India's Nuclear Policy

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Introduction

India has had an uncomfortable relationship with nuclear weapons. From the early days of independence, Indian leaders, especially Jawaharlal Nehru, took a very public and very vocal stand against nuclear weapons. But Nehru, a modernist, was also convinced that nuclear technology had a role to play in national development.[1] To a lesser degree, he also thought that nuclear weapons technology might have a role to play in national defence if efforts at nuclear disarmament should fail. These somewhat contradictory strands are still visible today, as they have been through much of the last six decades of Indian nuclear policy.

But it would be foolish to suggest that Nehru's perspective on nuclear weapons was the only determinant in Indian nuclear policy. India's nuclear policy was also influenced by India's international security condition as well as by domestic variables such as the vagaries of political change and the influence of bureaucratic elites. Indeed, India's decision to build a nuclear force was taken only in the late 1980s, much after it had become clear that Pakistan — with Chinese technological assistance — had made rapid advances in the nuclear weapons programme. As for bureaucratic influence, some defence scientists played a key role in keeping the weapons programme alive even when there was no political support or indeed, active opposition, while other bureaucrats were responsible for creating political awareness of India's declining nuclear options. Nevertheless, these variables suggest a moderate Indian approach to nuclear weapons and thus reinforce the dominant tendency towards a political rather a military approach to looking at nuclear weapons. They do not suggest any dramatic changes nor rapid advances in India's nuclear weapons programme.

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[1] On this dual aspect, see Itty Abraham, *The Making of the Indian Atomic Bomb: Science, Secrecy and the Postcolonial State* (New York: Zed Books, 1998).

The Purpose of India's Nuclear Weapons

Indian leaders have generally considered nuclear weapons at best a necessary evil. Prime Ministers Lal Bahadur Shastri and Rajiv Gandhi sought international solutions to avoid committing to nuclear weapons; Prime Minister Morarji Desai shut down the weapons program for a time.[2] Even Prime Minister Atal Vajpayee, who ordered the nuclear tests in 1998, was more ambivalent two decades earlier, siding with Desai in voting against restarting the nuclear weapons program in 1979. As a number of analysts have concluded, growing nuclear threats and a progressively unaccommodating global nuclear order forced New Delhi to move towards a declared nuclear arsenal in the 1990s.[3] This discomfort with nuclear weapons has defined the manner in which India has viewed nuclear weapons.

Much of the Indian debate about nuclear weapons between the 1960s and the 1990s did not consider how nuclear weapons might be used within the framework of Indian strategy. The arguments and propositions largely revolved around whether India should go nuclear, not what India should do with nuclear weapons.[4] It was only in the 1980s that some Indian strategists such as K. Subrahmanyam and General K. Sundarji started writing about what nuclear weapons might be useful for.[5] This also coincided with greater attention among decision-makers to such questions. Both Sundarji and Subrahmanyam argued that the kind of bloated nuclear arsenals that the US and the Soviet Union developed during the Cold War were unnecessary and wasteful. Nuclear deterrence could be had at far cheaper cost, with a relatively small arsenal. In essence, as Tellis has argued, what Sundarji and Subrahmanyam were suggesting was a view of nuclear weapons that emphasized its political rather

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[2] Though a decade old, Perkovich's work is still the best history of the Indian nuclear programme. George Perkovich, *India's Nuclear Bomb: The Impact on Global Proliferation* (New Delhi: Oxford University Press, 1999). See also, Raj Chengappa, *Weapons of Peace: The Secret Story of India's Quest to be A Nuclear Power* (New Delhi: Harper Collins, 2000); Abraham, *The Making of the Indian Atomic Bomb*; and Bharat Karnad, *Nuclear Weapons and Indian Security: The Realist Foundations of Strategy*, 2nd ed. (New Delhi: Macmillan, 2005).

[3] Ashley Tellis, *India's Emerging Nuclear Posture: Between Recessed Deterrent and Ready Arsenal* (New Delhi: Oxford University Press, 2001).

[4] Waheguru Pal Singh Sidhu, *The Evolution of India's Nuclear Doctrine* (New Delhi: Centre for Policy Research Occasional Paper no. 9, 2004).

[5] Lt. Gen. K. Sundarji, "Introduction," in *Effects of Nuclear Asymmetry On Conventional Balance*, Combat Papers no. 1 (Mhow: College of Combat, May 1981); K. Subrahmanyam, "Nuclear Force Design and Minimum Deterrence Strategy for India," in Bharat Karnad, ed., *Future Imperilled: India's Security in the 1990s and Beyond* (New Delhi: Viking, 1994), pp. 176 – 95.

than military utility, its deterrence rather than war-fighting capability.[6] This view of the political utility of nuclear weapons is also reflected in arguments about nuclear weapons providing political space and strategic autonomy, arguments that former Indian Foreign Minister Jaswant Singh has made.[7] Not surprisingly, the eventual Indian nuclear deterrent emphasized small numbers and a capability to retaliate, rather than building a deterrent force that would have parity with other nuclear powers.

