India-Pakistan Crises in the Shadow of Nuclear Weapons* (Washington: University of Washington Press, 2005).

*The Pattern of Past Indian-Pakistani Wars (1947-1971)*

India and Pakistan fought three wars before they incepted any nuclear programs. These include the earlier mentioned 1948 war, the 1965 and the 1971 war. Territorial disputes for Kashmir were the main cause, whether direct or indirect of all major conflicts between the two countries, with the exception of the Indo-Pakistani War of 1971, where conflict originated from the political turmoil between the West and the East Pakistan (today known as Bangladesh).

All these wars were fought with the full military power and options available to India and Pakistan. They were fought without the consideration of limited wars.<sup>61</sup> Theoretically, limited wars can be limited in several ways. Setting limits on political and military objectives will limit the war substantially. Second, geographic limits on the war zone can limit the war to specific areas. Third, war can also be limited by placing restrictions on the types of weapons to be used. Such a limit would reassure the adversary about controlling possible escalation. Fourth, a time limit can be placed on the war by stating that military operations can be called off when the adversary complied with certain

---

61. Varadarajan Raghavan, "Limited War and Nuclear Escalation in South Asia," *The Nonproliferation Review* 8, no.3 (2001): 6.

demands.<sup>62</sup> Three major wars that fought in the past demonstrated, with one exception, none of these limits. The exception was India's terminating the 1971 war after Pakistan laid down arms in Bangladesh. In previous wars, India had reserved and exercised the right to take the battle into Pakistani territory in response to an attack on Jammu and Kashmir. India strikes corps attacked and seized territory in two out of four Pakistan's provinces - Punjab and Sindh. All available resources, including the navy, were employed in prior India-Pakistan wars,<sup>63</sup> and all weapon systems were utilized (land, air and navy forces). Furthermore, neither country had imposed a time limit on the war.

All these prior wars were also fought favoring on the side of India. For example, in the 1965 Indo-Pakistan war, imbalance of armed strength was seen given that India had an overwhelming military advantage. India land forces are stronger than that of Pakistani.<sup>64</sup> The imbalance in air strength was even greater. The Indian Air Force was better-equipped, in terms of the number of transport aircrafts, and the warfare fighters.<sup>65</sup> Embolden by its superior conventional forces, India crossed the international border to transform insurgency in Kashmir into a major war. The 1965 war also saw a shifted balance of

---

62. Ibid., 7

63. Uday C. Bhaskar, "The Maritime Dimension," *Economic Times*, July 21, 1999.

64. Raghavan, 8.

65. Mushtaqur Rahman, *Divided Kashmir* (London: Lynne Rienner Publishers, 1996).

power in favor of India, when the main powers withheld their support although Pakistan was in peril. The Soviets remained neutral, and China restricted its support to verbal statements even it was the Pakistani supporter.<sup>66</sup>

Both India and Pakistan displayed offensive gestures in these wars.<sup>67</sup> Pakistan took the offensive first, including conventional military offensives and large-scale infiltrations by irregular forces into and behind Indian positions. For Pakistani forces, seizing territory was the criteria for success. There was always a major operational emphasis by Pakistan to include substantial military offensive in the disputed Kashmir. India, unexpectedly, replied the Pakistan's gesture violent and extensive. In wars of 1965 and 1971, offensive operations were launched in ways of armored thrust into Pakistan over a wide front. The Indian navy also attacked the seashore facilities. The Indian war doctrine against Pakistan was leaning heavily toward the offensive, after the weight of Pakistan's offensive was measured. The basis of India's army was to conduct its offensive, after Pakistan had launched its offensive.<sup>68</sup>

---

66. Ibid.

67. Raghavan, 9.

68. Major General Sukhwant Singh, *India's War since Independence: Defence of the Western Border*, Vol II (New Delhi: Vikas, 1981).

The prior India-Pakistan wars are not limited, they are full-scale wars fought with full resources and all weapon. Moreover, the wars were fought in favor of India. In the 1948 and the 1965 war, India demonstrated its overwhelming military power over the Pakistan's. In the 1971 war, there was not only an imbalance in the armed forces, but also an imbalance of power shifted in favor of India. The war structure was not in symmetry. In addition, both nations took an offensive stance in all prior wars. Pakistan adopted offensive first, while India responded with offensives. Restraints to stop the war from horizontally expansion were absent. Notably in the 1965 war, India crossed the international border without hesitations, and ultimately led domestic insurgency to a major war. The war structure presented an action-reaction chain: the mobilization of one's forces resulted in a corresponding alert of another forces.

#### *Non-Weaponized Deterrence (before 1998)*

After three major wars, both states entered into the period of opaque nuclear proliferation. From 1986-1998, nuclear deterrence took place in the form of "non-weaponized deterrence".<sup>69</sup> During this era both sides' nuclear postures were formally rejected to outside powers but the nuclear calculations were incorporated in regional crisis behavior

---

69. George Perkovich, "Non-Weaponized Deterrence: The Case for Pakistan," *Strategic Studies* (1994).

informally. Either weapons and warheads, or delivery systems were yet to reach maturity. Threatening postures were occasionally adopted but were ambiguous enough maintain the strategic flexibility.<sup>70</sup> Throughout this period, two crises arose with serious war alarms: the 1986-87 Brasstacks Crisis and the 1990 Kashmir Crisis. Pakistan during these crises was still on the road to acquiring a nuclear weapons capability and it did not have a clear nuclear posture. Pakistan kept its nuclear capability ambiguous by relying on existential deterrence until 1998. Obviously, this was a posture suited to its nuclear capability that could still deter a full scale conventional attack by India.

#### The Brasstacks Crisis of 1986-87

Early in the year 1986, the Indian government decided to stage the Brasstacks exercise, which was the largest military maneuver in modern Indian history. By the late 1986, the exercise reached its full-blown crisis stage when the Indian armed forces initiated a massive exercise in Rajasthan near the South-Eastern border of Pakistan. The scale of these exercises was as large as some exercises conducted by the North Atlantic Treaty

---

70. Zafar I. Cheema, *Indian Nuclear Deterrence: Its Evolution, Development, and Implications for South Asian* (Karachi: Oxford University Press, 2010).



