Nuclear Terrorism and Nuclear Posture in India and Pakistan

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The threat of nuclear terrorism has drawn renewed attention in the aftermath of the September 11 attacks. Much of the writing on the subject has focused on the sources of threat in terms of the availability of material, and the interests of non-state actors (mainly terrorist groups, but also assorted miscreants).[1] A separate line of inquiry on nuclear issues has sought to throw light on the strategic behavior of India and Pakistan as new nuclear states, particularly with regard to the scope for stability between nuclear adversaries.[2] This paper links the two areas, showing the significant relationships between the strategies of states and those of terrorists. India and Pakistan have in the recent past experienced both terrorist threats, including the risk of nuclear terrorism, and the instability of recurring crises in a nuclear-weapons environment. While the nuclear terrorism-nuclear weapons linkage has yet to be manifest in terms of actual events, its potential is sufficiently strong to justify exploration in order to assess the risk and anticipate its consequences.

An overview of the literature shows that nuclear terrorism is commonly treated as distinct from nuclear strategic politics. To an extent, this is understandable. Nuclear terrorism is about the relationship between non-state actors and states, nuclear strategy about the relationship between states. The former is about internal threats (possibly with outside linkages), the latter about external ones. Historically, too, the two realms have been separate. Terror groups have not yet acquired nuclear capability, while states have thus far shown no inclination to permit the acquisition of nuclear capability by non-state actors. Conceptually, the acquisition of nuclear capability by terrorist groups is viewed as tending toward use, while the possession of nuclear weapons by states is generally held to be biased toward non-use.[3] There is some overlap, since the availability of much of the nuclear material that terrorists might use springs from the military strategies of states. Thus, the remnants of the vast Cold War arsenal of the former Soviet Union, now in a state of organizational decay, are the largest potential resource for the aspiring nuclear terrorist. But the nuclear terrorism-nuclear strategy connection has never been investigated, perhaps because there has not been adequate reason for it. In South Asia, there *is* reason for it. The regional environment is characterized by simultaneous threats posed by nuclear terrorism and nuclear-weapons instability, and by the relationship between them. Each poses an autonomous threat, but the two together pose a complex threat that it would be unwise to ignore. Nuclear terrorism can generate nuclear crises, while nuclear strategy can provide opportunity for nuclear terrorism.

The Nuclear Terrorism Threat

Nuclear Infrastructure

Terrorists might obtain nuclear materials from diverse sources, both from outside India and within it. Though there are many sources of inadequately secured material, the biggest is Russia, which has experienced in recent years a combination of terrorist violence, the growth of organized crime, and an abundance of poorly guarded nuclear facilities.[4] William Potter has identified seven cases of diversion of significant quantities of nuclear material, and four other possible cases.[5] More alarming, a February 2002 assessment by the US National Intelligence Council states that undetected diversion of weapons-grade and weapons-usable materials has taken place from Russian institutes, but "we do not know the extent or magnitude of such thefts."[6] Russia is estimated to possess 150 tons of weapons-grade plutonium, 1,000 tons of enriched uranium, and, at the Chelyabinsk complex alone, 685,000 cubic meters of radioactive waste.[7] Given the reality of poor accounting, organizational deterioration on account of adverse economic conditions, and inadequate physical controls, it is not surprising that there are numerous examples of material diversion, more often than not by insiders.[8] Moreover, projections of Russian weapons inventories show that, over the next decade, about 3,500 warheads containing about 84,000 kilograms of fissile material will be removed from deployment.[9] Despite assistance from the US and from other countries, the potential for leakage remains considerable.

Pakistan is a significant potential source.[10] Though its overall nuclear infrastructure is relatively small, the possibility of leakage is widely feared because of the general sense of the country as an unstable state. Pakistan's main uranium enrichment facility is at Kahuta (Khan Research Laboratories). Smaller uranium enrichment facilities exist at Sihala and Golra and possibly, at Gadwal. Plutonium extraction work is done at the New Lab, Nilhore, and at Khushab in central Punjab. Pakistan has two nuclear power plants. One is located at Karachi, the other at Chasma. Its nuclear weapons are believed to be in an unassembled state, with the fissile core kept separate from the bomb assembly. The bomb components and the wider infrastructure are under military control. In February 2000, a National Command Authority was established. In January 2001, the Pakistan Nuclear Regulatory Authority (PNRA) was created to regulate the civilian infrastructure. Still, given Pakistan's deteriorating law and order environment, the possibility of "leakage" remains.