But the notion that nuclear weapons are political tools is primarily about how India views the usability of nuclear weapons. It does not extend to India's views about how other states, particularly Pakistan, might see nuclear weapons. In fact Indian views about what nuclear weapons in others' hands might do are highly pessimistic, assuming implicitly that other states might not be as responsible as New Delhi is or has been. India's view on nuclear proliferation is one indicator of this deeply pessimistic view that India has of the possibility of nuclear weapons use by other states. Though India objected to the Nuclear Non-proliferation Treaty (NPT), it has seen proliferation itself as a threat to international stability and has repeatedly touted its "exemplary non-proliferation record of four decades and more."[8] Thus the Indian view of the spread of nuclear weapons is fundamentally different from the 'more may be better' arguments of proliferation optimists such as Kenneth Waltz,[9] or even the radical rejection of the concept of non-proliferation by China prior to 1991.[10] Indian officials do not think that nuclear weapons have stabilized the region; rather they believe that nuclear weapons in Pakistani hands increase the nuclear risk in the region because Pakistan is seen as irresponsible.[11] This fits a larger pattern of contradiction which assumes that other powers, Pakistan in particular, will not be as responsible as India has been.

Indian views about missile defenses are a further indication of the contradiction

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6 Tellis, *India's Emerging Nuclear Posture*, pp. 261–96.

7 "Interview with the External Affairs Minister Mr. Jaswant Singh," <http://meaindia.nic.in/interview/1999/11/25i01.htm>; and "EAM's interview with Suddesutsche Zeitung, Germany," <http://meaindia.nic.in/interview/1999/10/10i01.htm>.

8 "Indo–US Relations: An Agenda for the Future," Foreign Secretary Mr. Shyam Saran's Address to the Heritage Foundation, Washington D.C., March 30, 2006, <http://www.indianembassy.org/newsite/press_release/2006/Mar/43.asp>.

9 Kenneth N. Waltz, *The Spread of Nuclear Weapons: More May Be Better*, Adelphi Paper no. 171 (London: International Institute for Strategic Studies, 1981).

10 Mingquan Zhu, "The Evolution of China's Nuclear Nonproliferation Policy," *The Nonproliferation Review*, vol. 4, no. 2 (Winter 1997), pp. 40–48.

11 "Irresponsible Talk: India," *The Hindu*, June 19, 2002; and "India Dismisses Pak Charge," *The Hindu*, April 17, 2003.

in Indian views about nuclear weapons. If nuclear weapons are essentially political weapons, not usable in fighting wars, the logic of missile defenses seems difficult to understand: clearly missile defenses are needed only if one assumes that nuclear weapons are going to be used. Nevertheless, New Delhi has pursued a ballistic missile defence (BMD) system since at least the mid-1990s.[12] India's search for an appropriate BMD system appears linked to the growth of Pakistan's missile delivery capability, including the transfer of Chinese missiles such as the M-11. As with nuclear weapons, the search for a BMD system has continued despite changes of political leadership and ideology in New Delhi. At various times, India has sought the Russian-built S-300, the Israeli-American Arrow, and the US-built Patriot ballistic missile defence systems. India is also thought to have a domestic BMD system in development, built around the still under-development Akash Surface-to-Air missile (SAM). New Delhi's decade-long search has been unsuccessful possibly because Indian decision-makers have not given sufficient thought to what kind of system India needs. Indeed, it is not clear how missile defenses will fit into the existing Indian nuclear doctrine. India's official nuclear doctrine has made no mention of a missile defence system, and it is unlikely that the war-fighting orientation of missile defenses will sit well with the political/deterrence driven sentiment that dominates the nuclear doctrine. None of the Indian governments that have been in power since 1995 have given any reason why they want missile defences, though the issue had created dissension among some of allies of the United Progressive Alliance (UPA) government when it included communist parties because New Delhi has been seeking to buy a US-built system based on the Patriot PAC-3. Thus India's view of nuclear weapons suggests an element of inconsistency: nuclear weapons are essentially political weapons and unusable militarily by India, but other states might not be as restrained. As a consequence, India both opposes the spread of nuclear weapons and pursues BMDs.