Organization (NATO) in Europe.<sup>71</sup> The Pakistani leaderships viewed it as a plan aimed at slicing Pakistan into two pieces. Consequently, the leaderships put armed forces on high alert and initiated their own military exercises very close to the Indian border. This led to counter-moves by the Indian army along the border combined with an operational alert. Crisis tensions were heightened when in January 1987 the Indian forces were put on high alert and staged forward along the borders with Pakistan. Sensing the tensions of the situation, Pakistan moved its offensive formations into forward positions. This escalation created panic over Kashmir, and its people felt that war was imminent. There would be no exaggeration to state that the crisis had every potential to escalate into an all-out war between Pakistan and India.<sup>72</sup>

Apparently, all elements for the escalation of a crisis were present. However, the decision-makers from both sides were successful in managing the crisis without reaching a point of unmanageable escalation and eruption of an all-out war across the international border. As the crisis escalated, the Indian Prime Minister Rajeev Gandhi stressed the importance of cooling things down in the meeting with the Pakistani Ambassador.<sup>73</sup>

---

71. Iram Khalid, "Brasstacks Crisis of 1986-87," *South Asian Studies* 27, no. 1 (2012).

72. Kamal Matinuddin, *The Nuclearization of South Asia*. (Karachi: Oxford University Press, 2002).

73. Humayun Khan, *Diplomatic Divide* (New Delhi: Roli Books, 2005).

Apart from official bilateral interactions, both sides conveyed peaceful intentions. Pakistan's General Zia-ul-Haq decided to project a peace-seeking image of the country. Rajeev was equally desirous of normalizing relations whatever the sincerity of Zia's motives. In February 1987, a reciprocal withdrawal of forces along the northern border was announced with both sides pledging to exercise "maximum restraint and to avoid all provocative actions".<sup>74</sup>

The key propositions about prior wars existed also in the Brasstacks crisis. The action-reaction chain was observed when both sides initiated counter-moves upon seeing each other position. Military asymmetry continued when Pakistan's conventional power, including the air, ground and navy forces, continued to lag behind India's. Why did they not go to war? Nuclear postures were communicated on purpose, though informally, to the regional adversary. The first time in the history of the subcontinent, Pakistan relied on its nuclear weapons capability to dissolve the crisis. In an interview with a prominent Indian journalist Kuldip Nayyar for the *London Times*, Dr Abdul Qadeer Khan, who headed the uranium enrichment facility, threatened that "Pakistan will not use (a nuclear weapon), but if it driven to the wall, there will be no option left in that eventuality.

---

74. Khalid, 50.

Nobody can undo Pakistan to take us for granted. We are here to stay and let it be clear that we shall use the bomb if our existence is threatened.”<sup>75</sup>

Khan’s deliberate acknowledgement about Pakistan possessing nuclear weapons had a significant impact on de-escalating the crisis. The U.S Intelligence reports also claimed that Pakistan had the capability to produce weapons-grade uranium and could assemble a nuclear bomb on a relatively short notice.<sup>76</sup> Indian intelligence authorities were also aware of Pakistan in possession of a nuclear bomb. The nuclear environment created did act as the prime factor in the resolution of the crisis.

#### The 1990 Crisis

In May 1990, the Kashmir dispute once again brought India and Pakistan a menace of a full scale war. The Kashmiri indigenous struggle for independence from India was being accredited to Pakistani support. India accused Pakistan of supporting the struggle in Kashmir by arming and training Mujahideens (freedom fighters). India thus deployed its strike corps along the southern border with Pakistan. Indian Prime Minister Singh warned

---

75. Mushahid Hussain, *The Muslim*, March 3, 1987.

76. Devin T. Hagerty, “Nuclear Deterrence in South Asia: The 1990 Indo-Pakistani Crisis,” *International Security* 20, no. 3 (1995).

that Pakistan could not have Kashmir without a war.<sup>77</sup> In response, Pakistan carried out its largest-ever military exercise, which tested a new “offensive defense doctrine” that was planned to stage a war with India by launching a sizeable offensive on Indian territory.<sup>78</sup> Pakistan also messaged its nuclear weapons in case of a full scale war with India: leaving the top-secret Pakistani nuclear weapons complex near Islamabad exposed, and signaling the convoys were ready to head for military airfields.<sup>79</sup> By late March 1990, thousands of forces were arrayed against each other across the Line of Control (LoC).

While most Indian and Pakistani nuclear capabilities were not mobilized and stayed in their de-alert mode, Washington was aware of the growing instabilities within Kashmir. In the mid-1990, the U.S. dispatched its Deputy National Security Adviser Robert Gates to the region to de-escalate the crisis. Gates visited India and Pakistan and conveyed a message to them that the U.S. would fail to mediate if a war broke out between them. He pressurized India to withdraw troops from the border, cautioning that any possible conflict “might go nuclear”. The Gates mission in Delhi and Islamabad succeeded in opening direct communication between them, and ultimately resulted in both states

---

77. This was reported by Seymour Hersh quoted in Zafar I. Cheema, *Indian Nuclear Deterrence*. Seymour Hersh, “On the Nuclear Edge,” *The New Yorker*, March 29, 1993, 62-65.

78. Ganguly and Hagerty, 91.

79. This was reported by James Adams quoted in Zafar I. Cheema, *Indian Nuclear Deterrence*. James Adams, “Pakistan ‘Nuclear War Threat’,” *Sunday Times*, May 27, 1990.

staying away from the potential conflict.<sup>80</sup> The possibility of a full-out war diminished.

Why did they not go to war? Technical evidence suggested that since the mid-1980s, Pakistan had proceeded from the stage of fissile materials production and was on its way to designing the weapons assembly. By 1987, Pakistan had the capability to assemble and deliver a nuclear weapon on India. Pakistan had by then conveyed a message in clear terms that it had the capability to inflict unacceptable damage on India if India took any action that threatened Pakistan's sovereignty and territorial integrity.<sup>81</sup> By the late 1980s, Pakistan was fully equipped with nuclear weapons. The then Pakistan's Army Chief Mirza Aslam Beg openly stated that "both the nuclear option and missiles act as a deterrent and these in turn contribute to... acts as a deterrent to the enemy".<sup>82</sup>

On the other hand, the Indian nuclear weapons program was underway in 1989. India's Minister of State for Defence stated that India would never use its nuclear capability against any neighbor, but if any neighbor were to do so, the country would rise to the

---

80. Ganguly and Hagerty.

81. See *The Kargil Review Committee Report* (New Delhi: Sage Publications, 2000), 191.

82. This was stated by Pakistan's Army Chief in October in 1989 and was reported in *Jane's Defence Weekly*, October 14, 1989.

occasion.<sup>83</sup> It is thus obvious that both were deterred from war in 1990 by the reciprocal fear of attack: each side's knowledge that that other was nuclear weapons-capable and that any military hostilities could escalate to the nuclear level. The crisis was a severe political conflict, but war between India and Pakistan did not break out. Existential deterrence can be said to have worked because in an opaque nuclear competition, there was simply no way that Indian and Pakistani planners could have the confidence to launch an entirely successfully nuclear first strike.<sup>84</sup> The theory of existential deterrence explains restraints exhibited in the 1990 crisis. More importantly, the occurrence of the crisis itself responded an important question: can opaque proliferants deter aggression without overt nuclear demonstrations, and direct nuclear threats against adversaries?

