

India and Pakistan's Nuclear Relationship
Establishing a Stable Nuclear Deterrent and Prospects for Peace

by

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Abstract

This thesis explores the adversarial relationship between India and Pakistan which is rooted in historical animosities that resulted from the end of the British Raj in 1946. This relationship is further exacerbated by the fact that both countries have conducted nuclear tests. An examination of the development of India and Pakistan's nuclear weapons program, specifically their nuclear doctrines and nuclear capabilities, is provided to determine the nature of their technical nuclear posture. A policy of *sufficient deterrence* is explained and adopted to keep the level of nuclear arsenals at a number adequate to deter successfully an adversary from initiating a nuclear attack, to reduce the potential for an arms race. A comparable nuclear capability is revealed, even though strategic asymmetry creates a larger Indian nuclear force. Finally, confidence-building measures taken by India and Pakistan in the direction of a more prospective peaceful nuclear relationship are highlighted.

Dedication

I dedicate this thesis to my grandfather Haider Rana, whose stories about a time when people lived harmoniously before the split up of British Raj, remains fresh in my mind. This thesis is for all of the people who believe that in spite of the enduring rivalry between India and Pakistan, a more peaceful and prosperous future is possible.

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Introduction

In a world of anarchy, realists argue that the pursuit of power and national interest are the major forces driving world politics; respect for law would be achieved only if it was backed by the threat of force. Further, the desire for nuclear weapons capabilities grows out of a desire by countries to gain strategic military advantage, power, prestige, advancement of scientific knowledge and technical capabilities. The long history of world politics demonstrates a struggle for power between states with competing interests which offers some insight into the relationship between India and Pakistan. Since the 1947 partition of British India into the modern states of India and Pakistan, there has been mutual animosity between the two countries over disputed territory. Partition split apart the British Raj, which further exacerbated social tensions and territorial disputes. In addition, the conflict over Kashmir ensured a continuing adversarial relationship that has given both countries a reason for developing a nuclear weapons program in an attempt to gain an advantage over, or restore balance with the other. Arguably, since the May 1998 nuclear tests conducted by India and Pakistan, their relationship has been considered one which may lead to a “nuclear confrontation in South Asia”.¹

The first chapter seeks to examine the origins of India and Pakistan’s nuclear weapons programs and the basis for developing such programs. In addition, Chapter One establishes the forces that drive the relations between India and Pakistan, determines whether any unique characteristics about their nuclear relationship exist, and whether there are any similarities in their attitudes towards one another. In Chapter Two, India

¹ Albright, David and Tom Zamora. “India, Pakistan’s Nuclear Weapons: All the Pieces in Place”. Bulletin of the Atomic Scientists. June (1989): 20.

and Pakistan's nuclear doctrines are examined, particularly paying close attention to their declaratory nuclear policy in addition to their actual nuclear posture. A section is devoted to an examination of the adequacy of each respective countries command and control structures, which is essential to prevent accidental or unauthorised nuclear use. Following this, a comparative analysis between India and Pakistan's technical nuclear posture is provided. The Third Chapter utilizes the notion of "minimum deterrence" as emphasized by the Governments of India and Pakistan, as a basis for their nuclear policy of mutual restraint. Due to the ambiguous nature of "minimum deterrence", this chapter highlights elements that make this concept ambiguous and offers an alternative methodology referred to herein as *sufficient deterrence*, to guide and formulate a more desirable Indo-Pakistani nuclear relationship.

The final chapter illustrates that even though India and Pakistan are considered 'adversaries', based on the actions of successive governments, prospects for further collaboration exist. In effect, through a demonstration for mutual restraint and common aversion, their nuclear relationship can become more manageable. The final chapter also reveals the failure of multilateral arms control regimes such as the Non-Proliferation Treaty, the Comprehensive Test Ban Treaty and Fissile Material Cut-off Treaty to suggest regional cooperation is a more attractive solution for a strategic arms control regime by India and Pakistan. In addition, this chapter highlights crucial steps necessary to push forward confidence-building measures that might be respected by both countries. Hence, this thesis demonstrates that despite levels of animosity and conflict between the successive governments of India and Pakistan, and major setbacks of arms control treaties, elements of cooperation exist between them.

Chapter One: India and Pakistan's Nuclear Weapons Program

Origins of India's Nuclear Weapons Program

India's desire for nuclear weapons began three years before independence in March 1944 when Cambridge educated nuclear physicist Dr. Homi Jehangir Bhabha submitted his proposal to the Sir Dorab Tata Trust for funding of a nuclear research institute.² However, it was not until 1946 that Bhabha along with Jawaharlal Nehru, who later would become India's first Prime Minister (PM), started to develop plans for a self-sustaining nuclear research program in India.³ Nehru was interested in developing nuclear weapon capabilities dating as far back as June 26, 1946, when he stated that:

As long as the world is constituted as it is, every country will have to devise and use the latest scientific devices for its protection. I have no doubt that India will develop her scientific researches and I hope Indian scientists will use the atomic force for constructive purposes. But if India is threatened she will inevitably try to defend herself by all means at her disposal. I hope India in common with other countries will prevent the use of atomic bombs.⁴

A few years later Nehru is reported to have written a note to Bhabha to the effect that:

“Apart from building power stations and developing electricity there is always a built-in advantage of defence use if the need should arise”.⁵ After independence, Nehru went to great lengths to proclaim to domestic and international audiences his distaste for nuclear weapons, and instead spoke of peaceful benefits such as economic development which could be gained from the application of nuclear research.

² On December 19, 1945 the Tata Institute of Fundamental Research (TIFR) was created with Bhabha acting as the Director. India. Department of Atomic Energy. Bhabha Atomic Research Centre. Retrieved from <http://www.barc.ernet.in/about/>

³ Bhatia, Shyam. India's Nuclear Bomb. Sahibabad: Vikas Publishing House PVT Ltd, 1979, p. 72.

⁴ Cited in Norman, Dorothy. Nehru: The First 60 Years. Ed. Vol. 2. New York: John Day, 1965, p. 264.

⁵ Kapur, Ashok. India's Nuclear Option: Atomic Diplomacy and Decision Making. New York: Prager Publishers, 1976, p. 193-4. Kapur did not cite his source for Nehru's marginal note.

An examination of Nehru's defence policy objectives is essential to better understand the basis for India's nuclear weapons program. Nehru sought a larger role for India in international affairs and wanted recognition as a potential great power, but he was not prepared to pursue this objective at the expense of abandoning plans for the country's economic advancement. He relied on diplomatic efforts, when possible, to advance India's interest. Nevertheless, Nehru maintained a nuclear option as part of his strategy, which he saw as a safety net in the event his diplomatic efforts failed. In 1946, despite evidence of Nehru's constant support of Bhabha's work, Nehru intentionally denied the extent to which the weapons option was viable and being built into the nuclear program. Publicly admitting an interest in developing a nuclear weapons option would lead to a cut-off from foreign economic and technical assistance. By August 1948, the Indian Atomic Energy Commission (IAEC) was created under the Indian Department of Atomic Energy (DAE) under direct charge of the Prime Minister.⁶ From 1952 onwards, the Government of India's policy towards nuclear technology was framed in a way that suggested nuclear development would be utilized for peaceful purposes. It is interesting to note the extent to which India's plan for a nuclear weapons program was dependent on external support. India's completion of a "peaceful nuclear explosive" would have been nearly impossible without the help from Britain, the United States, Canada, France and Sweden.

In 1954, Canada donated the *Cirus* (Canada India Research U.S.) research reactor in Trombay, India at the Bhabha Atomic Research Center (BARC) using heavy water supplied from the U.S. Although Canada and the U.S. stipulated that the *Cirus* be used

⁶ India. Department of Atomic Energy. "Our Collective Vision." Document No. 11. August 2004. Retrieved from <http://www.dae.gov.in/publ/doc11/index.htm>

only for peaceful purposes as part of the Colombo Plan,⁷ and hence, India used some of the plutonium stockpile from the reactor to conduct its nuclear test in 1974.⁸ In 1955, Britain provided India with enriched uranium fuel rods, engineering drawings, and other technical expertise for the research reactor.⁹ In the same year, the U.S. Atomic Energy Commission sold heavy water to India for the reactor in Trombay which was under construction at the time. In 1956, Canada, the world's leading exporter of uranium¹⁰ agreed to supply India with half of the initial uranium fuel required for the *Cirus* research reactor along with more heavy water from the U.S. for this reactor¹¹ which became operational in July 1960. In addition, Canada also helped with the heavy-water plant, nuclear fuel complex, and the construction of two nuclear power plants of *Candu* - type in Rajasthan during the 1960s. The U.S.-India agreement provided thirty years of the continual supply of low-enriched uranium fuel for the Tarapur atomic power reactors while also providing training programs, loans, and research grants for Indian scientists.¹² It is obvious that without American and Canadian nuclear assistance, India would not have been skilled and prepared to the extent necessary to conduct the nuclear test in 1974.

The nuclear expertise required for India's "peaceful nuclear explosion" would also not have been possible without the additional support from Sweden, Belgium,

⁷ The Colombo Plan for Cooperative Economic and Social Development in Asia and the Pacific was established in 1951 to promote technical cooperation and assist in sharing of technology among member countries.

⁸ Martin, David. Exporting Disaster: The Cost of Selling CANDU Reactors. Ottawa, Ontario: Campaign for Nuclear Phaseout, November 1996. Retrieved from http://www.ccnr.org/exports_1.html#3.2

⁹ Abraham, Itty. The Making of the Indian Bomb. London: Zed Books, 1998, p. 84-5.

¹⁰ World Nuclear Association. Uranium in Canada. Feb 2010. Retrieved from <http://www.world-nuclear.org/info/inf49.html>

¹¹ Chellaney, Brahma. Nuclear Proliferation: The US-India Conflict. New Delhi: Orient Longman, 1993, p. 6.

¹² Weissman, Steve and Herbert Krosney. The Islamic Bomb: The Nuclear Threat to Israel and the Middle East. New York: Time Books, 1981, p. 130-131. See, Stackhouse, John. "How the Nuclear Ban Bent for India." The Globe and Mail. 15 Jun. 1998. Retrieved from <http://www.nuclearfaq.ca/prasad.htm>

France, Spain and the Soviet Union. In September 1961, India and Sweden concluded a five year agreement for collaboration in developing nuclear energy for peaceful purposes. Under this agreement, Sweden facilitated the purchase of nuclear materials and equipment by India.¹³ France provided India with expertise on the extraction of plutonium from spent nuclear fuel¹⁴ and in addition, Belgium and Spain provided India with uranium concentrate without safeguards.¹⁵ On October 6, 1961, the Soviet Union agreed to cooperate on peaceful uses of atomic energy with India,¹⁶ supplying India with 45 tons of heavy water, some laboratory equipment and a large computer.¹⁷ On September 21, 1962 the Indian government enacted the Atomic Energy Act which mandated central governmental control over atomic energy while also enhancing its secrecy over its nuclear weapons program.¹⁸ In part, this may have contributed to India's policy of nuclear ambiguity until its first nuclear test in 1974. The U.S. agreed to supply India with two reactors in an agreement concerning the Civil Uses of Atomic Energy on August 8, 1963 in exchange for the International Atomic Energy Agency (IAEA) verification that fuel at this facility was not being diverted for non-peaceful use,¹⁹ but this

¹³ Office of Scientific Intelligence. Central Intelligence Agency. "Swedish Assistance to the Indian Nuclear Power Program". Scientific Intelligence Digest. May 1964: 4. Retrieved from <http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB187/IN04.pdf>

¹⁴ Weissman and Krosney, p. 131.

¹⁵ Office of Scientific Intelligence. Central Intelligence Agency. "Indian Nuclear Energy Program". 6 Nov. 1964: 7. Retrieved from <http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB187/IN06.pdf>

¹⁶ Appadorai, A. & M. S. Rajain. India's Foreign Policy and Relations. New Delhi: South Asian Publishers Private, 1985, p. 273.

¹⁷ Department of State. "Assessment of Indian Nuclear Test". 5 Jun. 1974: 2. Retrieved from <http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB187/IN20.pdf>

¹⁸ Pathak, K. K. Nuclear Policy of India. New Delhi: Gitanjali Prakashan Publishers, 1980, p. 80.

¹⁹ Embassy of India. India-U.S. Relations. Government of India and the Government of the United States of America on the Civil Uses of Atomic Energy. Washington. 8 Aug. 1963. Retrieved from http://www.indianembassy.org/indusrel/India_US_treaties/civil_atomic_energy_august_1963.htm

may not have been the case. Additionally, in an agreement with the IAEA in December 1966, the U.S. supplied a small amount of plutonium to India for research purposes.²⁰

Following Nehru's death in May 1964, Prime Minister Lal Bhadrur Shastri continued the plans to develop further a nuclear option. Shastri's declaratory posture was against developing a nuclear weapons option, but he introduced a proposal for developing "peaceful nuclear explosives". Further, Shastri stressed in January 1965 that nuclear weapons remained a possibility in the future.²¹ After the death of Shastri and Bhabha in January 1966, Prime Minister Indira Gandhi extended the commitment to "peaceful nuclear explosives". In short, the foreign assistance provided by Canada, the U.S., France and other countries contributed to the successful completion of India's plans for a fully rounded program of civilian nuclear power and research. The expansion of the national nuclear facility along with technical expertise acquired from other countries enabled Indian scientists to develop the skills necessary to run a nuclear power plant and to eventually develop a nuclear weapons option.

Regional Tensions

Due to regional instability during the 1960s, India shifted away from a declaratory aversion to nuclear weapons. Security concerns respecting China and Pakistan is to some extent part of the reason why India developed a nuclear weapons program. India's geographic proximity which places it in between both China and Pakistan creates an atmosphere of uncertainty for India. India's defeat by China in the 1962 border conflict and China's nuclear tests two years later further exacerbated tensions between the two

²⁰ Perkovich, George. India's Nuclear Bomb: The Impact on Global Proliferation. Berkeley: University of California Press, 1999, p. 131

²¹ Bhatia, p.152.

countries. In effect, India became more eager to develop nuclear explosives because arguably China posed a threat to its security.

In spring 1965, India and Pakistan fought over disputed Kashmiri territory for a second time since partition. Pakistan's Operation Gibraltar in August infiltrated Pakistani military into Jammu and Kashmir to force an international resolution over the disputed territory, and to persuade local Kashmiri people to rise up against an unfavourable Indian rule. Following an Indian victory, the United Nations called for a cease-fire and the Soviet Union offered a peace agreement under the Tashkent Declaration. Even though India gained another victory over Pakistan over its support of East Pakistani rebels to split into an independent nation of Bangladesh in 1971, the fact that India was engaged in conflict with both of its neighbours contributed to its domestic insecurity. Moreover, the American deployment of *USS Enterprise* in the Bay of Bengal, to show solidarity with its ally Pakistan²² may have also contributed to India's sense of insecurity. This strengthened the desire of Indian nationalists to develop a nuclear weapons program. India's earlier desire for nuclear energy for "peaceful purposes" was a deliberate attempt by the Indian government to pursue a policy of nuclear ambiguity.

Preparations for conducting a nuclear test began as early as 1964 and the sovereign right to decide when to conduct a nuclear test resided with Indira Gandhi. On September 7, 1972 Indira Gandhi's authorized Indian scientists to prepare for a nuclear test codenamed the *Smiling Buddha* which took place on May 18, 1974 in the desert village of Lokhari, Rajasthan. It seems that there are no public records of why Indira

²² A task force led by India's *INS Vikrant* and a trailing Soviet Navy countered the U.S. task force; and the confrontation was eventually averted when the U.S. task force moved away from the Indian Ocean.

Gandhi decided to conduct the nuclear test when she did in 1974 which leaves much room for speculation. It can be argued that a culmination of factors contributed to the final decision to conduct the 1974 nuclear test which includes: the fact the India was defeated by China in 1962, followed by China's nuclear tests in 1964; an unfavourable domestic political climate (problems between the central government and state opposition groups) where the Congress party was divided between socialists and conservatives; Gandhi's paranoia led by feelings of internal conspiracies to create a political revolution; and, a desire to demonstrate its ability to develop a nuclear capability that had been limited to the West.

According to Perkovich, following the 1974 tests, India was in a position to develop nuclear weapons if the security environment required it and arguments for the bomb from the Indian public and elites entailed a belief that the nuclear explosion would enhance India's regional power and international status. Atomic scientists in India felt that the Pokhran tests were the beginning of a full-fledged nuclear weapons program.²³ The significance of India's first nuclear test was that it demonstrated how a country with limited resources could adapt its civilian nuclear program for military needs. The Indian Government had many reasons to justify its nuclear test, such as domestic pressure, security problems emanating from China and an unsatisfactory discriminatory Non-Proliferation Treaty. Further, since Indian scientists used foreign assistance for its nuclear explosion, it demonstrated how loose the safeguards were, and highlighted how easily nuclear weapons could be acquired.

²³ Perkovich, p. 175-188.

As a result of India's 1974 nuclear explosion, the U.S. imposed restrictions limiting India's access to nuclear material and technology through the Symington Amendment in 1976.²⁴ Canada, angered by the fact that India used the Canadian reactor to produce plutonium for the explosion, ended its support of the Indian nuclear program. Following strong international opposition to India's nuclear tests, the nuclear program was put on hold until the return of Indira Gandhi to power in 1980. With a strong push towards producing a bomb by the Hindu-nationalist Bharatiya Janata Party (BJP), India was soon on its way to acquiring a nuclear weapons capability. On May 6, 1982 at a private meeting between Prime Minister Indira Gandhi and Chief of Army Staff General Krishna Rao the potential regional threat from China and Pakistan was discussed to strengthen their case for a nuclear deterrent.²⁵

Following Indira Gandhi's assassination on October 31, 1984, her son Rajiv Gandhi became her successor in which he quietly advanced India's technological capacity to build and deliver nuclear weapons, without pressing for more nuclear tests. Although Rajiv did not concentrate much on nuclear or foreign policy in 1989, this did not keep India or Pakistan from gaining strength in their nuclear and missile programs.²⁶ Following the 1989 Indian elections on November 22 and 24, a new government under Prime Minister Vishwanath Pratap Singh was formed. Singh offered to engage in dialogue with Pakistan over nuclear policy and when he entered office in December, his main concern was over the media's exposure of Pakistan's capability to detonate a

²⁴ Corera, Gordon. Shopping for Bombs: Nuclear Proliferation, Global Insecurity, and the Rise and Fall of the Abdul Qadeer Khan Network. New York: Oxford University Press, 2006, p. 29.

²⁵ Chengappa, Raj. "Arsenal for the Gods". Weapons of Peace: The Secret Story of India's Quest to be a Nuclear Power. 1st Edition. New Delhi: Harper Collins Publishers India P.v.t. Ltd, May 2000, p. 253-255.

²⁶ Pakistan conducted its first ballistic missile test on February 11, 1989 called Hatf, coming a year after India's first launch of the Prithvi missile; to demonstrate Pakistan's determination not to be left behind in strategic military competition with India (Perkovich, p. 300).

nuclear device in the Sindh desert to deter India in reaction to the uprisings in Punjab and Kashmir that were occurring at the time. According to Perkovich, even though Singh did not believe that Pakistan would actually use nuclear weapons against India, he set a meeting with his top advisers and nuclear scientists to establish India's options in the event that Pakistan detonated a nuclear explosive. The options revealed that in the event Pakistan used nuclear weapons against India, India was capable of retaliating with a nuclear response. Initially, due to India's economic and regional problems, a fear of sanctions and because Singh felt that Pakistan had not fully acquire the bomb, he decided not to take pre-emptive steps against Pakistan. However, after further analysis of India's nuclear relationship with Pakistan, Singh took back his initial willingness for nuclear dialogue and adopted a stance in February 1990 that India's peaceful nuclear policy would be reviewed in the event Pakistan produced nuclear weapons.²⁷

Successive weak governments in India caused a change of four prime ministers between November 1989 and June 1991, and the government's preoccupation with domestic affairs ruled out a significant shift in its nuclear policy. In 1991, India's political and economic situation stunted its nuclear policy considerations. But by the following year, nuclear policy re-emerged while India began to adopt a vision for the enhancement of its country's development through economic reforms. The government led by Narasimha Rao (1991-1996) exhibited great interest in exerting Indian influence by building and deploying nuclear weapons;²⁸ while also pursuing diplomacy with Pakistan's Nawaz Sharif. In December 1995, U.S. intelligence discovered India's

²⁷ Perkovich, p. 304-6.

²⁸ Subrahmanyam, K. "Commentary: Narasimha Rao and the Bomb". *Strategic Analysis*. The Institute for Defence Studies and Analyses. Vol. 28, No. 4, October-December 2004: 593-5. Retrieved from http://www.idsa.in/system/files/strategicanalysis_ksub_1204.pdf

preparation for nuclear weapons tests and by April 1996, scientists had placed a nuclear device in a test shaft at Pokhran.²⁹

The government of Inder Kumar Gujral was formed on April 21, 1997, following the withdrawal of support of Deve Gowda's Congress party. Congress party's Gujral continued active diplomacy with Pakistan's Prime Minister Nawaz Sharif and on May 12, 1997, relations improved after agreeing for open dialogue at a meeting held at the South Asian Association for Regional Cooperation summit in Male. Both countries sought to improve relations through closer trade links and maintain dialogue on a number of contentious issues, such as Kashmir.³⁰ Due to the Jain Commission inquiry on conspiracy about Rajiv Gandhi's assassination, the Congress Party withdrew its support of Gujral on November 28, 1997 which led to mid-term elections from February 16 through March 7, 1998.

The BJP's foreign policy platform sought to exercise the nuclear option in direct defiance of international pressure. Contrary to previous diplomatic efforts by India and Pakistan, the dialogue came to a halt after the BJP gained an electoral victory for the second time under Atal Behari Vajpayee on March 19, 1998. Vajpayee threatened to opt for an overt nuclear weapons policy and expressed unwillingness to compromise on Kashmir. On April 10, 1998 Vajpayee formed a three-person task force along with input from government and non-government officials, strategic analysts and economic experts to prepare recommendations for the constitution of a National Security Council (NSC). The NSC undertook the first strategic defence review (SDR) analyzing military, political

²⁹ Perkovich, p. 350-3.

³⁰ Ahmed, Samina. "Pakistan's Nuclear Weapons: Turning Points and Nuclear Choices". International Security. MIT Press. Vol. 23, No. 4 (Spring 1999): 191-2. Retrieved from <http://www.jstor.org/stable/2539298>

and economic threats to India which led to a well prepared nuclear policy. The NSC sought to determine whether the military should be given a greater role in policy-making, deciding to keep an open mind about a greater military role.³¹

Prime Minister's Indira Gandhi, Rajiv Gandhi, Vishwanath Singh, Narasimha Rao, along with the BJP's Atal Behari Vajpayee (May 16, 1996-June 1, 1996) and BJP's Deve Gowda (1996-1997) saw India as a great power, obtaining nuclear weapons to provide more leverage and strength against its adversary, Pakistan. In short, from the 1960s, India led a declaratory self-restrained nuclear policy which came under much pressure during the mid-1990s and proceeded to change India's nuclear direction into the late 20th Century. There has been consistent continuity under Congress governments and the nationalist BJP regarding India's nuclear policy. Even though India's declaratory policy was towards global nuclear disarmament, in reality, India's quest for international respect due to its quest for economic prosperity, a nuclear weapons program, and its suspicion of Pakistan's covert nuclear program led to the eventual decision to conduct a total of five nuclear tests on May 11 and 13, 1998 in the Rajasthan desert.

Vajpayee's decision to test was based on the desire for India to be recognized regionally as well as internationally as a rising power because arguably, the BJP government believed that military strength and nuclear weapons equated to state power.³² The Indian nuclear scientists also wanted to prove that the designs from India's Pokhran nuclear test in 1974 were crucial to perfect devices they had designed. More importantly, India's decision to conduct nuclear tests can be attributed to the fact that it felt nuclear

³¹ Perkovich, p. 405-11.

³² Chari, P. R. "India's Nuclear Doctrine: Confused Ambitions". The NonProliferation Review 7 (Fall/Winter 2000): 123.

weapons would provide the country with security from its regional adversaries, China and Pakistan. Vajpayee commented in *India Today* about India's possession of "a big bomb" which would only be used for self-defence. The five nuclear tests conducted were ostensibly impelled by security considerations. In a letter to American President Bill Clinton after the tests, Vajpayee stated,

We have an overt nuclear weapon state on our borders, a state which committed armed aggression against India in 1962.... [T]hat country has materially helped another neighbor of ours to become a covert nuclear weapons state. At the hands of this bitter neighbor we have suffered three aggressions in the last 50 years. And for the last 10 years we have been the victim of unremitting terrorism and militancy sponsored by it in several parts of our country....³³

India's quest for a nuclear weapons program had several major objectives: to gain recognition as a major power or nuclear weapon state; to catch up to China in terms of status and strategic deterrence; to reassert technological and strategic military superiority over Pakistan; to strengthen its national defence while maintaining civilian control over nuclear policy, and, to maintain moral standing as an advocate of nuclear disarmament.

Origins of Pakistan's Nuclear Weapons Program

Pakistan's commitment to the development and use of nuclear energy for peaceful purposes started in 1955 when Pakistan set up an Atomic Energy Commission which later was upgraded to the Pakistan Atomic Energy Commission in 1956.³⁴ Since the late 1950s, when Zulfikar Ali Bhutto served military ruler Field Marshall Ayub Khan as Minister for Fuel and Natural Resources, he had envisioned a nuclear capability for Pakistan striving towards developing a reprocessing plant for Pakistan. Due to the fact that China conducted nuclear tests in April 1964, followed by the development of India's

³³ Cited in Chari, p. 123 (Original source unfound).