India's Changing Nuclear Doctrine

India's nuclear doctrine, in its declaratory form if not in its operational variation, has undergone some changes since it was first announced in August 1999. The 1999

[12] Rajesh Rajagopalan, "India: Largest Democracy and Smallest Debate?," *Contemporary Security Policy*, vol. 26, no. 3 (December 2005), pp. 605–20. For a different view, see Harsh V. Pant, "India Debates Missile Defense," *Defense Studies*, vol. 5, no. 2 (June 2005), pp. 228–46.

doctrine was produced by the National Security Advisory Board (NSAB), a group of non-governmental experts, and its status was thus somewhat suspect. Indeed, the government formally claimed that the doctrine was not the official doctrine. However, much of what was stated by the NSAB in the "unofficial" nuclear doctrine was what had already been stated by various government officials, including the prime minister, at different times in and out of parliament. The only major difference between the various official statements and what was stated in the NSAB's nuclear doctrine was that the NSAB document discussed the need for a nuclear triad for India, which the government had not acknowledged until then but which was both logical and unsurprising. Thus, the government's coyness about the doctrine was probably unnecessary.

In any case, when some details of the Indian nuclear doctrine were officially released in January 2003 it in many ways stuck to some of the main elements of the 1999 doctrine though there were some important differences. The 2003 nuclear doctrine was released as a brief press statement, but it did state the key elements of the doctrine. The actual nuclear doctrine is reported to be a much more comprehensive document. Below I briefly outline the main elements of the 1999 doctrine and the changes made in the 2003 version.

The 1999 doctrine suggested a nuclear doctrine that was based on an unspecified minimum force but one which would also be credible and survivable. In addition, India would not use nuclear weapons first (no-first use of nuclear weapons or NFU) and will not use of nuclear weapons against non-nuclear countries (Negative Security Assurance or NSA). The doctrine emphasized the need for credible nuclear forces that would be able to survive a first strike against it as well as the need for strict political control over nuclear forces. The NSAB document also emphasized India's nuclear disarmament objectives. None of these were new: what was new, however, was that the doctrine also talked about a nuclear triad of aircraft, long-range ballistic missiles and submarine-launched ballistic missiles.

In January 2003, the government released a brief press statement (of just 349 words) that revealed some aspects of the 'official' nuclear doctrine. From the press statement, it is unclear when this doctrine was formulated and its relationship to the 1999 doctrine, though it could be read as having been the official doctrine for a while. The press statement revealed that many of the elements of the Indian nuclear doctrine was the same as in the 1999 doctrine, but a number of caveats had been added, and some pledges especially that of the NFU and non-use against

non-nuclear powers had been diluted. There were also details about command and control aspects that were new.

There were at least three variations of note in the new doctrine. First was the introduction of the notion of 'massive' retaliation to a nuclear attack on India. The 1999 doctrine had only talked of a 'punitive' retaliation that would cause 'unacceptable' damage. It is still unclear why this change was introduced, and indeed whether this was a change at all because some key individuals who presumably had a role in drafting the doctrine appeared unaware of the consequence of the change in such key concepts. A cynical but plausible interpretation is that this was simply public braggadocio, especially since the press release came in the wake of India's failed attempt at coercive diplomacy in the aftermath of the terrorist attack on the Indian parliament in December 2001. Whatever the interpretation of these words, there was little explication either in the press statement or subsequently about the meaning or logic of this change.

The second significant variation was the dilution of both India's NFU pledge as well as the pledge not to attack non-nuclear countries (NSA). The original NFU pledge and the NSA pledge not only in the 1999 doctrine but also in various official statements in and out of parliament was without any qualifiers. But in the 2003 version, there is an important qualifier: India will consider the use of nuclear weapons in response to a 'major attack' on India or on Indian forces anywhere with chemical or biological weapons (CBW). This dilutes both the NFU pledge as well as the pledge not to use nuclear weapons against non-nuclear states. It dilutes the NFU pledge because India could use nuclear weapons first against nuclear powers which decide to use chemical or biological weapons against India. For example, if Pakistan uses chemical weapons against India, India might use nuclear weapons in retaliation, though in such cases, New Delhi would also be violating its NFU pledge. Similarly, it dilutes the NSA because New Delhi could potentially use nuclear weapons against a state that does not have nuclear weapons. Hypothetically, if a country such as Bangladesh were to use chemical weapons against India, Indian leaders might be forced to consider the use of nuclear weapons in retaliation for such an attack, even if it is clear that Bangladesh does not possess nuclear weapons, thus violating India's non-attack against non-nuclear countries pledge. These contradictions have either not been thought through by those who framed the doctrine or else they have not taken these modifications seriously.

Interviews with Indian officials have suggested two reasons for such changes.