India's nuclear establishment, most of it civilian, is much larger.[11] Its Atomic Energy Commission (AEC) stands at the apex of an extensive infrastructure that incorporates warhead manufacture, electrical power production (14 reactors, with 6 more under construction), fuel fabrication and reprocessing, waste management, mining, research, and medical and industrial applications.[12] The physical security of nuclear installations is managed by an independent body, the Central Industrial Security Force (CISF), a

paramilitary force under the Ministry of Home Affairs. The CISF is also responsible for the protection of other high-risk facilities such as defense production units, space installations, oil refineries and major ports. But little is known about how it actually organizes the security of nuclear facilities.[13] Personal conversations with retired officials indicate that security is tight, enhanced by the fact that the CISF does not fall under the purview of the Department of Atomic Energy. The Atomic Energy Regulatory Board (AERB) is empowered to regulate all civilian facilities, while the BARC has an internal review mechanism for military-related facilities. Though much of the AERB's function is related to preventing and responding to accidents, part of the counter-terrorism function of controlling nuclear plants and other facilities and responding to emergencies would be covered by the same systems.[14] BARC is designated a nuclear-weapons laboratory, and warhead components are stored there in an unassembled state.[15] According to informed sources, the nuclear warheads located at BARC facilities are under military security. A study by P. R. Chari notes that air defense cover is provided by the Indian Army, security is strict, and access control is maintained by physical barriers and electronic systems.[16] The Nuclear Command Authority, made public in January 2003, is under civilian control.

Politics

India has a long history of terrorist activity.[17] Yet the only source of serious potential for terrorist acts on a catastrophic scale is Islamic radicalism. The rise of "jihadi" groups espousing militant Islam is a more recent phenomenon, drawing its power from bases in other countries, mainly Pakistan and Afghanistan.[18] All the domestically based movements have been relatively local in their focus and have shown no inclination toward mass killing. However, the jihadi groups are of a different character. Islamic extremists have steadily increased their presence in Indian-held Kashmir, as statistics show. The number of foreign militants killed by Indian security forces has grown from 30 in 1991 to 194 in 1996, and 541 in 2001.[19] These groups, which have their bases mainly in Pakistan, are driven by a Pan-Islamist agenda that seeks to transform the world order through a "war of a thousand cuts."[20] Not all Muslim terrorist groups active in India are connected to this larger enterprise, as one intelligence expert has pointed out.[21] But the potential to drive them to it is there. Discussions of terrorism in India pay insufficient attention to the widespread acts of terror – usually described as "communal violence" – that right-wing elements of the Hindu majority resort to against other communities.[22] But it is precisely these that are likely to push locally oriented groups into the wider network of terrorists that we call "jihadis."[23] Perhaps the first terrorist group with an Islamic orientation, the Tanzim Islah-ul-Mumineen, was formed in Mumbai (then Bombay) in 1985. This group was responsible for a series of bomb blasts in Mumbai and Hyderabad (Andhra Pradesh) on December 6, 1993, the first anniversary of the destruction of the Babri Masjid by Hindu extremists.[24] Earlier, in March that year, a series of bomb blasts in Mumbai killed some 250 people in what was one of the worst cases worldwide of mass attacks by terrorists[25] The attacks were apparently designed to avenge the large-scale killing of Muslims by Hindu extremists in Mumbai in December 1992 and January 1993. Events like the severe anti-Muslim riots in Gujarat in 2002 could give rise to social polarization and terrorism.[26] Already, there is evidence of Gujarati Muslim extremists traveling to Kashmir to acquire arms and ammunition.[27] The threat of nuclear terrorism from such groups cannot be ruled out if they become further radicalized.

The main source of a nuclear-terrorist threat, therefore, stems from the jihadi groups that have taken up arms in Kashmir, such as the Harkat-ul-Mujahideen (HuM), the Hizb-ul-Mujahideen (HM) the Jaish-e-Mohammed (JeM) and the Lashkar-e-Toiba (LeT). Of these, only HM has some Kashmiri membership, but like the others, it is based in Pakistan. Though their major membership is Pakistani, their fighters are drawn from a wide catchment area and includes Arabs from the Middle East, Chechens, and Afghans[28] All of them have a commitment to jihad as well as links to Al Qaeda, and all except HM are ideologically and operationally intertwined with Al Qaeda.[29] The latter has made it very clear that India is a target. In December 1999, a fax message to the Voice of America in Washington on behalf of Nazeer Ahmed Mujjaid, military adviser to Al Qaeda, proclaimed the goal of these groups: to fight against "Americans, Russians and Indians," and ensure that "Islam will spread over the entire world."[30] Militant leaders have proclaimed Kashmir as a "gateway to India" and established links with fundamentalist and terrorist organizations in different parts of the country, notably in southern India.[31]