³⁴ Kaushik, Brij Mohan and O. N. Mehrotra. Pakistan's Nuclear Bomb. New Delhi: Sopan Publishing House, 1980, p. 52.

own “peaceful nuclear device” under the Shastri government in June 1964, Bhutto hardened his position in favour of the bomb. Bhutto openly sought to develop a nuclear deterrent for fear that India would use its nuclear technology to blackmail Pakistan.³⁵

According to Weissman and Krosney, although the U.S. government under the Kennedy and Johnson administrations provided “security guarantees” to Pakistan’s Ayub Khan (1958-69), Bhutto felt that the U.S. would not keep its promise, since he saw the Johnson administration’s failure to protect Pakistan during the war with India in 1965. In 1967, Bhutto argued that a defence against India was needed, and also, believed that the desire for the bomb would allow Pakistan “to walk tall” in the international arena.³⁶ In his book, *The Myth of Independence*, written in 1969, he pointed out:

All wars of our age have become total wars... and it will have to be assumed that a war waged against Pakistan is capable of becoming a total war. It would be dangerous to plan for less and our plans should, therefore, include the nuclear deterrent. Difficult though this is to employ, it is vital for Pakistan to give the greatest possible attention to nuclear technology, rather than allow herself to be deceived by an international treaty limiting this deterrent to the present nuclear powers. India is unlikely to concede nuclear monopoly to others.... It appears that she is determined to proceed with her plans to detonate a nuclear bomb. If Pakistan restricts or suspends her nuclear programme, it would not only enable India to blackmail Pakistan with her nuclear advantage, but would impose a crippling limitation on the development of Pakistan’s science and the technology.... Our problem, in its essence, is how to obtain such a weapon in time before the crisis begins.³⁷

Moreover, it was not until Zulfikar Ali Bhutto came to power in mid- December 1971, that a concerted effort was made towards developing a nuclear weapons program following the loss of East Pakistan. Due to political dissent and overall ill-treatment of East Pakistanis following the 1971 elections in Pakistan, a civil war was ignited. A military conflict eventually ensued in the beginning of December due to Indian efforts to

³⁵ Weissman and Krosney, p. 48-9.

³⁶ Ibid.

³⁷ Bhutto, Zulfikar Ali. *The Myth of Independence*. USA: Oxford University Press, 1969, p. 117-8. Retrieved from <http://www.scribd.com/doc/2430601/Myth-of-Independence>

meddle in Pakistani affairs. While India provided financial support to assist the Mukti Bahini Bengali Liberation Movement, Pakistan felt that such efforts were part of a larger goal to weaken or dismember the country. Pakistan suffered a great loss when East Pakistan seceded into an independent nation, Bangladesh, and as a result, an environment of distrust ignited years of endless animosity between two adversaries.

According to many Pakistanis, Bhutto's ambition for the Islamic world's first atomic bomb was driven by a desire to bring back hope to a disheartened country after its defeat in the 1971 war. Following the war in 1971, Bhutto mobilized a group of scientists and military officials for a secret meeting which was held on January 20, 1972 in Multan and embarked upon the lengthy planning for a nuclear program. Bhutto was motivated by a desire for Pakistan to deal with India's conventional military advantage and demonstrate a capability to build its own bomb, while sharing with India a belief that the Western world should not be the only ones allowed to possess nuclear weapons. Although China supplied Pakistan with arms during the 1971 war with India over Bangladesh, the extent of Chinese aid was limited and hence, made it all the more obvious that Pakistan needed its own nuclear weapons program.³⁸ In short, the U.S. and China's unwillingness to provide adequate security guarantees during a time of crisis, made it all the more evident as to why Bhutto felt that Pakistan needed its own nuclear weapons program. Further, Bhutto thought nuclear weapons were essential even before India's "peaceful nuclear explosion" in 1974, and disguised its intentions by using the threat from India as the immediate excuse.

³⁸ Weissman and Krosney, p. 50-51.

In the early 1970s, the U.S. enforced sanctions to hinder Pakistan from satisfying its nuclear ambitions, even though India was preparing to conduct its first nuclear test. Often “security guarantees” were provided to convince Pakistan that it did not need to acquire a nuclear capability for an increased sense of security. However, as illustrated above, such efforts did not guarantee Pakistan that it could overcome India’s conventional military advantage without possessing the bomb. More importantly, India’s “peaceful nuclear explosion” in 1974 left a lasting psychological impact on Pakistan. At this time, Pakistani scientists started to lay the groundwork for the development of a covert military nuclear program that sought to obtain a plutonium reprocessing plant from France.

Following the secret Multan meeting in 1972, Bhutto met Libyan leader Colonel Gaddafi, who provided Pakistan military assistance during the 1971 war, seeking financial support for its nuclear program. In 1973, the technical and financial nature of their ongoing nuclear cooperation took place and was finalized into an agreement at the Organization for Islamic Conference (OIC) meeting in Lahore in February 1974. Bhutto continued his quest for financial support from Saudi Arabia, other Gulf States, and the Shah of Iran, gaining an influx of financial backing in 1973 and 1974. In total, several billion dollars were collected for Pakistan’s nuclear program.³⁹

From the early 1970s, Pakistan sought nuclear assistance from China in exchange for Abdul Qadeer Khan’s expertise in uranium enrichment for China’s relatively weak program. In return, China provided Pakistan with the blueprints to build a nuclear weapon and uranium necessary for producing weapons-grade material. Additionally, it

³⁹ Weissman and Krosney, p. 59-65.

was in China's interest to provide Pakistan with technical assistance to keep its rival India in check by providing a counterbalance which led to the 1976 China-Pakistani nuclear cooperation agreement entailing crucial economic and technical support to help build a nuclear bomb.⁴⁰

With financial support, highly skilled scientists and engineers, all that Pakistan needed for the completion of its nuclear weapons program were the major components of nuclear technology and materials from the West. With help from several nuclear exporters in western countries, Pakistan set out to produce the needed nuclear explosives through two separate, highly sophisticated industrial processes: the first method extracted plutonium from used reactor fuel using chemical reprocessing technology bought principally from France and Belgium; and the second method tried to produce highly enriched uranium, the plans of such were taken from URENCO plant in Holland by the expatriate metallurgist, Abdul Qadeer Khan. On March 1973, a French company signed a contract with Pakistan to provide a reprocessing plant. In addition, France and Pakistan's nuclear cooperation entailed technical assistance, training and scientific exchanges. The French provided a reprocessing plant for plutonium extraction through an engineering firm called Saint-Gobain Techniques Nouvelles (SGN) and SGN's Belgium counterpart, Belgonucleaire designed the overall building. Canada also provided Karachi with a natural uranium reactor, the Candu.⁴¹

⁴⁰ Burr, William. China, Pakistan, and the Bomb. The Declassified File on U.S. Policy, 1977-1997. National Security Archive Electronic Briefing Book No. 114. 5 Mar. 2004. Retrieved from <http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB114/index.htm>. See, 'Reagan administration asserts that Pakistan received unspecified design assistance from China' in Albright and Zamora, "India, Pakistan's Nuclear Weapons: All the Pieces in Place". Bulletin of the Atomic Scientists. Jun. 1989, p. 21.

⁴¹ Weissman and Krosney, p. 66-81.

This account is based on Gordon Corera's examination of Abdul Qadeer Khan's influence on Pakistan's nuclear weapons program which began in autumn 1974. Through employment with the Physical Dynamics Research Laboratory (FDO) in the Netherlands, Khan learned how centrifuges work, how to put them together and who the suppliers were. Khan was motivated by a wounded sense of national pride due to the loss of East Pakistan and volunteered to help Pakistan in a letter dated September 17, 1974 to Prime Minister Zulfikar Ali Bhutto. Khan suggested that Pakistan take the enrichment route to developing fissile nuclear material for a bomb because he had the expertise to accomplish it.⁴²

By 1975, Khan gained sufficient information from his employment with European firms to build a nuclear weapons program in response to India's "peaceful nuclear explosion". By 1976, Khan convinced Bhutto that the nuclear program was moving too slowly and a concerted effort towards building the bomb was necessary. However, the realization that a country like India could arrive at nuclear weapons technology using the nuclear power technology supplied by the developed world caused alarm among the nuclear weapons states, who applied restrictions on the export of nuclear equipment. The U.S. administration convinced France to halt its contract for building a reprocessing plant due to Pakistan's misuse of technology in 1978 which caused a major blow to Pakistan's nuclear efforts. This only available option left for Pakistan's desire for a nuclear weapons program was a reliance on Khan's nuclear expertise for developing a uranium enrichment plant. Khan used middlemen to make purchases directly from European suppliers whose work ethic entailed commercial greed and lacked an interest as to where

⁴² Corera, p. 5-9.

these supplies were ending up. In 1976 Khan placed orders in Switzerland, to Dutch firms, suppliers in Germany, France, Italy, Britain, and Niger. While Switzerland provided Pakistan with specialized centrifuge equipment, Germany supplied nuclear equipment. Niger provided Pakistan with raw uranium that could be converted and pumped into centrifuges for enrichment.⁴³

Although Bhutto was the initial driver of the nuclear weapons program, he was unable to see it through completion due to the 1977 coup which put General Zia ul-Haq in power. While General Haq continued the nuclear course, he turned over command of the program to the military. General Haq's perceptions of reality were shaped by the Kashmiri dispute with India, and arguably, his leadership realized the value of nuclear weapons both as a deterrent and as a tool of diplomatic bargaining.⁴⁴ In 1978, the Pakistan Atomic Energy Commission came up with its first implosion design of a nuclear device. Even though the Nuclear Suppliers Group also known as "the London Club"⁴⁵ are struggling to keep nuclear proliferators under control, by April 1979, CIA analysts realized that Khan had everything needed for its clandestine enrichment program. The fact that the U.S. was engaged in Afghanistan during 1979 to rid the Soviet influence may have played into the fact that the U.S. turned a blind eye to Pakistan's nuclear efforts. At this point, it was too late for European companies to do anything since Pakistan had enough technology to fulfil its nuclear program requirements alone.

⁴³ Corera, p. 14-24.

⁴⁴ Ahmed, p. 189-190.

⁴⁵ "The London Club" is the name that was given to participants of a series of secret top-level meetings which took place in Britain between nuclear exporting countries from the late 1975 onwards. In 1978, the guidelines illustrated that the London Club were much less stringent than Article III of the NPT because the London Club did not stipulate full scope safeguards. Arguably, members of the London Club offered more generous terms to non-treaty countries to market their nuclear industries. See, Patterson, Walt. "Britain's Part in a Nuclear Falling Out" in the Guardian. 20 Dec. 1984. Retrieved from <http://waltpatterson.net/gdnukvnpt.pdf>

During the 1980s, Pakistan adopted a policy of nuclear ambiguity which neither renounced nor declared a willingness to acquire nuclear weapons as did India prior to its 1974 nuclear tests. In 1985, the U.S. Congress passed the Solarz Amendment which required that aid be cut off to any country found trying to import sensitive items from the U.S. for a nuclear weapons program.⁴⁶ However, once Pakistan gained indigenous capability to drive on towards its nuclear program, further attempts to restrict imports or procurement became less relevant. In August 1988, Pakistan's nuclear program was left at a crossroad and its politics changed when General Haq died, and Benazir Bhutto, the daughter of Zulfikar Bhutto was elected as the next Prime Minister in November.

By the end of the 1980s, Khan boasted that Pakistan possessed the bomb but chose not to make a formal entry into the nuclear club. In an interview, Khan said that the nuclear program is “a national project and no government ever caused any obstacle”.⁴⁷ Khan's autonomy grew over time, but with the death of General Haq, a new power structure arose in which a troika of three would oversee the entire nuclear program- the president, the Prime Minister and the Army Chief. While Khan maintained his autonomy in the progress of the nuclear program, the army held most direct control over running the program, leaving the PM in the dark.⁴⁸ Contrary to Bhutto's efforts to secure American support, she lacked any leverage to put a halt to Pakistan's nuclear program. The lack of formalized command channels made it all the more difficult to distinguish who had final oversight or authority over the nuclear program.

⁴⁶ Corera, p. 35-37.

⁴⁷ Cited in Corera, p. 50.

⁴⁸ Perkovich, p. 410-11.

By August 1990, Benazir Bhutto was ousted and Nawaz Sharif became the new Prime Minister. Following Sharif's leadership, the military continued to develop its nuclear weapons capability. Any decisions by the government in power and elected officials to halt the nuclear weapons program could not be achieved without military assent, prospects of which were unlikely. In short, the immediate reason for Zulfikar Ali Bhutto's decision to go nuclear was to bring hope back to a dispirited nation following the defeat in 1965, the loss of East Pakistan in 1971, and, Pakistan's attempt to deal with India's conventional military advantage following the 1974 "peaceful nuclear explosion". Moreover, Abdul Qadeer Khan's nuclear expertise along with foreign nuclear assistance, and the central role of the military in the formulation of Pakistan's nuclear policy to level the playing field with India, also reinforced Pakistan's desire to develop nuclear weapons.

Following India's May nuclear tests, Pakistan was prompted to detonate six nuclear devices two weeks later on May 28 and 30, 1998 in Chagai, signalling the abandonment of its policy of nuclear ambiguity and demonstrating its nuclear weapons capability. Pakistan was motivated by efforts to equalize India's conventional superiority and felt that nuclear weapons were the only viable option to prevent India from achieving a "preponderance of power".⁴⁹ In addition, Pakistan's desire for nuclear weapons was due in part to the fear that the elected BJP would fundamentally change the security narrative of the region by taking back a part of Pakistan-held Kashmir pre-emptively through nuclear blackmail or nuclear coercion.

Prime Minister Nawaz Sharif held a cautionary position with regard to a retaliatory nuclear test for fear of U.S. imposed sanctions. Even though his cabinet was

⁴⁹ Perkovich, p. 406.

divided among those in opposition and those in favour of nuclear tests, the direction of Pakistan's nuclear policy reflected the thinking of the armed forces. Since Pakistan's military had a huge influence on the country's nuclear and security policy, perceptions of the Indian threat shaped the desire to acquire adequate conventional and nuclear forces. Although domestic factors, authoritarian rule, weak representative governments, inept and divided political leadership continued to play a crucial role in perpetuating the military's control over the security policy and the nuclear weapons program, the final decision to conduct Pakistan's nuclear tests in May 1998 was in the hands of the military high command.⁵⁰ After cost-benefit analysis, Pakistani policymakers felt that the political and economic costs of conducting nuclear tests would be bearable since it could gain international recognition as a nuclear weapon state, provide a strategic balance to India's traditional conventional superiority, and the failure to act could threaten its territorial integrity by undermining its interest in Kashmir. Furthermore, Pakistani policymakers felt that if India was given nuclear stature, Pakistan deserved nothing less.

Conclusion

For both India and Pakistan, conducting nuclear tests was an attractive course of action because both felt that it would simply yield the political benefits of recognition as a nuclear weapon state and also, deter any potential aggressor from nuclear attack or nuclear blackmail. To an extent, India and Pakistan were motivated by similar factors such as strategic implications, internal political factors, foreign influence (discussed earlier), and the non-proliferation regime which will be discussed in the final chapter. A

⁵⁰ Further discussion on Pakistan's command and control structures will follow in the next chapter.

closer analysis of these factors reveals similarities and differences surrounding the motivations in which both India and Pakistan developed a nuclear weapons program.

Since independence in 1947, an imbalance of power has existed between India and Pakistan; the former is considered a strong state while the latter is weak. Arguably, to counter the asymmetry between India and Pakistan, it was essential to obtain a balance of power to ensure that the stronger country, namely India did not enforce its will upon Pakistan through the use or threat of force. If India and Pakistan are bound by a common aversion alongside a mutual recognition that the effects of nuclear destruction would be devastating, a working balance of power was inevitably created through the possession of nuclear weapons. After India's nuclear test in 1974, Pakistan, fearful of the future use of nuclear capabilities, sought a counterbalance to the potential threat of nuclear blackmail or nuclear coercion by India. Even though Nehru gave Bhutto assurance that the tests were not indicative of an aggressive foreign policy because they were conducted for "peaceful purposes", Bhutto was still concerned with Pakistan's future security. In response to Nehru's "assurance", Bhutto replied,

It is a question not only of intentions but of capabilities. It is well-established that the testing of a nuclear device is no different from the detonation of a nuclear weapon. Given this indisputable fact, how is it possible for our fears to be assuaged by mere assurances, which may in any case be ignored in subsequent years. Governments change, as do national attitudes. But the acquisition of a capability, which has direct and immediate military consequences, becomes a permanent factor to be reckoned with.⁵¹

After all, a country can never be certain of the intentions of its adversary, and by levelling the playing field with India, Pakistan felt that it would gain a sense of security. For India and Pakistan, the central reason for developing a nuclear weapons program is a realist one; to counter the capabilities of its adversaries, ensuring that neither was subject to

⁵¹ Cited in Palit, Major General D. K. and P. K. S. Namboodiri. Pakistan's Islamic Bomb. New Delhi: Vikas Publishing House PVT Ltd, 1979, p. 17 (Original source unfound).

nuclear coercion or blackmail. This idea will be discussed in greater length in the third chapter, but for purposes here, the idea that bombs were meant to act as a deterrent, highlights India and Pakistan's objective for developing a nuclear weapons program was to maintain regional security.

Through India's successive governments, it is obvious that the Indian National Congress, and, more importantly, the BJP intentionally kept the nuclear option open while pursuing the contradictory objective of seeking universal nuclear disarmament. Following India's defeat in the Sino-Indian War of 1962, the nuclear tests in 1974 and 1998, offered a dissatisfied Indian populace an image of pride, giving credibility to the Vajpayee government in dealing with regional threats. For Pakistan, the 1965 Kashmir war, the loss of East Pakistan to Bangladesh in 1971, and the 1974 nuclear test by India, greatly affected the adversarial relationship with India. Similarly, a disheartened Pakistani populace following the loss of a part of its nation, the government's efforts were aimed towards ensuring such defeat would never happen again. The internal contradictions in Pakistan's power structure continue to be primarily responsible for its nuclear choices. For instance, the military has the ability to remove the government in power, making the Pakistani Prime Minister a scapegoat for its nuclear policies or actions, while allowing its continued dominance in the nuclear decision-making process. In effect, domestic constituencies who favour nuclear restraint are weakened through coercion and the manipulation of public opinion. Hence, the long history of military rulers in Pakistan contributed to the desire for pushing a nuclear weapons program that would allow the country to "stand tall" in the region, next to nuclear armed India. India's long history of self-restraint towards Pakistani military adventurism further implies that

the risks associated with detonation of a nuclear weapon against an adversary far exceeds any benefits to be gained from nuclear first use.

Chapter Two: India and Pakistan's Nuclear Relationship

According to Neo-Realists such as Kenneth Waltz, each state's actions or choices are limited and constrained by pressures of the anarchic international system. The nature of anarchy causes states to act in accordance with the logic of self-help, seeking their own interest and survival.⁵² States can never be certain of another states' intentions, and anarchy creates a lack of trust between them also known as the security dilemma.⁵³ Keeping this in mind, helps understanding why a country may or may not adopt a certain position or policy on a particular issue. India and Pakistan both developed a position, formal and unofficial, with regard to nuclear weapons; India officially formulated its nuclear doctrine in 2003, whereas Pakistan is still in the process of articulating an official position. It is important to note that the nuclear policy of a country is guided not only by what leaders proclaim, but also on the state of nuclear developments, the availability of indigenous resources, and the economic and industrial infrastructure of a particular country.

India's Nuclear Doctrine

A look back into India's history (examined in the first chapter) reveals that India has held a position of non-discriminatory global nuclear disarmament as its national security objective, while at the same time possessing nuclear weapons and continuing efforts to enhance its nuclear capabilities. India conducted a 'peaceful nuclear explosion' in 1974 and a series of full-scale nuclear tests in 1998 while still proclaiming a policy of

⁵² Waltz, Kenneth. "More May Be Better". The Spread of Nuclear Weapons: A Debate Renewed. Sagan, Scott and Waltz, Kenneth. New York: W.W. Norton, 2003, p. 4-5.

⁵³ The security dilemma is a term coined by John H. Herz in Political Realism and Political Idealism (1951) refers to any attempt a state makes to increase its own security may cause the another state to act similarly, thereby reducing its actual security.

nuclear restraint. What seems like a contradictory position in favour of global nuclear disarmament and arms control on the one hand, raise questions about the testing of India's nuclear weapons on the other.

During the 1990s, the Indian discourse on its nuclear doctrine reflected theories by a prominent pro-deterrence voice belonging to K. Sundarji, who is said to have heavily influenced India's Draft Nuclear Doctrine (DND).⁵⁴ Indian strategic thinkers believe that four principles should guide nuclear policy: India should never use nuclear weapons first; civilians should remain in control over the military in nuclear policy and plans; India should not engage in an arms race, and, no single sector- such as political leadership, the ministerial bureaucracy, the scientific community or the military- should be able to drive India's nuclear policy.⁵⁵ According to Ashley J. Tellis' analysis in *India's Emerging Nuclear Posture*, the first three principles would remain the more important ones in the system.⁵⁶

Since India's May 1998 nuclear tests, the country's efforts are aimed at persuading other nuclear weapon states to adopt a non-first use (NFU) principle and promote confidence-building measures to reduce nuclear threats. On August 4, 1998 Prime Minister Vajpayee announced in Parliament that India would pursue a policy of

⁵⁴ General K. Sundarji's main contribution was to change the "traditional infantry-oriented mindset of the army". In the 1980s, he shaped the army's perspective into what he called the Army Plan 2000, which outlined a new strategy based on tanks, firepower and enhanced communications. In light of the May 1998 tests also known as Pokhran-II, and the dawn of the information-technology age, the army is now revising this plan. See, India Today, Obituary, "Warrior as Scholar". 22 Feb. 1999. Retrieved from: <http://www.india-today.com/itoday/22021999/obit.html>

⁵⁵ Perkovich, op. cit., p. 330.

⁵⁶ Tellis, Ashley J. India's Emerging Nuclear Posture: Between Recessed Deterrent and Ready Arsenal. Santa Monica: CA, Rand Corporation, 2001, p. 105-6.

“minimum deterrence” and “will not be the first to use nuclear weapons”.⁵⁷ Further,

Vajpayee stated in the Indian Parliament:

India does not intend to use these weapons for aggression or for making threats against any country, these are weapons of self-defence, to ensure that India is not subjected to nuclear threats or coercion.⁵⁸

In November 1998, Vajpayee established a three-tier structure to undertake a strategic defence review comprising a 27-member National Security Council, chaired by the Prime Minister. It also included a Strategic Policy Group involving senior officials from three armed services, and the National Security Advisory Board.⁵⁹

On August 17, 1999 India released the “Draft Report of National Security Advisory Board on Indian Nuclear Doctrine” which stated that India’s primary objective for its nuclear forces is

to achieve economic, political, social, scientific and technological development within a peaceful and democratic framework. This requires an environment of durable peace and insurance against potential risks to peace and stability.⁶⁰

It states that the actual size, development, deployment and employment of these forces will be decided upon in light of the strategic environment, technological imperatives and the needs of national security. India’s declaratory policy of no- first use as highlighted in section 2.4 of the draft nuclear doctrine seeks to demonstrate that it will not initiate nuclear use on an adversary. However, in a crisis situation, such as a nuclear attack by an adversary, no-first use loses relevance. Further, in a November 1999 interview, India’s Foreign Minister Jaswant Singh said, “the principal role of [India’s] nuclear weapons is

⁵⁷ “PM Declares No First-Strike”. *Indian Express Newspapers (Bombay) Ltd.*, Bombay. 5 Aug. 1998. Retrieved from <http://www.indianexpress.com/ie/daily/19980805/21750694.html>

⁵⁸ Tellis, 2001, p. 266.

⁵⁹ Hindustan Times Correspondent. “Six-member National Security Body Formed”. *Hindustan Times*, New Delhi. 20 Nov. 1998. Retrieved from [http://www.indiarightsonline.com/Sabrang/india2.nsf/38b852a8345861dd65256a980059289d/fd1c0fa2faa912b6e5256afe0043afaf/\\$FILE/bac09248.pdf](http://www.indiarightsonline.com/Sabrang/india2.nsf/38b852a8345861dd65256a980059289d/fd1c0fa2faa912b6e5256afe0043afaf/$FILE/bac09248.pdf)

⁶⁰ Draft Nuclear Doctrine, 1.2.

to deter their use by an adversary” and to maintain a policy of retaliation only.⁶¹ As stated in India’s Draft Nuclear Doctrine, to maintain a credible, effective and survivable nuclear force, India’s nuclear deterrent requires: a sufficient, survivable and operationally prepared nuclear forces, a robust command and control system, effective intelligence and early warning capabilities, comprehensive planning and training for operations, and, the will to employ nuclear forces and weapons.⁶²

Following India’s Draft Nuclear Doctrine, Vajpayee’s government released ‘the Cabinet Committee on Security Reviews Operationalization of India’s Nuclear Doctrine’ on January 4, 2003, reiterating its commitment to “building and maintaining a credible minimum deterrent”.⁶³ The official announcement from the Indian government not only adopted the essence of the draft doctrine but also announced a formal nuclear command structure under civilian control. Even though the January 2003 press release stressed a credible minimum deterrent, non-first use, massive nuclear retaliation in response to first strike by an aggressor, non-use of nuclear weapons against non-nuclear weapon states, a commitment to arms control and non-discriminatory global disarmament, and continuance of Fissile Material Cut-off Treaty negotiations, India’s nuclear doctrine and posture nonetheless remains opaque. In other words, a country maintains a declaratory posture to disguise its true intentions.