First, since India no longer has CBW, it has only nuclear weapons to deter potential CBW use against India. The argument appears to be that there is a potential that Indian territory or forces might come under chemical or biological weapon attack from a non-nuclear country or even a terrorist entity but would be unable to respond because of the earlier blanket pledge on NFU. The second reason is that these changes reflect the government's response to domestic criticism about the NFU pledge being too weak to deal with potential threats. I suspect that the second reason is closer to the truth. Once again, the timing of these changes is significant. By late 2002, New Delhi was feeling particularly frustrated with Pakistan's support for terror and India's inability to do much about it, as well as the failure of Operation Parakram (the military mobilization in 2001–2002). A muscular nuclear doctrine may have been seen as one way of responding to this frustration. On the other hand, it is unclear if the government considered the problems of what Scott Sagan had called the 'commitment trap'.[13] Sagan had argued that making such a commitment might force decision-makers into either using nuclear weapons unnecessarily or create credibility problems that will end up diluting deterrence. This will happen because unless you carry out your threats, threats on which your deterrence depends might not be very credible in the future. Thus leaders and decision-makers have to be careful and prudent about the deterrence threats they make in order to make sure that these are actually threats that can be carried out if the contingency arose. There is little indication that the implications of these contradictions have been considered seriously by the government. In any case, the 2003 press statement remains the only official statement of India's nuclear doctrine to date.

India's Assured Retaliation Strategy

Though Indian officials continue to characterize the nuclear doctrine as one of minimum deterrence, I have characterized it elsewhere as 'assured retaliation'.[14] Minimum deterrence is politically attractive because it suggests limited goals and a responsible attitude towards nuclear weapons. Though this largely reflects India's

[13] Scott D. Sagan, "The Commitment Trap: Why the United States Should Not Use Nuclear Threats to Deter Biological and Chemical Weapons Attacks," *International Security*, vol. 24, no. 4 (Spring 2000), pp. 85–115.

[14] Rajesh Rajagopalan, "Assured Retaliation: The Logic of India's Nuclear Strategy," in Muthiah Alagappa, ed., *The Long Shadow: Nuclear Weapons and Security in 21st Century Asia* (Stanford, CA: Stanford University Press, 2008), pp. 188–214.

approach towards nuclear weapons, the changes that have taken place in the doctrine, especially the dilution of the NFU and NSA pledges and the reference to massive retaliation all suggest that assured retaliation is a better characterization of India's nuclear strategy than 'credible minimum deterrence'.

Assured retaliation includes the NFU pledge, with the problematic caveats noted earlier. It also includes the certainty of retaliation, but there is little indication that such retaliation will take place prior to an enemy attack striking India. Indian leaders appear content to wait until an attack has already landed on Indian soil before considering retaliation. In other words, there are no declaratory or operational indicators that suggest that India might adopt either a launch-on-warning (LOW) or a launch-under-attack (LUA) posture for its nuclear force. Indeed, Indian nuclear forces are still reportedly kept de-alerted and de-mated, which would obviate LOW or LUA strategies. Such a posture assumes that there will be considerable time between an attack and an order to retaliate because it will be many hours before the various components of India's nuclear forces can be brought together and mated for delivery. This might change once India's nuclear submarines assume a strategic deterrent role because India will then have to keep its submarine-based nuclear weapons mated, but it is unlikely that the nuclear submarine component of India's strategic forces would be ready for many more years.

Assured retaliation as strategy also includes massive retaliation, though this has certain other well-recognized problems. First, it is not very credible to threaten massive retaliation under all circumstances. For example, it will be difficult for Indian decision-makers to justify a massive retaliatory attack against Pakistan if Pakistan had only used one nuclear warhead to attack an advancing Indian military column inside Pakistani territory. Though this is an extreme scenario, it is possible to think of other scenarios of a limited Pakistani nuclear use in the context of a military confrontation between India and Pakistan. The massive retaliation doctrine will then force Indian leaders on to the horns of a dilemma: either stick to the doctrine and launch an unjustifiably large retaliation, or suffer the loss of credibility of not sticking to the doctrine.

Second, massive retaliation might force any potential adversary to also plan a massive attack and potentially a plan a counter-force first-strike as part of a damage limitation strategy. In other words, if Pakistan is convinced that India will launch a massive retaliation irrespective of the size of the original Pakistan attack, then Pakistan would have little reason to keep their nuclear first strike limited. After all

why keep your first blow limited — and risk losing your own nuclear forces in an Indian retaliation — if New Delhi will in any case retaliate massively? New Delhi does not appear to recognize that its own choices can affect the choices of potential adversaries, sometimes with negative consequences for India.

Of course, one potential positive consequence also needs to be kept in mind. If an adversary thinks that India might actually carry out a massive retaliation and that no nuclear war was likely to remain limited to isolated or discrete nuclear exchanges, it could force them to reconsider any offensive plans. The choice for an attacker then would be all or nothing: such drastic choices might be unpalatable.