The answer will be in the affirmative. Like all nuclear weapon states, opaque proliferants signal intentions to one another through a process of strategic bargaining, which runs along a communication spectrum from formal negotiations to the transmission of resolve via deeds.<sup>85</sup> Although communication might be not be as clear as that between transparent nuclear powers, such communication between India and Pakistan was still

---

83. Padmanabhan Balam, "Raja Ramanna – A personal tribute," *Current Science* 87, no.8 (2004): 1153.

84. For discussion about existential deterrence, see "Existential deterrence and counterforce/countervailing" by Robert Jervis, *The illogic of American nuclear strategy* (New York: Cornell University Press, 1984).

85. Thomas C. Schelling, *The Strategy of Conflict* (Cambridge, Mass.: Harvard University Press, 1960), 53.

observed, and formulated a certain deterrence relationship during the 1990 crisis. The signaling of intent appeared to be deliberate in both countries, and the bottomline was to avoid a nuclear escalation. Nuclear deterrence from 1986-1998 was presented as implicit deterrence. It conforms the conventional logic of proliferation optimism – that nuclear possessors do not go into war with each other. It also suggests that the third power intervention (i.e. the U.S. mediation) is a product of nuclear deterrence, rather than as the forerunner in backing down the crisis.

*Explicit Nuclear Deterrence (1998 onward)*

After the May 1998 nuclear tests, an explicit form of nuclear deterrence steadily developed between India and Pakistan. India and Pakistan began to define a clearer nuclear posture. Pakistan shifted from existential deterrence to integrating nuclear weapons with its national security. Pakistan's nuclear weapons are India-centric, credibly threatening the first use of nuclear weapons against the Indian conventional forces in the event they breached Pakistan's territorial integrity. Strategic ambiguity in nuclear threats gradually diminished while explicit nuclear deterrence surfaced incrementally. Three crises arose in this period. The Kargil conflict in 1999, the India-Pakistan crisis in 2002 and the Mumbai terror attacks in 2008. They have demonstrated nuclear deterrence in the

region progressed as a prevailing condition rather than an articulated policy.

### The Kargil Crisis of 1999

Kargil incursion was the first instance of military hostilities between India and Pakistan after the 1998 nuclear tests. It is considered both as a crisis and a war. It counts as a war because it met the standard criterion of 1,000 battle deaths in an interstate conflict.<sup>86</sup> Although the Kargil Crisis is considered as a war, it remained limited as India stopped to expand the conflict horizontally. Pakistan was able to invoke a sense of unacceptable damage to India by its nascent nuclear weapons capability. The crisis began in May 1999 when Pakistani army crossed a stretch of the LoC, and intruded the Kargil district of Jammu and Kashmir that is under India's administration.<sup>87</sup> Although the conflict was geographically confined to the northern region of the Kashmir LoC, the crisis rapidly deepened with the arrival of major weapons systems from India. Initially, India reportedly considered a number of options for "horizontal escalation", including whether to enlarge the conflict at strategically suitable places along the LoC inside Kashmir, or to attack along the international border.<sup>88</sup> By the late-June, the Indian forces managed to fully

---

86. On this subject, see J. David Singer and Paul Diehl, *Measuring the Correlates of War* (Ann Arbor: University of Michigan Press, 1990).

87. Sumit Ganguly, "Nuclear Stability in South Asia," *International Security* 33, no. 2 (2008): 55.

88. Cheema, 410.



reestablish control over its lost region.<sup>89</sup>

Despite Indian military successes, hostilities showed signs of alleviation. In fact, Pakistan's 1999 involvement in Kashmir was more troublesome than it was during the operation in 1964-65. India responded to Pakistan's intervention in its part of Kashmir by an all-out war in 1965. What prevented India from repeating the same to Pakistan? The employment and signaling of nuclear capabilities played an important role in preventing the Kargil conflict from escalation. Indian designs of horizontal escalation were thwarted by Pakistan's clear signaling through official statements. The then Pakistani Minister, and senior member of the then ruling party Pakistan Muslim League, Raja Zafarul Haq, publicly warned that Pakistan could resort to the nuclear option to preserve Pakistani territory and sovereignty. Pakistani Foreign Secretary also made explicit threats that Pakistan would "not hesitate to use any weapon in [its] arsenal to defend [its] territorial integrity."<sup>90</sup> Indeed, Indian and Pakistani officials and leaders exchanged direct or indirect nuclear threats no fewer than 13 times during the Kargil conflict in 1999.<sup>91</sup>

---

89. "India Reports Major Highway Recaptured from Rebels," *New York Times*, June 21, 1999.

90. Quoted in "Any Weapon Will Be Used, Threatens Pak," *Hindu*, June 1, 1999.

91. Usman Ghani, "Nuclear Weapons in India-Pakistan Crisis," *IPRI Journal* XII, no. 2 (2012): 142.

The Indian Prime Minister, Atal Bihari Vajpayee, was “known to have seriously considered a Pakistani nuclear strike had India escalated the war.”<sup>92</sup> The Indian Bharatiya Janata Party (BJP) was also cautious about not attacking Pakistani forces across the LoC, regardless of the fact that this flawed military logic and accepted heavier casualties. This restraint was in marked contrast to India’s response in the 1965 and 1971 conflicts, when nuclear weapons had not incepted in the crisis backdrop.

#### The India-Pakistan Crisis of 2002

It all began with Pakistan’s attack on the India’s parliament building by terrorists in December 2001. Indian responded with the biggest forces mobilization on the border since 1971 until the late 2002. Most channels of communication to Pakistan were cut off, and India continued to threaten to slice Pakistan in two.<sup>93</sup> An action-reaction chain was observed when Pakistan reacted with a counteract mobilization. The armed forces of both countries were ready for war for many months and setting the stage into a full-scale war.

Despite the gravity of the provocation, India chose not to resort to a larger war. This is puzzling, especially when Indian regime was dominated by a right-wing political party? It

---

92. V. K. Sood and Pravin Sawhney, *Operation Parakram: An Unfinished War* (Delhi: Sage, 2003), 70–71.

93. Vipin Narang, “Posturing for Peace? Pakistan’s Nuclear Postures and South Asian Stability.” *International Security* 34, no. 3 (2009).

is tempting to suggest that sustained U.S. engagement compelled India from attacking Pakistan. Yet the evidence for the argument is incomplete. Although Indian authorities felt under considerable international (and especially U.S.) pressure to exercise military restraints, India continued to launch its second attack in early 2002. Indian forces were able to carry out concerted attacks against key Pakistani targets.<sup>94</sup>

In fact, India was deterred from launching even a limited conventional attack on Pakistan because of the fear of nuclear retaliation. India believed that should it had followed a tans-LoC “hot pursuit” policy, conventional war would have broken out and Pakistan might have resorted to nuclear weapons. In March 2002, President Musharraf threatened in his speech: “Pakistan today possesses a powerful military might and can give a crushing reply to all types of aggression. Anybody who poses a challenge to our security and integrity would be taught an unforgettable lesson.”<sup>95</sup> Pakistan also tested three consecutive nuclear-capable ballistic missiles, conveying an unambiguous deterrent signal to Delhi.<sup>96</sup>

---

94. Ganguly, *Nuclear Stability in South Asia*, 65.

95. President, *General Pervez Musharraf’s Address to the Nation* (accessed May 6, 2014); available from <http://presidentmusharraf.wordpress.com/2006/07/17/musharraf-address-23-march-2002/>.