⁶¹ Embassy of India. Important Interviews. “India not to engage in n-arms race: Jaswant Singh.” The Hindu (Interview), 29 Nov. 1999. Retrieved from http://www.indianembassy.org/press/interview/jsingh_hindu_nov_29_99.htm

⁶² See “Draft Report of the National Security Advisory Board on Indian Nuclear Doctrine”. Embassy of India. Washington, D.C., 17 Aug 1999. Retrieved from http://www.indianembassy.org/policy/CTBT/nuclear_doctrine_aug_17_1999.html

⁶³ Press Release, “The Cabinet Committee on Security Reviews Operationalization of India’s Nuclear Doctrine”. Ministry of External Affairs, 4 Jan. 2003. Retrieved from <http://meaindia.nic.in/pressrelease/2003/01/04pr01.htm>

Pakistan's Nuclear Doctrine

While Pakistan has not formally announced a nuclear doctrine, in practice it has been pursuing one as early as the 1960s. In a public statement made by Foreign Minister Zulfikar Ali Bhutto in 1965 to Pakistan's Prime Minister Ayub Khan, he stated a desire for a nuclear weapons program which would counter the threat posed by India to its national security;

if India developed an atomic bomb, we too will develop one even if we have to eat grass or leaves or to remain hungry, because there is no conventional alternative to the atomic bomb.⁶⁴

Later, when Bhutto became PM in 1972, his civilian government launched the nuclear program which at the time was of little interest to the military. After General Zia ul-Haq came to power in 1977, the military started to develop an increasing interest in the nuclear weapons program and thus, a policy of nuclear ambiguity was created.⁶⁵ Furthermore, nuclear assistance provided by A. Q. Khan helped Pakistan achieve its nuclear weapons program. Pakistani officials viewed nuclear weapons as necessary to counter the perceived threat from India in the absence of conventional security alternatives and nuclear security guarantees.

Since the late 1980s, Pakistan has pursued a declaratory policy of nuclear deterrence to counter India's conventional and nuclear force. According to Dr. Shireen Mazari, Director General at the Institute of Strategic Studies in Islamabad, the fact that Pakistan has not yet publicly articulated its own nuclear doctrine is perhaps "because it

⁶⁴ Bhutto, Zulfikar Ali. *Awakening the People*. Rawalpindi: Pakistan Publications, 1970, p. 21.

⁶⁵ Cheema, Zafar Iqbal. "Pakistan's Nuclear Use Doctrine and Command and Control". *Planning the Unthinkable: How new Powers will use Nuclear, Biological, and Chemical Weapons*. Eds. Peter Lavoy, Scott Sagan and James Wirtz. London: Cornell University Press, 2000, p.162.

does not see a political/status utility for the nuclear capability- rather, it envisages the nuclear capability as having a purely defensive, security-related purpose”.⁶⁶ However, in the wake of the May 1998 nuclear tests, Pakistan has been formulating plans to assemble a small nuclear force, diversify its weapons, develop comprehensive missile programs, all of which suggest the outline of an emerging nuclear doctrine. Moreover, according to Zafar Iqbal Cheema, the fact that Pakistani leaders are starting to address Pakistan’s asymmetric strategic relation with India, in dealing with threats to its national security or the potential for nuclear blackmail, signals the formulation of a nuclear doctrine in Pakistan.⁶⁷

Pakistan’s declaratory nuclear policy changed after India conducted nuclear tests on May 11 and 13, 1998. It was only after these tests that Pakistani officials made an effort to devise a nuclear use doctrine and to develop a command and control system; due in part to a deliberate strategy of nuclear ambiguity that has been pursued since the early 1970s. The desire for importing nuclear technology and eventual nuclear self-sufficiency, while also avoiding international sanctions, is the reason that a policy of nuclear ambiguity was pursued prior to May 1998. Moreover, Pakistan did not want to jeopardize its relation with the United States during the Soviet invasion of Afghanistan (1979-1989), hence, its nuclear ambitions remained covert. After the May 1998 nuclear tests, Pakistan’s policy of nuclear ambiguity shifted to a more overt deterrent posture. Following the May 1998 nuclear tests, Pakistan’s Foreign Secretary Shamshad Ahmad

⁶⁶ Mazari, Shireen M. “Understanding Pakistan’s Nuclear Doctrine”. The paper was presented at the Conference on Arms Races & Nuclear Development in South Asia. Institute of Policy Research Islamabad and Hanns Seidel Foundation 20-21Apr. 2004. Retrieved from http://www.issi.org.pk/journal/2004_files/no_3/article/1a.htm

⁶⁷ Cheema, p. 159. See also, “Pakistan Working on Miniaturized N-Warheads”. The Nation (Islamabad), 16 Apr. 1998.

stated that the country was pursuing a restraint regime based on dialogue with India in accordance with the Lahore Declaration.⁶⁸ Further, he stated that “the direction of our [Pakistan’s] nuclear weapons programme will be determined by India’s actions”.⁶⁹ While Pakistan does not have a comprehensive nuclear doctrine, it has made clear four major principles to guide its nuclear strategy. These principles include “a commitment to deterrence against aggression and in defence of the country’s sovereignty”, a restraint regime, a doctrine of survivability and credibility of deterrence, and, arms control and disarmament.⁷⁰

Foreign Minister Abdul Sattar declared in November 1999 that Pakistan is committed to a ‘credible minimum nuclear deterrent’ which will depend on India’s nuclear build-up, and accordingly must maintain, preserve and upgrade its capability.⁷¹ Pakistan’s declared intent of using nuclear weapons as a last resort⁷² implies that its strategic policy emphasizes deterrence rather than war fighting. Former Foreign Secretary Inam ul Haque (2007-08) stated that Pakistan is prepared to discuss, under fair terms, the requirements of a credible minimum nuclear deterrent, if India is also prepared to do so.⁷³

⁶⁸ The Lahore Declaration was a bilateral agreement signed by India and Pakistan on February 21, 1999 by PM Atal Vajpayee and PM Nawaz Sharif signalling a major breakthrough in overcoming a historically strained relation since the May 1998 nuclear tests; which lost its momentum following the outbreak of the Kargil conflict in May 1999. For purposes here, India and Pakistan agreed to engage in bilateral steps to reduce accidental or unauthorized nuclear use, and elaborate confidence building measures especially in the nuclear field to prevent conflict.

⁶⁹ Stated by Shamsad Ahmad, Pakistan’s Foreign Secretary at a Press Briefing on India’s Nuclear Doctrine. 19 Aug. 1999. Retrieved from <http://www.fas.org/news/pakistan/1999/990819-pak-pr2.htm>

⁷⁰ Ibid.

⁷¹ Foreign Minister, Abdul Sattar, in a statement at a seminar in Islamabad on November 25, 1999 – as reported by VOA. See also, “Pakistan to Upgrade Nuclear Deterrent”. Dawn, 25 Nov. 1999.

⁷² Ambassador Munir Akram in a statement before the Conference on Disarmament in Geneva, 19 Aug. 1999.

⁷³ Cheema, p. 175.

While India declares a commitment to non-first use, Pakistan continues to keep this option open. It has been argued, that since Pakistan has not officially stated a policy of non-first use, this would undermine the credibility of its deterrent against Indian attack. Due to Pakistan's limited conventional capability, maintaining ambivalence towards non-first use is deliberate since it believes that India's pledge to a non-first use is an empty one; more declaratory than its actual policy. There are realities that need to be considered. For example, even though India declared non-first use in its draft doctrine, a closer look at paragraph 2.5 "India will not resort to the use or threat of use of nuclear weapons against states which do not possess nuclear weapons, or are not aligned with nuclear weapon powers" reveals a willingness to use nuclear weapons against any threat from a nuclear weapons state. Essentially, this means that India is willing to initiate nuclear use or take pre-emptive nuclear strikes on a nuclear-armed adversary if it feels threatened. Hence, Pakistan maintains a nuclear strategy which revisits its commitment to the use of nuclear weapons as a last resort while also reserving of the right to act pre-emptively in the event that India threatens to initiate nuclear attack.⁷⁴ Pakistan's strategic restraint regime should be based on reciprocal agreements with India on nuclear, missile and conventional restraint that entails:

One, not to deploy ballistic missiles; two, not to operationally weaponize nuclear capable missile systems; three, formalise the understanding to provide prior and adequate notification of flight-tests of missiles; and, four, to declare a moratorium on

⁷⁴ According to George Perkovich during times of crises Pakistan fears pre-emptive attack on its nuclear weapons capabilities by India which occurred in the 1982 (fear that India would try to dismember Pakistan or attack to take back Azad Kashmir) and 1990 crises (at the brink of war when Pakistani ISI supported militants fighting in Indian controlled Kashmir. Further, Pakistan implicitly threatened to use nuclear weapons if India attacked militarily across the LoC), and in the period in 1998 before Pakistan tested its nuclear devices. It was unlikely that Pakistan would use nuclear weapons, but the success of the nuclear bluff reinforced the leadership's belief in their value as a deterrent and as a tool of diplomatic bargaining. See Perkovich's remarks at September 23, 2001 [Carnegie Endowment for International Peace Nonproliferation Roundtable](http://www.ceip.org/files/events/Paktranscript.asp) on "Pakistan's Nuclear Dilemma". Transcript available at: <http://www.ceip.org/files/events/Paktranscript.asp>

the development, acquisition or deployment of Agni Ballistic Missile systems, since these can destabilise 'minimum credible deterrence'.⁷⁵

Even though both Pakistan and India enunciate "a doctrine of survivable and credible deterrence", a clear understanding of the term 'credible' is vague. The fact that Pakistan detonated its own nuclear devices following India's nuclear tests in May 1998 demonstrates Pakistan's desire for a credible deterrent to counter any potential threats from India. Here, it can be assumed that the concept of credibility is important because with it lie inhibitions regarding the use of nuclear weapons. The demonstration of national will and resolve to use nuclear weapons is vital. Similarly, a critical look at India's draft nuclear doctrine reveals that Indian strategic thinkers emphasize the importance of communicating the will to retaliate against an adversary. Credibility can also be equated with the ability to survive a first strike and thus, deterrence is credible if an adversary believes the other can retaliate.

The last principle that guides Pakistan's nuclear strategy is the approach to arms control and disarmament. At a global and regional level, arms control and disarmament is dominated by Pakistan's regional defence and security concerns in relation to India.⁷⁶ According to Foreign Secretary Inam ul Haque, Pakistan is not in a position to get into an arms race with India, but if India continues to build its nuclear weapons capability then Pakistan must take the necessary steps to preserve a credible deterrent.⁷⁷ In the past,

⁷⁵ Foreign Secretary Inam ul Haque in a Statement to the Conference on Disarmament. Geneva, 25 Jan. 2001. Agni missiles come from a family of medium to intercontinental range ballistic missiles developed by India under the Integrated Guided Missile Development Program. As of 2008, the Agni missile family comprises three deployed variants: Agni-I short range ballistic missile, 700 - 800 km range; Agni-II medium range ballistic missile, 2,500 km range; Agni-III intermediate range ballistic missile, 3,500 km range; and Agni-V intercontinental ballistic missile 5,000 - 6,000 km which is under development.

⁷⁶ Mazari, Shireen M. "Understanding Pakistan's Nuclear Doctrine". Retrieved from http://www.issi.org.pk/journal/2004_files/no_3/article/1a.htm

⁷⁷ Foreign Secretary Inam ul Haque in a Statement to the Conference on Disarmament. Geneva, 25 Jan. 2001.

Pakistan's policy of nuclear ambiguity allowed the country to conceal its intentions of developing a nuclear weapons program while claiming it had no desire to do so.

Pakistan's decision to conduct its own set of nuclear tests is due in large part by the need to demonstrate its ability to counter India's technological advancement while also enhancing the likelihood of possessing a credible nuclear deterrent. Since then, Pakistan has been pursuing a policy of nuclear deterrence, conventional defence, a commitment to arms control and disarmament while also, increasing efforts to re-vamp its nuclear weapons capability.⁷⁸

Following India and Pakistan's May 1998 nuclear tests, it became clear that they no longer pursue an ambiguous nuclear program. However, the extent to which either country reveals the number of nuclear weapons it possesses remains ambiguous because after all, "bombs seem bigger if they are ambiguous".⁷⁹ Further, based on the various estimates of cumulative yield produced by the May 1998 tests, India and Pakistan's ability to detonate successfully a nuclear weapon remains questionable. As stated by Cheema, it is important to note that, "public declarations about the doctrine need to be differentiated from its operational and functional developments".⁸⁰ While nuclear expertise exists to build nuclear bombs, it is not as easy to produce the potential for missiles with deliverable nuclear warheads. In other words, it is one thing to say that a country has the potential to build nuclear weapons; it is quite another to possess a credible nuclear deterrent.

⁷⁸ Interview with Pervez Hoodbhoy, in Islamabad. May 2009.

⁷⁹ Albright and Zamora, *Op. Cit.*, p. 24.

⁸⁰ Cheema, p. 159.

It is interesting to note that on the one hand, India's declaratory policy seems to highlight principles of non-first use, a commitment to global disarmament, non-proliferation and a credible minimum nuclear deterrent; while in reality India has been increasing its nuclear arsenal, delivery systems and capability. India's declaratory nuclear ambitions have undergone several different phases: nuclear technology for "peaceful purposes" while keeping the nuclear option open for the future (1947 to mid-70s), nuclear restraint (1975 to early-80s), conventional deterrence (in 1982-84)⁸¹, economic reforms and re-emergence of nuclear policy (1990s), nuclear confrontation (May 1999) and a policy of non-first use (1990s to present). Much of what India's nuclear doctrine entails is incompatible with what the country is actually doing. In addition to India's desire for international status, prestige, and recognition as a growing regional power as the driving forces behind the May 1998 tests, is the fear of long-term security threats posed by regional adversaries China and Pakistan.

Vajpayee stated that since nuclear weapons are considered weapons of mass destruction they cannot and will never be used.⁸² Former Indian President K. R. Narayanan, addressing the nation on the occasion of the golden jubilee of India's independence, reiterated this view, "nuclear weapons are useful only when they are not

⁸¹ During the early 1980s, India declared a strategic policy of 'conventional deterrence'. For India, 'conventional deterrence' referred to deterrence by traditional means. This presupposes that India was only a conventionally armed state. However, its declaratory position of 'conventional deterrence' was in direct contradiction to its actual nuclear ambitions by the fact that it conducted its first nuclear tests in 1974. This contradiction is noted by Sumit Ganguly & Devin T. Hagerty in *Fearful Symmetry* indicating "it is not pure nuclear deterrence, because no actual nuclear weapons have been deployed by the states involved; but it is not pure conventional deterrence either because the deterrent effect derives not from a balance of conventional forces, but from the prospect that conventional assets can be used to kill far beyond their basic potential when targeted against nuclear installations" (p. 60-61).

⁸² Embassy of India. Prime Minister's Statements and Interviews. "Suo Motu Statement by the Prime Minister Shri Atal Bihari Vajpayee in Parliament on 27th May, 1998". Washington, D.C. 27 May 1998. Retrieved from <http://www.indianembassy.org/pic/pm-parliament.htm>

used. They can only be a deterrent in the hands of the nation.”⁸³ However, in the event of nuclear crisis, the temptation to use nuclear weapons first increases as a country does not want to risk the loss of lives and crucial infrastructure in the event of pre-emptive nuclear attack. In reality, pre-emption contradicts nuclear deterrence and instead suggests a country’s desire for nuclear war-fighting capabilities. However, both the doctrine and subsequent Indian statements have underscored that Indian decision-makers view their arsenal as a pure deterrent rather than as an instrument of war. Ashley Tellis’⁸⁴ analysis in *India’s Emerging Nuclear Posture* (2001) of the country’s political process, regarded as inherently cautious and sensitive to fiscal constraints,⁸⁵ may lead to a strategy of sufficient deterrence. Considering the fact that both Pakistan and India view their own nuclear arsenal as political rather than operational suggests that the risk of nuclear confrontation would remain small.

Even though India has developed and operationalized a Draft Nuclear Doctrine, some elements of ambiguity still exist. For instance, the fact that its nuclear forces “will be based on a triad of aircraft, mobile land-based missiles and sea-based assets”⁸⁶ implies India desires a more robust nuclear force. Utilizing paragraphs 2.5, 2.7 and 5.5 of the draft doctrine, the military’s desire to maintain a large and effective conventional force by adapting a multi-use force in nuclear war scenarios becomes obvious. While India’s declaratory nuclear policy provides security assurances against threats from an adversary,

⁸³ Cited in Tellis, *Op. Cit.*, p. 261. Address to the Nation by Shri K. R. Narayanan, President of India, on the Occasion of the Closing Function of the Golden Jubilee of India’s Independence, Central Hall Parliament, New Delhi- August 15, 1998. *India News*, July 16-August 15, 1998, p. 3.

⁸⁴ Ashley J. Tellis is a senior associate at the Carnegie Endowment for International Peace, specializing in international security and defence. While on assignment to the U.S. Department of State as senior adviser to the Undersecretary of State for Political Affairs, he was intimately involved in negotiating the civil nuclear agreement with India. Prior to his government service, Tellis was senior policy analyst at the RAND Corporation.

⁸⁵ Tellis, p. 78.

⁸⁶ Draft Nuclear Doctrine, 3.1.

as emphasized in the draft nuclear doctrine's policy of non-first use, arguably, the overall strategy is intended to suggest more of a political role for its nuclear arsenal than a military one.⁸⁷ In addition, Pakistan's neutrality regarding non-first use of nuclear weapons and the fact that it has not yet officially articulated a nuclear doctrine makes it seem as if Pakistan does not take the desire for stable nuclear deterrence seriously.

The annual report of India's Department of Atomic Energy has not stated the number of nuclear weapons that constitute 'minimum' for India's nuclear deterrent. Similarly, the concept of minimum nuclear deterrence remains an ambiguous term for Pakistan as well. This ambiguity leaves open the possibility for an open-ended nuclear arsenal.

India's draft nuclear doctrine should not be taken as the sum total of strategic thinking because to do so would take away from the larger picture, especially since the release and operationalization of the doctrine has been contested within India. For example, months after its release, India's Foreign Minister Jaswant Singh publicly distanced the government's position from the National Security Advisory Board document, especially regarding the triad of forces.⁸⁸ Contrary to the perceived outline of India's nuclear strategy under the draft doctrine, the document's ambiguity is unable to conceal the fact that India's political leaders seek to use their nuclear weapons capability to bolster political support at home and to acquire a dominant role in international politics.⁸⁹ The overall purpose of the draft nuclear doctrine becomes questionable. Such

⁸⁷ Tellis, p. 261.

⁸⁸ Embassy of India. Important Interviews. "India not to engage in n-arms race: Jaswant Singh". *The Hindu* (Interview), 29 Nov. 1999. Retrieved from http://www.indianembassy.org/press/interview/jsingh_hindu_nov_29_99.htm

⁸⁹ Sidhu, Waheguru Pal Singh. "India's Nuclear Use Doctrine". *Planning the Unthinkable: How New Powers Will Use Nuclear, Biological, and Chemical Weapons*. Ed. Peter R. Lavoy, Scott D. Sagan, James J. Wirtz. Ithaca, NY: Cornell University Press, 2000, p. 129.

a position reveals the difficulty for the Indian government to reconcile its often contradictory claims to integrate a nuclear doctrine into policy due to its previous hesitation towards the deployment of nuclear weapons.

Both India and Pakistan kept the nuclear option open for the past twenty-five years or so without exercising it. India's draft doctrine and Pakistan's declaratory nuclear posture appear to be similar in the way that they leave open the shape of their nuclear capability in the future. In the past, India's nuclear posture left open the possibility to develop a nuclear weapons program. However, in future, it may reflect an aversion to risky and expensive military solutions. Since independence, India has been a proponent of nuclear non-proliferation and global disarmament efforts; however, India conducted a nuclear test in 1974 under the guise of "peaceful nuclear explosion". Hence, depending on India's domestic political situation and external security threats, the direction of India's nuclear policy will be affected by such.

Whether the joint nuclear capability possessed by India and Pakistan serves to deter conventional and nuclear conflicts between these states- or only increase the amount of destruction in a future war to unprecedented levels- remains to be determined.⁹⁰

In addition, Pakistan and India's 'coming out of the nuclear closet' in May 1998, created a vital need for political solutions regarding the asymmetries of their relationship; nonetheless, the task of doing so remains complicated. The following section seeks to elucidate the nuclear asymmetry between each respective country.

⁹⁰ Geller, Daniel S. "The India- Pakistan Rivalry: Prospects for War, Prospects for Peace". The India- Pakistan Conflict: An Enduring Rivalry Ed Cambridge: Cambridge University Press, 2005, p. 100.

Command and Control

Under India's constitutional system, the Prime Minister is the head of government and the President is the head of state. Vajpayee's press release states that any "nuclear retaliatory attacks [on India] can only be authorised by the civilian political leadership through the National Command Authority".⁹¹ The Indian Constitution states that it is the duty of the president to aid and advise the prime minister as well as the cabinet.

The actual policy choices are determined by the autonomous interests of the Prime Minister in office, who while taking into account the preferences of the strategic enclaves, the political elite, and various political parties have generally been acutely sensitive to the impact of the nuclear issue on economic development and foreign relations precisely because these variables must affect the living conditions of the large voting populace and, by implication, the political survival of the politician.⁹²

Currently, India has a system of divided control in which the civilian authority has absolute control over the nuclear arsenal and the military possesses the nuclear delivery systems.⁹³ In matters related to nuclear policy or nuclear use, the authority resides with the PM of India or the designated successor(s).⁹⁴

Since 2002, the need to control India's nuclear force led to the January 4, 2003 Cabinet Committee on Security (CCS) to constitute the political council and executive council of the Nuclear Command Authority (NCA).⁹⁵ The NCA of India is the agency responsible for all command, control and operational decisions regarding India's nuclear weapon stockpile. The Executive Council is chaired by the National Security Advisor

⁹¹ The National Command Authority is comprised of a Political and an Executive Council; the political council is chaired by the Prime Minister of India and it is the sole authority for authorization of the use of nuclear weapons. See, Press Release, "The Cabinet Committee on Security Reviews Operationalization of India's

Nuclear Doctrine". Ministry of External Affairs, 4 Jan. 2003. Retrieved from <http://meaindia.nic.in/pressrelease/2003/01/04pr01.htm>.

⁹² Tellis, p. 106.

⁹³ Sidhu, p. 130-1.

⁹⁴ Draft Nuclear Doctrine, 5.1.

⁹⁵ Norris, Robert S. and Hans M. Kristensen. "India's nuclear forces, 2005". Bulletin of the Atomic Scientists 61:5 (September/October 2005): 73.

(NSA) and provides input to the Political Council who is responsible for authorizing nuclear attack if deemed necessary. The Political Council is chaired by the PM, and advised by the Executive Council, chaired by the NSA. Their directives are to be operationalized by a new Strategic Forces Command under the control of a Commander-in-Chief of the rank of Air Marshal (or its equivalent) in charge of the management and administration of the tactical and strategic nuclear forces. The NCA may be seen as the first stage in the development of an effective and robust command and control (C²) and Indications-and-Warning (I&W) systems and infrastructure for its strategic nuclear forces.⁹⁶ In order to maintain an effective command, control, communications, computing, intelligence and information (C4I2) of India's nuclear forces, the survivability of the nuclear arsenal must be assured.⁹⁷

Following Musharraf's takeover in October 1999, he replaced the PM as Pakistan's Chief Executive.⁹⁸ He constituted a National Security Council to deal with issues of national interest and designated the Joint Chiefs of Staff Committee as the highest military decision-making institution dealing with command and control of nuclear weapons. Pakistan's armed forces play a strong role in decisions regarding national security policy and conventional military strategy, and may also play an important role in devising nuclear policy both through formal and informal channels.⁹⁹ On February 3, 2000, Musharraf announced the creation of a National Command Authority (NCA) to

⁹⁶ Pant, Harsh. "India's Nuclear Weapons Doctrine and Command Structure: Implications for India and the World". Paper presented at the annual meeting of the International Studies Association, Le Centre Sheraton Hotel, Montreal, Quebec, Canada, 17 Mar. 2004, p. 7. Retrieved from http://www.allacademic.com/meta/p73771_index.html

⁹⁷ Draft Nuclear Doctrine, 5.3 and 5.4.

⁹⁸ See also, "If the Finger on nuclear button is not Musharraf's". The Daily Telegraph. London, 7 Jun. 2002.

⁹⁹ Cheema, p. 174.

facilitate command and control of its nuclear weapons, headed by the President with the PM as its vice chairman. This formal chain of command was enacted into law in December 2007. The National Command Authority also includes a Strategic Plans Division (SPD), headed by a senior army officer who acts as the Secretariat for the NCA, and performs functions relating to planning, coordinating, and establishing a reliable command, control, communication, computer and intelligence network. The NCA consists of an Employment Control Committee, Development Control Committee and the SPD. The Employment and Development Committee is chaired by the Head of Government and includes the Ministers of Foreign Affairs (Deputy Chairman), Defence, Interior, Chairman of the Joint Chiefs of Staff Committee,¹⁰⁰ Service Chiefs (Chief of Army Staff, Air Staff and Naval Staff), Director-General of SPD, and, a representative of the strategic organization and scientific community who are responsible for the development of strategic assets.¹⁰¹ Officially, the authority to use nuclear weapons rests with the Prime Minister of Pakistan,¹⁰² but in reality, the authority to initiate nuclear use belongs to the Chief of Army Staff.

In February 2008, Lieutenant General Khalid Kidwai, the Director General of Pakistan's Strategic Plans Division acknowledged that at nuclear facilities the "state of alertness had gone up" with regard to security concerns over terrorists getting their hands on nuclear weapons. To deal with this, the SPD and the Army Strategic Force Command

¹⁰⁰ In principle, the Chairman of the Joint Chiefs of Staffs Committee is the highest ranking military official in the country, but the defacto power is with the Chief of Army Staff, as demonstrated by the number of times it has overthrown the government and declared himself ruler.