India's Nuclear Capabilities

India's nuclear capabilities are not known with any certainty. India is thought to have anywhere between 70 and 100 nuclear warheads. These are reportedly kept de-mated, with components in the hands of different agencies. Such a posture ensures greater safety for the nuclear assets and reduces the likelihood of accidents and inadvertent use of nuclear weapons. But there have been murmurs within the armed services about the feasibility of keeping weapons and delivery vehicles separated and about the smoothness and speed of integrating them. Given the sensitivity of the topic, obviously little is known about either the procedures or any problems.

India has significant stores of fissile materials, as much as ten tons. This would be sufficient for as many as 1000 warheads if it were all to be used for nuclear warheads. However, most of this stockpile appears intended for feeding India's indigenously built fast breeder reactors. Though that should eventually yield an even larger stockpile, India is not thought to have enough reprocessing capability to convert this to weapons-grade plutonium.

India's nuclear delivery capability has grown very slowly. Though the Indian guided missile development programme is almost a quarter century old, it has yet to develop a long-range missile capable of targeting all of China. Even the current under-development long-range missile, the Agni-3, has a range of only 3500 kilometers which is too short to target much of China. The Agni-3 has now been tested four times, the fourth test being conducted by the Army as a user trial.[15] Nevertheless, it will be some time before the missile is deployed with the Indian strategic forces. The

[15] "Agni-3 clears Test; All set to be inducted into forces," *Indian Express*, February 8, 2010, <http://www.indianexpress.com/news/Agni-3-clears-test--all-set-to-be-inducted-into-forces/576976>.

rumors that an even longer range missile, the Agni-5, is under development have now been officially confirmed by senior defence research officials.[16] The Agni-5 will have a range of more than 5000 kilometers, allowing it to target much of China. The Agni-5 development is expected to begin shortly, and the first test should happen within two years.

India' current ballistic missile and combat aircraft are sufficient, however, for targeting Pakistan. India has a number of missiles including the Prithvi, the Agni-1 and Agni-2, as well as the Agni-3 for targeting Pakistan. India has a number of combat aircraft too which can be used as delivery vehicle vis-à-vis Pakistan, including the Jaguar, the Mirage-2000 and the Su-30.

India is also developing a sea-based deterrent in the form of a nuclear-powered ballistic missile submarine. The first of these missile submarines, the Arihant, has been launched, though it will be some time before the submarine will be ready for sea-trial and even longer before it joins the deterrent force. Two more submarines of the same type are planned. What missile they will carry is unclear, with contradictory reports in the India media. It is also unclear how New Delhi will deal with the command and control issues that are raised by these platforms, including the thorny issue of how to keep these weapons de-mated in a submarine. Indian civilian leaders has consistently emphasized political control over these weapons, but maintaining political control over nuclear weapons in submarines has been a problem for all countries that have opted to put nuclear missiles in submarines.

The most notable aspect of the nuclear weapons capabilities has been their rather slow development. It has taken India a quarter century to develop even intermediate range missiles such as the Agni-3, and it has yet to develop one with intercontinental ranges. Similarly, the number of India's warhead stockpile has grown only very slowly. On the other hand, it is unclear what final state of capabilities India is aiming at, either in terms of the warheads or in terms of delivery vehicles. These decisions have probably not been finalized, and are likely to remain flexible to respond to changing strategic requirements.

Nuclear Dilemmas

Nuclearization has had unforeseen consequences for India security. Though nuclear

[16] "India to test 5,000-km n-missile," *Indian Express*, February 11, 2010, <http://www.indianexpress.com/news/india-to-test-5-000km-nmissile/578371/0>.

weapons, the perfect status quo weapon, has benefits for a status quo power such as India, there are also some concerns about what it does to the military balance in South Asia. By neutralizing India's conventional superiority, nuclear weapons may have been partly responsible for hobbling India's capacity to react to Pakistan's constant provocations.

Both the Kargil crisis (1999) and the Parakram crisis (2001–2002) demonstrated this. In Kargil, despite unambiguous evidence of Pakistani forces crossing the Line of Control (LoC), the Indian military response was limited to dealing with the forces that had already crossed the LoC rather than with attacking their support bases across the LoC or punishing Pakistan for that misadventure. New Delhi was extremely careful not to allow its forces to cross the LoC, giving strict instructions to its military, including the air force, that it must stay within Indian territory. Such orders constrained Indian military operations, but were nevertheless seen as necessary to prevent any escalation to a full-scale war, with potential consequences for further escalation to the nuclear level. But Pakistan also miscalculated the Indian response: Pakistani military leadership had apparently assumed that India cannot react at all to the military incursions in Kargil because of New Delhi's fear of nuclear escalation. They were wrong in that calculation but fear of nuclear escalation did limit the Indian response to India's side of the LoC.