96. Shishir Gupta, “When India Came Close to War,” *India Today*, December 19, 2002.

Such nuclear posture effectively shaped Indian decision of not starting even a limited conventional war. Prime Minister Vajpayee considered that a full-scale military assault could accelerate a wider conflagration. Though Vajpayee held that the risk of nuclear war was small, he saw no benefit in procuring a crisis of which it might be an outcome.<sup>97</sup> The 2002 crisis confirmed that the possibility of total war between India and Pakistan is low or nil. Despite the fact that nuclear weapons are a reality in the subcontinent, traditional strategic thinking has always been open to the possibility of limited conventional war. However, such a proposition becomes debatable after the 2002 crisis.

#### 2008 Mumbai Terror Attacks

A group of 10 terrorists from Pakistan attacked Mumbai on November 26, 2008.<sup>98</sup> The multiple attacks and the counter-terrorist offensive lasted over 60 hours. One of the attackers, Ajmal Kasab, was taken alive and Pakistan was asserted to be affiliated with the attacks.<sup>99</sup> India geared itself for a limited war on Pakistan, and the situation suggested an impending fourth Indo-Pak war. India however did not gather its troops along its border with Pakistan. The 2001-2002 Military standoff had made India realize that any

---

97. Narang, 63.

98. A report by Institute of Peace and Conflict Studies, "Mumbai Terror Attacks: An Analysis," *IPCS Special Report* 66, (2009).

99. Syed Shahzad, *Inside al Qaeda and the Taliban: Beyond Bin Laden and 9/11* (Pluto Press: London, 2010), 96.

attempt of even a limited conventional war with Pakistan was not feasible.

From the beginning, India's Congress government accepted that its military choice to strike back against Pakistan were more restricted, since any major strikes risked unmanageable escalation to the nuclear level. India was consequently restrained by Pakistan's low nuclear threshold from carrying out retaliatory airstrikes against Pakistan. Indian Former Army Chief Roy Chowdhury finally acknowledged that "Pakistan's nuclear weapons deterred India from attacking that country after the Mumbai strikes...[and] it was due to Pakistan's possession of nuclear weapons that India stopped short of a military retaliation following the attack on Parliament in 2001".<sup>100</sup>

Empirical evidence suggests that, states with a small number of nuclear weapons have been able to prevent states with much superior nuclear arsenal to initiate either total or conventional war. The key to deterrence is risk: confronting with even a small risk of large-scale nuclear damage, states become more cautious and are promptly deterred. Thus, it is reasonable to conclude that where deterrence is concerned, size does not matter. Pakistan nuclear doctrine of credible minimum deterrence is proven to be successful in

---

100. Narang, 64.

detering Indian conventional or nuclear attacks.

### **3. The Robustness of Nuclear Deterrence**

As the crystal ball effect of nuclear weapons is stronger, nuclear deterrence is becoming more robust in the subcontinent. This section will provide counterpoints to respond common challenges concerning nuclear deterrence between India and Pakistan.

#### Pakistan's Increasing Offensive Gesture

After the 1999 Kargil Crisis, India drew a significant conclusion that instead of seeking stable relationship on the basis of nuclear weapons capabilities, Pakistan used nuclear deterrence to support aggression. Pakistan was considered to be more confidence to raise the conflict thresholds with India.<sup>101</sup> In essence, the inception of nuclear weapons neutralized the military asymmetry. The stability-instability paradox has come into play. Undeniably, Pakistan's willingness to provoke India has increased in parallel with its steady acquisition of a nuclear arsenal. The period from the late 1980s to the late 1990s, however, also coincided with commensurate developments that equipped Pakistan with the opportunities and means to interfere with India's internal affairs. Upon the end of the

---

101. *The Kargil Review Committee Report* (accessed May 6, 2014); available from <http://nuclearweaponarchive.org/India/KargilRCB.html>.

conflict with the Soviet Union, military resources were excused for use in a new jihad in Kashmir. This jihad, meanwhile, was made possible by the emergence of an indigenous uprising within the state as a result of Indian political malfeasance.<sup>102</sup> Once the jihad groups were trained and armed, it is not clear whether Pakistan could control the behavior and actions of every resulting jihadist organization.

Therefore, although the number of attacks on India multiplied during the 1990s, it is difficult to establish a solid causal relationship between the growth of Pakistan's aggression and its acquisition of nuclear weapons capabilities. The 2002 crisis was triggered by non-state actors that led to irresponsible brinkmanship behavior by both states. Thus, we can see that the India-Pakistan crises can take place in various forms. When non-state actors are also involved, the increasing aggressive gestures cannot be solely attributed by the Pakistan government. Furthermore, even Pakistan had indeed supported rebellions in various parts of India, it had been doing so before it got nuclear weapons since the late 1950s.<sup>103</sup>

---

102. Sumit Ganguly, "India's Pathway to Pokhran II," *International Security* 23, no. 4 (1999).

103. Rajesh Rajagopalan, *Second Strike: Arguments about Nuclear War in South Asia* (New Delhi: Viking Penguin, 2005).

## Nuclear Doctrinal Dimension

India's nuclear doctrine is based on the no-first use policy, while Pakistan's doctrine is based on the first-use policy. Concerns arise as both doctrines appear to be problematic. The NFU policy is challenged that it only contains verbal characters without any provision for sanctions or enforcement. More critically, the policy presents as a one-sided wish for more peace-seeking states in the world, while placing no obstacles in the path of an aggressor government. The NFU policy has potentials to increase the risk of sub-limited war at the lowest levels of violence. On the other hand, the first-use policy is criticized as having potentials to escalate the risks of accidents and unauthorized use due to miscalculation, or a breakdown of command and control systems under pressure.<sup>104</sup> In addition, a country that adopts the first-use stance may abuse deterrent value of nuclear weapons, believing that the military options of its rival are substantially limited.

Yet, Pakistan's doctrine is generally less dangerous than it is seemingly to be. Though Pakistan has a first-use policy, it is not a first-strike doctrine, and the difference is considerable. Pakistani doctrine appears to indicate that it would make a limited strike, on Pakistani territory, against Indian forces that have penetrated deep into Pakistani territory,

---

104. David Gompert, "Nuclear First Use Revisited," *Survival* 37, no. 3 (1995).



and any change in such indication remains slim in the future.<sup>105</sup> The question is: will India accept the logic of nuclear parity and its strategic consequence? Indeed, in 1999 India had a robust political leadership and a powerful forces apparatus. It had at least two reserve strike corps along the border with Pakistan in a state of military readiness.<sup>106</sup> Despite all these, the Indian leadership chose to limit the scope of the Kargil crisis and exhibited considerable military restraints. K. Subrahmanyam, a prominent Indian defense analyst and political commentator stated, “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.”<sup>107</sup>

Indian assurance of not to be the first to use nuclear weapons acts as a stabilizing factor in preventing horizontal expansion. Pakistan is also careful in calculating the costs of a first strike and will opt for it only under the most desperate conditions. If both of them adopted the NFU policy, nuclear deterrence would be irrelevant. On the other hand, if both of them adopted a first-use stance, there would be a lack of a stabilizing factor in

---

105. Rajagopalan.

106. General Ved Prakash Malik, Chief of Staff of the Indian Army, interview by Sumit Ganguly, San Francisco, California, November 1999.

