The Nuclear Policy of India and Pakistan

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Introduction

Although India was alleged to have a nuclear weapons program since its nuclear test in May 1974, India demonstrated to the world that it is a de facto nuclear power by conducting its second nuclear tests in May 1998. Pakistan, which has a contentious relationship with India, quickly followed suit with tests of its own at the end of May. The nuclear tests by both countries were carried out in face of the strengthening and universalization of the Nuclear Non-Proliferation Treaty (NPT) regime.

India's motive for the possession of nuclear weapons is not clear. India is not so much exposed to threat as that faced by Israel, which is suspected of acquiring nuclear capability and which also stays outside the NPT. In the case of Pakistan, the primary motivation for the development of nuclear weapons seems simply for countering the nuclear capabilities of its rival, India.

The aim of this paper is twofold. First it tries to explore both countries' motives for possessing nuclear weapons. The second aim of this paper is to examine the nuclear policies and nuclear arms control policies of India and Pakistan. While India has developed and possessed nuclear weapons, it has advocated a treaty completely banning nuclear weapons. In addition, India does not pursue a policy that undermines efforts towards the non-proliferation of nuclear weapons by the international community by adhering unilaterally to a couple of non-proliferation undertakings, such as the Nuclear Suppliers Group (NSG). Pakistan is observing a similar position. Our purpose here is to identify the significance of nuclear weapons in the foreign and security policies of both countries.

I. History of the Nuclear Program

A. India

At first glance, India's motives for pursuing nuclear capability do not seem to be clear. This is because development of this capability was not carried out under a consistent strategic purpose. As shown in Figure 1, India's nuclear development has been gradual and reactive. Chinese nuclear testing and the acquisition of nuclear capability by Pakistan are factors that pushed the development of India's nuclear capability on to the next stage. However, India has not sought to achieve security through nuclear weapons in a straight,

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single-minded manner due to its domestic politics. Some domestic elements strongly commit to nuclear disarmament and the others are concerned about the financial cost of nuclear development. India's democratic system does not allow nuclear development simply out of military interests. Nuclear non-proliferation and disarmament issues are interwoven with India's domestic politics, and thus India's nuclear development was correlated to the negotiation process of the NPT in 1967-68 as well as its review and extension process in 1995.

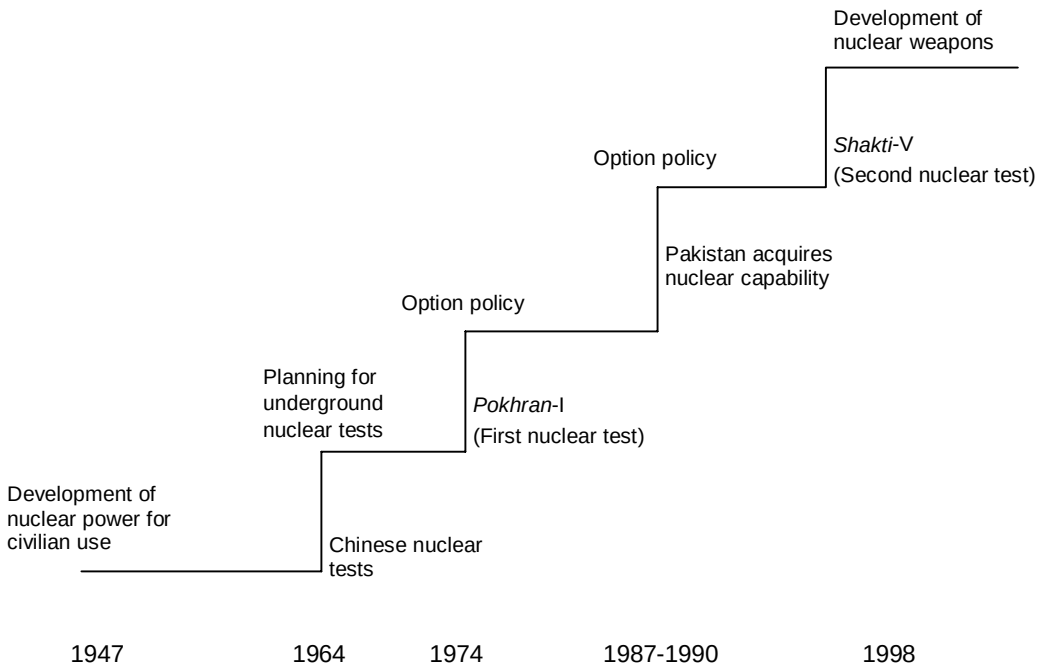

Figure 1 India's nuclear development

Source: Data from Ashley Tellis, *India's Emerging Nuclear Posture*, (Santa Monica: RAND, 2001), Figure 19.

India's nuclear development has several stages as is shown in Figure 1. Ever since India gained independence in 1947, the nation has been expending much effort in the development of nuclear power generation. In 1956, India started operation of its first research reactor, the first light water reactor in Asia. The development of nuclear power generation proceeded steadily with fuel and technical assistance provided by the United States and Canada. A

second research reactor, the *Cirus* (a heavy water reactor), became operational in 1960.[1] Following this, a heavy water reactor policy was adopted, leading Rajasthan Atomic Power Station (RAPS) to operation in 1973 using a Canadian reactor. In 1969, Tarapur Power Station was imported from General Electric corporation with enriched uranium supplied by the United States.[2]

The nuclear test conducted by China in 1964 became a major factor in motivating India to conduct an underground nuclear test of its own. Given the time lag of ten years between the Chinese nuclear test and the *Pokhran*-I of 1974, domestic politics as well as technical constraints appear to have affected the decision to conduct nuclear tests.[3]With India's defeat in a border clash with China in 1962, politicians in northern India who had strong anti-Chinese feelings, and atomic energy scientists with strong techno-nationalistic intentions, insisted that India should carry out nuclear tests of its own to counter the nuclear tests conducted by China. However, the Gandhian principle of non-violence and Nehruvian orientation for international cooperation had a strong influence on intellectuals and the ruling party, the Indian National Congress. They believed that exercising self-restraint with respect to nuclear tests would put India in a position of moral superiority vis-à-vis China in the international community. However, when the NPT came into being in 1968, China was privileged as nuclear-weapon state status, while India was not. When India sought security assurances from both the U.S. and the Soviet Union in the event of a Chinese nuclear attack, it was rejected, which led in turn to India's decision not to participate in the NPT.[4] Though India justified its nonparticipation in the NPT by reason of the "inequality" between nuclear-weapon states and non-nuclear-weapon states, it had maintained a vague position on whether or not to produce nuclear weapons.

Although India won the third Indo-Pakistan war of 1971, the actions of India were greatly constrained by the three nuclear powers, the U.S., China, and the USSR, and this provoked parliamentary debate on nuclear weapons.[5] Prime Minister Indira Gandhi gave the go-ahead for nuclear tests as a means of boosting her domestic popularity. India attempted to fend off international criticism of the *Pokhran*-I nuclear test carried out in 1974 by characterizing it as a "peaceful nuclear explosion." Though the nuclear test demonstrated that India retained the potential to develop nuclear weapons in the future, the Indian government also made it clear 4that it had no intention of producing nuclear weapons at that time. This is what is commonly referred to as the "option policy."

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[1] This reactor is called the *CANDU* by nuclear scientists.

[2] See the following sources for background on the development of nuclear power plants. Hidetake Kakibana and Koichi Kawakami eds., *Genshiryoku to Kokusaiseiji, Kakuhukakusannseisakuron*, (*Nuclear Power and International Politics – Policies on Nuclear Non-Proliferation*), Hakuto Shobo (1986); National Institute for Research Advancement (NIRA), *A Strategic Analysis on Plutonium beyond 1995*.

[3] Stephen Cohen, *India: Emerging Power* (Washington, D.C.: Brookings Institution, 2001), pp. 159-162.

[4] George Perkovich, *India's Nuclear Bomb: The Impact on Global Proliferation* (Berkeley: University of California Press, 1999), p. 136.

India's option policy was predicated on going ahead with weaponization in the event of the emergence of a new strategic threat, and this condition was fulfilled around 1987 by Pakistan's nuclear development. It is not possible to use official data to corroborate at what point Pakistan acquired nuclear capability and how India evaluated Pakistan's nuclear capability and linked this to its own nuclear development. Several research works conclude that it was in the late 1980s that nuclear factors became visible during the small-scale armed conflicts between India and Pakistan over Kashmir.[6] According to one analysis, India might have considered a "preventive attack" against Pakistan's nuclear facilities during the India-Pakistan crisis that occurred between late 1983 to early 1984.[7] While the risk of military conflict was rising in 1987, triggered by "Operation BRASS TACKS," a military exercise conducted by India, several comments from Pakistan hinted at the possible use of nuclear weapons. Once the crisis was over, President Mohammad Zia-ul-Haq of Pakistan declared that the country had indeed embarked on a program of nuclear development.[8] In order to counter Pakistan's nuclear capability, India moved a step closer to the weaponization stage of their own nuclear option. It is said that Indian prime minister, Rajiv Gandhi, ordered the development of nuclear weapons in 1988.[9] It was around this time that India began full-scale development of delivery systems, and in 1989 India carried out its first tests of *Agni* intermediate-range ballistic missile.

As has been stated, the nuclearization of Pakistan served to accelerate nuclear development in India. However, there seems to be no evidence to indicate that the military doctrine of the Indian army towards Pakistan shifted from one of deterrence by conventional arms to one based on nuclear deterrence. Rather it would be more correct to say that the Indian army tried to enhance its conventional arms capability so that it would not be offset by the nuclear capability of Pakistan. One study of the 1987 "Operation BRASS TACKS" concludes that the operation was a provocative exercise aimed at making it known that "the conventional capability of the Indian military is not offset by the nuclear capability of Pakistan."[10] As illustrated here, the pursuit of nuclear development by India is not logically tied to its military doctrine vis-à-vis Pakistan.[11] As mentioned at the outset, the progress of India's nuclear development has been a reactive response to circumstances, of which Pakistan's nuclear development is thought to be one such "circumstance."

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[5] John W. Graver, *Protracted Contest: Sino-Indian Rivalry in the Twentieth Century* (University of Washington, 2001), p. 322; Perkovich, *India's Nuclear Bomb*, p. 169.

[6] Neil Joeck, "Maintaining Nuclear Stability in South Asia," *Adelphi Paper 312*, (IISS/Oxford U.P., 1997); Devin T. Hagerty, "Nuclear Deterrence in South Asia: The 1990 Indo-Pakistani Crisis," *International Security*, Vol. 20, No. 3 (Winter 1995/96); Waheguru Pal Singh Sidhu, "India's Nuclear Use Doctrine," Peter Lavoy, Scott Sagan and James Wirtz eds., *Planning the Unthinkable: How New Posers will Use Nuclear, Biological, and Chemical Weapons* (Ithaca and London: Cornell University Press, 2000).