The Parakram crisis showed similar results. In the aftermath of the terrorist attack on the Indian parliament in December 2001, India ordered full military mobilization. Despite some initial fear at the Indian response Pakistan stood its ground, calculating that India would not risk nuclear escalation by launching a military attack. They were right: India ultimately backed down with little achieved. India's restraint in dealing with the attack on the Indian parliament once again demonstrated the limitations that nuclear weapons imposed on India's capacity to respond to Pakistan's use of terrorism as a strategy.[17] India used the military mobilization essentially as a way of putting pressure on Pakistan, as well as putting pressure on the U.S. to lean on Pakistan, rather than as a prelude to the use of force.

In 2008, Pakistan-based terrorists attacked both the Indian embassy in Afghanistan as well as the city of Mumbai and there is evidence that both attacks

[17] Polly Nayak and Michael Krepon, *US Crisis Management in South Asia's Twin Peaks Crisis* (Washington, D.C.: Stimson Center Report No. 57, 2006).

had Pakistan's official sanction.[18] This time, unlike in the aftermath of the attack on the Indian parliament, the Indian government did not even appear to have considered retaliatory strategies. India's inability to respond is another excellent demonstration of how debilitating the fear of nuclear escalation has been in terms of Indian policy. As a RAND report on the Mumbai attack pointed out, "(A)fter becoming an overt nuclear power, Pakistan has become emboldened to prosecute conflict at the lower end of the spectrum, confident that nuclear weapons minimize the likelihood of an Indian military reaction." [19]

It would be difficult to lay on the blame for India's pusillanimity on nuclear weapons alone. India's divided government (every government in the last two decades has been a coalition) as well as Indian political culture make India very risk averse. And after overt nuclearization, and especially after 9/11, any potential war between India and Pakistan raises even greater international concern than before. Nevertheless, fear of nuclear escalation probably plays a greater role than other factors in determining the Indian response.

India has tried to deal with such problems in at least two ways. In the immediate aftermath of Kargil, Indian military and political leaders suggested that despite nuclearization India has the space to fight a limited conventional war. This suggested that India could wage a full-scale conventional war against Pakistan without the worry that it might escalate to the nuclear level. This 'limited war doctrine' appears to have been purely declaratory and talk of such limited war options died down almost immediately. It is unclear if these pronouncements were the result of any politically approved strategy; the fact that such ideas were quickly forgotten suggests that these were more personal ruminations than any state policy.

Again, after the Parakram crisis, the Indian Army came up with what they called the 'Cold Start' doctrine.[20] Cold start was the idea that India would station sufficient troops at the border to start offensive operation immediately, without waiting for a full-scale mobilization. Such offensives would be in the form of multiple but shallow attacks across the entire India–Pakistan border. Again, it is unclear if such plans have any political backing. In any case, the problem was not the speed of launching an offensive but the question of whether there can be any military response at all

[18] Mark Mazzetti and Eric Schmitt, "Pakistanis Aided Attack in Kabul, U.S. Officials Say," *New York Times*, August 1, 2008, <http://www.nytimes.com/2008/08/01/world/asia/01pstan.html>.
[19] Angel Rabasa et al., *The Lessons of Mumbai* (Santa Monica: RAND, 2009), p. 13.
[20] Walter C. Ladwig III, "A Cold Start for Hot Wars? The Indian Army's New Limited War Doctrine," *International Security*, vol. 32, no. 3 (Winter 2007/2008), pp. 158–90.

under nuclear conditions. Though the army and other services have conducted several military exercises to test out elements of the Cold Start doctrine, its political status remains uncertain. No political leaders have so far used the concept publicly or spoken about it. The key problem facing the Indian decision-makers is not so much the speed with which Indian forces can be mobilized — which is what Cold Start is designed to address — but the question of whether there are any military solutions to the problem of Pakistan's sponsorship of terrorism itself. This remains a continuing and key problem for New Delhi. Until this issue is resolved, there is little that a 'cold start' doctrine can actually accomplish.

Nuclear Arms Control

Over the last several decades, India has emphasized nuclear disarmament rather than nuclear non-proliferation. New Delhi's position on the spread of nuclear weapons was a complex one. On the one hand, India always saw such spread of nuclear weapons as a danger. Its decision not to sign the NPT despite taking part in the negotiations was a difficult one, reached after New Delhi concluded that signing the treaty would adversely affect Indian security especially because neither Washington nor Moscow appeared willing to provide any form of extended deterrence cover for India's security. In other words, India never accepted the idea that nuclear proliferation was legitimate, unlike, for example, China in the 1950s and 1960s.[21] Therefore, though New Delhi refused to sign the NPT, it also refused to help other states such as Libya with nuclear technology.