¹⁰¹ Federation of American Scientists. "National Command Authority". Maintained by Robert Sherman. 19 Mar. 2000. Retrieved from <http://www.fas.org/nuke/guide/pakistan/agency/nca.htm>

¹⁰² Bremmer, Ian and Kuusisto, Maria. Pakistan's Nuclear Command and Control: Perception Matters. London: South Asian Strategic Stability Institute, May 2008, p. 9-10. See also, Graham, Stephen. "Musharraf Tightens his Control over Pakistan's Nuclear Arsenal". Associated Press. 15 Dec. 2007.

holds “a strength of between 12,000 and 15,000 people”.¹⁰³ Moreover, Lt. General

Kidwai stated that Pakistan:

institutionalized the structures [overseeing the nuclear arsenal] and introduced modern technology so there are sufficient firewalls, safety, and security built into the chain of command, as well as into the weapons and weapon producing facilities.¹⁰⁴

More recently, there has been some cause for concern. Since Musharraf’s resignation in spring 2008, the country has been left in a climate of political instability which is further exacerbated by the threat of radical elements coming to power and gaining control over nuclear weapons. After a meeting with Musharraf and other officials overseeing the nuclear arsenal in a February 2008 visit to Pakistan, U.S. Chairman of the Joint Chiefs of Staff Admiral Mike Mullen declared that Pakistan’s nuclear weapons are well-protected and unlikely to fall into the hands of terrorists.¹⁰⁵ Following Musharraf’s resignation in August 2008, it is likely that his successor President Zardari will keep the command and control system unchanged.

Pakistani PM Yousaf Raza Gilani said he was satisfied with the effectiveness of the command and control structure of the country’s nuclear program. Further, he said that the nuclear command structure had “matured”. In addition, “it has been ensured that while our nuclear assets are safe and secure the (nuclear) force development as per needs of Pakistan's minimum deterrence is progressing well”.¹⁰⁶ Moreover, in an interview with CNN’s Wolf Blitzer on May 6, 2009, Pakistani President Asif Ali Zardari claimed

¹⁰³ Dodd, Thomas. “Interview: Pervez Musharraf, President of Pakistan”. Jane’s Defence Weekly, 13 Feb. 2008: 34.

¹⁰⁴ Cited in Bokhari, Farhan. “Pakistani Official Addresses Nuclear Security Concerns”. Jane’s Defence Weekly, 6 Feb. 2008: p. 6.

¹⁰⁵ Ibid.

¹⁰⁶ Haider, Zeeshan. “Pakistan has effective nuclear command: PM”. Reuters. 20 Apr. 2008. Retrieved from <http://www.reuters.com/article/gc04/idUSISL28991220080420>

that the country's nuclear weapons are in 'safe hands'.¹⁰⁷ This came in response to international fear over the safety of Pakistan's nuclear weapons getting into the hands of terrorists after the rise of militant suicide bombings in the country, particularly following the assassination of former Pakistani PM Benazir Bhutto on December 27, 2008. In an interview with NBC's David Gregory, Zardari claimed that he is in control of Pakistan and that both the government and the military work together.¹⁰⁸ While President Zardari claims to have taken measures to strengthen controls on nuclear technology, and, also, to prevent accidental or unauthorised use; the possibility of this happening always remains a concern. But, increased professionalism by the armed forces and an improved command and control system, will mitigate some of these risks.

Indian and Pakistani claims that they already possess robust command and control system is highly questionable. One obvious reason for this is that in the event of death, resignation or impeachment of the PM in Pakistan, there is no clear chain of command or provision in its constitution. In India's case, there is no provision other than following the official protocol in order of precedence which does not provide a clear head of government to replace the Indian PM. Moreover, the effectiveness of India and particularly Pakistan's command and control systems is questionable, due to the conflict regarding whether the nuclear authority resides with either the civilian or military units. India's air force feels that it has the capability to deliver nuclear weapons. However the navy feels that the ultimate nuclear decision making in the operational arena belongs to

¹⁰⁷ Author unknown. "Zardari: Pakistan's Nuclear Arsenal is safe". [CNN/asia](http://www.cnn.com/2009/WORLD/asiapcf/05/05/pakistan.zadari.nukes/index.html#cnnSTCText), 6 May. 2009. Retrieved from <http://www.cnn.com/2009/WORLD/asiapcf/05/05/pakistan.zadari.nukes/index.html#cnnSTCText>

¹⁰⁸ Gregory, David. "Interview with PM Zardari". [NBC: Meet the Press](http://www.msnbc.msn.com/id/21134540/vp/30667031#30667031), 10 May 2009. Retrieved from <http://www.msnbc.msn.com/id/21134540/vp/30667031#30667031>

itself, since it has both maritime and aviation roles.¹⁰⁹ In addition, there is a general mistrust of the military, for fear of the inadvertent use of nuclear weapons, which is perhaps the reason that paragraph 3.2 of India's draft doctrine indicates a reluctance to share control of the nuclear weapons with the army.

While this offers some reassurance for the responsible control over India's nuclear weapons program, for Pakistan, this is not the case. Arguably, for Pakistan, nuclear command and control is exclusively in the hands of the military. Hence, it can become problematic if a radical extremist group got their hands on the nuclear weapons because they might not be as reluctant to authorize nuclear use.

For Pakistan, domestic factors, authoritarian rule, weak representative governments, inept and divided political leadership will continue to play a crucial role in perpetuating the military's control over the security policy, including the nuclear weapons program. The military's security policy is often formulated by its perceptions of threat from India and the desire to acquire adequate conventional and nuclear forces to counter such a threat. The partnership between the military and civil bureaucracy, including its subsidiary nuclear scientific establishment, further marginalizes the role of the political leadership in the nuclear decision making process.¹¹⁰ Military control over the nuclear weapons program rather than civilian control creates an atmosphere of uncertainty. Hence, Pakistan's Peoples Party (PPP) under the Government of Zardari

¹⁰⁹ Alam, Mohammed B. India's Nuclear Doctrine: Context and Constraints. Heidelberg Papers in South Asian and Comparative Politics, Working Paper No. 11. October 2002, p. 11. Retrieved from <http://archiv.ub.uni-heidelberg.de/volltextserver/volltexte/2003/4122/pdf/hpsacp11.pdf> . See also, "Three Services Squabble over Nuclear Button," May 16, 2001, Available from <http://www.thenewspapertoday.com/india/inside.phtml?News-ID=13976>

¹¹⁰ Ahmed, Samina. "Pakistan's Nuclear Weapons: Turning Points and Nuclear Choices". International Security MIT Press. Vol. 23, No. 4 (Spring 1999):179. Retrieved from <http://www.jstor.org/stable/2539298>.

must develop greater confidence in its command and control structures to ensure the security of its nuclear weapons will contribute to achieving more regional stability.

Another reason why India and Pakistan's command and control structure is questionable is due to the short distance and time that a delivery system would take to reach its target with a nuclear device. Neither country has yet devised a sophisticated command, control and communication systems (C3I) that can provide intelligence and accurate surveillance needed to destroy counterforce targets in a first strike.¹¹¹ While India intends to create space-based assets to provide early warnings and damage/detonation assessment,¹¹² for Pakistan, accurate surveillance is extremely essential to provide early warning in order to reduce the vulnerability of its nuclear arsenal and increase deterrence credibility.¹¹³ For both India and Pakistan, inadequate command and control structures, deficient early warning arrangements and perceptions about a doubtful capacity to launch a retaliatory "second strike" send mixed signals between adversaries which enhance the risk of nuclear exchange. Since it takes only about five minutes warning time following a ballistic missile launch from India vis-a-vis Pakistan, it is essential to avoid any temptation to launch on warning. This may require India and Pakistan to build a more credible and robust nuclear capability, which can be very costly however, as indicated in the final chapter, prospects for cooperation exist which can eliminate the need for a more robust nuclear force.

¹¹¹ Cheema, p. 179.

¹¹² Draft Nuclear Doctrine, 5.6

¹¹³ Sagan, Scott D, "The Perils of Proliferation". International Security 18 (Spring 1994): 90-92.

According to Indian commentators, General K. Sundarji and Vijai Nair¹¹⁴, both India and Pakistan suffer many deficiencies within their current systems. For an effective command and control system, it must carry these essential elements: a highly survivable national command during a conflict; wide dispersion of strategic nuclear forces and the ability to survive an adversary's attack; robust and survivable communications between the command and strategic nuclear forces; and, strategic intelligence, surveillance, warning and damage assessment.¹¹⁵ In short, the undeveloped nature of both India and Pakistan's command and control system makes it all the more difficult to maintain an effective and survivable system; one that is flexible in order to respond to a changing environment and strategic objectives.

India's Declared and Actual Capabilities

India's Department of Atomic Energy (DAE) and Defence Research and Development Organization (DRDO) stated that the country's first test on May 11 and 13, 1998 involved simultaneously the detonation of a fission device.¹¹⁶ Former Atomic Energy Commission Chairman P. K. Iyengar claimed in October 1998 that these tests involved low-yield tactical, full-size fission, and thermo-nuclear devices.¹¹⁷ The fact that the actual yields for these are unknown, cast doubt on India's ability to design and

¹¹⁴ Brigadier Vijai K. Nair, a retired member of the Indian army, served as Deputy Director General Strategic Planning and the Directorate of Perspective Planning at Army. He obtained a PhD in Political Science with a specialization in Nuclear Strategy formulation and nuclear arms control negotiations. See, <http://www.ndu.edu/inss/symposia/pacific2001/nair.html>

¹¹⁵ Synnott, Hillary. *The Causes and Consequences of South Asia's Nuclear Tests*. The International Institute for Strategic Studies. Adelphi Paper 332. New York: Oxford University Press, 1999, p. 65.

¹¹⁶ Synnott, p. 54. See also, "Joint Statement by Department of Atomic Energy and Defence Research and Development Organization". New Delhi. 17 May 1998, p. 2. Retrieved from www.meadev.gov.in/govt/drdo.htm

¹¹⁷ Albright, David. "Shots Heard Round the World". *the Bulletin of the Atomic Scientists*. Vol. 54, No. 04. Jul-Aug. 1998, p. 23. Retrieved from http://people.reed.edu/~ahm/Courses/Stan-PS-314-2009-Q1_PNP/Syllabus/EReadings/Albright1998Shots.pdf

successfully detonate a hydrogen bomb.¹¹⁸ Given the H- bombs¹¹⁹ potential for enormous destructive power; this bomb is unnecessary for any country seeking sufficient deterrence in so far as they are concerned with a counterforce strategy as opposed to counter-value targets. Waheguru Pal Sidhu notes that “perhaps this is why the Indian Armed Forces, which have consistently asked for nuclear weapons, have never demanded the H-bomb”.¹²⁰ Further, the Chairman of the Chiefs of Staff Committee, Admiral Sureesh Mehta endorsed this by stating that India “already acquired a credible minimum nuclear deterrent ... [and] an H-bomb was not essential for India’s strategic nuclear objectives”.¹²¹ As stated, “minimum deterrence” which is later referred to as sufficient deterrence, is demonstrated to mean a quantity that can fulfill a need or requirement without being abundant.

Without going into specifics, K. Subrahmanyam, a leading member of India’s National Security Advisory Board, and author of India’s draft nuclear doctrine argued for 150 nuclear warheads for an effective Indian deterrent against Pakistan and China.¹²² General K. Sundarji, India’s former Army Chief of Staff, however, suggested that India needed a minimum of 20 nuclear weapons to deter Pakistan and about 50 such weapons

¹¹⁸ Hibbs, Mark. “India Test Questioned”. *Nucleonics Weekly*, 10 Jun 1999, p.13. See also, Hillary Synnott, p.55.

¹¹⁹ Both India and Pakistan have the infrastructure to build these bombs. A fission bomb is an explosive weapon that uses uranium and plutonium as fuel which in the past was referred to as the atomic (A-) bomb, now it is referred to as a nuclear bomb. A fusion bomb, also known as a hydrogen (H-) bomb is now commonly referred to as a thermonuclear bomb, is an explosive weapon that primarily uses uranium fission providing most of its energy to create enormous destructive power. To date, the explosive energy of all deployed devices has been derived primarily from nuclear fission consisting of fissile uranium or plutonium. (Science Clarified. Nuclear Weapons. Retrieved from <http://scienceclarified.com/Mu-Oi/Nuclear-Weapons.html>)

¹²⁰ Sidhu. W. Pal. “Does India Really Need the H-bomb?” 8 Sep. 2009. Retrieved from <http://www.livemint.com/2009/09/08215934/Does-India-really-need-the-Hb.html?h=B>

¹²¹ Ibid.

¹²² Tellis, p. 486.

to provide a credible nuclear deterrent against China.¹²³ However, there are uncertainties that surround the actual number of warheads available to India, and the size of its stock of fissile material. In 1999, the estimated number of nuclear weapons available to India was about 75 or more warheads;¹²⁴ and by reprocessing fuel from its nuclear reactors, India could obtain enough plutonium for 390 and 470 warheads.¹²⁵ One of the problems with such estimates is that they fail to indicate the factors related to the discrepancy between the amount of fissile materials and the number of nuclear weapons. Since it is one thing to have the fissile material to make a certain number of bombs, it is quite another to actually be able to make a nuclear warhead small enough to fit onto a missile. For instance, in 2006, some independent experts estimated that India produced enough fissile material for about 60 to 105 nuclear warheads¹²⁶ of which only 50 to 60 nuclear warheads are assembled.

This size of India's arsenal is dependent upon the number of operational nuclear delivery platforms that are available. As of 2007, the only available nuclear delivery systems included Mirage and Jaguar aircraft and one short-range ballistic missile.¹²⁷ The Indian Ministry of Defence claimed that the *Agni I* is not yet deployable, however it is under progress and once it becomes fully operational, presumably over the next few

¹²³ Kamath, P.M. "Indian Nuclear Strategy: A Perspective for 2020". Strategic Analysis. Colombia University Press, March 1999. Vol. XXII, No. 12. Retrieved from http://www.ciaonet.org/olj/sa/sa_99kap01.html

¹²⁴ Synnott, p. 55.

¹²⁵ Sidhu, Waheguru Pal Singh. "Building a Nuclear Triad and Second Strike Capability". Paper presented at the conference Nuclearisation of South Asia. Como, Italy, May 1999, Retrieved from www.ceip.org/programs/npp/sidhu3.htm See also, Ian Steer, "Asia's Rival reactors a Cause for Concern". Jane's Intelligence Review, October 1998: 26.

¹²⁶ Norris, Robert S. and Kristensen, Hans M. "Global Nuclear Stockpiles 1945-2006". Bulletin of the Atomic Scientists, Vol. 62, No. 4. July/ August 2006. Prepared by NRDC. Available online: 12 Oct. 2006: 64-66. See also, Global Fissile Material Report 2006, International Panel on Fissile Materials. Princeton University, 25 Sep. 2006:15-17.

¹²⁷ Norris and Kristensen. "India's Nuclear Forces, 2007". Bulletin of the Atomic Scientists. Vol. 63, No. 4. July/ August 2007. Prepared by NRDC. Available online: 13 Jul. 2007: 74.

years, India's strike capability may increase.¹²⁸ Moreover, India's only deliverable land-based ballistic missiles are the Agni, Prithvi and Dhanush.¹²⁹ In addition to a limited number of short-range ballistic missiles (Prithvi-I and II) and medium-range ballistic missiles (Agni and Dhanush), India's assault aviation French Mirage 2000 H fighters (approximately 48¹³⁰ in India's inventory) will be supplemented by Russian Sukhoi SU-30 MIC multi-role strike aircraft under the program name 'Medium Combat Aircraft'. With some additional technical prowess, India may also be able to deploy a nuclear device from MIG, Mirage or Jaguar aircraft that already are part of the inventory of its Air Force.¹³¹ There is no official information regarding which of these aircraft has a nuclear role and until India's missiles and warheads are fully developed, their primary delivery vehicle will remain aircraft.

On April 12, 2007, India came one step closer to developing an intercontinental nuclear strike capability when the Indian Defence Research and Development Organisation (DRDO) successfully launched the *Agni III* medium-range ballistic missile. For India to maintain a sufficient nuclear deterrent, although this may be contested, it is unnecessary to develop intercontinental ballistic missile systems (ICBMs) and submarine launched ballistic missiles (SLBMs). However on the contrary, India tested the *Dhanush* naval system on March 30, 2007 and the *Prithvi III* naval in May 2005.¹³² In addition, India is developing its first nuclear-powered submarine called *Arihant* ("destroyer of

¹²⁸ Ibid.

¹²⁹ Alam, Mohammed B. India's Nuclear Doctrine: Context and Constraints. Heidelberg Papers in South Asian and Comparative Politics. Working Paper No. 11. October 2002. South Asia Institute Department of Political Studies University of Heidelberg, p. 8.

¹³⁰ Norris and Kristensen, 2007, p. 75.

¹³¹ Norris, Robert S. and Hans M. Kristensen. "India's nuclear forces, 2005". Bulletin of the Atomic Scientists 61:5 (September/October 2005): 73-75.

¹³² Norris and Kristensen, 2007, p. 75-77.

enemies”) which was launched on July 26, 2009. Indian President Manmohan Singh said that it will take at least a few years before these will be deployable,¹³³ since none of these naval systems are capable of firing missiles. India plans to test-fire a 290 km range BrahMos cruise missile from an undersea post and, if successful, the Indo- Russian joint venture will prove that the cruise missile is capable of launching from submarines.¹³⁴

In an interview conducted by *Frontline Magazine*’s T. S. Subramanian with the chairman of the Atomic Energy Commission of India and nuclear scientist Dr. Anil Kakodkar it was revealed that India’s Pressurized Heavy Water Reactor (PHWR) programme is operating at a high capacity. In addition to being able to build its own nuclear power reactors by manufacturing all the essential nuclear components, India also has an elaborate nuclear infrastructure, and is one of the few countries with a fully capable waste storage facility also known as the Solid Storage under Surveillance Facility.¹³⁵

Under the Indo-US Civilian Nuclear Agreement signed October 8, 2008,¹³⁶ India agreed to place 14 of its 22 commercial nuclear power reactors under safeguards. Currently, India operates 17 commercial nuclear power plants and 5 nuclear power plants are under construction. Under the purview of the nuclear deal, eight of India’s

¹³³ Polgreen, Lydia. “India Launched Nuclear Submarine”. *The New York Times*. Asia Pacific. Retrieved from <http://www.nytimes.com/2009/07/27/world/asia/27india.html> 26 Jul. 2009. See also, “India Launches Nuclear Submarine”. *BBC News*. 26 Jul. 2009. Retrieved from http://news.bbc.co.uk/2/hi/south_asia/8169360.stm

¹³⁴ Author unknown. “India Likely to Test – Fire BrahMos Supersonic Missile in Dec”. *Outlook India*. New Delhi. 11 Oct. 2009. Retrieved from <http://news.outlookindia.com/item.aspx?667570>

¹³⁵ Subramanian, T. S. “Neutron Bomb Capability Exists”. *Frontline*. Interview with Dr. Anil Kakodkar. 9-22 Dec. 2000. Vol. 17, Issue 25. Retrieved from <http://www.hinduonnet.com/fline/fl1725/17250890.htm>

¹³⁶ In a Joint Statement on July 18, 2005, Bush and PM Singh first announced their intention to enter into a nuclear agreement which is now called the United States-India Nuclear Cooperation Approval and Non-proliferation Enhancement Act.

commercial reactors are not subject to safeguards. For instance the Russian supplied research reactor *Aspara* is unsafeguarded, and the Canadian supplied *Candu* (which is also unsafeguarded) will be phased out over the next five years. Key nuclear weapons related facilities in India that are not subject to IAEA inspections include the Bhabha Atomic Research Center (BARC) in Trombay, which houses the *Cirus* and *Dhruva* reactors used for producing plutonium, plutonium reprocessing plants and uranium enrichment plant.¹³⁷ India's safeguarded nuclear reactors cannot be used for nuclear weapons and hence, the U.S. cannot directly assist India with its nuclear weapons program. However, under the nuclear cooperation arrangement, it can indirectly assist India's nuclear weapons program. The remaining eight unsafeguarded nuclear reactors are considered necessary for the production of nuclear weapons and by continuing to operate India's heavy water reactors it provides the opportunity to harvest weapons-grade plutonium from the eight unsafeguarded commercial nuclear power plants. Under the Indo-U.S. Civilian Nuclear Cooperation, the U.S. mandates that all future commercial nuclear power plants will be subject to safeguards and in order for India to enhance its future supply of plutonium, it will need to construct military nuclear plants whose electrical output cannot be utilized commercially.¹³⁸

¹³⁷ Squassoni, Sharon. "Nuclear Threat Reduction Measures for India and Pakistan". CRS Report for Congress. Congressional Research Service. Library of Congress. 17 Feb. 2005: 12. Available at <http://www.fas.org/sgp/crs/nuke/RL31589.pdf> For listing and maps of Indian nuclear facilities, both safeguarded and unsafeguarded, see also, Cirincione, Joseph, Wolfsthal, Jon B. and Rajkumar, Miriam. Deadly Arsenals: Nuclear, Biological, and Chemical Threats, Second Edition Revised and Expanded. Washington, D.C: Carnegie Endowment for International Peace, 2005. Available at: www.carnegieendowment.org

¹³⁸ Thakur, Vijinder K. Indian Nuclear Reactors: Details of existing and planned Indian nuclear reactors, safeguarded and unsafeguarded. Version 9. Knol. 07 Feb 2009 Available from <http://knol.google.com/k/vijinder-k-thakur/indian-nuclear-reactors/yo54fmdhy2mq/2>

One study indicates that India's ongoing and planned expansion of its nuclear program figures at around \$15 and \$150 billion U.S. dollars for achieving a sufficient deterrent capability, assuming it maintains 30-50 bombs.¹³⁹ The most recent estimates by the U.S. Natural Resources Defence Council (NRDC) in 2009 indicate that India has about 50 to 70 nuclear weapons.¹⁴⁰ Thus, establishing sufficient deterrence seems like a viable option for India which will be discussed in greater detail in the next chapter.

Pakistan's Declared and Actual Capabilities

In April 1995, Pakistan Atomic Energy Commission (PAEC) Chairman Ishfaq Ahmad Khan commented that Pakistan's nuclear goals include self-reliance in the construction of nuclear power plants;¹⁴¹ a goal which has since been achieved. Following Pakistan's May 1998 nuclear tests, A. Q. Khan claimed that all six of the country's tests involved boosted fission devices using uranium.¹⁴² Here again, the estimates of cumulative yield vary¹⁴³ which calls into question whether or not the nuclear weapons are ready for use and if they can be successfully deployed. Pakistan's first uranium enrichment plant was developed at the Kahuta Research Laboratories, which already provided the country with its first nuclear weapons.¹⁴⁴ Kahuta is a semi-civilian controlled weapons development and nuclear science research lab. It is also the site of

¹³⁹ Vanaik, Achin; "India's Draft Nuclear Doctrine-A Critique." Transnational Institute- Movement in India for Nuclear Disarmament. 2001. The Online Archives, Retrieved from http://www.tni.org/detail_page.phtml?page=archives_vanaik_critique

¹⁴⁰ Windrem, Robert. "Pakistan Expanding its Nuclear Capability". MSNBC. See also, NRDC, International Panel on Fissile Materials, Institute for Science and International Security, U.S. government estimates. 10 May. 2009. Retrieved from <http://www.msnbc.msn.com/id/30648446/>

¹⁴¹ Khan, Shahid-ur-Rehman. "Officials Say Pakistan Developing Nuclear Manufacturing Capability". Nucleonics Week. 01 Jun. 1995, p. 15.

¹⁴² As cited in Synnott, p. 56.

¹⁴³ Iqbal, Anwar. "How did they pay for it? Not through BCCI, Honest, Says Pakistan's Dr. Strangelove". The Observer. 31 May 1998.

¹⁴⁴ Nayyar, A. H., Toor, A. H. and Mian, Zia. "Fissile Material Production Potential in South Asia". Science and Global Security 6. 1997: 189-203.

the emerging centre for long-range missile development. In addition, the primary fissile material production facility for Pakistan is located here, employing the production of highly enriched uranium.¹⁴⁵

On May 24, 2002, Pakistan tested *Ghauri* missiles with a range that can hit most populous cities of Northern, Central and Western India. Moreover, Zia Mian, of the International panel on Fissile Materials at Princeton University reports that Pakistan's development of two plutonium reactors (near the town of Khushab) in addition to its expertise in uranium enrichment allows the country to increase its nuclear warheads to about 4 to 5 per year while also enhancing the quality of its nuclear arsenal.¹⁴⁶ Pakistan's nuclear-capable aircraft consist of U.S. manufactured F-16s and French-manufactured Mirage Vs. Pakistan has requested additional aircraft from the U.S. since former President George W. Bush lifted restrictions from the Pressler Amendment (2001), and on March 25, 2005, announced aircraft sales with Pakistan would resume.¹⁴⁷ Since then the U.S. has delivered equipment which includes refurbished C-130E transports, refurbished P-3C surveillance aircraft, refurbished Cobra helicopter, new Bell 412 helicopter, number of Harpoon missiles, Harris radars, surveillance radars, night vision goggles and AIM-9M Sidewinder missiles.¹⁴⁸ In addition, the U.S. delivered a total of 14 F-16 aircraft to Pakistan beginning in December 2005 until the final 4 were delivered

¹⁴⁵ Enriched uranium is a critical component for both civil nuclear power generation and military nuclear weapons. Highly enriched uranium is critical for nuclear weapons, naval reactors or nuclear propelled submarines which can be diverted from civilian nuclear power generation.

¹⁴⁶ Windrem, Robert. "Pakistan Expanding its Nuclear Capability". *MSNBC Online*. 12 May 2009. Retrieved from <http://www.msnbc.msn.com/id/30648446/> See also, NRDC, International Panel on Fissile Materials, Institute for Science and International Security, U.S. government estimates.

¹⁴⁷ Norris and Kristensen. "Nuclear Notebook: Pakistani Nuclear Forces, 2009". *Bulletin of the Atomic Scientists*. Vol. 65, No. 5. Sep/ Oct 2009, p. 86.