[7] Sidhu, "India's Nuclear Use Doctrine," p. 133.

[8] Hagerty, "Nuclear Deterrence in South Asia," p. 95.

[9] Sidhu, "India's Nuclear Use Doctrine," p. 137.

[10] Ibid., pp. 136-137.

[11] However, as is discussed later, Pakistan's nuclear weapons cannot be said to pose no threat at all to India.

The indefinite extension of the NPT in 1995 and the conclusion of the negotiation of the Comprehensive Test Ban Treaty (CTBT) in 1996 were factors that finally pushed India's option policy toward nuclear testing. Indian strategists and nuclear scientists were alarmed at the dooming effect of the CTBT on the option policy. It was obvious to them that without nuclear tests, it would not be possible to secure credible nuclear deterrence. Such security concerns articulated by strategists prompted a policy decision that led to India's refusal to sign the CTBT. There was no strong opposition against this decision from proponents of nuclear disarmament in Indian society. The reason for this was because India's proposal for time-bound nuclear disarmament was rejected during the CTBT negotiations. As a result, these proponents for disarmament were also dissatisfied with the NPT and CTBT.[12]

As mentioned above, the finalization of the CTBT resulted in a weakening of the leverage held by Indian proponents of nuclear disarmament. It also boosted nationalist sentiment among those who engaged in nuclear development. However, the final decision on nuclear testing would not have been possible without the inauguration of the BJP-led government. The Bharatiya Janata Party (BJP), which publicly advocated the option of "inducting" nuclear weapons, acquired the largest number of seats in the Lower House (Lok Sahba) general election of 1998, and formed a government with allied parties.[13] The BJP has been transforming the Nehruvian diplomacy of the Congress Party and has been seeking for major power status through power politics in the international arena. Also, some of the ideologues in the BJP have an antagonistic mindset toward China.[14]

Immediately following the nuclear test of May 1998, Prime Minister Atal Behari Vajpayee wrote a letter to President Clinton implying that China posed a threat, stating that "we have an overt nuclear weapons state on our borders, a state which committed armed aggression against India in 1962".[15] However, the attempt to justify nuclear testing in light of a "China threat" invited criticism both at home and abroad. As a result, the government revised its line on the China threat and assumed the official view that it was not China's nuclear arms that were so much the cause for concern, but rather the transfer of nuclear and missile technology from China to Pakistan that contributed to a deterioration of the security environment of India.[16]

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[12] See 3 (2) in this paper, and the following sources for India's position on the CTBT negotiations: Marie Izuyama, "CTBT Kosho ni okeru India no Ronri (India's Logic in CTBT Negotiations)," *Boei Kenkyu* (*NIDS Defense Studies*), Vol. 2, No. 3 (November 1996).

[13] Bharatiya Janata Party, *Vote for a Stable Government and an Able Prime Minister, Election Manifesto, 1998*.

[14] For details see Marie Izuyama, "BJP Seiken to Kakujikken (The BJP and nuclear tests)," *Kaigai Jijyo (Journal of World Affairs)*, Vol. 46, Nos. 7, 8 (July – August 1998).

[15] Text of Vajpai's letter to Clinton, *New York Times*, May 13, 1998; Brahma Chellaney, "After the Tests: India's Options," *Survival*, Vol. 40, No. 4 (Winter 1998-99), p. 96.

[16] The Government of India, "Evolution of India's Nuclear Policy, May 22, 1998," text in *The Hindu*, May 28, 1998.

India started to develop nuclear weapons in earnest after the nuclear tests of 1998. The development of a nuclear capability until then had proceeded gradually in response to circumstances. In contrast to this, India clearly referred to "credible minimum nuclear deterrence" in its draft nuclear doctrine released in 1999. The *Agni* development program that had been suspended under pressure from the United States in 1994 was also resumed, with tests taking place in April 1999 and January 2000. Today, the Indian government and strategists maintain that nuclear weapons are necessary in order to overcome pressure from the nuclear non-proliferation regime and to maintain the autonomy of decision making in diplomacy and security policy, and further, in order not to have to submit to nuclear threats made by China.

B. Pakistan

Since their independence in 1947, India and Pakistan fought three wars. Pakistan, was severely defeated in the third Indo-Pakistan war in 1971 and was divided into two states in which the former East Pakistan became the new independent and separate state of Bangladesh. Given that Pakistan started to develop nuclear weapons the following year in 1972,[17] it is thought that this defeat of Pakistan was a direct impetus to the development of nuclear weapons by Pakistan.[18]

The development of nuclear weapons by Pakistan was further spurred on by India's nuclear test in May of 1974. Abdul Qadeer Khan, a metallurgist who had returned to Pakistan from Europe in 1975, made significant contributions to the advancement of the development of nuclear weapons. Dr. Khan worked in Dutch uranium enrichment facilities during the first half of the 1970s, and became well acquainted with the gas centrifuge equipment necessary for uranium enrichment. Dr. Khan came to play such a critical role that he subsequently came to be known as the father of Pakistan's nuclear weapon development program.

Jimmy Carter, who came into office as president of the United States in January 1979, tackled nuclear non-proliferation issues seriously. After assuming office, Carter promptly invoked the Glenn-Symington Amendment,[19] that was enacted in 1977 during the Republican administration of the former President Ford, and suspended economic and military aid to Pakistan for its suspected development of nuclear weapons at that time.[20] However, the

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[17] Rodney W. Jones et al., *Tracking Nuclear Proliferation: A Guide in Maps and Charts, 1998* (Washington D.C.: The Brookings Institution Press, 1998), p. 131.

[18] Foreign Affairs and National Defense Division, Environmental and Natural Resources Policy Division, "India-Pakistan Nuclear and Missile Proliferation: Background, Status, and Issues for U.S. Policy," *CRS Report for Congress*, December 16, 1996, pp. 25-26.

[19] The Glenn-Symington Amendment is a domestic U.S. law that added to The Foreign Assistance Act of 1961. It came into force in 1977 and prohibits any kind of aid to be given to countries that import uranium enrichment equipment and/or technology, and where this equipment is not monitored by the IAEA.

[20] Jones et al., *Tracking Nuclear Proliferation*, p. 131.

Soviet invasion of Afghanistan dramatically changed this course. In 1981, the Reagan administration began to provide substantial amounts of economic and military assistance to Pakistan. The Reagan administration tried to make use of Pakistan as a base to support Afghan anti-Soviet armed groups, while at the same time attempting to contain the expansion of Soviet power and influence in South Asia. The Reagan administration justified commencing aid to Pakistan on the grounds that it would be conducive to enhancing the security of Pakistan and thereby reduce the incentive for that country to go nuclear.[21] Still, Pakistan steadily proceeded with the development of nuclear weapons as armed conflict against Soviet troops continued in Afghanistan. In 1985, Pakistan began to produce weapons-grade enriched uranium.[22] Incidentally, it is believed that this was also the time when Pakistan obtained blueprints for nuclear warheads from China.[23]

It may be said that Pakistan's nuclear weapon program was able to move forward by taking advantage of the dilemma facing the United States, which was not able to effectively implement a strong nuclear non-proliferation policy toward Pakistan while proceeding with its containment strategy against the Soviet Union in South Asia. The 1985 Pressler Amendment was suggestive that the U.S. policy of seeking to contain the Soviet Union was proceeding at the expense of nuclear non-proliferation objectives. The Pressler Amendment, which was added to the Foreign Assistance Act of 1961, required that the U.S. president certify at the beginning of each fiscal year that Pakistan was not in possession of any "nuclear explosive devices" as the condition to the provision of any military assistance to that country.[24] In other words, the Pressler Amendment specified that military aid to Pakistan could continue as long as there was no clear evidence of the production of nuclear explosive devices by that country. Thus, despite the fact that Pakistan proceeded with the production of weapons-grade fissile material and research into the production of nuclear warheads, both Presidents Reagan and Bush (senior) continued to provide military aid to Pakistan until fiscal 1989, stating the reason that such activities did not constitute actual production of nuclear explosive devices.

However, in October of 1990, President Bush (senior) stated that he was unable to certify that Pakistan was not manufacturing a nuclear explosive device, which led to the complete suspension of aid. In fact, from the end of 1989 to the beginning of 1990, when relations between India and Pakistan were extremely strained, Pakistan had allegedly been fabricating enriched uranium metal strips needed for the production of nuclear explosive devices.[25] Moreover, Soviet forces completely withdrew from Afghanistan in 1989.

[21] *Ibid.*, p. 131.
[22] *Ibid.*, p. 132.
[23] *Ibid.*, p. 132.
[24] *Ibid.*, p. 132.
[25] *Ibid.*, p. 140.

While the United States suspended aid to Pakistan by invoking the Pressler Amendment, Pakistan suspended the enrichment of uranium and exercised self-restraint in the fielding of M-11 ballistic missiles from China. As a result, the U.S. Congress and the Clinton administration enacted the Brown Amendment in February 1996, which established exceptions to the Pressler Amendment, thereby allowing the resumption of economic and military aid to Pakistan.[26]

Pakistan conducted its first nuclear tests on May 28 and 30, 1998 in response to the Indian underground nuclear tests that were carried out two weeks earlier.[27] Even though the international community, fearing that Pakistan would conduct nuclear tests after India's nuclear testing, appealed in various ways to Pakistan not to conduct such tests, hinting at economic sanctions and other measures, Pakistan went ahead with the tests anyway. Seen from the perspective of Pakistan, which has an antagonistic relationship with India, it was necessary to demonstrate that Pakistan too had a capability comparable to that of India. However, the response from the Clinton administration, which was actively promoting the non-proliferation of nuclear weapons and other weapons of mass destruction, was swift and harsh. In the same way that it had toward India, the Clinton administration imposed sanctions on Pakistan based on the Nuclear Non-Proliferation Act of 1994, immediately after its nuclear tests, by designating Pakistan as a non-nuclear-weapon state that had carried out a nuclear explosion. Seven punitive measures were taken against Pakistan, including the suspension of economic aid except for humanitarian assistance, suspension of military aid and military ordinance exports, and the denial of credit by the U.S. government and commercial banks. Punitive actions imposed by the United States based on the Nuclear Non-Proliferation Act on non-nuclear weapons states that carry out nuclear tests are such that they continue indefinitely unless measures are taken by Congress to lift them, since waiver authority had not been given to the President.[28]

As outlined above, although the progress of Pakistan's nuclear weapon development was being influenced by America's South Asian policy and nuclear non-proliferation policy, its objective is to compete solely with India's nuclear weapon development and to serve as a deterrent to India, which has overwhelming conventional military strength. Unlike India, the background to the development of nuclear weapons by Pakistan does not exhibit any of the aspirations for becoming a major power nor to enhance its international prestige.