The politics of the region is conducive to a sustained threat from Al Qaeda and its affiliates. Muslim fundamentalism and the instruments of violence became a powerful combination with massive American funding of the Afghan resistance to Soviet occupation in the 1980s. Afghanistan remained turbulent after the Soviet withdrawal and eventually fell under the control of the Pakistan-sponsored Taliban. Al Qaeda found a safe base there until the United States launched Operation Enduring Freedom in response to the September 11 attacks. Well over a year later, at the time of writing (April 2003), remnants of Al Qaeda and the Taliban continue to fight from the mountainous region bordering Afghanistan. There are indications that Al Qaeda's organization is recovering, with training camps drawing fresh volunteers.[32] Afghanistan itself remains troubled by violence and internecine warfare among numerous tribal groups. The production of opium has risen dramatically.[33] Much of it travels to overseas markets through India and Pakistan. This increases the scope for terrorist activity in the region as there is a close linkage between organized crime, especially the drug trade, and terrorist groups.[34]

Pakistan's links to terrorism and Islamic radicalism are well known.[35] Support for terrorists operating in India has been a useful, low-cost instrument to put India under constant pressure.[36] After September 11, 2001, when it turned against the radicals it had formerly sponsored in Afghanistan and Kashmir, it has been confronted with a rising incidence of internally oriented terrorism. Its own political and economic condition is vulnerable: military rule has not sufficed to bring about fundamental reforms relating to corruption, tax restructuring, bonded labor, and the de-weaponization of society.[37] Radical Islam is on the rise, carrying with it a "jihadi culture" of violence.[38] There are believed to be as many as 18 million illegal weapons in the country.[39] Notwithstanding President Musharraf's proclaimed commitment to crushing terrorism, terrorist groups have flourished.[40] In the 2002 elections, the Muttahida Majlis-e-Amal (MMA), an alliance of six religious parties, came to power in the North West Frontier Province (NWFP) and Baluchistan (through a coalition in the latter case). A few weeks later, the new Chief Minister of Baluchistan ordered the release of all militants in the province.[41] As a result of these developments, the region bordering Afghanistan, never much under control, became a base for former Taliban members.[42] Al Qaeda was believed to have set

up base in Pakistan.[43] By early 2003, most arrested terrorists had been released and the cross-border flow of jihadis into Kashmir was on the rise again.[44] Under pressure from the religious right, Musharraf had allowed the resumption of cross-border terrorism, in part to safeguard his own regime, and in part because the jihadis were now the only dependable instrument for sustaining Pakistani pressure on India.[45]

Given the widespread evidence of Islamic extremists in South Asia, the cause for anxiety is strong because of Al Qaeda's known interest in acquiring nuclear capability.[46] An investigation by the television channel Al-Jazeera revealed in June 2002 that the original plan for September 11, 2001 was to crash hijacked jets into nuclear plants, but the plan was changed.[47] Qualified personnel were also available in the region. At least one Pakistani and two Afghan nuclear scientists were approached by Osama bin Laden for help in making a bomb.[48] Late in 2002, it was reported that nine Pakistani nuclear scientists had "disappeared."[49] While none of these reports is individually a strong piece of evidence of the advent of nuclear terrorism to South Asia, they together paint a disturbing picture of a potential threat that cannot be ignored, especially in light of the political conditions outlined earlier. After September 11, 2001, the realm of the possible has been greatly expanded.

Given this threat environment, the possibility of a nuclear-terrorist event is significant. Terrorists may threaten to or actually activate a nuclear bomb or radiological dispersion device (RDD) in numerous ways, such as:

- Physical takeover of a nuclear plant or consignment of materials during transportation, followed by the threat of radioactive release;
- An attack on nuclear materials during transportation so as to cause a release of radioactivity;
- A radiological attack on symbolic targets with a relatively limited physical impact, e.g., a national monument or a major public building at a time when few people are present;
- A conventional attack on a nuclear reactor or a waste storage/disposal site;
- A radiological attack on urban concentrations with intent to maximize fatalities; and
- A nuclear blast aimed at any of the targets identified above.