New Delhi was also quite meticulous about ensuring that its nuclear weapons technology did not reach other non-nuclear weapon states. Though there have been some concerns raised that India might have illegally acquired some technologies and materials, and that it may have been careless in ensuring the security of some of its nuclear technology, the Indian record in protecting its technology from leaking is far better than that of most other nuclear powers.[22] In the process, New Delhi built up a reputation as a 'responsible nuclear power' that became an unexpected bonus in dealing with the international community, especially as India sought a waiver from

[21] See Mingquan Zhu, "The Evolution of China's Nuclear Nonproliferation Policy," *The Nonproliferation Review*, vol. 4, no. 2 (Winter 1997), pp. 40–48.

[22] On these concerns, see David Albright and Susan Basu, "Neither a Determined Proliferator nor a Responsible Nuclear State: India's Record Needs Scrutiny," *ISIS Issue Brief*, April 5, 2006, <http://isis-online.org/publications/southasia/indiacritique.pdf>.

NSG guidelines. India squared this circle of both opposing the NPT and opposing nuclear proliferation by taking the position that though each country should be free to decide on how to meet its security needs, states that did sign the NPT had an obligation to live up to their commitments. Thus, on both North Korea and Iran, India's position has been to argue that because these countries voluntarily accepted the NPT, they have an obligation to live up to their treaty commitments. India's response to the threat of nuclear proliferation was to take an active part in nuclear disarmament diplomacy, seeing the elimination of nuclear weapons as both a way of dealing with the threat of proliferation as also a way of avoiding the unpleasant decision about building its own nuclear weapons. India also was at the forefront in pressing that all commitments in the NPT be honored, including the Article 6 obligation towards nuclear disarmament, rather than focusing only on the spread of nuclear weapons to non-nuclear states. Thus, a favorite Indian argument about nuclear proliferation was to point out that what mattered was not just horizontal proliferation (or the expansion of the nuclear weapons club) but also vertical proliferation (the expansion of the arsenals of the existing members of the nuclear club).

Nevertheless, as the global nuclear non-proliferation regime comes under increasing threat due to non-compliance or even outright violations by countries such as Iran and North Korea, India will have to increasingly face up to the needs of fashioning a more appropriate approach to the non-proliferation regime. In addition to focusing on nuclear disarmament and non-compliance by NWS (Nuclear Weapon States), India will also have to come up with meaningful and effective ways of dealing with non-compliance by NNWS (Non-Nuclear Weapon States), something that India had previously ignored. One of the disadvantages that India faces in making this policy transition is that India is not a member of the NPT and it is unlikely to become one unless India's de facto NWS status is accepted as de jure status by the NPT members. This is unlikely. But the alternative —India giving up its nuclear weapons and joining the treaty as a NNWS— is equally unlikely. In essence, then, India's relationship with the treaty is unlikely to undergo any formal changes though India can be expected to play a more active diplomatic role in trying to keep the NPT system together.

As stated earlier, India is likely to continue stressing nuclear disarmament as a way of resolving the problems of nuclear proliferation. Though India's disarmament drive is sometimes seen a cynical ploy to divert attention from its unwillingness to accede to the NPT, a good number among India's political and administrative elite

appear sincerely committed to the goal of a nuclear-weapon free world. This may very well be because no serious cost-benefit analysis has been undertaken within the government of the implications of nuclear disarmament on India's security interest. If so, it would not be the first time: India originally supported both the NPT and the CTBT without realizing the full import of these treaties on India's security. India eventually refused to accede to either treaty. Nevertheless, India does strongly support a Nuclear Weapons Convention with the objective of eventual comprehensive nuclear disarmament. Even after openly declaring itself as a nuclear weapon state, India has reiterated its commitment to comprehensive nuclear disarmament.

Obviously, nuclear disarmament is unlikely in the immediate future. In the meantime, India faces some key nuclear arms control challenges in the next couple of years. The most immediate of these issues are those related to the Comprehensive Test Ban Treaty (CTBT) and the Fissile Material Control Treaty (FMCT).

For New Delhi, the CTBT is a domestic rather more than an international problem. There is a continuing dispute within the Indian defence science community about the success of the H-bomb test in 1998. A section of India's scientific community, mostly retired scientists, has argued that the H-bomb test was not successful and that India should test again. The Indian government as well as serving nuclear scientists have repeatedly stated that they are satisfied with the results of the 1998 tests and no further tests are necessary. In addition, there is some disquiet among some members of the Indian strategic community about India signing the CTBT after just six tests. Both of these concerns make for serious and rather vocal opposition to any moves by New Delhi to sign the CTBT. Though the government can overcome such opposition, it would require the kind of political commitment that the current government has so far not suggested it is willing to expend. Thus, they are hoping that either opposition in the US Senate or some other problem will slow the CTBT. The loss of momentum in the U.S. Senate on the CTBT thus comes as good news to New Delhi. In any case, it is highly unlikely that New Delhi will sign the CTBT in the near future given such domestic issues, unless all the main nuclear powers sign and ratify the treaty.