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[26] *Ibid*., p. 134.

[27] Though the Pakistani government claims that five nuclear tests were conducted on May 28, and six nuclear tests were conducted on May 30, results of measurements of seismic waves indicate that one 8-17 kiloton explosion test, not a number of tests, was conducted on May 28. John Barry, "Nuclear Jitters," *Newsweek*, June 8, 1998, p. 24.

[28] Howard Diamond, "India Conducts Nuclear Tests; Pakistan Follows Suit," *Arms Control Today*, Vol. 28, No. 4 (May 1998), pp. 23, 27.

II. Nuclear Weapons in the National Security

A. India

1. The Debate over Nuclear Doctrine[29]

India published its "Draft Report of the National Security Advisory Board on Indian Nuclear Doctrine" (hereafter referred to as "Draft Nuclear Doctrine") in August of 1999. The National Security Advisory Board, a sub-organization of the newly established National Security Council, drafted this doctrine. The doctrine has yet to be authorized as an official government document. Though initially scheduled for adoption by the National Security Council followed by approval by the cabinet, it currently represents the best compromise among the many disparate views within India.

The reason why the doctrine is still in draft form might be found in the criticism it has encountered both at home and abroad. Pakistan claimed that India's nuclear policy would fuel an arms race.[30] The U.S. Department of State also expressed its disappointment, stating that the maintenance of a nuclear deterrence was a move in the "wrong direction."[31] Various Western nations expressed concern because India's nuclear policy appeared to be too ambitious, given its stipulation of a "nuclear triad" and the lack of any clear indication of an upper limit on its nuclear capability. Within India, further criticism was targeted at the motive for releasing the Doctrine at that particular time when the Parliament had been dissolved. It was suspected that announcing the nuclear policy was aiming to gain votes for the incumbent administration in the upcoming elections

The Draft Nuclear Doctrine consists of eight sections: 1) Preamble, 2) Objectives, 3) Nuclear Forces, 4) Credibility and Survivability, 5) Command and Control, 6) Security and Safety (of Nuclear Weapons), 7) Research and Development, and 8) Disarmament and Arms Control.

Compared with five nuclear-weapons states, it is unusual that a nuclear doctrine was stated prior to the development of nuclear weapons into certain stages.[32]The draft doctrine carefully stipulates "credible minimum nuclear deterrence" in such a way as not to hinder research and development.[33]The Minister of External Affairs, Jaswant Singh, stated that although India had declared a moratorium on nuclear tests, research and development that

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[29] The discussion in this section is supported by interviews with four of the six members who drafted the Nuclear Doctrine as well as a National Security Advisor.

[30] Statement by Foreign Minister Shamshad on August 19, Howard Diamond, "India Release Nuclear Doctrine, Looks to Emulate P-5 Arsenals," *Arms Control Today*, Vol. 29, No. 5 (July/August 1999), p. 23.

[31] Statement by U.S. State Department press secretary on August 19, Diamond, "India Release Nuclear Doctrine."

[32] Sidhu, "India's Nuclear Use Doctrine," p. 127.

[33] Doctrine, 7.2.

included computer simulations and sub-critical tests would continue.[34]

The central principles of the Draft Nuclear Doctrine are "credible minimum nuclear deterrence" and "no first-use" of nuclear weapons. "Credible minimum nuclear deterrence" is seen as a policy based on "retaliation only," in which great emphasis is placed on survivability of nuclear forces,[35] although no reference is made to concrete levels of force size. The Doctrine states that the purpose of India's nuclear weapons is the "deterrence of the use or the threat of use of nuclear weapons" by other states, and declares that India "will not initiate any nuclear attacks."[36] Since the doctrine does not specify what level of force constitutes a "credible minimum nuclear deterrence," this ambiguity has stirred controversy resulting in various interpretations and arguments. In the government's view, credible minimum nuclear deterrence is a dynamic concept that is determined by the strategic environment, and as such cannot be specified as a fixed numerical quantity. However, it does not constitute any pursuit of numerical parity with China.[37]

What level of deterrence should India aim to achieve? The range of views in India on this question is very wide.[38] The most moderate view advocates "recessed deterrence" which is basically a continuance of the policy from 1974, while the most radical view advocates "maximum deterrence" in which the deterrence between the U.S. and Soviet Union during the Cold War is seen as the ideal. There are groups in between these two extremes that seek to frame a deterrent taking into consideration financial and technical constraints as well as the reaction of the international community. The Draft Nuclear Doctrine is a compromise of these views, and its future disposition will be determined while responding to challenges analyzed later.

The following discussion takes a brief look at the main points of the nuclear doctrine where advocates of recessed deterrence, maximum deterrence, and moderate views in between differ. The first point is the nature of threats. Proponents of recessed deterrence maintain that the major threat to India comes from Pakistan, while proponents of maximum deterrence believe that it is not necessary to consider the threat of Pakistan in drafting of nuclear policy, but rather that the main threat lies with China. This latter group also believes that in order to ensure strategic autonomy, it is necessary to have a deterrent capability against the U.S. and Russia.[39] Moderates see China as the primary threat and Pakistan as a secondary threat.

The second point is the force size necessary for deterrence. The moderate group suggests figures from 60 to 140 nuclear devices. This is based on the calculation that the

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[34] "Clarifying India's Nascent Nuclear Doctrine: An Interview with Indian Foreign Minister Jaswant Singh," *Arms Control Today*, Vol. 29, No. 8 (December 1999), p. 18.

[35] Doctrine, 2.3.

[36] Doctrine, 2.4.

[37] Interview with Jaswant Singh, *Arms Control Today*, Vol. 29, No. 8. Authors' interview with high government official on July 24, 2001.

[38] Three categories of views are based on: Kanti Bajpai, "India's Nuclear Posture After Pokharan II," *International Studies* (New Delhi), Vol. 37, No. 4 (October – December 2000).

chance of a nuclear weapon reaching the target without being destroyed by the enemy would be 60 percent if India were to drop two warheads on each of ten cities in China and five in Pakistan.[40] However, these figures are also derived from the stockpile equivalent to the *Pokhran*-I type device (20KT-class).[41] The process of establishing the level of deterrence based on India's available stockpile of plutonium reflects the pragmatic approach of the moderate group. On the other hand, those who advocate maximum deterrence put forward figures of between 300 and 400 nuclear weapons. This is based on the belief that four bombs each would be necessary to destroy 60 targets with certainty. In addition, the argument goes, another 50 thermonuclear weapons of various yields on top of that would still fall far short of robust deterrence.[42] Figures such as 300 to 400 devices are also required for "notional parity" with China.[43] Indian researchers estimate that China has a stockpile of 350 to 450 nuclear warheads.[44]

The third point concerns no first-use of nuclear weapons. Those who advocate recessed deterrence regard no first-use as an effective confidence-building measure. The moderate group believes that a pledge of no first-use is essential in order to show that India's nuclear weapons are exclusively for self-defense. They also propose that India should clearly show that no first-use is not just a political declaration, but also a deterrent posture in which nuclear warheads will not be mounted on delivery systems.[45] Those who advocate maximum deterrence question the strategic rationale of no first-use, assuming that India's pledge of no first-use would not effectively change other parties' aggressive intentions.[46] They are suspicious of whether China's declaration of no first-use will be applied to India. They cite an argument in China that no first-use shall not be applied to Chinese territories,[47] although this argument was originally raised in the 1980s in the context of conventional Soviet invasions. They therefore figure that there is a possibility of first use by China against the northeast territory of India over which China disputes territorial claims. Furthermore, many

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[39] Bharat Karnad "A Thermonuclear Deterrent," in Amitabh Mattoo, *India's Nuclear Deterrent: Pokhran II and Beyond* (New Delhi: Har-Anand, 1999).

[40] Fumiaki Nishiwaki, "Minami Asia ni okeru Kakuheikitou no Kakusan to Fukakusan (Proliferation and Non-Proliferation of Nuclear Weapons in South Asia since the 1990s)," *Shin Boei Ronshu*, (*The Journal of National Defense*) Vol. 28, No. 4 (March 2001), p. 40.

[41] Kanti Bajpai, "The Fallacy of an Indian Deterrent," in Mattoo, *India's Nuclear Deterrent*, p. 168; Nishiwaki, "Proliferation and Non-Proliferation of Nuclear Weapons in South Asia Since the 1990s," p. 38.

[42] Karnad, "A Thermonuclear Deterrent," p. 143.

[43] Interview with Bharat Karnad, Senior Fellow, Centre for Policy Research, July 24, 2001.

[44] Savita Pande, Chinese Nuclear Doctrine, *Strategic Analysis*, Vol. 23, No. 12 (March 2000); Swaran Singh, "China's Nuclear Weapons and Doctrine," Jasjit Singh, ed. *Nuclear India* (New Delhi: Knowledge Word, 1998).

[45] Bajpai; interview with K. Subrahmanyam, former convenor, National Security Advisory Board, July 20, 2001.

[46] Bajpai; interview with Karnad, July 24, 2001.

[47] "China and Weapons of Mass Destruction: Implications for the United States," National Intelligence Council, Conference Report, November 5, 1999, pp. 6-7; interview with Jasjit Singh, Director, Institute for Defence and Strategic Analysis (IDSA), July 20, 2001.

Indian analysts take the view that the Chinese principle of no first-use is only applicable to non-nuclear states.[48]

The fourth point concerns nuclear force structure. The Draft Nuclear Doctrine has designated a triad of aircraft, mobile land-based missiles, and sea-based assets.[49] While admitting that sea-based forces are ideal from the perspective of survivability, the moderate group regards the establishment of sea-based assets as a long-term objective, something more for the future than the present. They put priority on the *Agni*-II intermediate-range ballistic missile, which requires further development, mobility, dispersion and deception.[50] Those who advocate maximum deterrence argue that the development of inter-continental ballistic missiles (ICBM), submarine-launched ballistic missiles (SLBM) and cruise missiles should be promptly advanced.[51] This debate, however, reflects the organizational interests of the different branches of the military. For example, retired naval officers advocate sea-based missiles,[52] while those of the air force emphasize an airborne nuclear force.[53] Tactical nuclear weapons are considered unnecessary except for a minority within the advocates of maximum deterrence. This is because the recessed deterrence group and the moderate group do not base their premises on a nuclear war, while those in favor of maximum deterrence do not assume deterrence vis-à-vis Pakistan.