¹⁴⁸ "Pakistan Air Force". *GlobalSecurity.org*. 3 Jul 2009. Maintained by John Pike. Retrieved from <http://www.globalsecurity.org/military/world/pakistan/air-force.htm>

July 2008. Pakistan also signed an agreement with the U.S. in 2005/2006 for the acquisition of 14 EDA F-16 multi-role aircraft, ten of which the country has received as of June 2008.¹⁴⁹

Like India, Pakistan is developing operational ballistic missiles that are capable of delivering nuclear warheads, which include short-range ballistic missiles *Ghaznavi*¹⁵⁰ (Hatf-3) and *Shaheen-1* (Hatf-4) and the medium-range *Ghauri* (Hatf-5). The *Ghaznavi* was test-launched on February 13, 2008 as part of the army's field-training exercise and production of this missile is reportedly complete. The *Shaheen-1* (engineering originally supplied by China) was last test-launched on January 25, 2008. Following the military launch of *Shaheen-2* on April 19 and 21, 2008, the medium-range ballistic missile is close to becoming operational.¹⁵¹ The *Ghauri*-series of missiles and *Shaheen*-series weapons are capable of hitting any target Indian cities from deep within Pakistani territory.¹⁵² In addition to Pakistan's nuclear capable aircraft and nuclear ballistic missile (getting ready for deployment), two potentially nuclear capable cruise missiles, the ground-launched *Babur* (Hatf-7) and the air-launched *Ra'ad* (Hatf-8), are under development.¹⁵³ Pakistan also sought to improve accuracy and solid fuel capabilities of its existing missile categories.¹⁵⁴

¹⁴⁹ "US Completes Delivery of F-16 Aircraft to Pakistan". [Global Security.org](http://www.globalsecurity.org). 30 Jul 2008. Site maintained by John Pike. Retrieved from <http://www.globalsecurity.org/military/library/news/2008/07/mil-080730-irna2.htm>

¹⁵⁰ *Ghaznavi* is derived from the Chinese M-11 missile.

¹⁵¹ Norris and Kristensen, 2009, p. 87.

¹⁵² Windrem. op. cit. Retrieved from <http://www.msnbc.msn.com/id/30648446/> See also, NRDC, International Panel on Fissile Materials, Institute for Science and International Security, U.S. government estimates.

¹⁵³ Norris and Kristensen, 2009, p. 88.

¹⁵⁴ Statement by Ambassador Akram, Munir; Pakistan in the Conference on Disarmament, 19 Aug. 1999, Retrieved from <http://www3.itu.int/pakistan/CD-Indian%20Nuclear%20Doctrine-19%20August%201999.htm>

Pakistan's nuclear force structure or "the size of Pakistan's nuclear arsenal will be determined by the availability of fissile material, the number and types of available delivery systems, ... and the size of the Indian nuclear arsenal."¹⁵⁵ Pakistan would likely target four to five major cities in India, key military complexes, vital communication centers, strategic air bases, and battlefield targets, adding up to about twenty-five targets. Considering a few technical or delivery failures, assuming a fifty percent attrition rate, a sufficient Pakistani nuclear force might be roughly 50 to 75 deliverable warheads. Hence, these numbers indicate that for a credible deterrent against India, Pakistan needs to build anywhere from 45 to 60 nuclear warheads over the next few years.¹⁵⁶ Moreover, Pakistani efforts suggest that it is preparing to expand and enhance its nuclear forces. The *Bulletin of the Atomic Scientists* estimates that "Pakistan's nuclear weapons stockpile may reach between 100 and 120 warheads within the next decade, or even sooner".¹⁵⁷ In May 2009, the Natural Resources Defence Council estimated Pakistan has about 60 to 80 nuclear weapons.¹⁵⁸ The most recent estimate of Pakistan's nuclear arsenal by the *Bulletin of the Atomic Scientists* reveals amounts to about 70 to 90 nuclear weapons.¹⁵⁹ These estimates indicate the number of nuclear weapons Pakistan has already developed, but fails to determine with certainty which of these nuclear weapons are actually deployable. Further, these numbers are estimates and their reliability is unknown.

The international community has expressed fear over the safety and production of nuclear materials in Pakistan's nuclear facilities. According to some members of the Obama administration, there is concern over what appears to be an increasing amount of

¹⁵⁵ Cheema, op. cit. p. 179.

¹⁵⁶ Ibid.

¹⁵⁷ Norris and Kristensen, 2009, p. 85.

¹⁵⁸ Windrem, op. cit. Retrieved from <http://www.msnbc.msn.com/id/30648446/>

¹⁵⁹ Norris and Kristensen, 2009, p. 85.

unknown bomb-grade uranium for the production of new nuclear weapons in Pakistan. Admiral Mike Mullen, chairman of the Joint Chiefs of Staff confirmed the assessment of Pakistan's expanded arsenal at a briefing in May 2009.¹⁶⁰ The U.S. Congressional Research Service report on May 15, 2009 notes that despite Pakistan's assessed 60 nuclear weapons, Pakistan "continues fissile material production for weapons, and is adding to its weapons production facilities and delivery vehicles". This can be explained by an attempt from Pakistan to create a second-strike capability to enhance its security against the threat from India. Despite the fact that President Zardari, in an interview with MSNBC's David Gregory denied that Pakistan is not adding to its nuclear stockpile,¹⁶¹ there is evidence that says otherwise. When asked about Pakistan's nuclear arsenal, Zardari responded by saying that "even if I did [know about adding to the nuclear arsenal], I wasn't going to tell you".¹⁶²

Several of Pakistan's nuclear facilities are under International Atomic Energy Agency safeguards, which include the KANUPP power reactor (using natural uranium), Chasma-1, low enriched uranium-fuelled power reactor, and two research reactors in Rawalpindi. In addition, two research reactors at Pakistan's Institute of Nuclear Science and Technology (PINSTECH) and Karachi's heavy water upgrading plant are also under safeguards.¹⁶³ The reactors that are not under safeguards includes the Khan Research

¹⁶⁰ Shanker, Thom and Sanger, David E. "Pakistan is Rapidly Adding Nuclear Arms, U.S. says". The New York Times. Asia Pacific. 17 May 2009. Retrieved from <http://www.nytimes.com/2009/05/18/world/asia/18nuke.html>

¹⁶¹ Gregory, Op. cit., Retrieved from <http://www.msnbc.msn.com/id/21134540/vp/30667031#30667031>

¹⁶² Ibid.

¹⁶³ Squassoni, op. cit, p. 12. For listing and maps of Pakistani nuclear facilities both safeguarded and unsafeguarded see Cirincione, Joseph, Wolfsthal, Jon B. and Rajkumar, Miriam. Cirincione, Joseph, Wolfsthal, Jon B. and Rajkumar, Miriam. Deadly Arsenals: Nuclear, Biological, and Chemical Threats, Second Edition Revised and Expanded. Washington, D.C: Carnegie Endowment for International Peace, 2005. Available at: www.carnegieendowment.org

Laboratories at Kahuta (uranium enrichment plant and facilities for fabricating HEU into weapons), centrifuge enrichment plants at Sihala, Golra Sharif and Wah/Gadwal, the Chasma reprocessing plant, and PINSTECH facilities related to reprocessing in Rawalpindi. In addition, the Khushab Pressurized Heavy Water Reactor under construction (the potential future site of a tritium production facility), the heavy water production facility at Multan, Kundian fuel fabrication facility, and Dera Ghazi Khan uranium conversion plant and uranium milling site are also unsafeguarded.¹⁶⁴ In short, the fact that Pakistan continues to spend on its nuclear infrastructure, such as improving its weapons design, construction and expansion of nuclear facilities, and building two additional heavy water reactors¹⁶⁵ indicates preparation for increasing and enhancing its nuclear forces.

While India and Pakistan are not pursuing the same technical route to obtain nuclear weapons, the end result is the same. Based on the above examination, it is obvious that both Indian and Pakistani efforts are aimed at increasing their nuclear arsenal. Since the May 1998 nuclear tests, India has announced its intention to develop and deploy a nuclear triad. While India's nuclear program continues to grow, it is doing so at a slow rate. In August 2008, India negotiated International Atomic Energy Agency safeguards for its civilian nuclear facilities, allowing India to import nuclear technology from countries that belong to the NPT even though India does not. Further, this provides the freeing up of domestic uranium reserves to produce plutonium for its military reactors

¹⁶⁴ Squassoni, p. 12. For listing and maps of Pakistani nuclear facilities both safeguarded and unsafeguarded see, Cirincione, Joseph, Wolfsthal, Jon B. and Rajkumar, Miriam. Cirincione, Joseph, Wolfsthal, Jon B. and Rajkumar, Miriam. Deadly Arsenals: Nuclear, Biological, and Chemical Threats, Second Edition Revised and Expanded. Washington, D.C: Carnegie Endowment for International Peace, 2005. Available at: www.carnegieendowment.org

¹⁶⁵ Norris and Kristensen, op. cit, 2009, p. 83.

for its emerging nuclear weapons delivery systems.¹⁶⁶ Similarly, former CIA Official on Weapons of Mass Destruction and the Energy Department's Director of Intelligence and Counterintelligence Rolf Mowatt-Larssen notes, "it took them [Pakistan] roughly 10 years to double the number of nuclear weapons from roughly 50 to 100".¹⁶⁷ This represents the fact that while Pakistan is continuing efforts to produce its nuclear arsenal, it is actually doing so at a steady pace. It is important to note that Pakistan does not have 100 nuclear weapons yet, one of the reasons is because it does not have enough delivery vehicles to accommodate that many weapons.¹⁶⁸ Furthermore, the operational status of India and Pakistan's nuclear delivery systems is ambiguous. Hence, the size, composition and operational status of their nuclear arsenals remain difficult to determine.

Based on the above estimates, it appears that the number of nuclear weapons possessed by India and Pakistan are actually quite comparable. Pakistan clearly has a greater sense of urgency to diversify its nuclear arsenal, build nuclear reactors and enhance its infrastructure and capabilities because of its perceived prominent threat faced from India. One of the reasons for the varying number of estimates for India and Pakistan's nuclear weapons capabilities is that while they may possess a particular amount of fissile material capable of building nuclear weapons, sufficient deterrence makes it unnecessary to increase nuclear capabilities beyond adequacy. Further, both countries are constrained by technical limitations, and additionally, India must cope with domestic opinion. Moreover, for Pakistan, increasing its nuclear capabilities would be

¹⁶⁶ Norris and Kristensen, op. cit, 2008, p. 38.

¹⁶⁷ Smith, R. Jeffrey and Warrick, Joby. "Nuclear Aims by Pakistan, India Prompt U.S. Concern". The Washington Post. 28 May 2009.

¹⁶⁸ Norris and Kristensen, op. cit, 2009, p. 82.

irresponsible due to limited financial resources. To ignore such factors, may cause them to commit large investments into a robust nuclear weapons program.

Both India and Pakistan are self-reliant nuclear powers because they have the infrastructure to produce nuclear weapons at an incremental pace. India has articulated its nuclear doctrine and also its command and control system, in a manner which can be deemed more efficient and effective than Pakistan based on the examination provided above. While India's primary delivery vehicles are aircraft, it also has land delivery systems which are sufficient to reach Pakistan. Presently, India is developing long-range missiles to deter its larger adversary, China. However, India appears to be at a disadvantage due to the fact that Pakistan is developing two plutonium reactors which will make nuclear warheads lighter and more complex weapons for long-range and cruise missiles. Moreover, Pakistan has the ability to counter India's delivery systems by its own intermediate and short-range missiles which are capable of reaching Indian targets.¹⁶⁹ Pakistan also possesses enough highly enriched uranium and fissile material capable of developing a few nuclear weapons per year. While India has the ability to extract tritium from heavy water used in power reactors to build a hydrogen bomb, Pakistan's capabilities far exceed India's in terms of its potential to improve the quality and quantity of its nuclear arsenal by adding a large-scale plutonium reactor to the country's expertise in uranium enrichment.¹⁷⁰ Moreover, while India has a larger economy than Pakistan, the 1991 economic reforms under PM Narasimha Rao and Finance Minister Manmohan Singh of the BJP Party limited the amount of money to be spent on the advancement of military defence. Even though India continues to utilize its

¹⁶⁹ Nayyar, Toor and Mian, *op. cit.*, p. 189-203.

¹⁷⁰ *Ibid.*

financial resources to maintain a technological, military and nuclear advantage over Pakistan. India is somewhat disadvantaged because it must commit more resources to deter a second regional adversary, China.

The Head of the Strategic Plan Division of the Pakistan's Army, General Khalid Kidwai commented that nuclear weapons are aimed solely at India. In the event that deterrence fails, nuclear weapons will be used if India attacks Pakistan and conquers a large part of its territory, India destroys a large part either of its land or air forces, India proceeds to the economic strangling of Pakistan, and/ or India pushes Pakistan into political destabilization.¹⁷¹ Pakistan is very likely to exercise this option to counter India should the latter pose a serious threat to territorial integrity leading to dismemberment and further fragmentation.¹⁷² Sufficient deterrence keeps the requirements of deterrence to a level adequate to successfully deter an attack by an adversary, thus, gaining security while incurring relatively little risk.

¹⁷¹ Albright, David. "Securing Pakistan's Nuclear Weapons Complex". October 2001, Retrieved from www.isis-online/publications/terrorism/stanleypaper.html

¹⁷² Lodhi, Lieutenant General Sardar F. S. (Retd; Pakistan Army). "Pakistan's Nuclear Doctrine". Pakistan Defense Journal. 1999. See also, Brigadier Ismat, Saeed (Retd; Pakistan Army), "Strategy for Total Defense: A Conceptual Nuclear Doctrine". Pakistan Defense Journal. March 2000.

Chapter Three: Establishing a Stable Nuclear Deterrent

From a standpoint of strategic stability, nuclear war risks a level of destruction that is incompatible with any political objectives between adversaries, India and Pakistan, and thus, it is the aim of this thesis to determine whether or not the condition of stable deterrence may minimize the risk of nuclear war. The purpose of this chapter seeks to ascertain what is necessary for the establishment of a stable deterrent relationship between India and Pakistan. Since India and Pakistan have both claimed a position of minimum deterrence to be a part of their policy, the following section seeks to provide answers to the following questions: What is “minimum deterrence”? What is necessary to establish sufficient deterrence? What are the complications from strategic asymmetry? What are the implications of this for future arsenals?

Both India and Pakistan declare that they seek minimum nuclear deterrence; a term which is often misunderstood. One of the reasons for this is due to the fact that neither India nor Pakistan has clearly defined what ‘minimum deterrence’ means; the implications of which lead to the belief that both countries deliberately espouse a strategy of ambiguity regarding the number of nuclear weapons required for minimum deterrence. Some misunderstandings of the term suggest that for an effective minimum deterrent, it must be small in size and cheap to obtain. However, this misses the point as conveyed by Paul Buteux, the notion of “minimum deterrence” or finite deterrence, is the minimum size necessary for an effective deterrent which could actually become a larger nuclear force.¹⁷³ The term *sufficient deterrence*, coined here, is more applicable to India and

¹⁷³ Buteux, Paul. “The Theory and Practice of Deterrence”. World Politics: Power, Independence and Dependence. Eds. Hawes, Michael K. and Haglund, David G. Toronto: Harcourt Brace Jovanovich Canada Inc., 1990, p. 99.

Pakistan which will be used as an alternative to indicate the fact that the size of a nuclear force is dynamic because it is dependent on specific circumstances. Hence, for sufficient deterrence, the ability is sought to threaten a degree of harm that could seriously weaken the adversary as opposed to obliterating an entire nation.

The concept of minimum deterrence becomes seemingly more ambiguous due to statements stemming from India and Pakistan. Secretary to the Government of India, Department of Atomic Energy's Dr. Anil Kakodkar¹⁷⁴ contends that the objective of the nuclear tests was for India to have a credible minimum nuclear deterrent.

For that purpose, what you really require ... [is] weapons [that] must be compact, lightweight and compatible with the delivery vehicles. This has been the basis of configuring the five tests, and I think we have sufficient information on the basis of these five tests to build a credible, minimum nuclear deterrent... If you are talking about a credible deterrent, then I think that whatever has been done is sufficient.¹⁷⁵

Moreover, India's former Minister of External Affairs, Jaswant Singh stated that,

minimum deterrence is not quantification. It is not a fixity. It is the enunciation of a fixity. The principle is codified in cold war phraseology. It is to be determined in accordance with the reality of and an assessment of the security situation. And as the security situation alters with time determination of minimum deterrence also alter.¹⁷⁶

Singh claims nuclear weapons are an asset that must be sustainable, and deterrence is a question of adequacy, not relative size, which would in this case eliminate India's participation in an arms race. This would imply that India's commitment to deterrence is based on a relaxed posture desiring only a few weapons which provides some stability between India and Pakistan's relationship. Moreover, a nuclear posture as such, signals the prospects for establishing what is later described as *sufficient deterrence*.

¹⁷⁴ Dr. Anil Kakodkar is associated with research and development related to nuclear reactors since 1964, involved in India's first peaceful nuclear explosion of May 1974 and played an important role in the May 1998 nuclear tests.

¹⁷⁵ Subramanian, T. S. "Neutron Bomb Capability Exists". *Frontline*. Interview with Dr. Anil Kakodkar. 9-22 Dec. 2000. Vol. 17, Issue 25. Retrieved from <http://www.hinduonnet.com/fline/fl1725/17250890.htm>

¹⁷⁶ Singh, Jaswant. Interview with *India Today*. 11 Jan. 1999. Retrieved from www.indianembassy.org

Pakistan's former President Pervez Musharraf announced in March 6, 2003, the entry into service of the medium-range nuclear capable *Shaheen I* missile, and to mark the event he announced that the deployment of this weapon reflects the country's determination to "seek qualitative refinements" for its nuclear arsenal while also fusing together minimum deterrence. Further Musharraf adds,

Pakistan does not have global ambitions but was compelled to go nuclear due to belligerence in its neighbourhood.... We are not into an arms race with anyone. Minimum credible deterrence remains the cornerstone of our security policy and toward that end we have defined and quantified for ourselves the notion of minimum deterrence. Beyond that quantified notion, Pakistan will not pursue an open-ended strategic weapons arms race. In my opinion, in the nuclear game, numbers beyond a point lose their significance.¹⁷⁷

Statements as such, by Indian and Pakistan officials fail to indicate accurately their true nuclear intentions. Hence, based on the above Indian and Pakistani statements, sufficient deterrence is better suited for their nuclear strategy which would require a nuclear force that is enough to deter based on strategic security considerations, but nothing more than that. So in other words, India might end up having a larger nuclear force than Pakistan due to their asymmetrical relationship which is discussed in greater detail below.

It is important to note that while both India and Pakistan declare their country seeks minimum deterrence, neither clearly defines what a nuclear strategy of "minimum deterrence" entails. The fact that both India and Pakistan have mentioned that their minimum deterrence is 'dynamic' (subsection 2.1 of the Draft Nuclear Doctrine) and 'flexible' in nature, implies that their nuclear arsenal is subject to change under certain circumstances and is better represented as sufficient deterrence. Further, it implies that these countries have deliberately failed to define the term, keeping open the possibility for further development of their nuclear arsenal in the future. Since Pakistan's 'flexible'

¹⁷⁷ Author unknown. "Pakistan Inaugurates New Shaheen Missile". [The Associated Press](#). 06 Mar. 2003.

nuclear posture is dependent on India, if India increases its nuclear arsenal, then Pakistan feels that it too, must increase its own nuclear arsenal to achieve a certain level of comfort and provide some sort of balance. India's policy towards nuclear weapons is consistent with realist notions that unless everyone gives up the nuclear option, it is not in India's interest to do so. India's strategic culture enables arms control talks to facilitate a desire to build a stable relationship with Pakistan. In short, India and Pakistan have maintained a deliberate policy of ambiguity regarding their "minimum" nuclear deterrence to mislead people.

If utilize the concept of *sufficient deterrence* to better reflect India and Pakistan's nuclear policy as indicated by government statements, this directs to believe the concept is derived from the destructive capability of a few nuclear weapons. It is important to note that, neither India nor Pakistan subscribe to a concept of assured destruction as derived from the Cold War, but the potential for such destruction is nonetheless apparent. The idea then, is that nuclear weapons possess an equalizing power and, the argument as it stands, is based on the fact that since nuclear weapons can cause damage, there is no need for an adversary to match each other bomb for bomb. In other words, sufficient deterrence keeps the requirements of deterrence to a level adequate to successfully deter an attack by an adversary. Buteux's concept of "finite deterrence" notes that it is not necessary to destroy an adversary, but what is necessary is the ability to "tear off an arm" or weaken the adversary's nuclear force. For sufficient deterrence, then, the numerical value of nuclear weapons becomes irrelevant beyond a certain number based on what is deemed sufficient since a few weapons can cause damage. Based on a specific circumstance, the size of a country's nuclear arsenal can be kept to a limited number, in

effect, avoiding a nuclear arms race between India and Pakistan. Furthermore, the shared fear of total war, which is reinforced by nuclear weapons, creates an opportunity for India and Pakistan to make a tacit agreement never to use nuclear weapons against one another. This can work only as long as a deterrent posture is adopted for the purpose of simply deterring war or preventing nuclear blackmail. Whereas, if the purpose for nuclear weapons is to satisfy a war fighting objective, then the number of a country's arsenal and its delivery vehicles would increase significantly. It must also be kept in mind that increasing the number of nuclear weapons and the necessary infrastructure would be a very expensive endeavour.

According to a former Director of Arms Control and Disarmament Affairs in Pakistan, Naeem Salik, the ultimate size of a "minimum" deterrent force is inversely proportional to the survivability of the force. If the survivability of the force is great, then the nuclear force is small; and if the survivability is low and if the opponent has deployable missile defence systems in place, then obviously the size of a deterrent force is high.¹⁷⁸ In addition, in a newspaper article entitled 'Securing Nuclear Peace', three retired Pakistani officials, Abdul Sattar, Agha Shahi and Zulfiqar Khan argued that:

purely deterrent forces can be relatively modest provided their survivability can be assured against a surprise attack, continued build up of nuclear weapons should be unnecessary. Nor does a strategic arsenal have to match the adversary's arsenal.¹⁷⁹

¹⁷⁸ Salik, Naeem. Minimum Deterrence and India Pakistan Nuclear Dialogue: Case Study on Pakistan. Rawalpindi, Pakistan: Landau Network Centro Volta South Asia Security Project Case Study, March/ June 2006, p. 4-5. Retrieved from <http://www.centrovolta.it/landau/content/binary/A%20Cooperative%20Threat%20Reduction%20and%20Regional%20Verification-%20Monitoring%20Model%20for%20South%20Asia.%20The%20Pakistan%20View.pdf>

¹⁷⁹ Shai, Agha, Khan, Zulfiqar and Sattar, Abdul. "Securing Nuclear Peace". Nuclear Stability in Southern Asia. Eds P.R. Chari, Arpit Rajain and Sonika Gupta, New Delhi: Manohar Publications, January 2003, p. 191.

In short, the primary purpose of adopting a policy of mutual sufficient deterrence is because it is conducive to stability and offsets any potential nuclear competition such as an arms race.

There is disagreement in the literature over the number of nuclear weapons desirable for a “minimum” deterrent. Without getting into specific numbers for a desirable nuclear force, the following section seeks to establish criteria for establishing what is necessary for sufficient deterrence to prevail. In a remark made before *the American Society of Newspaper Editors* the Secretary of Defense in Washington on April 20, 1963, Robert McNamara said, “you cannot make decisions simply by asking yourself whether something might be nice to have. You have to make a judgment on how much is enough.”¹⁸⁰

Having discussed various definitions of “minimum deterrence” and the ambiguity surrounding a clear definition by Indian and Pakistani officials, what remains is how these countries can establish and maintain a stable nuclear posture. The difficulty in providing answers to these questions arises from the fact that the concept of “minimum deterrence” espoused by India and Pakistan lacks clarity and, moreover, there is a real difficulty in practicing such a strategy due to altering political and economical circumstances of each country. For instance, any country can adopt or declare a policy of stable nuclear deterrence but in actuality, complications arise from the operational aspects of the concept. This is why both India and Pakistan state their “minimum deterrence” is ‘flexible’ and ‘dynamic’ in nature, so that it can keep open the option for upgrading and increasing its nuclear arsenal if a situation arises which would deem a build-up necessary.

¹⁸⁰ Enthoven and Smith, op. cit., p. 197.

Based on the fact that nuclear weapons have the potential to inflict unacceptable damage along with disastrous effects which are carried over into the future, the rationale for sufficient deterrence, then, is to highlight the fact that even a single nuclear weapon can cause tremendous destruction. Hence, efforts aimed at reducing or eliminating the chances of unacceptable damage and destruction is crucial. “The sublime factor in a war against the unknown could only be guaranteed to function decisively if it has been psychologically prepared for the unknown”.¹⁸¹ Statements as such, fail to consider the utility of sufficient deterrence as a counterforce strategy rather than a counter-value strategy which would adversely affect the number of nuclear arsenal. For an effective sufficient deterrent, a common aversion to avoid war does not require the nuclear killing of an entire population. Hence, what can be deemed sufficient is a nuclear force that demonstrates the ability and political will to cause a level of damage upon the adversary that can adequately weaken its nuclear forces. Furthermore, since the objective of sufficient deterrence is not the total destruction of a country, large numbers of nuclear weapons are deemed unnecessary to achieve this objective and, preparing for “the unknown” is undesirable and unnecessary because it allows a country to increase its nuclear arsenal.

The balance of terror is anything but delicate. An enemy who *can* be deterred, *will* be deterred by the prospect of a counterattack, even if it consists of only a few nuclear weapons. Beyond that minimum threshold, nuclear weapons provide little additional deterrent benefit.¹⁸²

Understanding the difficulty in deciding the amount of destruction the U.S. was willing to inflict upon the Soviet Union to maintain its deterrent capability during the Cold War, led

¹⁸¹ Palit and Namboodiri, *op. cit.*, p. 122.