107. K. Subrahmanyam, “Capping, Managing, or Eliminating Nuclear Weapons?” in *South Asia after the Cold War: International Perspectives*, ed. Kanti P. Bajpai and Stephen P. Cohen (Boulder, Colo.: Westview, 1993), 184.

mitigating the crises. Interactions between India's and Pakistan's doctrines - one deters while one holds back - help maintain a stable nuclear deterrence in the subcontinent.

#### Latent Nuclear Dangers

*Proximity* South Asia's geography, or specifically, the proximity between India and Pakistan is thought to make nuclear relations more dangerous. Proximity is constantly compared between the relations of India and Pakistan and that of the U.S. and the Soviet Union. America and Russia are separated by vast distances, while Pakistan and India live like neighbors. There are always concerns about the accidental exchange of warheads from either side. In actuality, however, such unintended use of nuclear weapons is almost impossible given that never do two countries share a common interest more completely than when they are locked in short distance. During the Kargil crisis, India placed warheads on delivery vehicles and Pakistan followed the suit. There were seen as rash moves but the placement contained only verbal characters more than materializing them.

Proximity does make warning time short. With little warning time, quick decisions seem to be required. However, early warnings of incoming missiles that turn out to be false alarm could also be fatal to both sides. Indeed, the deterrence of a would-be attacker does

not depend on the belief that retaliation will be prompt, but on the belief that the attacked may in due course retaliate. As K. Subrahmanyam has put it, “The strike back need not be highly time-critical.”<sup>108</sup> Organizational theorists worry about tightly-coupled systems because they are susceptible to accidents. Conversely, nuclear weapons loosen the coupling of states by cutting through complexities of conventional confrontations.

*Small Nuclear Forces* Pessimists predict that small arsenals will be highly vulnerable. Nonetheless, neither India nor Pakistan has behaved as if its arsenals are vulnerable to a surprise attack. Both nuclear forces are on de-alert mode. Furthermore, small arsenals have unique advantages. With smaller nuclear forces, India and Pakistan could face less command and control problems when compared to the extremely complicated Cold War systems. Smaller size arsenals are also easier to be hidden and guarded. According to Waltz, states with large arsenals and faulty bureaucratic routines may accidentally fire warheads in large numbers. In estimation, a Soviet attack accidentally launched against the U.S. might have resulted in as many as three hundred warheads falling on the U.S. In response, as many as five hundred of American warheads might have been launched

---

108. K. Subrahmanyam, “Nuclear Force Design and Minimum Deterrence Strategy for India,” in *Future Imperilled*, ed. Bharat Karnad (New Delhi: Viking, 1994), 192.

against the Soviet Union.<sup>109</sup>

*Survivability of Nuclear Forces* Sagan points out that the survival of Indian and Pakistani forces cannot be guaranteed.<sup>110</sup> He states that Pakistan deployed its missile forces in ways that produce signatures giving away their deployment locations. Also, the possibility that India and Pakistan intelligence agencies could intercept messages revealing the secret locations of would-be survivable military forces remains high. In reality, the locations and numbers of their nuclear devices and delivery system remain uninformed by both sides.<sup>111</sup> And what matters most is that neither India nor Pakistan can bring complete destruction to each other's nuclear arsenals. Residuals of even a small number of nuclear forces can bring unacceptable damage to the adversary. Indeed, many pessimists overlook a basic nuclear truth: If some part of a force is invulnerable, all of the force is invulnerable. Destroying even a major portion of a nuclear force does no good because of the damage a small number of surviving warheads can do. Such survivability has differentiated nuclear weapons from conventional weapons.

---

109. Frank V. Hippel, "How to Avoid Nuclear War," *Bulletin of the Atomic Scientists* 46, no. 5 (1990).

110. Sagan and Waltz, 101.

111. Arvind Kumar, "Nuclear Deterrence in the Subcontinent," in *The India-Pakistan Nuclear Relationship*, ed. E. Sridharan (London: Routledge, 2007), 257.

*Civil-Military Relations* Sagan also argues that militaries generally tend to be biased towards offensive operations, to resist civilian interference in professional matters, and incline to inflexible routines and standard operating procedures, all of which may in turn lead to crisis instability and inadvertent escalation of war. Since the militaries is in charge of the nuclear system in Pakistan, they might be tempted to conduct a preventive war against India they believed that they had a temporary nuclear advantage over India. Sagan's assertion about the dominance of the Pakistani military in determining Pakistan's security policies is accurate. Yet, with the possible exception of the Kargil conflict, it is far from clear that the Pakistani military has been the primary force in planning for and initiating aggressive war against India. The first Kashmir war had the explicit approval of Pakistan's civilian authorities.<sup>112</sup> Foreign minister Zulfikar Ali Bhutto, together with President Ayub Khan, gave the green light of the 1965 war.<sup>113</sup> Six years later, once again Bhutto, was complicit in provoking a war with India.<sup>114</sup>

Even though the Pakistani military has been risk prone toward India, the evidence does not support the proposition that the Pakistani military has been more war prone. The

---

112. On this subject, see H. V. Hodson, *The Great Divide* (London: Hutchinson Radius, 1969).

113. Russell Brines, *Indo-Pakistani Conflict* (London: Pall Mall P, 1968).

114. Richard Sisson and Leo E. Rose, *War and Secession: Pakistan, India, and the Creation of Bangladesh* (Berkeley: University of California Press, 1990).

civilian authority have indeed played a critical role in urging the military to undertake aggressive actions. Furthermore, in the context of weak democratic institutions and potentials that political leaders can abuse chauvinism from their people, civilian regimes in Pakistan have demonstrated a substantial propensity to resort to war.<sup>115</sup> Consequently, even though deductive theories may suggest that military organizations are more prone to the use of force and the adoption of offensive military doctrines, an assessment of the empirical evidence from South Asia suggests a more complex reality.

---

115. Jack L. Snyder and Edward D Mansfield, "Democratic Transitions, Institutional Strength, and War," *International Organization* 56, no. 2 (2002).