The fifth point concerns command and control. Since the middle group does not envisage a nuclear war, it considers it sufficient to centralize command and control in the hands of the prime minister. Those who advocate maximum deterrence believe that nuclear weapons should be integrated into the military operation plan, and that the authority for the control and use of nuclear weapons needs to be transferred to the armed forces in a severe crisis, as was once the case with the U.S. and Soviet nuclear deterrence policies.

2. Building a Deterrent Capability vis–à–vis China

"Minimum nuclear deterrence," as was previously mentioned, cannot be a perfect guide for the future of the nuclear weapon program. The biggest challenge that India might face would be how to develop a stable deterrence policy vis–à–vis China. Two questions are at hand. First, what kind of weapons should be developed and deployed? Second, how will nuclear weapons affect the stability of the India-China border?

On the first question of the choice of weapons, while predicated on an assessment of Chinese nuclear strategy, research so far has been only fragmentary both at the governmental level and among the strategic community. Since it is difficult to evaluate and predict China's intentions, research has focused on the configuration as well as the deployment of China's

[48] Karnad, "A Thermonuclear Deterrent," p. 121; Jasjit Singh, shares this interpretation.
[49] Doctrine, 3.1. Text reads, "will be based triad…"
[50] Interview with K. Subrahmanyam, July 20, 2001.
[51] Brahma Chellaney, *The Hindustan Times*, February 13, 2001.
[52] Raja Menon, *Nuclear Strategy for India* (New Delhi: Sage, 2000), pp. 224-227.
[53] Interview with Jasjit Singh, July 20, 2001.

nuclear capabilities. Several researchers point out that China's theater missiles, the DF-3 (CSS-2) (range: 2,800 km[54]) and the DF-21 (CSS-5) (range: 1,700 to 1,800 km) are either targeted at India or at least possess that capability.[55] In particular, it is believed that missile bases headquartered in Xining, Qinghai Province and Kunming, Yunnan Province have deployed missiles that target India.[56] On the other hand, considering the excessive yield (3.3 MT[57]) of the DF-3 and its area of deployment, there are those who hold the view that China's primary target is the Russian heartland, followed by Southeast Asia, and that India has never been a target.[58] However, even these analysts hold that there is a strong possibility that China's nuclear weapons will target India in the future. In this context, it is considered to be uncertain whether China will adhere to no first-use if it acquires counter-force capabilities by developing a MIRVed DF-31 (range: 8,000 km) and achieves higher accuracy with the DF-21.[59]

In practice, the Indian government seems to put priority on intermediate-range ballistic missiles (IRBM). In December 1998, Prime Minister Vajpayee reaffirmed to Parliament that India would continue with the research and development of *Agni* missiles.[60] An *Agni*-II flight tests were carried out in April 1999 and January 2000. The *Agni* program had been suspended since the end of 1995, possibly due to pressure from the United States after three tests were conducted between 1989 and 1994.[61] The *Agni*-II is a two-stage missile that is an upgrade of the *Agni*-I. For example, the *Agni*-II uses a solid propellant in the second stage, and it has a mobile platform.[62]

However, the 2,500-kilometer range [63] *Agni*-II is not able to reach Beijing or other cities in eastern China. It is in light of this that an argument in favor of the early development of ICBMs has surfaced even among the authors of the Draft Nuclear Doctrine.[64] Theoretically, this would be possible if India's space development technology were utilized. In 1980, India became the seventh nation in the world to acquire satellite-launch capability. Although the early space-launch vehicle had a launching capability of only a 35- to 40-kilogram satellite

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[54] Range as assessed by Indian researchers. Dipankar Banerjee, "The New Strategic Environment," in Mattoo, *India's Nuclear Deterrent*, p. 287; Swaran Singh, "China's Nuclear Weapons and Doctrine," p. 146; Menon, p. 181. The Federation of American Scientists (FAS) lists the range of the DF-3 at 3,000 km; <www.fas.org/nuke/guide/china/theater/index.html>, accessed on October 26, 2001.

[55] Gurmeet Kanwal, "China's Long March to World Power Status: Strategic Challenge for India," *Strategic Analysis*, Vol. 22, No. 11 (February 1999), p. 1954.

[56] Banerjee, p. 276.

[57] Yield as assessed by Indian researchers. Banerjee, "The New Strategic Environment," p. 287; Swaran Singh, "China's Nuclear Weapons and Doctrine," p. 146.

[58] Menon, *Nuclear Strategy for India*, pp. 180-181.

[59] *Ibid.*, pp. 184-185.

[60] *The Hindu*, December 16, 1998.

[61] BAS, 92/9; <www.fas.org/nuke/guide/India/missile/agni.html.>

[62] <www.fas.org/nuke/guide/India/missile/agni.htm.>

[63] Ministry of Defence, *Annual Report 1990 – 2000*; <www.fas.org range given as 2,800 – 3,000 km.>

[64] Chellaney and Karnard, both members of the Center for Policy Research, strongly advocate the development of ICBMs.

to low earth orbit, the polar space launch vehicle (PSLV) that was successfully launched in 1994 has a launching capability of three tons to low earth orbit. It was around this time that India's ICBM "*Surya*" development program was first reported. The PSLV is a four-stage rocket that uses solid fuel in the first and third stages, and liquid fuel in the second and fourth stages. In April 2001, India succeeded in launching a Geosynchronous Space Launch Vehicle (GSLV) using a cryogenic rocket engine in the fourth stage. It had purchased this engine from Russia, and though initially it had intended to use technology transfer, it switched to acquiring the completed product because of the sanctions imposed upon India and Russia in May 1992 by the United States for violating the guidelines of the Missile Technology Control Regime (MTCR).[65] The launching of the PSLV and GSLV was aimed at entering the global communications space business in the fields of communications satellites and earth observation, but if they were to be converted to military use, they could realize a range of more than 5,000 kilometers. Dr. A.P.J. Abdul Kalam, who had been in charge of nuclear development in India, declared, "An ICBM is technically feasible. Once India makes a decision, it will be produced shortly."[66] However, as Dr. Kalam himself admits, because a cryogenic rocket requires time for fuel supply and an enormous facility, it is not suited for missiles. It has also been pointed out that it is difficult to make the huge bodies of a PSLV and GSLV mobile, and that their survivability is questionable.[67] The question of whether the Indian government should go ahead with developing ICBMs is a major decision that remains to be made in the future.

The second question of a deterrent relationship with China, stability of the India-China border, is an extremely sensitive issue, and one that has been kept out of the public scrutiny. In a report titled "Reforming the National Security System" released in February 2001 by the group of ministers, the entire part that examined Sino-Indian border control was deleted under government security reasons.[68]

There is a shared awareness in India that the country's military supremacy in the border area is gradually deteriorating due to China's military modernization,[69] but a clear relationship between shifting conventional balance and the need for nuclear deterrence has not been argued. There are two types of arguments. One considers nuclear weapons as political weapons that should effectively change China's reluctant attitude toward border negotiations. One variant of this view holds that India should tear up the CBM agreements of

[65] For details on space development, see *India Today*, April 30, 2001, pp. 34-40; Japan Space Forum, *Space Development Data Book 1997*; National Space Development Agency of Japan website.
[66] *Hindustan Times*, September 18, 2000.
[67] Amit Gupta, "A Nuclear Arms Control Agenda for India," Raju Thomas & Amit Gupta, eds., *India's Nuclear Security* (Vistaar, 2000), p. 281.
[68] Recommendations of the Group of Ministers on Reforming the National Security System (February 2001), pp. 64-65.
[69] See for instance: Ministry of Defence, *Annual Report 1999 – 2000*, p. 5.

1993 and 1996 and Tibet should be turned into a neutral zone.[70] The other argument acknowledges a role for nuclear weapons in complementing the weakening supremacy of India's conventional forces in border areas. One variant of this argument is that India's use of air power and short-range Prithvi ballistic missiles to block Chinese supply routes could escalate to bringing in the use of the *Agni*-II.[71]

At the government level, the view is that the framework of confidence-building with China is functioning effectively and that a nuclear war between India and China is simply out of the question. This is based on the hypothesis that China will not make a cross-border incursion with conventional forces, and that China would find an Indian nuclear attack on one of its regional cities "unbearable." However an assessment of China's intentions, that is, an assessment of just how far China will tolerate India's nuclear development and deployment, has not been made. It is probable that for the immediate future China will respond to India's buildup of nuclear capabilities by strengthening its military assistance to Pakistan.[72] In this sense, the Indian government is correctly assessing that India's nuclear weapons will not invite a nuclear arms race with China. Rather, China's anticipated reaction to India's nuclear buildup would be one more factor for the destabilization of South Asia.

3. Sea-Based Deterrence

The second challenge is building sea-based deterrence. Although sea-based deterrence is generally discussed in relation to the objective of enhancing survivability, India does not yet possess any nuclear submarines, and building a highly survivable sea-based deterrence program will be time-consuming and expensive. Then why is India advocating sea-based deterrence?

Let us take a look at the developmental stages of the Indian navy's ballistic and cruise missiles. The first on-board test firing of the *Dhanush* short-range surface-to-surface ballistic missile, a naval version of the *Prithvi*, was conducted in April 2000.[73] With an estimated range of 250 kilometers, the *Dhanush* is considered to be an anti-ship missile.[74] Regarding cruise missiles, in April 1998 the *New York Times* revealed a secret program with Russian cooperation involving the submarine-launched cruise missile *Sagarika*. Although Minister for Defence George Fernandes admitted the existence of the program, it cannot be verified

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[70] Bharat Karnad, "Getting Tough with China: Negotiating Equitable, not "Equal," Security," *Strategic Analysis*, Vol. 21, No. 10 (January 1998); Senthil Ram also advocated support for partition of Tibet. Quoted in Mark W. Frazier, "China-India Relations since Pokharan II: Assessing Sources of Conflict and Cooperation," *Access Asia Review*, Vol. 3, No. 2 (July 2000), p. 25.

[71] Gupta, "A Nuclear Arms Control Agenda for India," p. 281.

[72] Fraizer, "China-India Relations since Pokharan II," p. 22.

[73] Expressed as "demonstration" in the Ministry of Defence Annual Report. Ministry of Defence, Government of India, *Annual Report 2000 – 2001*, p. 67.