¹⁸² Lewis, Jeffrey. “Minimum Deterrence”. the Bulletin of the Atomic Scientists. New America Foundation. Jul/Aug 2008. Retrieved from http://www.newamerica.net/publications/articles/2008/minimum_deterrence_7552

Robert McNamara to the judgment that “the ability to destroy in retaliation 20 to 25 percent of the Soviet population and 50 percent of its industrial capacity was sufficient.”¹⁸³ It was argued that such a level of destruction would be considered unacceptable by any country and would serve as an effective deterrent against any potential nuclear attack.

The question becomes: How many nuclear weapons for the purpose of deterrence would be sufficient? Pakistan’s Salik suggests a simple method which can lead to a realistic figure to determine the ‘pain threshold’ of an adversary, linked to the level of development affluence in a country and the value it assigns to human lives. First, a country must identify the most valuable assets, the loss of which would really hurt an adversary. For instance, major population centers, industrial complexes, military bases and communication centers. Second, a country would determine the number of targets it considers critical followed by determining the number of warheads and delivery systems that would be required to engage each of these targets. Third, given the uncertainty that comes with delivery of nuclear weapons, each country would keep a few extra weapons in case of system failures and also, for its reserve (since all nuclear assets would not be used in a single strike). Fourth, a country’s nuclear arsenal is also dependent upon whether or not the other side has deployed missile defence systems.¹⁸⁴ If the third criterion is eliminated from Salik’s method, the remaining criteria, should if nothing else, keep a country’s nuclear arsenal to a bare minimum if the objective is to deter a country rather than causing total devastation. In short, the number of nuclear weapons will vary depending on critical number of targets and missile defence systems.

¹⁸³ Enthoven and Smith, *op. cit.*, p. 175.

¹⁸⁴ Salik, p. 14.

Before examining the complications of power asymmetries between India and Pakistan, it is necessary to briefly outline what is meant by asymmetry. T. V. Paul notes that an asymmetric conflict involves “states of unequal aggregate power capability, measured in terms of material resources, i.e., size, demography, military capability, and economic prowess”.¹⁸⁵ Factors such as political will and morale are difficult to measure and are not included in assessing national power capabilities because they are bound to change over time. There is a noticeable disparity of power capabilities in which the India-Pakistan conflict. “India is over seven times larger than Pakistan in population and size of national economy, and four times in territorial size”.¹⁸⁶ Although India and Pakistan’s nuclear arsenals are comparable in size, as demonstrated in the previous chapter, the view that India’s requirements for “minimum deterrence” or *sufficient deterrence* are larger than Pakistan’s which creates a basis for instability in their nuclear relationship. In addition, conventionally, Pakistan is no match for India. India has to cope with security concerns which arise from the fact that it is in between two nuclear-armed neighbours: Pakistan and China, whereas Pakistan is only concerned with India.

In the past, Pakistan was able to balance India through its military capabilities and alignment with external powers. While Pakistan’s economy performed slightly greater than India up until the 1980s (in terms of GDP growth rates and per capita income) due to foreign aid and its economic policy of a limited free market, following India’s policy of economic liberalization in 1991, the situation started to change in India’s favour, showing steady growth of economic and military capabilities. Hence, Pakistan started to resort to

¹⁸⁵ Paul, T. V. *The India-Pakistan Conflict: An Enduring Rivalry*. Cambridge: Cambridge University Press, 2005, p. 5. Also, see T.V. Paul. *Asymmetric Conflicts: War Initiation by Weaker Powers*. Cambridge: Cambridge University Press, 1994, p. 20.

¹⁸⁶ Paul, op. cit., 2005, p. 12.

an old strategy adopted during the Soviet withdrawal from Afghanistan in 1989 which supported insurgency and proxy wars to continue the struggle with India. At the expense of political and economic underdevelopment, Pakistan has poured in much of its financial resources into ensuring it can maintain some type of defence against India. Moreover, Pakistan considers the acquisition of nuclear weapons a “great equalizer” at the strategic level due to the ability of its missiles to reach most parts of India. In addition to conducting operations in Kashmir with more force.

Since the introduction of nuclear weapons, a long war has also become inconceivable without the likelihood of nuclear escalations. In a short war, the Pakistani leaders tend to believe that their superior strategy, tactics, and resolve could enable them to compensate for their overall material weakness.¹⁸⁷

Even though India is larger in size, population, GNP and overall military capacity, a smaller Pakistani military force is still proportionally higher than India. At times, India is at somewhat of a disadvantage because half of the Indian land forces¹⁸⁸ are stationed on the border with China. What is of importance here is that this asymmetry, as indicated by the fact that India has to deter two-nuclear armed neighbours, demonstrates that sufficient deterrence is compatible with India’s security objectives. Furthermore, Indian requirements for a sufficient deterrent are larger than Pakistan’s which creates a basis for instability in their relationship.

With regard to strategy, policy-makers need to analyse a particular situation carefully and then, tailor their policies accordingly. When analyzing sufficient deterrence, one must keep in mind the difficulties that are involved in achieving such a nuclear posture. In order for deterrence to work, it is argued here that it is not enough to

¹⁸⁷ Paul, op. cit., 2005, p. 13.

¹⁸⁸ As of 2005, India has the second largest military manpower in the world at 3,773,300 personnel next only to China and Pakistan’s manpower was 1,449,000 personnel.

only have nuclear weapons, what is necessary, is the ability to deter with nuclear weapons. Often, nuclear weapons are criticized by the fact that they provide neither security nor autonomy and instead, provide an additional danger. The Cold War demonstrated that if two opposing sides possess the nuclear capability to inflict unacceptable damage to an adversary in a second-strike, they have mutual assured destruction (MAD). While the concept of ‘unacceptable damage’ and MAD derived from the Cold War does not apply to the Indian-Pakistani nuclear relationship, the fact that both sides implicitly understood the risks associated with nuclear escalation is applicable. During the Cold War, a second-strike nuclear force capable of surviving a surprise attack with enough retaliatory strength to cause unacceptable damage to the attacker was considered “enough”. Additionally, both sides were deemed to be “absolutely deterred” from launching a first-strike offensive by the credible threat of retaliatory annihilation. At this time, much of what deterrence represented revolved around efforts aimed at preventing a potential aggressor from launching an offensive attack by taking certain measures to convince the enemy that aggression would be too costly, and perhaps end in defeat. Since this thesis is concerned with sufficient deterrence and the ability to deter nuclear war, Cold War deterrence theory which purports to threaten the very survival of the aggressor nation becomes irrelevant. What is of significance is that, during this period of arms control, MAD ensured that both sides implicitly understood the risks involved in a nuclear confrontation which is applicable to the India-Pakistan case.

According to Ashley Tellis, India’s nuclear strategy is considered a “lite” version of MAD. For instance, during the Cold War, assured destruction was dependent on the

nuclear annihilation of an adversary, but for India and Pakistan, the concern is with weakening the nuclear capabilities of the adversary. If Tellis is correct in making such an analysis, many of the often expressed fears concerning India and Pakistan being on the brink of nuclear war, could prove unfounded. During the Cold War, the U.S. and the Soviet Union understood the negative consequences from the fallout of nuclear war. Now, this is not to say that the Cold War provides a perfect example for India and Pakistan in resolving their enduring conflict over the fear of nuclear escalation. One must keep in mind that domestic political structures and civil-military relationships of India and Pakistan vary considerably from the Cold War case,¹⁸⁹ but to some extent, also provides some insight into India and Pakistan's nuclear relationship. During the Cold War, security competition was related primarily to power politics whereas for India and Pakistan, the competition of power politics is further exacerbated by historical animosities, unstable power transition, internal political changes and the demands of state building. Hence, if anything is to be learned from the Cold War, it is that both India and Pakistan share a mutual understanding of the disastrous consequences of waging a nuclear war against one another. It is also important to note that the variables which allowed the U.S. and the Soviet Union to achieve a sense of nuclear stability came from the fact that they were able to reach a consensus on nuclear dialogue, contributing to the success of deterrence. This, as it turns out, is a missing factor in India and Pakistan.

The power asymmetry between India and Pakistan is further affected by the fact that India seeks to gain great power status and permanent membership to the UN Security

¹⁸⁹ One difference is that during the Cold War, the U.S. and former Soviet Union did not share a common border and the in-flight delivery time of nuclear weapons was far greater than the distance between India and Pakistan's 3-minute alert.

Council, which creates an atmosphere of fear for Pakistan. Pakistan fears that if India gains membership to the Security Council, then its security would be adversely affected. In contrast, since Pakistan cannot compete conventionally with India, Pakistan has consistently pursued a policy of obtaining parity with India through indirect support of clandestine military operations, as demonstrated by the 1999 Kargil crisis. However, the Indo-U.S. Civilian Nuclear Cooperation agreement creates a new cause for concern among Pakistani officials, while also creating a strategic imbalance in the region.¹⁹⁰ The nuclear deal allows India to gain technical expertise for its civilian nuclear program which can also be indirectly utilized for its military nuclear program. Arguably, one of the reasons why the U.S. government signed a nuclear cooperation agreement with India is to counter perceived threats from China. If this is the case, the Indo-U.S. nuclear cooperation agreement may be considered necessary for India to cope with problems of regional asymmetry. In contrast, the nuclear deal as it stands also generates feelings of insecurity amongst the Pakistanis. Whatever the circumstance may be, by extending a nuclear cooperation agreement to India may lead to a desire by Pakistan to further develop its nuclear arsenal in the future. However, if both India and Pakistan endorse a policy of sufficient deterrence, they can reduce the potential for engaging in an arms race while also keeping the level of deterrence to a low level.

Given the above examination of India and Pakistan's asymmetrical relationship, establishing sufficient deterrence seems like a more viable option. While Pakistan is concerned solely with deterring threats from India, unfortunately India is concerned with

¹⁹⁰ Pakistan Defence. "Pak pushed for FMCT to nuke India's stockpile". 17 Jun. 2009. Retrieved from <http://www.defence.pk/forums/strategic-geopolitical-issues/28399-pakistan-pushes-fmct-nuke-india-s-stockpile.html>

detering threats from China and Pakistan which provides the justification for a potential larger nuclear arsenal. In a letter to former American President Bill Clinton after the May 1998 nuclear tests, PM Vajpayee said,

we have an overt nuclear weapon state on our borders, a state which committed armed aggression against India in 1962.... [That] country has materially helped another neighbor of ours to become a covert nuclear weapon state.¹⁹¹

Sufficient deterrence is the optimal position for a state faced with security threats from regional adversaries. The potential for nuclear weapons to cause tremendous damage and destruction in a short time shapes strategic thinking, which holds that no decision-maker can afford to treat such a risk as acceptable.¹⁹² Moreover, nuclear retaliation is only credible in “defence of one’s homeland”¹⁹³ and as it becomes obvious that, the purpose of sufficient deterrence is to protect national sovereignty. So, for India and Pakistan, sufficient deterrence would eliminate the desire to significantly increase nuclear arsenals or engage in an arms race. As it stands, American historian and strategist Bernard Brodie statement made in 1946 still holds some truth today:

thus far the purpose of our military establishment has been to win wars. From now on its chief purpose must be to avert them. It can have no other useful purpose.¹⁹⁴

This statement illustrates the fact that nuclear weapons are unique, changing warfare forever, becoming a key to the fact that nuclear weapons were never used during the Cold War. Any blurring of the distinction between nuclear weapons and conventional weapons was understood to move the world across the nuclear threshold towards disaster.

¹⁹¹ P.R. Chari. “India’s Nuclear Doctrine: Confused Ambitions”. The Non Proliferation Review. Fall/Winter 2000: 123.

¹⁹² Basrur, op. cit., 2006, p. 169-70.

¹⁹³ Hoag, Malcolm W. “Nuclear Policy and French Intransigence”. Foreign Affairs. Vol. 41, No. 2. Jan 1963: 288.

¹⁹⁴ Brodie, Bernard. The Absolute Weapon: Atomic Power and World Order. New York: Harcourt Brace, 1946, p. 76.

India's interest in arms control recognizes the large degree of risk inherent in nuclear confrontations, which signals a preference for strategic stability.

They [nuclear weapons] can only serve a limited purpose for India-of preventing the use or threat of use of nuclear weapons by its adversaries against it. There is little else that nuclear weapons can do ... Even the most sophisticated and expansive nuclear arsenal will not propel India into the ranks of great powers. Mindless obsession with nuclear weapons will instead push India down the ruinous path that the Soviet Union went. Having acquired an insurance policy through nuclear weapons, India must now pursue the arduous domestic agenda of economic modernization, political reform, and social advancement ... The productive economic and political engagement of the world must remain the bedrock of nuclear India's diplomacy. A paranoid reading of external threats to security and an over-determination of the role of nuclear weapons in national strategy will drive India into a needless confrontation with most nations and undermine New Delhi's efforts to expand its regional influence and global standing.¹⁹⁵

The history of non-deployed posture, despite recent crises (1999 and 2001-2002) under a nuclear shadow, shows that a strong commitment to a non-threatening posture, with a low potential for escalation exists. For example, during the Kargil crisis, India managed to refrain from violating the rule that makes it imperative for nuclear powers not to cross the threshold to conventional war.

Based on the estimates provided in chapter two, it becomes evident that India and Pakistan, more or less, possess a comparable nuclear force. While India may need a larger force down the road, presently Indian policymakers appear confident that a small nuclear force capable of surviving a first strike will be a sufficient deterrent¹⁹⁶ in light of outstanding security concerns with Pakistan and China. Both India and Pakistan's nuclear posture is based on a political rather than an operational conception of deterrence, because neither country has any desire to engage in an arms race with their nuclear adversaries, and hence, there is some form of mutual recognition of the risks involved in nuclear use.

¹⁹⁵ Mohan, C. Raja. "Beyond the Nuclear Obsession". The Hindu. Chennai, India, 25 Nov. 1999.

¹⁹⁶ Ganguly, Sumit. "Review: Behind India's Bomb: The Politics and Strategy of Nuclear Deterrence". Foreign Affairs. Council on Foreign Relations. Vol. 80, No. 5, Sept-Oct 2001: 138. Retrieved from <http://www.jstor.org/stable/20050256>

Given the above examination of the criteria essential for establishing sufficient deterrence together with their declaratory nuclear policies, and the asymmetric relationship between India and Pakistan, it becomes crucial to emphasize what this means for future arsenals. A look back at chapter one reveals that India has maintained a long history of nuclear restraint as demonstrated by the fact that it has not crossed the nuclear threshold during conflict. However, India holds a contradictory position which acknowledges nuclear power is a prerequisite for security in an anarchic world, while at the same time considers nuclear weapons morally unacceptable and detrimental to security because of the risks associated with them. This contradictory position has allowed India to pursue calls for universal disarmament, while also keeping open the option for further nuclear development. There are features of India's nuclear thinking which does not fit with the concepts of sufficient deterrence argued here. For instance, India puts emphasis on credibility and survivability of its nuclear forces in the draft nuclear doctrine, which could lead to the expansion of its nuclear arsenal beyond what is necessary, and shift deployment which could create more tension among adversaries, thereby reducing security in the region. The recent Indo-U.S. Civilian Nuclear Cooperation deal is a great example of this. For Pakistan, the very fact that it has not fully articulated a nuclear doctrine makes its claims of seeking "minimum deterrence", immature. The unstable nature of the government in Pakistan also contributes to the difficulty of ensuring a responsible command and control infrastructure is available and adequate.

Based on the factors listed above, both India and Pakistan may continue to increase their nuclear arsenals so long as they fail to engage in nuclear dialogue with one

another. What remains crucial to obtain a sufficient deterrent is a satisfactory command and control system that has a non-deployed posture and an unattached nuclear warhead to prevent accidental or unauthorized use, unaccompanied by enough nuclear weapons to reach only key targets. Hence, the nuclear arsenal can continue its process of technological sophistication to ensure the credibility and survivability of the nuclear force to reduce the overall number and size of its nuclear weapons. This will contribute to arms control efforts, but with the insistence on high levels of verification without open-ended acquisition.

Before one can begin to estimate the implications of India and Pakistan's nuclear relationship for the future, it is important to keep in mind that sufficient deterrence alone, is not going to create a more stable and peaceful environment; it must be in conjunction with a number of other factors. A few basic requirements are essential for maximizing prospects of stable nuclear deterrence. First, India and Pakistan must obtain a clear understanding of the political and operational aspects of each country's nuclear weapons together with the concomitant need to prioritize the political.¹⁹⁷ Second, each country must recognize the necessity of creating a strategy which focuses on each country's commitment to help promote stability, as well as maintain political and diplomatic dialogue. Third, it is absolutely essential that both India and Pakistan establish a sound understanding of the requirements of sufficient deterrence as a basis for arms control.

¹⁹⁷ Basrur, p. 176.

Chapter 4: Prospects for Peace

During the Cold War, the threat of mutual annihilation was seen as one of the reasons why the United States and the former Soviet Union did not go to war with one another. India and Pakistan's declaratory desire for establishing a stable nuclear deterrent contributes to their overall desire to avert nuclear exchanges. Since the advent of India's nuclear capability in 1974, India and Pakistan have not fought any serious wars, although they came close in Kargil (1999). By now, they should have learned from the risks associated with such confrontations, leaving open the possibility to a peace process. "A serious nuclear crisis, which is not inconceivable, would compel the two countries to seek a more stable relationship".¹⁹⁸ In 1988, the first manifestation of nuclear arms control was an agreement between India and Pakistan not to attack each other's nuclear facilities. The future for India and Pakistan lies in the cooperative and stable elements of a nuclear relationship.

Proliferation optimists like Kenneth Waltz make the case that deterrence brings security and produces war-avoiding policies, while proliferation pessimists such as Scott Sagan emphasize risks associated with the breakdown of deterrence. It is useful to apply Waltz's logic to the India-Pakistan case to better understand aspects of their nuclear relationship. According to Waltz, nuclear weapon states will use their capabilities to deter threats and this will improve the overall prospects for peace. While, it cannot be denied that war remains a possibility, Waltz argues that the unacceptable costs of war remain too high for both sides, which provides little incentive to fight. Moreover, the presence of nuclear weapons makes states exceedingly cautious: "why fight if you can't

¹⁹⁸ Basrur, op. cit., 2006, p. 176.

win much and might lose everything?”¹⁹⁹ Following this logic, if the possibility of fighting a nuclear war induces restraint, and if India and Pakistan establish a mutual deterrent relationship, they could gain confidence in each other’s ambitions which may reveal more cooperative elements of their nuclear relationship.

For India and Pakistan’s deterrent strategy to be effective, both countries must demonstrate the will to use their nuclear weapons without actually using them. According to Waltz, if two nuclear countries can demonstrate the will to use their weapons, an adversary will be inhibited from taking any undesirable course of action against the other.²⁰⁰ Further, since the risk of nuclear war hinders the fact that suffering may be unlimited, a potential aggressor is restrained from acting in an aggressive manner. However, given the internal problems facing India and Pakistan’s weak government and growing extremist movements in the North Western Frontier province, control over their nuclear weapons and the decision to use them is at risk. Waltz notes that under such fearful circumstances, “it may be impossible to maintain governmental authority and civil order”²⁰¹ and furthermore, what is required is a level of continuity among successive governments, to ensure the sustainability of its nuclear programs.

Looking back at chapter one, the historical background for India and Pakistan provided some insight into the attitude of each respective countries’ successive governments toward nuclear weapons. It revealed that while both countries declared a desire for universal nuclear disarmament, the reality was that neither India nor Pakistan was willing to give up the nuclear option as demonstrated by the nuclear tests in May

¹⁹⁹ Waltz, Kenneth. “More May Be Better”. *The Spread of Nuclear Weapons: A Debate Renewed*. Eds. Sagan, Scott and Kenneth Waltz. New York: W.W. Norton, 2003, p.7.

²⁰⁰ Ibid, p. 7.

²⁰¹ Ibid, p. 11.

1998. It was also revealed that through their successive governments, in times of crisis or conflict both countries remained in control of their nuclear arsenal; whether it was under civilian control or military control. Bear in mind that “nuclear weapons induce caution in any state, especially weak ones”,²⁰² and thus, for Pakistan, the potential to lose everything deters the country from launching a nuclear attack. More importantly, regardless of problems of proliferation, territorial disputes, and asymmetrical nuclear capabilities, India and Pakistan recognized the importance of maintaining some level of cooperation. According to Arthur Stein, common aversions are “characterized by actors’ having a common interest in avoiding a particular outcome”.²⁰³ During the Cold War there was a desire to avoid nuclear war and for India and Pakistan, the destructive potential of nuclear weapons can also lead to a strong aversion for nuclear war which may create incentives for cooperation. In short, since nuclear weapons impose constraints on countries that possess them, the practice of prudence if enjoined by India and Pakistan can lead to a more secure nuclear relationship.

Today, the fear that control over Pakistan’s nuclear weapons program might end up in the hands of terrorists threatens the country’s overall ability to function. It has been argued that since Pakistan’s nuclear weapons program is primarily controlled by its military there is a reason for alarm due to a “supposed” inclination by the military towards the use of force in times of conflict. In addition, there is a fear that a lack of checks-and-balances on Pakistan’s military increases the likelihood that terrorists may get their hands on nuclear weapons. Following this argument, Scott Sagan contends that strategic and operational nuclear doctrines will be heavily influenced by the interests of

²⁰² Ibid, p. 13.

²⁰³ Stein, Arthur A. *Why Nations Cooperate: Circumstance and Choice in International Relations*. Ithaca, New York: Cornell University Press, 1990, p. 36.

the military, and such interests or biases will result in the failure of deterrence which could lead to accidental or unauthorised nuclear use.²⁰⁴ On the contrary, in Pakistan, a nuclear weapons program controlled by the military as opposed to civilian- or shared control, does not necessarily presuppose civilians are more cautious than soldiers. After all, military officials dislike uncertainty, and the offensive use of nuclear weapons does nothing more than to increase this feeling. In addition, Waltz notes that a military official would be strongly inhibited from initiating nuclear use against an adversary.²⁰⁵ The risk then, comes from the fact that terrorists, and not the military, would misuse nuclear weapons to achieve their own malicious objectives. Hence, the argument posed by Sagan is dismissive of the fact that most military officials recognize the potential destruction of a nuclear war. Furthermore, Sagan denies countries like India and Pakistan the potential in which their nuclear relationship provides incentives for cooperation.

Sagan raises an interesting point regarding the military-civilian control of nuclear weapons, resembling the discussion in chapter two²⁰⁶ regarding command and control structures that points to the checks- and- balances system of civilian control over nuclear arsenals.²⁰⁷ Then, for a country like Pakistan, whose military has control over the nuclear weapons program, there is a dire need for a system in which checks-and-balances can be applied to ensure the overall safety of the nuclear arsenal. As stated earlier in chapter two, since it is simply not enough to possess nuclear weapons, India and Pakistan must strengthen their command and control systems to reduce the potential for accidental or unauthorized nuclear use.

²⁰⁴ Sagan, Scott. "More Will Be Worse". *The Spread of Nuclear Weapons: A Debate Renewed*. Eds. Sagan, Scott and Kenneth Waltz. New York: W.W. Norton, 2003, p. 47.

²⁰⁵ Waltz, p. 15.

²⁰⁶ See Chapter 2, p. 16-21.

²⁰⁷ Sagan, p. 83.

According to Waltz, the pressures of competition among states, causes them to behave in a manner which makes threats more manageable,²⁰⁸ and offers them an opportunity to cooperate. In order for enduring peace to prevail, India and Pakistan need to find a way to manage domestic instability. If Pakistan manages to secure the role of its government, then India will feel a greater sense of security, because the security of one country is connected to the security of the other. In addition, a crucial step forward, is a mutually shared understanding and recognition that the escalation of war to the nuclear level is undesirable by both parties due to the disastrous consequences of such an attack. The mutual recognition of this fact will provide some form of confidence that neither country will act aggressively towards the other country. In addition, to reduce the risks of further conflict, India and Pakistan should secure mutual conditions of trust by establishing sufficient deterrence and pursuing confidence-building measures. Irrespective of any negative outcomes, ongoing dialogue over Kashmir, insurgency and arms control will help promote a more stable relationship between India and Pakistan. Through efforts aimed at pursuing collective goals, a greater level of trust between them may eventually develop.

Both India and Pakistan are aware of the fact that their hostility over Kashmir is dangerous and damaging to their national interest and thus, a negotiated settlement cannot be ruled out. This would lower tensions, reduce the possibility of expanding nuclear capabilities and facilitate arms control. Indian policy must simultaneously maximize its national security while promoting cooperation and restraining the negative impact of measures taken to do so. Aside from the fact that critics have argued India and

²⁰⁸ Waltz, *op. cit.*, p. 12.

Pakistan show strong signs of instability as is evident by the fact that arguably, they came close to war in 1999 and 2001-2002. On the other hand, there have been times of crisis in which both countries have observed the terms of the Lahore Memorandum (discussed below) which requires each country to inform the other in advance, about any impending missile testing, mandating continued dialogue on nuclear risk reduction. For example, at the height of the 2001-2002 conflict, both countries exchanged information about their nuclear facilities as required by their 1988 agreement. In addition, India's efforts following the 2008 Mumbai attacks were limited, due to the desire to curb terrorism from within India, and not concerned with dismembering or occupying Pakistan.²⁰⁹ There is a predisposition against a large-scale destructive war which is evident by the fact that both countries have restrained from exasperating the issue despite their conflict with each other. Pakistani General Beg stated in an interview in 1992 that,

... the strategy of terror starts working from the first notion that there is retaliation. The fear of retaliation lessens the likelihood of war between India and Pakistan. I can assure you that if there were no such fear we would probably have gone to war in 1990.²¹⁰

What we can determine is that, from a standpoint of strategic stability, the “minimum deterrence” doctrine espoused by India and Pakistan which is referred herein as *sufficient deterrence*, minimizes the risk of war. The greater strategic distance between them, the lower the probability of nuclear conflict. However, some vulnerability exists, such as terrorist threats. Thus, for a strategy of sufficient deterrence, the question of adequacy is the ability to demonstrate the will to successfully cause damage, but more importantly, the level of risk associated with the potential use of nuclear weapons.