## **Chapter V CONCLUSIONS**

### **1. Conclusions**

Nuclear deterrence has proved its value and robustness in South Asia. There has been no full-scale war since their appearance on the subcontinent, and the probability of future total war remains slim. More importantly, limited conventional war at lower level is also decreasing. In the face of Pakistan's present economic and resources deficiencies, nuclear weapons have given the country's defence its needed confidence and capability that the its adversary fully recognizes. Furthermore, such deterrence is becoming more evident upon India and Pakistan evolving from opaque proliferation to overt nuclear weapons states. Thus, explicit deterrence can be said to be more stable than implicit deterrence. While implicit deterrence could prevent full-scale wars, explicit deterrence can lead to more enduring peace not only by preventing larger war, but also decreases the likelihood of limited conventional war, and bring warring parties to the negotiating table.

Given by its nuclear weapons and the now military symmetry, Pakistan might appear to be more aggressive at first glance. Pessimists challenge Pakistani first-use policy would enhance the country's offensive. Yet, there is a lack of persuasive causation when

non-state actors are involved. Credits should also be given to the countries' respective nuclear doctrine. The first use policy has given Pakistan's nuclear capability credits and made Indian choices of de-escalation easier. India's no-first use policy has given greater restraints to its leaders when facing crises. It also acts as a stabilizing factor in preventing horizontal escalations of conflicts. Such phenomenon is unique and contextual. At the peak of the crisis, Pakistan would issue nuclear warnings and India would then hold back. This pattern of nuclear relationship has been gradually established and recognized through repeated interactions between the two countries.

Not surprisingly, pessimists would further challenge potential nuclear dangers and accidents that might happen in South Asia. Proximity, seemingly vulnerable small arsenals, dubious survivability of nuclear forces and civil-military relations, especially in the case of Pakistan, are all factors accentuating nuclear dangers in the region. Yet, logical and empirical evidence has proven that these concerns seldom come into play. India and Pakistan have come through a long way to construct a robust nuclear deterrence. The intensity and the frequency of war is lessened. Indeed, for fear of retaliation, they do not want to fight. Now, the efforts should be concentrated on making the system safe.



## **2. Implications**

What policy implications draw from this study? U.S. and multilateral efforts to discard the Indian and Pakistani nuclear weapons programs have proven futile. Neither country in the foreseen future will willingly dispense with these weapons and programs. Under the circumstances, it is more pragmatic to enhance the safety usage of nuclear weapons in the subcontinent, rather than one-sidedly advocate for disarmament. America and other major powers, given Pakistan's porous political order, should help secure its nuclear arsenal from theft, sabotage or unauthorized usage. Some information from the public domain suggests that the U.S. has already undertaken efforts toward those ends.<sup>116</sup>

It is also important to bear in mind that the question of stable deterrence is multifaceted and cannot be addressed exclusively in terms of the strategic logic of classical deterrence theory. The physical components of nuclear deterrence are necessary but not sufficient for a stable security environment. Emerging powers like India and Pakistan have a common stake in taking other steps that would endure mutual security, safety of nuclear assets and stabilization of deterrence. Three steps are important to consider. First, Pakistan - due to the limitations of its resource base and financial budgetary - should continue to adopt

---

116. David E. Sanger and William J. Broad, "U.S. Secretly Aids Pakistan in Guarding Nuclear Arms," *New York Times*, November 18, 2007.

credible minimum deterrence as its nuclear doctrine. Pakistan needs to focus on what the level of unacceptable damage would be for India decision-makers to posit a rational and corresponding nuclear force structure. It must avoid the trap of a nuclear arms race. What is critical is a technologically smart, credible and survivable nuclear force and not a gruff system without sharp capabilities.

Second, India and Pakistan should engage in meaningful dialogues from lower to higher politics. Success on one area may have positive spillover effects in other areas. The opening up of trade between the two countries such as sale of surplus electricity, can facilitate interdependence between them. South Asian diplomacy should be comprehensive enough to avoid both conventional and nuclear war, and cover all issues from resolving contentious issues to agreements on nuclear stability. The U.S. should urge India to pursue a meaningful political dialogue without stirring Kashmiris opinion. Although such a dialogue has been under way for some time, substantive progress has been limited. Washington should also nudge the Pakistani government to abandon its reliance on various jihadi groups for its strategic ends in Kashmir. This issue is of particular significance because could easily destabilize a fragile bilateral relationship.

Third, an effective command, control and communication systems is needed. India and Pakistan may eventually develop a reliable indigenous systems, but their current technology may still impose possible risks on the nuclear infrastructures. The U.S. and other big powers can help reduce nuclear dangers in the region by sharing their expertise and experience, including technical assistance on how to prevent unauthorized use. While external powers friendly to both India and Pakistan could provide technological hardware to make nuclear arsenals safe, or prod them towards an institutionalized peace process, India and Pakistan themselves share the primary responsibility for transforming their traditional hostility into a cooperative relationship. It is not just the for the sake of economic benefits, but also the shadow of nuclear weapons that should push peace high up on the bilateral dialogue.

It is noteworthy to remember; this study confines the result between the India-Pakistan nuclear relationships, and shall not be duplicated on relationships between other NWSs. The current deterrence relationship between India and Pakistan is the result of their repeated interactions during crises, as well as the unique functions of their respective nuclear doctrine. Positive effects of the spread of nuclear weapons on this subcontinent are contextual, and thus are not necessarily observable on other regions.

## Bibliography

### ARTICLES

- Alam, Mohammed B. "India's Nuclear Doctrine: Context and Constraints." *Heidelberg Papers in South Asian and Comparative Politics*, no. 11 (2002): 1-22.
- Balaram, Padmanabhan. "Raja Ramanna – A personal tribute." *Current Science* 87, no.8 (2004): 1152-4.
- Basrur, Rajesh M. "Nuclear India at the Crossroads." *Arms Control Today* 33, no. 7 (2003).
- Bracken, Paul. *Fire in the East: The rise of Asian Military Power and the Second Nuclear Age*. New York: Harper Collins, 1999.
- Durrani, Mahmud A. "Pakistan's Strategic Thinking and the Role of Nuclear Weapons." *Cooperative Monitoring Center Occasional Paper* 37, 2004.
- Feaver, Peter D. "Command and Control in Emerging Nuclear Nations." *International Security* 17, no. 3 (1992/3): 160-87.
- Ganguly, Sumit. "Nuclear Stability in South Asia." *International Security* 33. No. 2 (2008): 45-70.
- Ghani, Usman. "Nuclear Weapons in India-Pakistan Crisis." *IPRI Journal* XII, no. 2 (2012): 137-145.
- Gompert, David. "Nuclear First Use Revisited." *Survival* 37, no. 3 (1995): 27-44.
- Graham, Thomas W. "Winning the Nonproliferation Battle." *Arms Control Today* 21, no. 7 (1991): 8-13.
- Hippel, Frank V. "How to Avoid Nuclear War." *Bulletin of the Atomic Scientists* 46, no. 5 (1990): 35-6.
- Hymans, Jacques C. "When Does a State Become a "Nuclear Weapon State"?" *Nonproliferation Review* 17, no.1 (2010): 161-80.
- Kerr, Paul K., and Mary B. Nikitin, "Pakistan's Nuclear Weapons: Proliferation and Security Issues." *Congressional Research Service*, March 19, 2013. Accessed April 24, 2014. Available from CRS Report for Congress.
- Khalid, Iram. "Brasstacks Crisis of 1986-87." *South Asian Studies* 27, no. 1 (2012): 35-62.
- Hagerty, Devin T. "Nuclear Deterrence in South Asia: The 1990 Indo-Pakistani Crisis." *International Security* 20, no. 3 (1995): 79-114.
- Hussain, Mushahid. *The Muslim*. March 3, 1987.
- Institute of Peace and Conflict Studies, "Mumbai Terror Attacks: An Analysis," *IPCS Special Report* 66, (2009): 1-9.