[74] *Hindustan times*, April 20, 2000; <http://www.bharat-rakshak.com/MISSILES/News/00-Apr.html>, accessed on October 30, 2001; <http://www.fas.org/nuke/guide/india/missile/sagarika.htm.>

because of contradictory information coming from various sources.[75] In marked contrast to the controversy over the *Sagarika* program, the purchase of the *Club* naval cruise missile system from Russia in September 1999 passed unnoticed. Though it is not clear which type has been purchased by India, if it is a 3M54E (SS-NX-27) with 220-kilometer range, it would be an effective anti-ship attack weapon as it flies at supersonic speeds.[76] A Kilo-class submarine fitted with the *Club* missile system was brought to India in July 2000 and commissioned under the name INS *Sindhushastra*.[77] It is thought that these weapons will be fitted to three *Krivak*-class frigates as well as three Kilo-class submarines currently undergoing a refit in Russia.[78]

India's intense efforts to obtain ballistic missiles and cruise missiles with a range of less than 300 kilometers might be a manifestation of India's strong desire to influence Chinese and U.S. activities in the Indian Ocean. In December 1998, in the face of the presence of nuclear submarines and ballistic nuclear submarines of China and the United States in the Indian Ocean, in which India has a vital stake, the House Standing Committee on Defence recommended to the government to "review and accelerate its Nuclear Policy for fabricating or for acquiring nuclear submarines to add to the deterrent potential of the Indian Navy." The recommendation has been noted by the government in October 2000.[79]

This recommendation urged the government to accelerate its efforts to promote the Advanced Technology Vessel (ATV), the project for indigenous nuclear submarines that was started in the 1970s. In 1988, India set out to introduce nuclear reactor technology by leasing a *Charlie*-I-class nuclear-powered cruise-missile submarine (SSGN), but technical problems such as scaling down the size of the 190Mw nuclear reactor remain unresolved today.[80] It is estimated that the construction of a prototype of the vessel will be completed around 2005 to 2006, and that it will take until around 2010 for a vessel with missile capability to be completed.[81]

As can be inferred from the above equipment plans, the "sea-based deterrence" in India's nuclear doctrine means nuclear powered submarines, not nuclear missiles. It may be interpreted as putting nuclear submarines loaded with ballistic missiles or cruise missiles with conventional warheads into service with the objective of acquiring the capability to deny Chinese and U.S. naval activity in the Indian Ocean. Even though if in the long term it does proceed with its nuclear-capable SLBM program, for the present time sea-based

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[75] Rahul Roy-chaudhury, *India's Maritime Security* (Knowledge World, 2000), pp. 142-143.
[76] Steve Zaloga, "India Joins the Russian Naval Missile System Club," *Jane's Intelligence Review*, Vol. 12, No. 12 (December 2000), pp. 43-45.
[77] <http://www.bharat-rakshak.com/NAVY/News/00-July.html>, accessed on October 29, 2001.
[78] <http://www.bharat-rakshak.com/NAVY/News/00-July.html>, accessed on October 29, 2001.
[79] Standing Committee on Defence, Eighth Report, p. 13.
[80] Menon, *Nuclear Strategy for India*, p. 226; Roychaudhury, *India's Maritime Security*, p. 142; <www.fas.org/nuke/guide/india/sub/ssn/part01.htm>, accessed on October 31, 2001.

deterrence is at the very least aimed at nuclear deterrence vis–à–vis China and is more an issue of military balance in the Indian Ocean.

4. Deterrence and Limited War against Pakistan

The third challenge is securing strategic stability, which is a more urgent issue for relations with Pakistan than with China. As compared to India-China border disputes, the conflict between India and Pakistan over Kashmir comprises national identities and, therefore, is likely to intensify. In addition, it is suspected that Pakistan has not given up on the option of challenging the status quo by the use of force.

In examining the strategic stability between India and Pakistan, it is necessary to go back to about 1987 when Pakistan is thought to have acquired nuclear capability.[82] The period from 1987 to 1990 witnessed a number of events that reflected a lack of both crisis stability and arms-race stability between India and Pakistan. First, in response to the Soviet Union's withdrawal from Afghanistan, Pakistan was seen to shift its strategies to another front, Kashmir. It was around this time that Pakistan started supporting Islamic militant groups in Jammu and Kashmir, which is on the Indian side of the Line of Control (LOC).[83] As a result of acquiring nuclear capabilities, the incentive increased for Pakistan to carry out nuclear first-use in cases where India escalated situations into conventional warfare, something that concerned India's military intelligence agencies and some researchers in the United States.[84] Second, an India-Pakistan missile development race accelerated in the same period. In response to India's first flight test of the short-range ballistic missile *Prithvi* in February 1988, then Pakistan displayed both *Hatf*-I (range: 80 kilometers[85]) and *Hatf*-II (range: 300 kilometers[86]) missiles in March 1989. India in turn conducted the first test of the intermediate-range ballistic missile *Agni*-II (range: 2,000 kilometers) the following May. Although its action may not have been intended to provoke Pakistan, the effect was to induce a Pakistani reaction.

The United States responded quickly to these strategic instabilities. In the early 1990s, many high-level U.S. government officials raised the alarm about the intensification of the nuclear and missile development race between India and Pakistan. Something that must not

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[81] Menon, *Nuclear Strategy for India*, p. 226; In interview on July 24, 2001, Karnad supported this, citing an interview given to Jane's by Defence Minister Fernandes.

[82] India's assessment from *Ministry of Defence Annual Reports*, 1986 and 1987 editions, *Kargil Committee Report*, p. 193; Though the United States first made an official allegation in 1990 (see 1 (2) in this paper), this had been accepted by researchers in 1987. Since 1987 the Pakistani president and military officials have frequently hinted at nuclear capability.

[83] Annual Report published by Ministry of Defence referred to as "Pakistan's support for terrorist activities" in 1988 – 1989 version for the first time.

[84] Cohen, *India: Emerging Power*; Assessment by JIC contained in *Kargil Committee Report*, p. 197.

[85] Jane's Strategic Weapon Systems, Issue 34, pp. 121-122. The FAS puts this at 60 – 100 km. <http://www.fas.org/nuke/guide/pakistan/missile/index.html>, accessed on June 29, 2001.

[86] Jane's Strategic Weapon Systems, Issue 34, pp. 121-122. The FAS puts this at 280 km.

be overlooked is that these remarks were not only aimed at promoting the U.S. non-proliferation agenda by putting pressure on both India and Pakistan, but that the intentional leaking of information by the U.S. side was intended to promote strategic stability. The objectives of the United States toward the arms race were to bring about an immediate freeze in nuclear development by India and Pakistan with an ultimate goal of eliminating nuclear weapons and capping missile development. The United States imposed sanctions against Russia's export of cryogenic rocket engines to India in 1992, and China's export of M-11 missiles (DF-11/CSS-X-7 range: 300 kilometers) to Pakistan in 1991 and 1993, for not complying with the guidance of the MTCR. However, these sanctions could only slow the pace of the arms race. After China demonstrated a more positive approach to non-proliferation by reaffirming its pledge to the MTCR in October 1994, Pakistan then turned to North Korea as a supplier of missiles. It is thought that the intermediate-range (1,300 to 1,500 km range) ballistic missile *Ghauri*-I tested in April 1998 was based on the North Korean *No Dong* missile.

As for the crisis stability, the U.S. adopted a more low-key approach, and this has been successful to a certain degree. When India and Pakistan came close to war emanating from military exercises in 1990, there was serious concern in the Bush administration over the possibility of nuclear war. The United States took on a mediating role in an attempt to avoid a crisis.[87] This led to several confidence-building measures including the Agreement on Prevention of Air Space Violations (April 1991),[88] the Agreement on Advance Notice of Military Exercises, Maneuvers and Troop Movements (April 1991),[89] the extension of the hotline between the two countries (December 1990), and the exchange of instruments of ratification for an agreement on the non-attack of nuclear facilities in January 1991. India also proposed its no first-use policy in 1994.

Even after this series of confidence-building measures, the question of the stability of the virtual nuclear deterrence between India and Pakistan continued to be debated among researchers in the United States. Those who argued that nuclear deterrence lacked stability pointed out several factors, including the possibility of war between the two countries over Kashmir, deployment of short-range ballistic missiles, insufficient intelligence capabilities and fragile command and control systems.[90]

The Kargil crisis, which lasted for two months from May 1999, was the first test of crisis stability after the nuclear tests. It started with Islamic militants crossing the LOC from the Pakistan-side and making an incursion into Indian territory, followed by Pakistani forces

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[87] For the 1990 crisis, see Marie Izuyama, "Indo Pakistan kan no Shinrai, Josei Sochi (CBMs between India and Pakistan)," *Boei Kenkyusho Kiyo* (*NIDS Security Studies*), Vol. 1, No. 2 (December 1998), p. 8, source cited in note 32.

[88] Agreement between Pakistan and India on Prevention of Air Space Violations and for Permitting Over Flights and Landings by Military Aircraft.

[89] Agreement between Pakistan and India on Advance Notice on Military Exercises, Maneuvers and Troop Movements.

[90] Joeck, "Maintaining Nuclear Stability in South Asia," pp. 41-50.

occupying strategic posts on the Indian side. Subsequently it developed into an armed conflict between the regular military forces. After India's air campaign, the Indian armed forces gained superiority in the end. Nawaz Sharif, Prime Minister of Pakistan, asked Clinton for mediation in vein and had to accept a virtually unilateral cease-fire.[91] Strong persuasion by the U.S. commander-in-chief of the Central Command to the Pakistan chief of army staff also facilitated the end of the Kargil Crisis. This episode is one more indication of the structure whereby the United States provides the communication channel between India and Pakistan.

It is a matter of significance to look at how both governments are interpreting the Kargil Crisis in the context of nuclear deterrence. The Pakistani government's opinion is that India's restraint in not crossing the LOC was the effect of Pakistan's deterrent capability.[92] This view is somehow shared with the Indian side. The Kargil Review Committee Report, published by India, reveals a view held by India's Joint Intelligence Committee a few years back that Pakistan was conducting low intensity conflict under a nuclear umbrella, and that Pakistan's nuclear capability had made it difficult for India to escalate the conflict into a conventional war.[93]

Even if a Kargil-type crisis occurs in the future, India is not likely to go beyond deterrence by conventional forces. After the submission of the Kargil Review Committee Report, India's strategic community started to discuss the concept of a limited war.[94] According to India's Minister of Defence, George Fernandes, a limited war is a war that is "limited to a geographical area," something that is considered inevitable in the future.[95] It seems that India is trying to raise the "nuclear threshold" between India and Pakistan through a buildup of its conventional forces. However, the doctrine of limited war would not be able to eliminate the possibility of the use of nuclear weapons by Pakistan if India fails to clearly convey its political objectives in Kashmir. As India's declared policy is that Kashmir as a whole, including Pakistani-held Kashmir, belongs to India,[96]if India were to launch even a small counterattack on the Pakistani side of the LOC, it is possible that Pakistan could misunderstand it as being the intention of seizing the whole of Kashmir.

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[91] Text of the Nawaz-Clinton meeting Joint Statement, July 4, 1999; <http://stimson.org/cbm/sa/jntstmnt.htm.>

[92] View of researchers contained in Ayesha Siddiqa-Agha, *Pakistan's Arms Procurement and Military Buildup, 1979-99* (Houndmills, Hampshire: Palgrage, 2001), p. 179, p. 182.