²⁰⁹ Basrur, op. cit., 2006, p. 97

²¹⁰ Perkovich, op. cit., p. 312.

So long as the world remains anarchic, states will continue to value nuclear weapons to counter threats to their security. According to a prominent Indian strategist K. Subrahmanyam,²¹¹ “deterrence is mostly a matter of perception”.²¹² Proliferation optimists make the case that deterrence brings security and produces war-avoiding policies, while proliferation pessimists emphasize risks associated with the breakdown of deterrence.²¹³ Thus, it is essential to ask the question: Will *sufficient deterrence*, if established, provide India and Pakistan with a more peaceful and stable relationship?

Much research on the issue of India-Pakistan’s nuclear relationship fails to look at positive elements within their relationship, often exaggerating the potential for nuclear war. While the never-ending rivalry between India and Pakistan is one of the reasons that compelled them to acquire nuclear weapons, the prospects for peace based on this nuclear relationship remains contested. Domestic politics are a factor contributing to India and Pakistan’s nuclear policy, thus, in order to achieve more stability and peace, responsibility is required by each respective country to move beyond its nuclear weapons capabilities. According to George Perkovich, by demonstrating a nuclear weapons capability, India and Pakistan gained the confidence to revive bilateral diplomacy, “...but as before, the fate of such diplomacy would depend on more political will than on nuclear strength”.²¹⁴

²¹¹ K. Subrahmanyam is a former Indian civil servant and journalist. He is considered a proponent of *realpolitik* and an influential voice regarding nuclear deterrence and India’s nuclear policy advocating NFU and US-India civilian nuclear deal.

²¹² Perkovich, p. 369.

²¹³ Basrur, 2006, p. 17.

²¹⁴ Perkovich, p. 439.

Mutual Understanding to Maintain Cordial Relations

Although India and Pakistan have different political systems, varying approaches to arms control regimes and nuclear doctrines dealing with issues relating to nuclear weapons, both countries are offered the opportunity to work on establishing a plausible regime of nuclear restraint and risk reduction measures. Prior to the advent of nuclearization between India and Pakistan, serious efforts were made to improve relations. For instance, in March and April 1976 Zulfikar Bhutto and Indira Gandhi rekindled the normalization of relations through constructive letters which led to a meeting in May between their Foreign Secretaries in Islamabad, resulting in an agreement to resume air flights, re-open rail links and a commitment to explore modest trade.²¹⁵ In 1979, President Zia ul-Haq proposed the mutual inspection of each other's nuclear facilities, the simultaneous acceptance of full-scope International Atomic Energy Agency (IAEA) safeguards and simultaneous accession to the Non- Proliferation Treaty.²¹⁶ During the 1980s, Indira Gandhi and Zia ul-Haq met in Zimbabwe, to convey their desire for improved relations and Joint Statements between their Foreign Ministers reiterated a policy of nuclear energy for peaceful purposes. Diplomatic exchanges continued and Indira Gandhi proposed that the two countries sign a Treaty of Friendship and Cooperation which was agreed in June 1982. The talks called for a No-war Pact or Treaty of Friendship entailing non-aggression, renunciation of force, and the promotion of good neighbourly relations, which resulted in the creation of an Indo-Pakistan Joint Commission. On August 11, 1982 India gave Pakistan a Draft Treaty of Peace,

²¹⁵ Cited in Perkovich, p. 197.

²¹⁶ Salik, Naeem. Minimum Deterrence and India and Pakistan Nuclear Dialogue: Case Study on Pakistan. Rawalpindi: LNCV Publications, March 2006, p. 16.

Friendship and Cooperation²¹⁷ which lead to the first formal bilateral meeting in New Delhi on November 1, 1982 between Zia ul-Haq and Indira Gandhi. Their relationship was further strengthened through ongoing dialogue regarding each side's proposal to renounce aggression and promote friendship. In 1985, both India and Pakistan recognized the need to maintain cordial relations with the other, in an agreement 'not to attack each other's nuclear facilities'²¹⁸ which required an exchange of lists of respective nuclear installations on the first of January every year.

Additionally, the willingness of both countries to engage in dialogue during the 1990 uprisings in Jammu and Kashmir, at a time of crisis, along with foreign diplomatic intervention from Russia, the U.S. and China, enabled the dissolution of the crisis. The dissipation of the uprising led to a bilateral meeting in July 1990 between India and Pakistan and each country agreed upon confidence-building measures. In short, the fact that India and Pakistan engaged in some form of understanding and diplomatic dialogue prior to the nuclear tests conducted in May 1998, reveals that a form of nuclear deterrence existed at a time when these countries only possessed the capability to cause radioactive contamination from its nuclear facilities. In a statement made by Chairman of Pakistan Atomic Energy Commission, Munir Khan on April 29, 1994,

We have to understand that nuclear weapons are not a play thing to be bandied publicly. They have to be treated with respect and responsibility. While they can destroy the enemy, they can also invite self destruction.²¹⁹

²¹⁷ Pakistan. Ministry of Foreign Affairs. Spokesperson Briefings. 27 Mar. 2006. Record of the Press Conference Addressed by the Foreign Office Spokesperson. Retrieved from http://www.mofa.gov.pk/Spokesperson/March_06/Spokes_27_03_06.htm

²¹⁸ Cited in Perkovich, p. 312.

²¹⁹ Cited in Munir Ahmad Khan Memorial Service. Pakistan Military Consortium. Retrieved from http://www.pakdef.info/pakmilitary/army/nuclear/memorial_munrahmed.html (Original source non-retrievable).

After Nawaz Sharif's second electoral victory in February 1997, he sought to formulate better relations in a bilateral agreement with Indian Prime Minister Inder Gujral for mutual restraint in the nuclear fields which, if implemented, could lead to a normalization of relations between India and Pakistan. At this time, private and public statements were made which "signalled a willingness not to make progress on Kashmir a precondition for progress on other issues".²²⁰ The nature of these secret meetings along with official statements made by Pakistani officials reveal the political fear under which both countries operate under including nuclear issues. From March 28 to April 9, 1997, Indian Foreign Secretary Salman Haidar and Pakistani Foreign Secretary Shamshad Ahmad conducted talks in New Delhi, and concluded that slow and steady progress through dialogue would be a desirable course.²²¹ To signal gestures of goodwill, both secretaries agreed to release several hundred fishermen which were held in prison for illegally fishing in each other's waters. Further, cultural ties and trade were discussed at the negotiations, and discussing Kashmir as always, was unavoidable. Pakistan's Foreign Minister Gohar Ayub Khan and India's Inder Kumar Gujral were part of these talks,²²² signalling the prospects for high-level discussions in the future, after a three year break in diplomacy due to the Kashmiri insurgency.

Arms Control

Under the Atoms for Peace program, countries were able to develop nuclear technology for peaceful purposes. However, with the introduction of the Non-Proliferation Treaty, countries like India and Pakistan felt that the terms of the treaty

²²⁰ Perkovich, p. 392.

²²¹ Author Unknown. "India, Pakistan Break Ice at Talks". *Cable News Network (CNN) Inc.* Reuters (contributor). 09 Apr. 1997. Retrieved from <http://www.cnn.com/WORLD/9704/09/in.pak/index.html>

²²² Ibid.

were discriminatory in favour of the declared nuclear weapons states. Furthermore, the separation of “haves” and “have-nots” was seen as a direct attempt to prohibit countries like India and Pakistan from acquiring nuclear weapon status but eventually ambiguous nuclear programs were created.

The Conference on Disarmament (CD) formed as the world’s sole multilateral disarmament treaty negotiating body presently consists of 65-member countries including Pakistan and India. Even though the CD has a permanent agenda entailing aspects such as weapons of mass destruction, conventional weapons, weapons development, reduction of military budgets, reduction of armed forces, international security, and confidence building and disarmament measures, universal implementation of the agenda remains ineffective. Both India and Pakistan’s declaratory postures claim to support the Comprehensive Test Ban Treaty (CTBT)²²³ which was open for signature on September 24, 1996. However, accession to the Treaty by Pakistan is linked to the accession of India and vice versa. Since India was provided with a “reason” not to sign the CTBT due to the “time-bound condition for disarmament”²²⁴, Pakistan was also given an excuse not to sign. Essentially, neither India nor Pakistan is going to sign the CTBT unless they are formally recognized as a Nuclear Power under the NPT. Since the likelihood of this happening in the near future is slim, India and Pakistan will continue to pay lip service to the idea. While the CD has addressed a fissile-cut off negotiating mandate, it has been unable to set up an ad hoc committee to carry out such talks.²²⁵ Since then, the

²²³ See, Public Statement by Abdul Sattar. “CTBT safeguards Pak interests”. The Nation (Pakistan), 19 Mar. 2001.

²²⁴ “Time-bound disarmament” sets target dates for disarmament, identifies all necessary steps to move from one place to the next, and envisages all countries working together to achieve this.

²²⁵ Reaching Critical Will: Reaching for a Critical Mass of Political Will for Nuclear Disarmament. New York, 2008. Retrieved from <http://www.reachingcriticalwill.org/political/cd/basicinfoindex.html>

Conference on Disarmament has not agreed on a common agenda and has become stalemated. Hence, the overall functioning and benefits of the consensus-based conference on disarmament in the future is questionable.

Both India and Pakistan refuse to join the Non-Proliferation Treaty because yet again, accession is linked to the other. In addition, both countries refuse to join the NPT due to the discriminatory nature in which it operates by failing to extend to them the status and benefits of being a nuclear weapons state. India's diplomatic support for disarmament and a nuclear test ban created an image of itself as a country which would never allow its scientists to develop atomic bombs. While India's nuclear research began to expand along with India's demand for more representation at international disarmament negotiations, its proposals for a ban on nuclear tests led to its inclusion into the Disarmament Commission in 1961.²²⁶ Meanwhile, India deliberately, did not sign the NPT in 1968; ensuring the option for developing nuclear weapons would remain open.²²⁷ In an interview conducted by *Frontline* Magazine's T. S. Subramanian with chairman of the Atomic Energy Commission of India and nuclear scientist Dr. Anil Kakodkar, when asked about what led to the May 1998 nuclear tests responded,

The scientific community has to respond to national needs. So once the decision was made, it was implemented. The fact is that it was well known that nuclear weapons existed in our neighbourhood, and also the way the CTBT discussions went on... there was a deadline. So it was perhaps necessary, essential for national security requirements, that this option was exercised. That is what must have been at the back of the government's decision.²²⁸

²²⁶ General Assembly-Twentieth Session. "Resolutions Adopted on the Reports of the First Committee". *United Nations General Assembly*. 2009. Retrieved from <http://www.opanal.org/Docs/UN/UNAG20res2028i.pdf>

²²⁷ India. External Affairs Minister Shri Jaswant Singh's Statement in the Indian Parliament on May 9, 2000, p. 2. Retrieved from http://www.indianembassy.org/inews/2000_inews/may_june_2000.pdf

²²⁸ Frontline. "Interview with Dr. Anil Kakodkar". *Frontline*. Vol. 17, Issue 25. 9-22 Dec. 2000. Retrieved from <http://www.hinduonnet.com/fline/fl1725/17250890.htm>

This indicates that India was not only motivated by national needs to respond to regional threats from nuclear-armed countries, but also, India was motivated by the Comprehensive Test Ban Treaty deadline. In other words, India conducted its May 1998 nuclear tests when it did, so that it remained in compliance with CTBT deadline even though it is not a signatory.

While India refuses to join the NPT, it still prescribes to some of the key provisions that apply to nuclear weapon states, contained in Article I, III and VI. Article I of the NPT states that a nuclear weapon state (NWS) cannot transfer nuclear weapons or devices to any recipient, or assist any non-nuclear weapon state in manufacturing or acquiring such weapons or devices. Article II of the NPT indicates that any non-nuclear weapon state party must allow International Atomic Energy Commission (IAEC) to apply its safeguards to all nuclear material in all of the states peaceful nuclear activities and prevent the diversion of such material to nuclear weapons or explosive devices. Article VI states of the NPT states that the Parties to the NPT have a right to develop research, production and use of nuclear energy for peaceful purposes without discrimination.²²⁹ To date, India has complied with IAEA safeguards when exporting nuclear materials and related equipment, and continues to push for negotiations on a nuclear-weapon-free-world through a Nuclear Weapons Convention.

²²⁹ United Nations. The Treaty on the Non-Proliferation of Nuclear Weapons (NPT). Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons. 02-27 May 2005. New York: Department for Disarmament Affairs, 2000. Retrieved from <http://www.un.org/events/npt2005/npttreaty.html>

On the contrary, Pakistan accepted assistance and received critical input into its nuclear and missile programs from China.²³⁰ Pakistan's lack of commitment to the NPT is contingent on India's accession. More recently, like India, Pakistan has stated that it will not sign on to the NPT unless it is recognized as a nuclear weapon state. Similarly, Pakistan did not sign the NPT because it wanted to keep the nuclear option open in the event the security environment alters and would require a nuclear deterrent. In addition Pakistan has put the onus of not signing the NPT on India. India's decision not to sign the NPT allows both countries the opportunity to keep the nuclear option open without committing to it one way or another. Further, it provided Indian decision makers the opportunity to pursue the often contradictory policies that followed. The notion of strategic nuclear ambiguity allowed India to pursue multiple objectives including global disarmament, dual-use technological capabilities, a substantial defence and some form of international status.

In short, both India and Pakistan utilized Atoms for Peace to develop their nuclear weapons program with the help from foreign countries, and both did not sign the NPT because they could not be inhibited from developing "peaceful uses of nuclear technology". More importantly, while both India and Pakistan abused the terms under Atoms for Peace by utilizing nuclear technology and expertise from foreign countries for their nuclear weapons program, the onus of blame should also fall on the nuclear suppliers for their negligence and greed related to nuclear technologies commodities of international commerce. Moreover, while multilateral arms control measures seem like a

²³⁰ Ollapally, Deepa M. "India's Strategic Doctrine and Practice: The Impact of Nuclear Testing". India's Nuclear Security. Eds. Thomas, Raju G. C. and Gupta, Amit. London: Lynne Rienner Publishers Inc., 2000, p. 73.

good idea, it is an unattractive option for India and Pakistan because of the discriminatory criteria which has been set by the declared Nuclear Weapon States. It is obvious that since India and Pakistan's regard such multilateral arms control measures as inherently discriminatory, accession to such a Treaty is not only based on the accession of the other, but also requires that they are given Nuclear Weapon Status. It is safe to say that this is unlikely to happen in the near future, and thus, multilateral arms control measures in their present form, will prove ineffective because it is unable to secure a more stable nuclear relationship between India and Pakistan.

Cooperation after the Nuclear Tests

Following the May 1998 nuclear tests, India and Pakistan possess low-level alert status nuclear capabilities, manifested by the separation of nuclear weapons from their delivery systems. Positive efforts were made by both countries towards a mutual understanding which sought to reduce the level of risk associated with nuclear weapons. For instance, leading up to the Lahore Declaration, the Prime Ministers of India and Pakistan agreed upon an environment of peace and security on September 23, 1998, and determined that their supreme national interest was the resolution of all outstanding issues, including Jammu and Kashmir.²³¹ In October 1998, India and Pakistan conducted expert-level discussions in Islamabad on nuclear risk reduction and 'Strategic Restraint Regime'. Pakistan's proposal for a restraint regime included aspects of development, testing and deployment of nuclear weapons. Unfortunately, the dialogue came to a halt and did not resume until December 2004, when Pakistan revived the strategic restraint

²³¹ India. Embassy of India. The text of the Memorandum of Understanding. 1999. Retrieved from [http://www.indianembassy.org/South_Asia/Pakistan/mou\(lahore01211999\).html](http://www.indianembassy.org/South_Asia/Pakistan/mou(lahore01211999).html)

proposal during the second round of expert-level talks held in Islamabad. In addition, Pakistan proposed conflict resolution as an objective that should be mutually respected.²³² The problem however, was India's refusal to discuss such measures, claiming that it needed more time to examine the proposals.²³³

On February 21, 1999 the Lahore Declaration followed by a memorandum of understanding (MOU) was signed by the Indian Foreign Secretary K. Raghunath and Pakistan's Foreign Secretary Shamshad Ahmad in Lahore. The MOU entails eight measures for promoting a stable and peaceful environment and providing security for each respective country. Both countries agreed to the following:

1. *The two sides shall engage in bilateral consultations on security concepts, and nuclear doctrines, with a view to developing measures for confidence building in the nuclear and conventional fields, aimed at avoidance of conflict.*
2. *The two sides undertake to provide each other with advance notification in respect of ballistic missile flight tests, and shall conclude a bilateral agreement in this regard.*
3. *The two sides are fully committed to undertaking national measures to reducing the risks of accidental or unauthorised use of nuclear weapons under their respective control. The two sides further undertake to notify each, other immediately in the event of any accidental, unauthorised or unexplained incident that could create the risk of a fallout with adverse consequences for both sides, or an outbreak of a nuclear war between the two countries, as well as to adopt measures aimed at diminishing the possibility of such actions, or such incidents being misinterpreted by the other. The two sides shall identify/establish the appropriate communication mechanism for this purpose.*
4. *The two sides shall continue to abide by their respective unilateral moratorium on conducting further nuclear test explosions unless either side, in exercise of its national sovereignty decides that extraordinary events have jeopardised its supreme interests.*
5. *The two sides shall conclude an agreement on prevention of incidents at sea in order to ensure safety of navigation by naval vessels, and aircraft belonging to the two sides.*

²³² Akhlaque, Qudsia. "Pakistan Proposes 20 CBMs: Secretary level talks begin". The Dawn. Karachi. 28 Dec. 2004.

²³³ Salik, p. 18.

6. *The two sides shall periodically review the implementation of existing Confidence Building Measures (CBMs) and where necessary, set up appropriate consultative mechanisms to monitor and ensure effective implementation of these CBMs.*
7. *The two sides shall undertake a review of the existing communication links (e.g. between the respective Directors- General, Military Operations) with a view to upgrading and improving these links, and to provide for fail-safe and secure communications.*
8. *The two sides shall engage in bilateral consultations on security, disarmament and non-proliferation issues within the context of negotiations on these issues in multilateral fora.*²³⁴

The agreement also stipulated that the two sides would meet again at mutually agreed dates to discuss the technical details regarding implementation of the above measures, but due to the Kargil conflict (discussed below), the agreed upon measures of risk reduction were not formalized into a binding bilateral agreement. However, it is interesting to note that the measure regarding ballistic missile testing, wherein each side provide advance notification of such tests, has become the norm. In April 1999, India provided Pakistan with advance notification that it was going to conduct a test of its medium range Agni ballistic missile. Similarly, Pakistan has notified India of all of its missile tests as of March 2006.

Crisis Management and Border Management

Following the May 1998 nuclear tests, a common expressed concern was over fear of accidental or unauthorized nuclear use in Pakistan and to a lesser extent, India. By continuing a tradition of civilian control over the military, giving the armed forces a very insignificant role in policy-making, Indian efforts demonstrate that its nuclear weapons program proceeds with caution for fear of unsatisfactory public opinion. A country like India, which prides itself on a position of universal nuclear disarmament,

²³⁴ India. Embassy of India. The text of the Memorandum of Understanding. 1999. Retrieved from [http://www.indianembassy.org/South_Asia/Pakistan/mou\(lahore01211999\).html](http://www.indianembassy.org/South_Asia/Pakistan/mou(lahore01211999).html)

would not be met with a welcoming response by its population, if it allowed the military to control the nuclear arsenal. On the other hand, an often expressed fear that the Government of Pakistan lacks any significant control over the military and the nuclear weapons program, as illustrated in the second chapter,²³⁵ is contestable.

It is reasonable to argue that with each successive government in Pakistan, the military has and will continue significant control over nuclear weapons, and in the event the military gains absolute control over the program, contrary to Sagan's argument, it does not necessarily mean that the military will act in an irrational manner that authorises nuclear use. For instance, during the Kargil conflict which took place between May and July 1999, Pakistani soldiers and Kashmiri insurgents infiltrated into the Indian side of the line of control (LoC) which serves as the de facto border.²³⁶ The Indian Army and its Air Force eventually recaptured most of the positions where the infiltrators were positioned. In addition, international diplomatic pressure caused Pakistan to withdraw from its positions along the Indian side of the LoC. It is important to note that the Government of Pakistan's involvement in the Kargil conflict remains controversial in which statements made by Pakistani commanders and Nawaz Sharif claim that Pervez Musharraf was responsible for involving the country's military.

Sumit Ganguly argues that the Kargil Conflict in 1999 occurred as a result of Pakistan's newly acquired nuclear capability which challenged India's previous conventional superiority. In addition, Pakistan's military elite's were dissatisfied with

²³⁵ See Chapter 2, p. 18-22.

²³⁶ Tellis, A., Fair, C., & Medby, J. Limited Conflicts Under the Nuclear Umbrella: Indian and Pakistani Lessons from the Kargil Crisis. Santa Monica: CA: Rand, 2001, p. ix.

India's successful dealing with the Kashmiri insurgency.²³⁷ Pakistan's reckless behaviour during the Kargil crisis, created an environment in which India lost the ability to trust Pakistan's commitment to maintain a diplomatic relationship. Further, Pakistan's unsatisfactory ability to calculate the negative outcome from engaging in such a crisis resulted in international dissatisfaction with its government's overall ability to provide order and stability. The Kargil conflict is one instance in which Pakistan's military acted recklessly, in a manner which can be deemed inconsistent with its overall understanding of the risks associated with the potential escalation to the nuclear level. What is important here, is the overall *outcome* of the Kargil conflict which suggests that both sides, including Pakistan's military, implicitly understood that further escalation could mean the threat of nuclear use, or actual nuclear use, a potential which neither side was willing to risk.

For deterrence to work, what is required is a country with prudent decision-makers that are capable of understanding the disastrous effects of conducting a nuclear war. An often expressed fear is that terrorists might get their hands on Pakistan nuclear weapons which come out of the concern over the conduct and control over the nuclear arsenal by Pakistan's military. Contrary to the argument posed by Sagan, deterrence may break down in the event that terrorists, and not Pakistan's military, misuse nuclear weapons by infiltrating themselves into the Armed Forces. As illustrated above, it can be assumed that military decision-makers understand the negative outcome of nuclear war. A look back into the discussion found in the second chapter of this thesis identifies the

²³⁷ Ganguly, Sumit. Paper presented at the Naval Post Graduate School in Monterey, California. *Asymmetric Conflict in South Asia: The Causes and Consequences of the 1999 Limited War in Kargil.* 29 May - 01 Jun. 2002. Retrieved from http://www.nps.edu/Academics/Centers/CCC/Conferences/recent/may02Kargil_rpt.html

necessary steps required to secure effective command and control structures are in place to prevent the nuclear arsenal from getting into the wrong hands.

Conflict and Peace

Desmond Ball's definition of strategic culture offers some insight into this discussion:

... different countries and regions approach the key issues of war, peace and strategy from perspectives which are both quite distinctive and deeply rooted, reflecting their different geo-strategic situations, resources, history, military experience and political beliefs.²³⁸

Further, Ball argues that these factors have a deep impact on how a country will behave in order to promote its values and interests with regard to the threat or use of force against an adversary.²³⁹ At first glance, the infiltration of Pakistani soldiers and Kashmiri insurgents over the Indian side of the LoC during the Kargil conflict in 1999, the 2001-2002 terrorist attacks on India's Parliament, and the 2008 terrorist attacks in Mumbai, all of which increased tensions between India and Pakistan raise serious doubt about the prospects for peace and stability. During the Kargil Conflict, Pakistan's military sought to instigate an unstable environment for India to control Kashmiri insurgents. However, it is important to mention that the 2001 attacks on the Indian Parliament and the 2008 Mumbai attacks were not direct actions of the Pakistani Government. Arguably, there may have been some covert financial backing from the Government of Pakistan for conducting such acts, evidence of which is contested.

²³⁸ Ball, Desmond. "Strategic Culture in the Asia-Pacific Region". *Security Studies* 3, No. 1 (Autumn 1993): 44.

²³⁹ Ibid.

Much of the literature on India-Pakistan relations deemphasizes prospects for peace between the two countries because of a belief that their geographical proximity makes it difficult to resolve tension. However, in each of the above mentioned conflicts, it has had the opposite effect because each conflict was either limited in scale or defused by third party mediation. For instance, two years after the 2001-2002 Indian Parliament attack and ensuing border crises, India and Pakistan entered bilateral talks on a wide range of issues including Kashmir and nuclear confidence-building measures because they recognized the risks associated with the potential nuclear escalation. Additionally, neither of these attacks was a direct order approved by the Government of Pakistan and, furthermore, President Musharraf promised to stop supporting Kashmiri insurgents in a speech delivered on January 12, 2002.²⁴⁰ This indicates that while the Government of Pakistan continues to be fragile and politically corrupt, the decision-makers understand the dire consequences of engaging in a war with India. The fact that these attacks were conducted by rogue elements within the country indicates that terrorists and the like, pose a serious challenge to the country's ability to maintain political order and not the government itself. Following the logic of Waltz, Devin Hagerty contends that each country was deterred from war due to the existence of mutual nuclear weapons capability, and the recognition that "any military clash could escalate to the nuclear level".²⁴¹

Despite the fact that India and Pakistan have been involved in several conflicts since the advent of nuclear weapons in May 1998, the governments of both countries through joint statements recognize the costs and risks associated with nuclear war. In

²⁴⁰ Rajain, Arpit. Nuclear Deterrence in Southern Asia: China, India and Pakistan. New Delhi: Sage Publications, 2005, p. 58.

²⁴¹ Hagerty, Devin. The Consequences of Nuclear Proliferation: Lessons from South Asia. Cambridge, Massachusetts: MIT Press, 1998, p. 108.

instances where fear was expressed that conflict may reach to a nuclear level, both countries restrained from engaging in further military behaviour. It can be assumed that in the event India and Pakistan become involved in another conflict, the fact that they share a common aversion to nuclear destruction is premised on the notion that they ensure survival through incentives for cooperation. This can act as part of strategic arms control efforts where both countries exploit their nuclear weapons status without actually going to war.