- Lavoy, Peter R. "The Strategic Consequences of Nuclear Proliferation: A Review Essay." *Security Studies* 4, no. 4 (1995): 695-753.
- Major General Singh, Sukhwant. *India's War since Independence: Defence of the Western Border*. Vol II. New Delhi: Vikas, 1981.
- Malik, Mohan J. "Nuclear Proliferation in Asia: The China Factor." *Australian Journal of International Affairs* 53, no. 1 (2010): 31-41.
- Narang, Vipin. "Posturing for Peace? Pakistan's Nuclear Postures and South Asian Stability." *International Security* 34, no. 3 (2009): 38-78.
- Perkovich, George. "Non-Weaponized Deterrence: The Case for Pakistan." *Strategic Studies*, 1994.
- Raghavan, Varadarajan. "Limited War and Nuclear Escalation in South Asia." *The Nonproliferation Review* 8, no.3 (2001): 1-18.
- Sagan, Scott D. "The Perils of Proliferation: Organization Theory, Deterrence Theory, and the Spread of Nuclear Weapons." *International Security* 18, no. 4 (1994): 66-107.
- Salik, Naeem. "Minimum Deterrence and India Pakistan Nuclear Dialogue: Case Study on Pakistan." *LNCV South Asia Security Project Case Study*, March 2006. Accessed April 24, 2014. Available from Landau Network Centro Volta.
- Shapley, Deborah. "Nuclear Weapons History: Japan's Wartime Bomb Projects Revealed." *Science* 199, no. 4325 (1978): 152-7.
- Sidel, Victor W., and Levy, Barry S. "Proliferation of Nuclear Weapons: Opportunities for Control and Abolition." *Am J Public Health* 97, no. 9 (2007): 1589-94.
- Singer David J., and Paul Diehl. *Measuring the Correlates of War*. Ann Arbor: University of Michigan Press, 1990.
- Snyder, Jack L., and Edward D Mansfield, "Democratic Transitions, Institutional Strength, and War." *International Organization* 56, no. 2 (2002): 297-337.
- Sublette, Carey. "Text of Prime Minister Muhammad Nawaz Sharif Statement at a Press Conference on Pakistan Nuclear Tests." *A Guide to Nuclear Weapons*, May 29 1998. Accessed April 23, 2014. Available from The Nuclear Weapon Archive.
- The Kargil Review Committee Report*. New Delhi: Sage Publications, 2000.
- Viner, Jacob. "The Implications of the Atomic Bomb for International Relations." In *Proceedings of the American Philosophical Society*, delivered November 16, 1945.

## **BOOKS**

- Aziz, Sartaj. *Between Dreams and Realities: Some Milestones in Pakistan's History*. Karachi, Pakistan: Oxford University Press, 2009.
- Bhabha, Homi J. "The Implications of a Wider Dispersal of Military Power for World Security and the Problems of Safeguards." In *Proceedings of the Twelfth Pugwash*

- Conference on Science and World Affairs*, ed. Homi J. Bhabha. Udaipur. India: Taylor & Francis, 1964.
- Bhola, P. L. *Pakistan's Nuclear Policy*. New Delhi: Radiant Publishers, 1993.
- Brines, Russell. *Indo-Pakistani Conflict*. London: Pall Mall P, 1968.
- Brodie, Bernard. *The Absolute Weapons: Atomic Power and World Order*. New York: Harcourt Brace Jovanovich, 1946.
- Carl von Clausewitz, *On war*, ed. Michael Howard and Peter Paret. New Jersey: Princeton University Press, 1984.
- Cheema, Zafar I. *Indian Nuclear Deterrence: Its Evolution, Development, and Implications for South Asian*. Karachi: Oxford University Press, 2010.
- Dasgupta, Chandan. *War and Diplomacy in Kashmir: 1947-1948*. New Delhi: Sage Publications 2002.
- Dunn, Lewis A., and William H. Overholt, "The Next Phase in Nuclear Proliferation Research." In *Asia's Nuclear Future*, ed. William H. Overholt, 1-34. Colorado: Westview Press, Inc., 1977.
- Dokos, Thanos P. *Countering the Proliferation of Weapons of Mass Destruction: NATO and EU Options in the Mediterranean and the Middle East*. London: Routledge, 2008.
- Evron, Yair. *Israel's Nuclear Dilemma*. I thaca, N.Y.: Cornell University Press, 1994.
- Freedman, Lawrence. *The Evolution of Nuclear Strategy*. 3rd American ed. New York: Palgrave Macmillan, 2003.
- Freedman, Lawrence. *Deterrence*. Cambridge: Polity Press, 2004.
- Ganguly, Sumit. "India's Pathway to Pokhran II." *International Security* 23, no. 4 (1999): 148-77.
- Ganguly, Sumit and Devin T. Hagerty, *Fearful Symmetry: India-Pakistan Crises in the Shadow of Nuclear Weapons*. Seattle: University of Washington Press, 2005.
- Hodson, H. V. *The Great Divide*. London: Hutchinson Radius, 1969.
- Hussain, Rifaat. "Deterrence and Nuclear Use: Doctrines in South Asia." In *The India-Pakistan Nuclear Relationship*, ed. E. Sridharan, 151-184. London: Routledge, 2007.
- Jervis, Robert. *The illogic of American nuclear strategy*. New York: Cornell University Press, 1984.
- Kanwal, Gurmeet, and Monika Chansoria, *Pakistan's Tactical Nuclear Weapons - Conflict Redux*. New Delhi: Knowledge world publishers, 2014.
- Khan, Feroz H. *Eating Grass: The Making of the Pakistani Bomb*. Stanford, CA: Stanford University Press, 2012.
- Khan, Humayun. *Diplomatic Divide*. New Delhi: Roli Books, 2005.
- Kumar, Arvind. "Nuclear Deterrence in the Subcontinent." In *The India-Pakistan Nuclear*