[93] *Kargil Committee Report*, p. 197.

[94] Jasjit Singh, "Dynamics of Limited War," *Strategic Analysis*, Vol. 24, No. 7 (October 2000).

[95] *Asia Week* interview with Defence Minister Fernandes on February 11, 2000. Reproduced in Embassy of India, important interviews; <www.indiaembassy.org/press/interview/fernandes_feb_11_2000.htm> accessed on October 31, 2001.

[96] Parliamentary resolution, February 22, 1994.

B. Pakistan

1. Nuclear Weapon Delivery Systems

Pakistan possesses two means of delivering nuclear weapons: ballistic missiles and fighter planes. Pakistan began developing ballistic missiles in the 1980s. The first missiles developed were the *Hatf*-I and *Hatf*-II, with ranges of approximately 80 kilometers and 300 kilometers respectively. However, the *Hatf*-II was never deployed and its development was abandoned around 1997.[97] The *Hatf*-III has been deployed, though this is the M-11 short-range ballistic missile that Pakistan obtained from China and has a range of approximately 300 kilometers.[98] It may be noted that Pakistan has been acquiring M-11 missiles since 1992 and it is estimated that it has approximately 30 of these missiles.[99] Pakistan has the *Ghauri* intermediate-range ballistic missile, though this is based on the *Nodong* missile imported from North Korea. [100] It also deploys the *Shaheen*-I, a short-range ballistic missile based on the M-9 made in China, and it is currently developing the *Shaheen*-II, a mobile ballistic missile with a payload of 1,000 kilograms and a range of about 2,500 kilometers.[101]

As for fighter planes capable of carrying nuclear bombs, Pakistan purchased a total of 40 F-16A and F-16B aircraft from the United States between 1983 and 1987, eight of which are no longer in service. Pakistan has equipped itself with two more nuclear-capable fighter planes, the *Mirage*-V made in France and the Chinese-made A-5 fighter-bomber.[102]

Although it is not clear whether or not Pakistan has more than just nuclear explosive devices and has nuclear warheads that can be carried by ballistic missiles or fighter-bombers, it is suspected that at the very least it has components for 30-40 nuclear devices (nuclear weapons).[103]

2. Deterrence vis-à-vis India and First Use of Nuclear Weapons

As is evident from the background of Pakistan's development of nuclear weapons, its nuclear policy is directed at India, with which it has a long-standing antagonistic

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[97] Jones et al., *Tracking Nuclear Proliferation*, p. 133.

[98] The U.S., National Intelligence Council, "Foreign Missile Developments and the Ballistic Missile Threat Through 2015," p. 14.

[99] Robert S. Norris et al., "Nuclear Notebook: Pakistan's Nuclear Forces, 2001," *The Bulletin of the Atomic Scientists*, Vol. 58, No. 1 (January/February 2002), p. 71.

[100] Ibid., p. 71.

[101] The U.S., National Intelligence Council, p. 14.

[102] Norris et al., "Nuclear Notebook: Pakistan's Nuclear Forces Deterrence, 2001," p. 72.

[103] Michael Quinlan, "How Robust is India-Pakistan Deterrence," *Survival*, Vol. 42, No. 4 (Winter 2000-01), pp. 151-152. Paul Richter, "Pakistan's Nuclear Wild Card," *The Los Angeles Times*; September 18, 2001; Jon B. Wolfsthal, "U.S. Needs a Contingency Plan for Pakistan's Nuclear Arsenal," *The Los Angels Times*, October 16, 2001.

relationship. Accordingly, Pakistan's nuclear policy is largely a passive response to India's nuclear policy, as will be seen later from its stance toward the NPT and the CTBT.

Nonetheless, with regard to its nuclear strategy, Pakistan's formulation of its own strategy is a reflection of its inferiority in conventional military capability. A typical example of this can be seen in Pakistan's decision to decline India's proposal of "no first-use" of nuclear weapons, which resulted in Pakistan retaining the option of nuclear "first use." Still, Pakistan's "first use" policy does not mean that it will arbitrarily use its nuclear weapons first, but is a "first use" predicated on the use of nuclear weapons in the ultimate situation in which the survival of the state is at stake, and follows similar lines as the nuclear doctrine adopted by NATO in 1991.

Apart from making clear its intention of retaining the option of nuclear "first use," Pakistan has so far not made public details of its nuclear strategy. And yet, an outline of its strategy has gradually become clear in recent years from the statements of Pakistani officials. One example is a nuclear weapons employment policy announced by Lt. Gen. Khalid Kidwai, Chief of the Strategic Plans Division, on the occasion of an interview with an Italian nuclear physicist. After stating that Pakistan's nuclear weapons were targeted at India, Lt. Gen. Kidwai outlined the four scenarios under which Pakistan would use its nuclear weapons: (1) In the event that India launches a military attack on Pakistan and takes hold of a large part of Pakistan's territory; (2) In the event that in a future war between India and Pakistan, India destroys a large part of Pakistan's Army and/or Air Force; (3) In the event that India paralyzes Pakistan's economy; and (4) In the event that India brings instability to Pakistan's domestic political situation by inciting riots within Pakistan.[104] Judging from these concrete examples of cases in which Pakistan would use its nuclear weapons, it may be inferred that, with the exception of the fourth scenario, it would take recourse to its nuclear arsenal only if Pakistan's survival as an independent state was at stake. The fact that Pakistan considers nuclear use as the ultimate measure is suggested by the absence of a need for tactical nuclear weapons while retaining the option of nuclear "first use."

As can be seen from Pakistan's retention of the option of nuclear "first use," it is possible that, depending on the capability, Pakistan's nuclear force can offset India's superiority in conventional military strength with its three times larger army, five times greater air power, and six times greater naval power. However, in order to offset India's conventional military capability, Pakistan's nuclear weapons must have survivability. In other words, they must have a credible retaliatory capability. The reason being, in the event that if invaded by Indian conventional forces Pakistan should employ nuclear weapons, there is a danger that this would invite nuclear retaliation by India, although whether or not India would go ahead with this nuclear retaliation would largely depend on the survivability of Pakistan's nuclear weapons. In other words, if, after "first use," Pakistan's remaining

[104] Nadeem Iqbal, "Economic Threat May Push Pakistan to Nukes—Report," *Inter Press Service*, February 4, 2002; Rodney W. Jones, "Is Stable Nuclear Deterrence Feasible?" *The Friday Times*, February 22-28, 2002; <http://www.thefridaytimes.com/news6.htm.>

nuclear force is vulnerable and there is a high probability that nuclear retaliation by India would completely destroy any remaining nuclear weapons, it would be difficult for Pakistan to avoid nuclear retaliation by India. However, if its nuclear force is invulnerable, it is also possible that it will cause India to hesitate in taking nuclear retaliation because it is also possible that Pakistan would take retaliatory strikes against India's nuclear retaliation.

In light of the existing military balance between India and Pakistan, Pakistan at least has to pursue the following two policies in order to put in place a sufficiently survivable nuclear capability. First, it must strengthen its air force. Given the overwhelming superiority of India's air force, Pakistan's present nuclear capability is in danger of being disarmed by a preemptive conventional strike by India's air force. Second, Pakistan must ensure that its ballistic missiles and unassembled nuclear weapons are survivable. These kinds of policies become all the more important because if Pakistan keeps its nuclear weapons in parts and continues to refrain from fielding nuclear-armed ballistic missiles that are designed to be launched at a moment's notice.

Viewed from the perspective of credibility for nuclear retaliation, while the deployment of unassembled nuclear weapons is problematic, this problem could be resolved if their survivability is ensured. In view of the small-scale armed clashes that occur frequently between India and Pakistan, survivability assuring nuclear retaliatory capability holds the key to preventing these small-scale disputes from escalating to all-out war. If Pakistan's nuclear explosive devices (nuclear weapons) are vulnerable, far from these nuclear weapons deterring India, it is quite possible that conversely the situation may invite a preemptive strike by India.

It is also necessary for Pakistan to enhance its command, control, communications and intelligence (C^3I) in regard to its nuclear forces. As far as authority to launch its nuclear forces is concerned, Pakistan differs from India in that it is not absolutely clear just which organizations possess the authority to make a decision. For instance, at the time of civilian government when Nawaz Sharif was Prime Minister, it was thought that as chairman of the Cabinet Defence Committee the Prime Minister had the authority to take decisions on nuclear use, but looking back at the events of the Kargil conflict when Sharif had inadequate control, it is not clear whether the military respected the authority of the Cabinet Defence Committee centered on Sharif himself.[105] In fact, in Pakistan where there is no reliable civilian control, when civil servants run the administration it is said that the authority to launch nuclear weapons is shared between the military and the prime minister.[106] Pervez Musharraf, President of Pakistan today, is the chief of the Pakistani army, and it can be seen that Musharraf has the authority to take a decision on nuclear weapons. However, if power is completely transferred to a civilian Prime Minister, or if Musharraf resigns as the chief of the army, it is conceivable that the same problem encountered during Sharif's time in power

[105] Farah Zahra, "Pakistan's Road to a Minimum Nuclear Deterrent," *Arms Control Today*, Vol. 29, No. 5 (July/August 1999), p. 11.
[106] Ibid., p. 11.

may arise. Unless this situation is not improved, the hot line established between the policymakers of both India and Pakistan will become meaningless. Also, command and communications capability for the units operating nuclear weapons must be made doubly secure. Although one means of ensuring the survivability of Pakistan's nuclear forces is the dispersion of its unassembled nuclear explosive devices (nuclear weapons), the strengthening of command and communications systems is vital to the viability of this dispersion.

Another vital task is the establishment of an early warning system that detects nuclear launches and other military actions taken by India. A credible early warning system not only lowers the risk of nuclear launches caused by accidents and misunderstandings, but would also serve to ensure the retaliatory capability of Pakistan's nuclear forces. For instance, a timely advanced warning would prove crucial, since nuclear capable fighter planes stationed at an air force base are vulnerable in the event of a surprise attack.

3. Custody of Nuclear Weapons

Immediately following the terrorist attacks on the United States on September 11, 2001, the Bush administration lifted all the sanctions that had been imposed on Pakistan by the Clinton administration on account of Pakistan's nuclear tests.[107] This action was taken because the United States, which regarded the Taliban government of Afghanistan and Al Qaeda, which was under its protection, as terrorist organizations, deemed Pakistan's cooperation as essential for carrying out anti-terrorist actions inside Afghanistan. While the lifting of sanctions by the Bush administration did not mean that it accepted Pakistan's nuclear status, for the time being it amounts to overlooking Pakistan's nuclear weapons development.