Pakistan may soon find itself in a position which requires economic cooperation through trade with India, to improve its overall relationship and contribute to nuclear confidence-building measures. It is essential that both sides remain in communication with the other during times of conflict, to prevent a catastrophic nuclear war. Confidence building measures require both countries to demonstrate a mutual understanding of the disastrous effects from nuclear war. India and Pakistan need to search for common ground and learn the benefits of cooperation as opposed to associating prospects for success with the demonstration of tenacity.

Confidence Building Measures

Following the spring of 1999, angered by the Kargil conflict, India discontinued its practice of notifying Pakistan of its missile tests; however the practice resumed during the January 2002 military standoff. In addition, Pakistan broke the cycle with regard to matching Indian missile tests with tests of its own, and instead conducted tests only when it was required for the validation of technical issues. Both countries also practice testing at locations away from their common borders. It is interesting to note that missile tests

conducted by either side are taken by the other as part of a routine. For instance, when Pakistan carried out its first over the sea long-range missile test of *Shaheen* in March 2004, prior notification was given to India. This indicates the fact that both countries recognize the utility of a particular risk reduction or confidence building measure and adhere to it regardless of the lack of a formal agreement.

As part of India and Pakistan's composite dialogue regarding 'Peace and Security', four rounds of talks have been held with the technical experts from each country where they discussed nuclear confidence building measures. The first-round of talks were held in New Delhi from June 19-20, 2004, and resulted in a joint statement that recognized the need to 'promote a stable environment of peace and security' in which their nuclear capabilities should be understood as a national security imperative, constituting as a factor for stability.²⁴² Progress of such measures would be reported to the respective Foreign Secretaries who met on June 27-28, 2004.²⁴³ During expert-level talks held in New Delhi on August 6, 2005, the two sides reached an understanding on the proposed Agreement on Pre-Notification of Flight Testing of Ballistic Missiles to enhance mutual confidence and transparency of intent. This understanding was codified into a formal agreement and signed in Islamabad on October 4, 2005.²⁴⁴ It was further

²⁴² India. Ministry of External Affairs. Joint Statement, India-Pakistan Expert-Level Talks on Nuclear CBMs in New Delhi. 20 Jun 2004. Retrieved from: <http://meaindia.gov.in>

²⁴³ India. Ministry of External Affairs. Joint Statement, Meeting between Foreign Secretaries of India and Pakistan in New Delhi. 28 Jun. 2004. Retrieved from <http://www.newsindia-times.com/nit/2004/07/09/diplomacy16-top.html>

²⁴⁴ India. Ministry of External Affairs. Joint Press Statement by India and Pakistan at the Conclusion of Expert Level Talks. New Delhi. 06 Aug. 2005. Retrieved from http://www.indianembassy.tj/english/vneshnya_politika/zayavleniya_inter/06082005.htm

agreed to start the hotline between Foreign Secretaries of India and Pakistan in September 2005.²⁴⁵

Attempts to Generally Improve Relations

In a Joint Statement on January 18, 2006, Pakistan presented a draft Agreement to India on the ‘Prevention of Incidents at Sea’ in order to ensure safety of navigation by naval vessels, and aircraft belonging to the two sides.²⁴⁶ India and Pakistan launched the bus service between Amritsar and Nankana Sahib on March 24, 2006, to commemorate the connection of two of the holiest sites for Sikhs, which were separated by partition in 1947. The launch of this bus service opened a new chapter between Indo-Pakistan relations following the bus service from Srinagar to Muzaffarabad and the rail link from Munnabao to Khokrapar. Further, additional facilities at Wagah International Border are being developed and improvements have also been made at the Amritsar-Lahore facilities for bus services.²⁴⁷

In the third round of talks the two sides agreed on CBMs aimed at avoiding conflict to include the following: finalization of ground rules for implementation of international border, further elaborating on an agreement reached on no new defence posts along the LoC, active cooperation in solving the problems in Jammu and Kashmir,

²⁴⁵ Faisal, Hayyan. “Expert-level Contact: Pakistan, India resume Talks on Nuclear CBMS”. Pakistan Times. New Delhi: Times Group of Publications. August 6, 2005. Retrieved from <http://pakistanimes.net/2005/08/06/top.htm>

²⁴⁶ Pakistan. Ministry of Foreign Affairs. Joint Statement, the Third Round of Pakistan-India Expert Level Dialogue on Conventional Confidence Building Measures, Islamabad. 27 Apr. 2006. Retrieved from http://www.mofa.gov.pk/Press_Releases/April/PR_161_06.htm

²⁴⁷ India. Ministry of External Affairs. Speech by Prime Minister Dr. Manmohan Singh on the Launch of Amritsar – Nankana Sahib Bus Service, Amritsar. 24 Mar. 2006. Retrieved from <http://indembkwt.org/mar24.htm>

and finalization of return of inadvertent line crossers.²⁴⁸ The fourth round of expert level talks on nuclear CBMs entailed consultations on security concepts and nuclear doctrines to develop measures for confidence building and reiterated their commitment to elaborate the framework of the Lahore MOU, with the objective of achieving peace and security.²⁴⁹ The Ministers of both sides noticed in 2007 and over the course of the fourth round of dialogue that a number of bilateral achievements were made which includes: increasing travel frequencies between both countries, signing an agreement on reducing accidental nuclear-related risks, and, continue implementation and proposals of confidence building measures in the nuclear and conventional fields to enhance cooperation.²⁵⁰

The Foreign Minister of Pakistan, Makhdoom Shah Mahmood Qureshi, and External Affairs Minister of India, Pranab Mukherjee, met in Islamabad on May 21, 2008, to review the progress made in the ‘Fourth Round of Pakistan-India Composite Dialogue’. This was preceded by a meeting between the Foreign Secretary of Pakistan, Salman Bashir and Foreign Secretary of India, Shivshankar Menon, on May 20, 2008. They reviewed the progress made in the Fourth Round of the Composite Dialogue encompassing many issues, particularly peace and security, including CBMs, Jammu and Kashmir, terrorism, economic and commercial cooperation, and promotion of friendly exchanges. At this time, they noted positive contribution to improved relations by the

²⁴⁸ Ibid.

²⁴⁹ Pakistan. Ministry of Foreign Affairs. Joint Statement, the Fourth Round of Pakistan-India Expert Level Dialogue on Nuclear Confidence Building Measures, Islamabad. 25-26 Apr. 2006. Retrieved from http://www.mofa.gov.pk/Press_Releases/April/PR_160_06.htm

²⁵⁰ For a complete list of achievements please refer to: India. Ministry of External Affairs. India- Pakistan Joint Statement, New Delhi. 21 May 2008. Retrieved from <http://www.satp.org/satporgtp/countries/pakistan/document/papers/2008India-Pakistan-Joint-Statement.htm>

Composite Dialogue process reiterated a commitment to facilitate economic cooperation through trade, and the promotion of the Pakistan-India Peace Process.²⁵¹

The November 2008 Mumbai attacks caused further strain to India-Pakistan relations until July 16, 2009, when both countries agreed in a Joint Statement to continue dialogue process. Prime Minister's Manmohan Singh and Syed Yusuf Raza Gilani provided a joint statement delinking terrorism from such talks.²⁵² Both agreed that terrorism is the main threat to their security and to this end, both agreed to work cooperatively to resolve and put an end to this issue. Furthermore, cooperation from Pakistan to help identify the perpetrators of the 2008 Mumbai attacks will increase the level of mutual trust and confidence. Both Prime Ministers also recognized the importance of continued dialogue, and Singh stated India's willingness to discuss all outstanding issues with Pakistan. "Both leaders are resolved to eliminate those factors which prevent our countries from realizing their full potential."²⁵³

India and Pakistan have reached agreement on the following measures aimed at increasing a level of security in addition to building confidence of one another, all of which, to some extent, have been implemented: neither country will attack the other's nuclear installations; neither country will intrude on the other's airspace; advance notification of military movements will be given; a bilateral agreement prohibiting chemical weapons (signing of the Chemical Weapons Convention, which entered into force in April 1997); opening of cross-border bus route (changes during times of crisis); a

²⁵¹ Ibid.

²⁵² India. Ministry of External Affairs. India-Pakistan Joint Statement, New Delhi. 16 Jul. 2009. Retrieved from: <http://www.satp.org/satporgtp/countries/india/document/papers/09July16Indiapakistanst.htm>

²⁵³ Ibid.

code of conduct governing the treatment of diplomats; a hotline between prime ministers (not used in May 1998); and, a hotline and staff meetings between headquarters along the LoC.²⁵⁴

The following measures remain to be implemented or fully developed: release of all fishermen held by both sides (reached new high in November 2009); repatriation of civilian prisoners (1991 & 1999); easing travel restrictions (some developments with PM Singh in 2004 through an extension of cooperation & friendship); increased cultural exchanges (October 2009 Kabbadi matches); increased bilateral trade; collaboration in a gas pipeline from Iran via Pakistan to India; and collaboration in flood management.

A greater push forward is also required in the areas which include: a revival of the Indo-Pakistani Joint Commission (a forum for the discussion on a range of issues) measures regarding the LoC; expanding the coverage of the existing agreement prohibiting attacks on each other's nuclear installations; a joint no-first use agreement; and a convening international Conference on Peace and Security in South Asia. It is essential to introduce additional confidence building measures such as an agreement not to mount nuclear warheads on missiles or to deploy missiles, and measures to verify compliance; restrictions on equipment and force sizes; and ending official support of terrorist insurgencies across borders.

While confidence building measures can never substitute the need for universal nuclear disarmament, it offers an attempt to address the reality that nuclear weapons exist, the danger associated with nuclear weapon use and how to keep this contained.

²⁵⁴ Synnott, Hillary. "The Causes and Consequences of South Asia's Nuclear Tests". The International Institute for Strategic Studies. Adelphi Paper 332. New York: Oxford University Press, 1999, p. 75.

Hence, confidence-building measures are meant to be, at best, transitional measures to reduce the level of nuclear threat while striving towards the total disarmament and elimination of nuclear weapons. Moreover, while confidence building measures provide some assurances of safety in a country where nuclear weapons exist, it should not be misunderstood that these measures are adequate for nuclear countries to live in peace. Confidence building measures are limited by the very fact that nuclear weapons exist and they cannot guarantee non-use of nuclear weapons. For India and Pakistan, confidence building measures will inhibit a level of trust between the two adversaries which promotes a relationship built upon confidence in the other, that it will comply with such measures and that cooperation through ongoing dialogue is the only chance these countries have in surviving from the threat of nuclear weapons use. More importantly, confidence building measures can only work if a mutual level of trust between both countries exists. In other words, trust is a pre-disposition to the effectiveness of confidence building measures and through assurances of compliance, both countries lay the ground work for a more cooperative relationship.

While in the past, some of the proposed confidence-building measures may have been unsuccessful, following the nuclearization of India and Pakistan, additional measures have gained significance. Today, these proposals still hold some relevance as confidence building measures in so far as the Indo-U.S. Civilian Nuclear Cooperation²⁵⁵ does not hinder prospects for success. Although expert level talks as indicated above through confidence building measures signal prospects for a more stable, secure and

²⁵⁵ On October 1, 2008, the U.S. Congress gave final approval to an agreement facilitating nuclear cooperation with India. This deal provides assistance to India's nuclear civilian program, and also expands cooperation in energy and satellite technology. The U.S.-India Nuclear Deal was first introduced in a joint statement by President G. W. Bush and PM Manmohan Singh on July 18, 2005.

peaceful relationship between India and Pakistan, the Indo-U.S. Civilian Nuclear Cooperation Agreement, if pursued by the Obama administration, arguably decreases any chance of bilateral success. To date, there are no formal consultative mechanisms in place to discuss security, disarmament and non-proliferation between India and Pakistan which may further prove to be difficult since the U.S. has not extended the Civilian Nuclear Cooperation Agreement to Pakistan and as a result, arguably, creates a strategic imbalance of power in favour of India.

The terms of the agreement permit International Atomic Energy Agency inspections to assess only certain power reactors of India's civilian nuclear program. Additionally, U.S. companies will be allowed to build nuclear reactors in India and provide nuclear fuel for its civilian energy program. In exchange, India has to continue its moratorium on nuclear testing, strengthening the security of its nuclear arsenals, working towards Fissile Material Cut-off Treaty, and continue to prevent proliferation.²⁵⁶ The Indo-U.S. Civilian Nuclear Cooperation creates a strategic imbalance between India and Pakistan because while it allows India to enhance and multiply the size of its arsenal, Pakistan is not afforded the same deal.

It has been argued that by allowing nuclear cooperation between the U.S. and the Nuclear Suppliers Group, India has been given *de facto* status of a Nuclear Weapons State.²⁵⁷ The American recognition of India's growing economic importance is clear by the willingness to cooperate on nuclear arrangements even though India is not Party to

²⁵⁶ Pan, E. and Bajoria, J. "The U.S.-India Nuclear Deal". Council on Foreign Relations, 02 Oct. 2008. Retrieved from <http://www.cfr.org/publication/9663/>

²⁵⁷ Muhammad, Adil Sultan. Indo – US Civilian Nuclear Cooperation Agreement: Implications on South Asian Security Environment. Henry L. Stimson Center, July 2006, p. 2. Retrieved from <http://www.stimson.org/southasia/pdf/AdilSultan.pdf>

the NPT. However, by indirectly accepting India's Nuclear Weapon Status, it may become difficult for the U.S. to deny Pakistan the same status, even if it is informal as is the case of India. Contrary to arguments which suggest that the implications of the Indo-U.S. Civilian Nuclear Cooperation are problematic for Pakistan, it can actually have the opposite effect by enhancing regional stability through regional cooperative nuclear arrangements. How adversely the Indo-U.S. Civilian Nuclear Cooperation will affect the Indo-Pakistan relationship is yet to be seen. However, it can be noted that it is in India's interest to continue to engage in dialogue with Pakistan, because any halt on further progress due to India's deal with the U.S. would force Pakistan to review and revise its posture of deterrence. A less inclined India and a discriminating U.S. would undermine years of progress made to date.

Prospects for Stability within the Region

The problems in Kashmir, the bone of contention between India and Pakistan since 1947, may induce both countries to come to a negotiating table to implement 'enforceable and verifiable' confidence building measures. This would almost definitely require the Nuclear Weapon States to recognize India and Pakistan's nuclear weapon status, otherwise further progress on arms control and nuclear disarmament will become very difficult. Since India and Pakistan feel that international policies concerning disarmament and arms control are discriminatory, the onus rests on the declared nuclear weapons states to initiate action to demonstrate to these countries that they are interested in pursuing a collective objective. The implications of such efforts will have lasting effects for international stability.

No substantive efforts towards multilateral arms control have been taken by India or Pakistan since the late 1990s, following the nuclear tests. For instance, in August 1998, Pakistan agreed to start negotiations for a non-discriminatory and multilateral treaty banning the production of fissile materials for nuclear weapons or other nuclear devices at the Conference on Disarmament (CD) in Geneva. Negotiating a clear agenda is becoming more and more difficult to achieve. For instance, Pakistan is saying that the Fissile Material Cut-off Treaty should look at existing stockpiles rather than just concentrating solely on future production of fissile material for nuclear weapons. The likelihood of establishing a clear mandate for disarmament and arms control is becoming increasingly difficult, especially when accession and ratification is dependent on the signatures of all countries. In addition, India and Pakistan remain reluctant to sign such arms control or disarmament treaties, so long as the declared nuclear weapons states do not initiate action, or fail to recognize their nuclear status. Unfortunately, for all of these reasons, the CD is almost useless and the likelihood of setting an agenda in the future is slim. Perhaps a regional bilateral arrangement concerning arms control cooperation may prove to be a more effective method for India and Pakistan. For instance, during the Cold War, a common aversion to war led the U.S. and the Soviet Union to create informal, and then eventually formal security coordination to avoid nuclear war. Similarly, India and Pakistan could rely on their implicit understanding to avert the potential for nuclear war without a formal agreement like they have in the past with regard to advance missile notification, and also, the separation of delivery vehicles from nuclear warheads. A formal agreement works only when all the affected parties agree with its objective and measures, otherwise it becomes as useless as the Conference on Disarmament.

Vajpayee and Musharraf made some tangible progress on confidence building measures beyond what the two countries agreed in 1985 that included ‘not to attack each other’s nuclear facilities’, establish a hotline between the two nation’s general headquarters and work towards a strategic restraint regime. It is remarkable that even during the height of tensions between India and Pakistan during January 2002 border crisis, the lists were exchanged as per the practice of 1985 which is indicative of the seriousness both countries follow and respect their agreement. It seems as though for some form of stability to exist between India and Pakistan, it will have to come from the courage and determination of political leaders. What is required is a government that is willing to take risks for the overall good of society fostered by leadership that can mobilize the masses into accepting a more peaceful and prosperous destination than what has been offered to them in the past. For both countries, problems of stability lay within the internal politics and stability of the regime. The Indian government is flawed, but not to the same extent that Pakistan is. The degree of control that the government in Pakistan has over rogue elements within the country is limited and must be kept under pressure to somehow contain these elements. Contrary to the statement made by spokesman for Admiral Michael Mullen that there is no concrete evidence of radicalization within the Pakistani Military,²⁵⁸ the internal instability Pakistan faces today, should create a sense of urgency among decision-makers to ensure checks and balances exist over the safety of the nuclear arsenal. Moreover, the internal problems of Pakistan can divert a tradition of anti-Indian sentiment and possibly utilize the opportunity to bridge a peace process between the two countries.

²⁵⁸ Hersh, Seymour. “Annals of National Security. Defending the Arsenal. In an Unstable Pakistan, Can Nuclear Warheads be Kept Safe?” *The New Yorker*. 16 Nov. 2009. Retrieved from http://www.newyorker.com/reporting/2009/11/16/091116fa_fact_hersh?currentPage=all

Since anarchy compels states to pay attention to their security, a non-offensive defence could mean that troops would be deployed away from a contested border, which is less threatening than if they are positioned at the border itself. Utilizing a posture of sufficient deterrence, the intensity of India and Pakistan's interaction may remain limited due to their adherence of a non-deployed nuclear posture. Controlling the risk of nuclear conflict and an arms race does nothing to reduce political tensions or impel India and Pakistan to manage their relationship in a meaningful manner. However, this can be resolved through the recognition of mutual fears and a reliance on confidence building measures. It is important to note, that Indians and Pakistanis think in similar ways in so far as their strategic culture contends itself as minimalistic, through a slow and steady development of nuclear weapons. Further, they both manifest an unwillingness to be overly exercised by numerical differences in nuclear weaponry, and foster a belief that deploying nuclear weapons is not a prerequisite for deterrence to be effective.²⁵⁹ More importantly, as indicated in Chapter Two,²⁶⁰ both India and Pakistan treat nuclear weapons more as political instruments than military ones. Thus, sufficient deterrence offers as the least threatening alternative for each country to adopt.

India and Pakistan need to concentrate on ensuring the safety of nuclear weapons use by preventing a premature or accidental explosion. They should conduct research to search for measures which will help improve the technical expertise to eliminate this risk. The appropriate mechanisms need to be put in place to effectively deal with these technical issues before nuclear weapons are deployed. In addition to safety concerns,

²⁵⁹ Basrur, R. "Nuclear India at the Crossroads". Arms Control Association. Washington, September 2003, p. 5. Retrieved from http://www.armscontrol.org/act/2003_09/Basrur

²⁶⁰ See Chapter Two, p. 14.

both countries must also deal with the high costs related to developing and maintaining nuclear weapons capabilities.

It has been argued that nuclear weapons have prolonged the conflict between India and Pakistan because in the absence of a traditional war possibility in the rivalry, there is no pressure on the parties to compromise. Further, it is argued that the general instability between the two creates a non-conducive environment for substantial dialogue, which is often instrumental in terminating a conflict. Here, it is argued that this is not the case. While it is understandable why some people have come to accept this pessimistic conclusion, since Pakistan has demonstrated risk-taking and belligerence in its clandestine operations such as Kargil and its support for terrorists operations in Kashmir. On the other hand, Pakistan has at times shown caution in the deployment of its conventional forces and in the non-deployment of nuclear weapons. The initiation of action from the declared Nuclear Weapon States can trigger a shift in Pakistan's traditional way of thinking towards the direction of diplomacy to persuade a strategy which seeks to negotiate on nuclear issues internationally.

Conclusion

Upon an examination of India and Pakistan's nuclear relationship, it is obvious that their deep rooted historical problems cannot be ignored and a resolution of this is necessary. However, at minimum, there is a need to create an environment of stability based on a common aversion so that mutual dialogue can prosper. Utilizing indigenous resources, government statements from India and Pakistan, in addition to facts, and Western sources, this thesis sought to demonstrate that even though the media has sensationalized the risk of nuclear war between both countries, prospects for collaboration exist which can create a more stable relationship. A challenge to this thesis has been to evaluate India and Pakistan's declared governmental positions with their actual practice in terms of policy. Establishing the details of their nuclear weapons program and nuclear weapons capabilities proved especially difficult due to the sensitive and confidential nature of the material, and in addition to government statements, the research relied on secondary sources.

It is important to comment on the fact that most of the literature from the Cold War focusing on deterrence is premised on the notion that decision-makers are prudent which provides only minimal insight into the India-Pakistan case because the problems of the latter are much more complex than the nuclear rivalry between the U.S. and the Soviet Union. It is worth mentioning that as a result of the common aversion to nuclear war during the Cold War, this presents an exemplary example in which the decision-makers led informal, and later formal security policy coordination to avoid accidental war. As demonstrated above, for deterrence to be effective, a country must be able to persuade the adversary that the costs associated with nuclear use far outweigh the

benefits. This can be done if a country can clearly convince its adversary of the threat it poses through adequate capabilities and the willingness to carry out such threats. For a strategy of deterrence to flourish will require some degree of prudent behaviour between adversaries India and Pakistan. Utilizing the arguments posed earlier by Waltz and Stein²⁶¹, both countries share mutual fears which can act as an incentive for cooperation. However, this can only work if there is an overall satisfaction with the international order; by recognizing India and Pakistan's nuclear weapon status, can lead to a more inclusive strategic arms control regime.

The key aim of this paper is to offer an alternative understanding of deterrence which is refers to *sufficient deterrence* as a viable option for India and Pakistan, while keeping in mind that both countries must actively eliminate the prospects for building a robust nuclear weapons program in addition to eliminating the potential for an arms race. According to Waltz, "the presence of nuclear weapons makes war less likely";²⁶² this idea, if applied to India and Pakistan, holds some truth, because since the advent of their nuclear weapons program, the number of conflicts between each country have been manageable. Hence, the focus for India and Pakistan's nuclear programs should be on stabilizing their nuclear weapons program instead of rolling it back. Once their nuclear programs are stable, then discussion for universal nuclear disarmament might seem more attractive. A responsible country should be concerned with organizing itself in a manner which ensures its citizens are the beneficiaries of prudent protection which makes an irrefutable argument for making deterrence the cornerstone of nuclear security.

²⁶¹ Chapter Four, p. 92.

²⁶² Waltz, p. 33.

A country cannot know for certain the intentions of its adversary and whether or not it will use nuclear weapons because each country's capabilities of risk-taking differ from one country to the next, and also, from one political leader to another. Hence, the onus of maintaining stability should fall on the actions of political decision-makers of both respective countries. A strong, stable, prosperous and moderate Pakistan is in the interest of India and the entire international system. Pakistan, with an inherently militaristic framework of security must strive towards mobilizing the masses into a mindset that does not posit India as the enemy or endorse the bomb as the answer to the country's problems. Possessing nuclear weapons alone does not mean that a country will have an effective deterrent force, but additionally must recognize a common aversion to war which creates incentives for nuclear cooperation. While it has been argued that the history of military coups in Pakistan have been a major setback to prospects of formal civilian control over the country's nuclear deterrence²⁶³, this thesis supports the idea that a country with as many internal problems as Pakistan, needs a strong military leadership which will not only have operational control over nuclear weapons program but can also work with civilian rule to gain the support of its overall population.

It is important to stress that improved relations between India and Pakistan are conditional on continuous dialogue regarding a resolution of the Kashmiri dispute, which remains the ultimate cause of problems and tensions between the two countries. The problems facing Kashmir must be revisited to a time back when the problem was initially created, dating as far back to independence and partition in 1947. Non-proliferation strategies need to influence both public opinion and government officials to accept

²⁶³ Rajain, p. 31.

nuclear restraint. In a post-test nuclear environment, there is urgent need for innovation and patience. Given the historical realities in which these countries seek to cope with, it is crucial to recognize that ongoing dialogue is contingent on real efforts of action and positive steps forwards as opposed to an illusion of the willingness for collaboration.

Pakistan must find internal peace in order for positive efforts to transcend into its relations with India. India and Pakistan must move beyond the bound of distrust and animosity. They must eliminate Indo-centric or anti-Muslim culture and policies. Instead of viewing each other as an adversary, they must move together in pursuit of their common objective to rid chronic poverty, promote higher education, better health care, economic sustainability and government accountability. A relationship like India and Pakistan's, built by animosity and distrust requires a political leader with a strong vision and a mandate that can be imparted upon its people. The timing could not be any more favourable for Pakistan than now, faced with domestic problems, it can utilize the opportunity to pursue additional diplomatic exchanges in order to strengthen its political stance with India in order to fight terrorism together. Such efforts will increase confidence and mutual trust among the two traditional adversaries and can lead to further cooperative steps. Pakistan must introduce a more progressive way of thinking based on regional social and economic cooperation with neighbouring countries like India and China. Through regional cooperation, these countries can bridge a stronger alliance based on economic interests and improve the overall level of domestic as well as regional security. Someone once said "a road is made by walking;" the steps are in place, and now it is up to India and Pakistan to walk through them.

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