The FMCT presents a different and more serious problem. It is unclear if India's fissile material stockpiles are sufficient to meet India's current and future strategic needs. India agreed to join the FMCT negotiations, one suspects, with the same short-sightedness that it joined the NPT and CTBT negotiations. From New Delhi's perspective, the FMCT is thankfully tied up in a number of controversies, especially the one about the scope of the treaty. But should these problems be resolved India

might suddenly find itself once again staring at a treaty that it helped negotiate but which does not serve its strategic needs. But unlike the CTBT, the FMCT is not so much a domestic political issue as a practical issue that has to do with decisions about the size of the nuclear arsenal that India wants. Until now, Indian decision-makers have been reluctant to make these decisions, and they can be expected to put off such decisions for as long as possible.

The Implications of the US–India Nuclear Deal

The US–India nuclear deal was essential to India because India's traditional approach towards nuclear cooperation had reached a dead-end. Traditionally, India sought international nuclear cooperation, even while maintaining a nuclear weapons program, by agreeing to partial safeguards on nuclear imports. This strategy allowed India to supplement its domestic nuclear power capability with international cooperation, as long as there were willing international partners. However, when the rules of international nuclear commerce changed from partial safeguards (safeguards only on the specific imported item) to full-scope safeguards (safeguards on the entire nuclear program as a condition for any nuclear commerce), India was faced with the choice of either giving up its nuclear weapons program, or giving up on international nuclear commerce. Not surprisingly, India chose the latter. What the US–India nuclear deal does is give India the option yet again to both keep its nuclear weapons program while also preserving its access to international nuclear commerce. The issue had become even more vital for India because India's explosive economic growth has put much greater strains on its electricity generation capacity, leading to peak power shortages of as such as 11 percent. Now that the nuclear deal is complete, and India has the necessary waiver from the NSG that permits other nuclear powers such as France and Russia to supply India with civilian nuclear technology, India is expected to significantly enhance its civilian nuclear power sector with international cooperation. Indeed, several agreements have already been signed to bring to fruition additional nuclear power generating capacity and more nuclear power agreements are expected to be signed over the next two years.

The nuclear deal is unlikely to have major impact on India's nuclear weapons program. In the last two decades, ever since India went nuclear in the late 1980s, India has only built a few dozen nuclear warheads. Most estimates suggest that India has enough fissile material for about 65–110 warheads, with some estimates suggesting

even lower numbers. If we assume a median of 85 warheads, it would suggest that India has only built, on average, about four warheads a year. This suggests that India feels no great pressure to rapidly increase its arsenal. The suggestion, by some arms control experts, that access to foreign nuclear fuel will free India's domestic fuel resources for weapons does not hold much water because India has much larger stockpiles of fuel (about one ton) that it could have converted for weapons if it had wanted to do so.[23] In other words, the small size of the Indian nuclear force is the consequence of deliberate choice rather than because of any fissile material shortage.

Conclusion

India's nuclear policy has evolved gradually rather than dramatically. This is unlikely to change. Indian leaders and the political and administrative system are cautious and risk-averse. And India faces no existential insecurities and is indeed a fairly confident and secure state that dominates its region. Thus, there is little domestic political or international reasons to expect rapid changes in India's nuclear policy. But just as it is cautious in advancing its nuclear weapons arsenal, it will also be cautious in advancing on the nuclear arms control and disarmament agenda. India is unlikely to sign either the CTBT or the FMCT, should they be presented to New Delhi in the next couple of years. On the other hand, India is also unlikely to stage more nuclear tests or hugely increase its nuclear arsenal. Over the next decade, India should be expected to gradually increase the size of its arsenal and make it more robust and reliable, with some 6000 kilometer plus range ballistic missiles and possibly one or two submarines capable of firing long-range ballistic missiles. India has sought BMDs for over a decade. Though it is possible that India might buy a BMD system or develop one indigenously, it is unlikely that such systems will be deployed in the next few years. India can also be expected to campaign vigorously for nuclear disarmament. New Delhi can also be expected to continue to worry about the negation of its conventional military deterrent, but it is unlikely that it will find a solution to this puzzle either in the immediate future.

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[23] For a detailed analysis, see Ashley J. Tellis, *Atoms for War?: U.S.–Indian Civilian Nuclear Cooperation and India's Nuclear Arsenal* (Washington, D.C.: Carnegie Endowment for International Peace, 2006).