As the United States proceeded with its anti-terrorist campaign in Afghanistan, a concern arose that Pakistan's nuclear explosive devices (nuclear weapons) might fall into the hands of those hostile to the United States. This concern arose because Islamic extremist groups close to the Taliban and members of Al Qaeda live in Pakistan, and also because devices controlling the use of nuclear weapons, such as permissive-action-link (PAL) devices that would prevent unauthorized persons from launching nuclear weapons, had not been put in place.[108] In order to allay the fears of the international community over its control and custody of nuclear weapons, President Musharraf took several actions including detaining nuclear weapon technicians with links to Islamic extremist groups and redeploying

[107] In 1999 U.S. Congress passed a bill giving the president the authority to withdraw the sanctions. The sanctions imposed by the U.S. after October 1999, when General Musharraf staged a coup d'etat and toppled the democratically elected Sharif government, were lifted, but the sanctions imposed because of Pakistan's importation of missile materials and equipment from China have not been lifted.

[108] Richter, "Pakistan's Nuclear Wild Card."

its nuclear explosive devices (nuclear weapons) to new locations.[109] These actions have worked so far as nothing unexpected has occurred.

III. India and Pakistan's Positions Toward Nuclear Arms Control and Disarmament

A. Nuclear Non-Proliferation Treaty (NPT)

The NPT permits countries that conducted nuclear tests before January 1, 1967, to possess nuclear weapons as "nuclear-weapon states," and rules that all other countries are "non-nuclear-weapon states" and prohibits them from the development or possession of nuclear weapons. It goes no further than to set down a set of objectives for the disarmament of nuclear-weapon states in its Article 6. In other words, Article 6 of the NPT on nuclear disarmament is no more than obligating the treaty's signatories to take effective measures regarding the early cessation of the nuclear arms race and disarmament, and to conduct negotiations in good faith aimed at "general and complete" disarmament. India has criticized the NPT and these provisions on the grounds that the NPT sets down a dual structure of rights and obligations of signatories, and it is a policy of "nuclear apartheid" that fails to take any effective steps for abolishing this dual structure. India continues to refuse to sign the treaty.

Another reason given by India for rejecting the NPT is that the NPT fails to remove its security concerns.[110] A major flaw of the NPT is that it takes no measures to assure the security of non-nuclear-weapon states against nuclear threat; while at the same time it prohibits these same non-nuclear-weapon states from developing or possessing nuclear weapons. In taking this flaw into account, and in order to encourage India and other non nuclear-weapons states to sign the treaty, in June 1968, just before the NPT negotiations concluded and the treaty was ready for signing, the United States, United Kingdom and the Soviet Union (depository states to the NPT) declared "positive security assurance" to non-nuclear-weapon states, whereby assistance and countermeasures would be given in accordance with the United Nations Charter to the non-nuclear-weapon states that come under nuclear threat or attack. Nonetheless, India took the view that this sort of political declaration alone was not able to provide India with sufficient security assurance.[111] Also, while in later years the five nuclear powers made "negative security assurance" pledges whereby they would, subject to some conditions or unconditionally, not use or threaten to use nuclear weapons against non-nuclear-weapon states. However, these pledges were not

[109] Norris et al., "Nuclear Notebook: Pakistan's Nuclear Forces, 2001," p. 71.
[110] The Government of India, "Evolution of India's Nuclear Policy," paper presented in India's Parliament on May 27, 1998, *India Perspective*, special issue (August/September 1998), p. 13.
[111] Refer to Masahiko Asada, "Hikakuhoyukoku no Anzenhosho-ron no Saikento (Security of Nuclear Non-Weapons States)," *Okayama Daigaku Hogakukai Zasshi*, Vol. 43, No. 2 (1993), for issues arising from the declarations of the positive security assurances made by the U.S., UK, and the Soviet Union in June 1968.

legally binding. India was not under the nuclear umbrella of the nuclear-weapon states and faced border issues with China, one of the nuclear-weapon states. This situation probably made India sensitive to its security against nuclear threat. Although Pakistan has not signed the NPT either, Pakistan has made it clear that it will join the NPT on the condition that India becomes a signatory to the treaty.

Not only do both India and Pakistan stand outside the framework of the NPT, but neither are they members of the Nuclear Suppliers Group (NSG) or the Zanger Committee. However, they have voluntarily placed restrictions on the export of technology and materials related to nuclear weapons and thus contributed toward the prevention of nuclear proliferation.[112] Although there were concerns that as the first Islamic nation to develop nuclear weapons Pakistan might be a source for spreading nuclear weapons to Arab nations opposed to Israel, so far these concerns have not been warranted.

B. Comprehensive Nuclear Test Ban Treaty (CTBT)

India is a country that has been calling for the complete banning of nuclear testing for many years, as seen by the call made in April 1954 by then prime minister Jawaharlal Nehru for the commencement of negotiations on the elimination of nuclear weapons and the complete cessation of nuclear testing as the first stage to their abolition.[113] However, at the Conference on Disarmament (CD) in Geneva held in August 1996, India opposed the adoption of the CTBT, which the CD had been negotiating since January 1994. India had the following three reasons for its opposition: First, the CTBT did not stipulate a time frame for the elimination of nuclear weapons. Since the negotiation stage, India had been advocating the need to set a specific year by which time nuclear weapons had to be completely destroyed, since by banning nuclear testing alone the CTBT contributed only to the prevention of nuclear proliferation and did nothing to ameliorate the inequalities that lay in the NPT. Second, India was dissatisfied with the approval of so-called sub-critical nuclear tests as not being a part of nuclear testing. India took the view that just as the PTBT of 1963 permitted underground nuclear tests, the CTBT was permitting laboratory-type nuclear tests. India criticized the treaty saying that instead of banning all nuclear tests, by permitting sub-critical nuclear tests that could be carried out by only a few nuclear-weapon states which possessed the technological capabilities, the treaty not only continued the inequality, but also would make the elimination of nuclear weapons almost impossible. Third, India showed strong opposition to its addition to the 44 required signatories as coercing India to

[112] The following paper stresses the robustness of India's export control policy toward nuclear weapon-related materials and equipment: The Government of India, p. 13. Also see Diamond, "India Conducts Nuclear Tests; Pakistan Follows Suit," p. 22.

[113] The Government of India, "Evolution of India's Nuclear Policy," *India Perspective*, pp. 6, 8; Savita Pande, "India and the Test Ban," Jasjit Singh, ed., *Nuclear India* (Delhi: Shri Avtar Printing Press, 1998), p. 232.

join the CTBT, something which it was unable to accept.[114] Subsequently, India changed its policy direction to one of blocking the adoption of the CTBT proposal at the CD. Up until that point India had expressed dissatisfaction with the way in which its calls for a time-frame for nuclear elimination in the treaty's text had been disregarded, and although it had made it known that even if the CTBT came into force it intended to refuse to sign the treaty, it did not go so far as to indicate that it would obstruct the adoption of the proposed CTBT at the CD.

Certainly, as asserted by India there is no doubt that making the ban on nuclear tests "comprehensive" in the true sense of the word and achieving the elimination of nuclear weapons are important objectives. However, the consensus of most people is that making these objectives the subject of negotiations is extremely difficult both politically and technologically. The selection of the 44 countries as required signatories to the treaty was based on whether or not they possessed nuclear power generation facilities or research reactors, and India was no more than one of the countries included on this list. The fact that countries were selected solely on the basis that they had nuclear generation facilities or research reactors within their territories is problematic in itself, but if excluding the five nuclear-weapon states, which had held nuclear tests numerous times, from the list of required signatory countries is deemed outrageous, then India too should not be excluded from the list for the same reason that it had held nuclear tests in 1974. In the end, India's assertions merely needlessly delayed the conclusion of the CTBT negotiations or made the wheels fall of the CTBT negotiations that had nearly reached the point of conclusion. Arms control and disarmament negotiations must be undertaken in stages based on the political and technological conditions of the time.

However, India's stance towards the CTBT changed significantly after it conducted nuclear tests in May 1998. Immediately following the nuclear tests held on May 11, India released a statement to the effect that it would be prepared to consider being an adherent to some of the provisions in the CTBT and this would depend on "a number of reciprocal activities."[115] Then, on May 21, about one week after the nuclear tests of May 13, India declared a moratorium on nuclear testing. India did not rescind its decision even after Pakistan had held its own nuclear tests at the end of May in response to India's tests. Furthermore, India pronounced at the United Nations General Assembly in 1998 that it would not block the CTBT from coming into effect.[116] Similar announcements were reiterated in March and August 2000 on the occasion of the visits to India by President Clinton and Japan's Prime Minister Mori, respectively. India's stance in not blocking the

[114] Pande, "India and the Test Ban," pp. 237-243.

[115] Ibid., p. 244. At one point Indian government sources suggested the total lifting of sanctions and restrictions imposed on India by the NSG and MTCR be conditions for its signing of the CTBT. Arms Control Association, "News Briefs: India, Pakistan May be Moving Toward CTBT," *Arms Control Today*, Vol. 28, No. 6 (August/September 1998), p. 32.

[116] Nobuyasu Abe, "Imakoso Kaku-gunshuku no Giron wo (Now is the Time for a Nuclear Disarmament Debate)," *Gaiko Forum*, No. 159 (October 2001), p. 82.

CTBT from taking effect meant that India would agree to signing and ratifying the treaty when all of the 44 required signatories, except for India, had signed and ratified the CTBT, and this change in India's policy regarding the CTBT was a significant step towards the entry-into-force of the CTBT.

While Pakistan, on the other hand, also declared a moratorium on nuclear testing, at one point after its May nuclear tests it indicated that it would consider signing the CTBT and that its decision would be made independently from any action taken by India.[117] However, this was a tactical statement made so that the United States, Japan and other members of the international community would lift economic sanctions. In fact, after this Pakistan reverted to its former stance of requiring India to sign the CTBT as a condition for it to sign the treaty. At the same time, in keeping pace with India, it ended up adopting the stance that it would not block the CTBT from coming into effect. Consequently, once the 42 required signatories, excluding India and Pakistan, have signed and ratified the treaty, it is a possibility that both India and Pakistan may join the CTBT at the same time.

C. Fissile Material Cut-off Treaty (FMCT)

As one measure for strengthening the prevention of nuclear proliferation, and also as a milestone on the way toward genuine nuclear disarmament, a global ban on the production of weapons-grade fissile materials such as enriched uranium and plutonium has been advocated since the 1950s. The UN resolution of December 1993, which called for the commencement of CTBT negotiations, and the "Principles and Objectives of Nuclear Non-Proliferation and Nuclear Disarmament," adopted at the NPT Review and Extension Conference in 1995, called for the immediate start of FMCT negotiations and its early conclusion.