- Relationship*, ed. E. Sridharan, 239-265. London: Routledge, 2007.
- McCauley, Martin. *The Rise and Fall of the Soviet Union*. London: Routledge, 2014.
- Morgan, Patrick M. *Deterrence Now*. Cambridge: Cambridge University Press, 2003
- Quester, George. "Conceptions of Nuclear Threshold Status." In *Security With Nuclear Weapons?* ed. Regina Cowen Karp. Oxford: Oxford University Press, 1991.
- Rajagopalan, Rajesh. *Second Strike: Arguments about Nuclear War in South Asia*. New Delhi: Viking Penguin, 2005.
- Rahman, Mushtaqur. *Divided Kashmir*. London: Lynne Rienner Publishers, 1996.
- Rais, Rasul B. "Conceptualizing Nuclear Deterrence: Pakistan's Posture." In *The India-Pakistan Nuclear Relationship*, ed. E. Sridharan, 51-82. London: Routledge, 2007.
- Sagan, Scott D., and Kenneth N. Waltz. *The Spread of Nuclear Weapons – A Debate Renewed*. New York: W. W. Norton & Company, 2003.
- Schelling, Thomas C. *The Strategy of Conflict*. Cambridge, Mass.: Harvard University Press, 1960.
- Shahzad, Syed. *Inside al Qaeda and the Taliban: Beyond Bin Laden and 9/11*. Pluto Press: London, 2010.
- Singh, Swaran. "The China Factor in South Asia's Nuclear Deterrence," in *The India-Pakistan Nuclear Relationship*, ed. E. Sridharan, 287-309. London: Routledge, 2007.
- Sisson, Richard, and Leo E. Rose. *War and Secession: Pakistan, India, and the Creation of Bangladesh*. Berkeley: University of California Press, 1990.
- Sood V. K., and Pravin Sawhney, *Operation Parakram: An Unfinished War*. Delhi: Sage, 2003.
- Strong, Robert A. "The Nuclear Weapon States: Why They Went Nuclear," in *Nuclear Proliferation In The 1980s*, ed. William H. Kincade and Christoph Bertram, 3-26. London: The Macmillan Press Limited, 1982.
- Subrahmanyam, K. "Capping, Managing, or Eliminating Nuclear Weapons?" in *South Asia after the Cold War: International Perspectives*, ed. Kanti P. Bajpai and Stephen P. Cohen. Boulder, Colo.: Westview, 1993.
- Subrahmanyam, K. "Nuclear Force Design and Minimum Deterrence Strategy for India." In *Future Imperilled*, ed. Bharat Karnad, 188-193. New Delhi: Viking, 1994.
- Waltz, Kenneth N. *Theory of International Politics*. New York: McGraw-Hill, 1979.
- Waltz, Kenneth N. *The Spread of Nuclear Weapons: More May Be Better*. Adelphi Paper No.171. London: International Institute of Strategic Studies [IISS], 1981.

## INTERNET RESOURCES

- Draft Report of National Security Advisory Board on Indian Nuclear Doctrine*. Accessed April 21, 2014.  
Available from  
<http://fas.org/nuke/guide/india/doctrine/990817-indnucl.htm>.
- India Inches Closer to Credible Nuclear Triad With K-4 SLBM Test*. Accessed April 21, 2014.  
Available from  
<http://thediplomat.com/2014/05/india-inches-closer-to-credible-nuclear-triad-with-k-4-slbm-test/>.
- India's Nuclear Blunder*. Accessed April 21, 2014. Available from  
<http://nationalinterest.org/commentary/indias-nuclear-blunder-8946>.
- Kashmir Profile*. Accessed April 25, 2014. Available from  
<http://www.bbc.com/news/world-south-asia-11693674>.
- Nuclear: Pakistan*. Accessed April 23, 2014. Available from  
<http://www.nti.org/country-profiles/pakistan/nuclear/>.
- Nuclear safety, nuclear stability and nuclear strategy in Pakistan*. Accessed April 24, 2014. Available from  
<http://www.pugwash.org/september11/pakistan-nuclear.htm>.
- PM's Statement In Parliament On "Bilateral Talks With United States"*. Accessed April 23, 2014. Available from  
<https://www.fas.org/news/india/1998/12/981215-par115dec.htm>.
- President, General Pervez Musharraf's Address to the Nation*. Accessed May 6, 2014.  
Available from  
<http://presidentmusharraf.wordpress.com/2006/07/17/musharraf-address-23-march-2002/>.
- The Kargil Review Committee Report*. Accessed May 6, 2014. Available from  
<http://nuclearweaponarchive.org/India/KargilRCB.html>.
- Treaty On the Non-Proliferation Of Nuclear Weapons (NPT)*. Accessed April 15, 2014.  
Available from  
<http://www.un.org/disarmament/WMD/Nuclear/NPT.shtml>.



## 국문초록

1945년 히로시마 원폭으로 핵시대가 시작되었으며, 오늘날 과학 기술의 발전으로 핵무기 확산에 대한 우려가 증대되고 있다. 따라서, 핵확산이 세계에 어떠한 결과를 가져올 것인가에 대한 의문은 필연적이다. 이에 대해 국제 사회는 (핵확산에 대한 부정적 영향을 우려하여) 핵확산 반대라는 합의를 이루어 냈다. 그러나 핵확산의 영향에 관해 아직도 학자들은 끊임없이 논쟁을 벌이고 있으며, 논쟁은 핵무기가 과연 국제정치에서 안정 인자인가에 대한 것으로 재편되었다. 최근 핵무기 보유 국가의 수가 증가함에 따라, 학자들 및 정책분석가들은 국가 관계에 있어 핵무기가 미치는 영향에 대해 본격적으로 연구하고 있다.

핵확산 "낙관론"와 "비관론"으로 구분되는 기존 두 학파는 핵확산이 가져올 결과에 대해 서로 상반된 주장을 한다. 핵확산 낙관론자들은 핵무기 확산은 우려할 게 아니라고 말한다. 오히려 실제로는 지역 갈등을 완화하고 저지하는 역할을 해왔을 수도 있다고 주장한다. 반면, 비관론자들은 이러한 주장에 반대하고 핵무기 확산은 핵무기 사용 가능성을 높인다고 주장한다. 두 학파 모두 역사적 근거를 들어 자신의

입장을 뒷받침하려고 한다. 하지만, 역사적 사례가 매우 드물고, 있다고 하더라도 항상 결정적인 근거가 되는 것은 아니다. 이러한 가운데, 인도와 파키스탄이 1998 년 공공연한 핵무기 보유국이 되면서 논쟁은 한층 더 심화되었다. 과연 핵무기가 지역 내 안정화 역할을 할 것인가? 아니면 지역 질서 안정을 파괴하는 역할을 할 것인가?

본 연구는 핵시대 이전과 이후의 인도-파키스탄 관계를 분석함으로써 핵 억지력의 효과성을 평가하고자 한다. 단, 본 연구의 결과는 인도-파키스탄 사례에만 제한적으로 적용되며 다른 핵무기 보유국간 관계를 논의하는데 일반적으로 적용되어서는 안 된다는 점을 유념해야 한다.

**주요어:** 핵 확산, 인도, 파키스탄, 핵 억지력, 국가간의 관계

**학번:** 2011-24195