Since January 1994, negotiations had been held at the CD in Geneva aimed at establishing an "Ad Hoc Committee on Prohibiting Production of Weapons-grade Fissile Material," which would deliberate proposals for a FMCT. However, unlike the case of the CTBT, the Ad Hoc Committee could not be established until March 1995. The reason for this delay of more than one year was that agreement could not be reached on what to do with existing weapons-grade fissile material. The resolution passed at the December 1993 UN General Assembly did not touch on existing stocks of weapons-grade fissile material, and simply went no further than to call for a ban on their production. However, countries such as Pakistan and Egypt demanded that negotiations include existing fissile material. Many countries agreed with Pakistan and Egypt's view, since it is indispensable for nuclear disarmament to deal with existing stocks of weapons-grade fissile material. However, the five nuclear-weapons states and India responded to this call by declaring their opposition

[117] Remarks by Prime Minister Sharif on July 11, 1998. See, for example, Arms Control Association, "News Briefs: India, Pakistan Respond to Arms Control Initiatives," *Arms Control Today*, Vol. 28, No. 5 (June/July 1998), p. 24.

and invoking the December 1993 UN General Assembly resolution. In spite of this, both camps had to reach a compromise in order not to kill the momentum that had finally gained pace for the FMCT negotiations. To this end, they eventually agreed that while there would be room in the deliberations to include the matter of what to do with existing weapons-grade fissile material, as a general rule the negotiations would focus on the matter of prohibiting the production of these materials.[118]

However, the FMCT negotiations didn't start at the 1995 CD. The largest blocking factor was India's adoption of a stance, which linked the FMCT negotiations with negotiations for the complete abolition of nuclear weapons accompanied by a time frame, something that the five nuclear-weapon states opposed.[119] As a consequence, it became necessary to reach a further agreement on the commencement of the FMCT negotiations because every year at the beginning of the Geneva CD session it is required that all countries participating in the conference reach a consensus on setting up a negotiation mandate.

After it held its nuclear tests in May 1998 India withdrew the above-mentioned link, though there was a lack of consensus among the member countries at the Geneva CD as to the scope of the weapons-grade fissile material that should be regulated by the FMCT. India reiterated the position it had held for some time that the object of prohibition by the FMCT should be the future production of weapons-grade fissile material, whereas Pakistan held fast to its stance that some kind of regulatory measures should be imposed on already produced weapons-grade fissile material.

In addition to the question of the scope of weapons-grade fissile material that should be regulated, an additional problem surfaced to stall the beginning of the FMCT negotiations. This was caused by China and some other countries linking the FMCT with the prevention of weaponization in space, probably in order to block the missile defense plans of the United States. Notwithstanding, even if the FMCT negotiations do get underway in the future after resolving the aforementioned two questions, it is hard to believe that both India and Pakistan will approach the negotiations positively. Pakistan's priority is to produce weapons-grade fissile material that is close to the volume possessed by India, and it may be assumed that India deems matching China, which possesses weapons-grade fissile material equivalent to around 3,200 warheads,[120] as more important than reaching agreement on the FMCT.

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[118] Arms Control Association, "News Briefs: Fissile Cutoff Talks Mandate Reached at CD," *Arms Control Today*, Vol. 25, No. 3 (April 1995), pp. 22-23.

[119] Wade Boese, "CD Convenes Committee to Work on Fissile Cutoff," *Arms Control Today*, Vol. 28, No. 6 (August/September 1998), p. 30.

[120] China possesses around 300 strategic nuclear warheads (bombs) and around 150 tactical nuclear weapons, and has held nuclear tests 45 times. It is estimated that as of the end of 1994 China held enough weapons-grade fissile material for around 2,700 nuclear devices. (Jones et al., p. 54.) Exact production volumes of (nuclear weapons-grade) fissile material of India and Pakistan are not known, but one source

D. Bilateral Measures for Nuclear Arms Control and Confidence-Building

It is Pakistan that has shown a positive stance concerning nuclear arms control involving India and Pakistan. For instance, Pakistan has continually told India that with regard to the NPT and other global nuclear arms control and non-proliferation treaties, it would join these treaties providing that India did so. However, India has not been receptive to Pakistan's proposals on the basis that the NPT and other global arms control and non-proliferation treaties would not eliminate the nuclear threat India faces from China, and also because the issue of global nuclear arms control and non-proliferation is not something that should be addressed from a regional perspective.

In contrast to this, several agreements have been reached between India and Pakistan with regard to confidence-building measures in relation to nuclear weapons. One representative agreement was announced in February 1999, some nine months after the nuclear tests of May 1998, when the prime ministers of both countries met at Lahore. Although even prior to this time the two countries had agreed on such points as setting up a military hotline and agreeing not to attack each other's nuclear facilities, the various measures aimed at fostering mutual trust concerning nuclear weapons that were announced after the Lahore meeting represented progress from the perspective of nuclear weapons and preventing the accidental use of nuclear weapons. First, they agreed on an exchange of information on their respective nuclear doctrines. This information exchange includes details on the quantity of nuclear warheads and ballistic missiles as well as the status of their deployment. However, considering that both India and Pakistan are in the process of establishing their nuclear forces and nuclear doctrines, there is a limit to the significance of this information exchange. Second, it is an agreement on measures that lessen the danger of a nuclear launch based on accidents or misunderstandings. In terms of specifics, it means prior notification of test flights of ballistic missiles, as well as instant notification in the event of an unexpected situation such as an accident involving nuclear weapons. Third, an agreement was reached on strengthening the hotline already established between the two countries. In addition, both India and Pakistan showed a willingness to strengthen the moratorium on nuclear testing by stating that they would not conduct nuclear tests "unless a situation arose in which the supreme interests of our own countries are put in danger."[121]

Concluding Remarks - Nuclear Weapons in South Asia and International Security

The history of nuclear development in India and Pakistan is fundamentally different. So are their nuclear policies. Since its independence, India has been rigorously pursuing indigenous bases for nuclear science and technology. This, combined with its autonomy-

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puts their production volumes at the equivalent of 70 – 200 devices for India, and 20 – 50 devices for Pakistan. See Zahra, "Pakistan's Road to a Minimum Nuclear Deterrent," *Arms Control Today*, p. 12.

oriented defense and foreign policy, led to the belief that nuclear weapons are currency for autonomy. As a result, it is difficult to rollback India's nuclear development. Added to this, the present BJP government has made it clear that it aspires to be a world power and is in the process of establishing nuclear forces for a "minimum deterrent" that is largely directed at China. Because Pakistan's nuclear capability is, on the other hand, directed solely at India, it has not abandoned the option of nuclear first use against India, which enjoys an advantage over Pakistan by a three-to-one ration in terms of conventional capability. Pakistan has made it clear that it will continue to develop nuclear weapons as long as India continues to do so.

Nuclear development by both India and Pakistan is interconnected to the negotiation process of global nuclear non-proliferation regimes as well as non-proliferation policies of the United States. Arguing that the obligation for disarmament placed on nuclear-weapon states was insufficient, India turned its back on the CTBT while more or less simultaneously deciding to undertake its own nuclear tests. It did soften its position on the CTBT after it had conducted the tests. However, this is probably a manifestation of its awareness of the tacit approval of its nuclear status given by the United States, as well as a sign of its self-confidence.

The possession of nuclear explosive devices by India and Pakistan posed a huge challenge to the international security based on the NPT regime. Now that the two antagonistic nations of India and Pakistan possess nuclear explosive devices, the immediate task facing the international community is to avert their use. If nuclear weapons were to be used even on a limited scale, that would be the first case since Hiroshima and Nagasaki more than half a century ago. It might change the widely held perception of the international community toward the use of nuclear weapons. In other words, if a nuclear war between India and Pakistan causes huge damage, it could be assumed that the norm of a taboo against the use of nuclear weapons would be strengthened. Conversely, in case the damage is limited, it could be also possible that the moral and political threshold for nuclear use will be lowered. In the case of India and Pakistan, the latter scenario is highly possible, as neither country has built an enormous nuclear force. Moreover, if either India or Pakistan achieves their political objective by using nuclear weapons, it would set an unfortunate precedent for the use of nuclear weapons and might have a huge impact on the rest of the international community, which has averted the use of nuclear weapons.

Some analysts argue that the nuclear taboo has a negative effect on the efficacy of nuclear deterrence, including extended deterrence. However, as several cases where a non-nuclear state employed armed forces against a nuclear state show, a nuclear weapon has its own limitations in deterring conventional attacks. The nuclear taboo should not be interpreted as renouncing the use of nuclear weapons against other types of weapons of mass destruction. Though it goes without saying that the principal objective of nuclear deterrence is to deter nuclear attack, a large-scale attack by biological or chemical weapons could also

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[121] Howard Diamond, "News and Negotiations: India, Pakistan Agree on Security, Confidence-Building Measures," *Arms Control Today*, Vol. 29, No. 1 (January/February 1999), p. 21.

be an objective if the enormity of human casualties could be avoided by the threat of nuclear retaliation.

Viewed in this context, a pressing issue is to launch measures to avert nuclear exchange between India and Pakistan, such as maintaining a balance in conventional forces, a balance in air power in particular, ensuring the survivability of nuclear explosive devices, and strengthening C^3I, including early warning capability. Assistance in both soft and hard forms by the United States and other nuclear-weapon states in promoting such measures is highly significant. Some analysts view that providing that kind of assistance violates Article 1 of the NPT, which stipulates that each nuclear-weapon state "… undertakes not in any way to assist, encourage, or induce any non-nuclear-weapon state to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, or control over such weapons or explosive devices." Our view is that this provision does not immediately prohibit assistance to India and Pakistan, both of which have already manufactured nuclear weapons.

Having said that, there remains a fundamental issue even after nuclear stability was to be achieved between India and Pakistan. If India and Pakistan could successfully achieve a stable deterrent relationship, it would bring about security to India and Pakistan, as well as peace and stability to South Asia. However, this regional stability is not necessarily compatible with the global security order. Other pairs of non-nuclear-weapon states with rivalries may emulate India and Pakistan in their relationship of mutual deterrence and withdraw from the NPT and go nuclear. If this does happen, it would jeopardize the NPT, which has functioned to cap the proliferation of nuclear weapons to some extent, although not perfectly.

In order to minimize their negative effect on the international security order, both India and Pakistan must not advance their nuclear weapons program any further. To this end, even if the United States and other countries provide assistance for stabilization, steps are required in order to ensure that neither India nor Pakistan is relieved to strengthen its nuclear weapons. In view of the scale of their nuclear capabilities, limited C^3I capabilities and the fact that their nuclear weapons have not yet been deployed, there is still opportunity to prescribe the future of these weapons, and this task fall on the international community.