Attacks on military targets are dealt with in the next section.

Nuclear Posture and Nuclear Terrorism

There is a close linkage between nuclear terrorism and nuclear posture. The one feeds on the other. Nuclear terrorism has the potential to spark off war between India and Pakistan, very possibly a nuclear war. Already, Pakistan's use of terrorists as a low-cost way of putting India under pressure on the Kashmir issue has brought the two countries close to war (2001-2002). Nuclear terrorism may make a war hard to avoid. At the same time,

rising tensions beween India and Pakistan may impact adversely on their nuclear postures. Nuclear posture determines significantly the extent to which nuclear terrorism can ignite war. I argue that, in the India-Pakistan context, small, undeployed arsenals of the kind that exist today minimize risks.

Change in Nuclear Posture: Opportunity for Nuclear Terrorism

Following their respective nuclear tests in 1998, India and Pakistan adopted "minimum deterrence" postures.[50] Neither side to date has given this term clear meaning. Perhaps its most concrete manifestation – one on which they seem to be in tacit agreement so far – has been the non-deployed status of nuclear weapons in both countries. By tacit agreement, it appears, the nuclear neighbors have not only kept warheads and delivery vehicles separate, but even the warheads in unassembled condition. This has important implications for general nuclear stability, since it increases the number of steps and time between the onset of crisis and the potential launching of nuclear weapons. Non-deployment has significant bearing on nuclear terrorism as well. Numbers are important. Since nuclear weapons are not risk-free, the number of weapons is directly related to the level of risk. In the present situation, it is not at all clear that India and Pakistan are fully committed to very small arsenals. Both have been involved in a missile race of sorts, with periodic bouts of tit-for-tat testing. India's long-term quest for a triad of launch vehicles inclines it toward an expansive nuclear weapons program. Pakistan's tendency to respond in kind augurs the same.

A strategy of minimum deterrence has a built-in advantage if an arsenal is kept down to small numbers. The smaller the number of weapons, the fewer the targets for terrorists. From the standpoint of a minimum deterrence strategy, the question of sufficiency in numbers is not determined by the capacity to kill many millions, as was the case in the US-Soviet Cold War relationship, but by the potential of *any* use of nuclear weapons to cause even tens of thousands of deaths. Indeed, since the overwhelming preference is that nuclear weapons not be used at all, their very existence is associated with a significant level of risk. This applies to the relationship between weapons and terrorists as well. If the meaning of what constitutes sufficiency is ambiguous, then the possibility of expanding arsenals is significant. This may be driven by the growth of "operational" concerns as nuclear organizational systems crystallize, by changing perceptions of threat, by bureaucratic interests, or merely by a certain inertia of motion. Above all, it will be hard to resist if the level of tensions, interspersed with crises, remains high. Furthermore, if the trend toward greater diversity – for instance, by the development of a triad – is sustained, numbers will almost certainly go up, since there will be a felt need to ensure that each leg has a "sufficient" number of weapons. The notion that there must be "enough" weapons to make a second strike capability "credible" will inevitably apply to each leg, and the number of weapons – and targets for terrorists – expand accordingly. Whatever the reason, growth in the number of nuclear weapons in an arsenal will increase vulnerability to terrorists. Bennett Ramberg has argued that nuclear plants may be "weapons for the enemy."[51] Equally, nuclear weapons may be regarded as "weapons" for another kind of enemy: terrorists.

Deployment is another crucial issue. The continuing hostility between India and Pakistan over Kashmir, punctuated as it has been by frequent crises, portends the possibility of deployment, perhaps at first during a crisis, possibly on a more sustained basis. This increases the scope for a nuclear terrorism-nuclear strategy linkage. Even without deployment, nuclear weapons are subject to the designs of terrorists in at least two ways. First, like nuclear plants and materials, they are potential targets. They could be targeted at the place of storage. Even high levels of security alertness can be – and have been – penetrated by small numbers of terrorists in both countries. It is conceivable that an unassembled weapon could be blown up with conventional explosives. Alternatively, admittedly a more difficult task, a nuclear core or other components could be stolen or removed by force. This could be done with or without the assistance of an insider. If a nuclear core is removed, then it is potentially usable as a weapon. Again, it might in the most extreme case be used to manufacture a nuclear weapon, even if only a crude one. Or it could merely be used as an RDD at a time and place of the terrorists' choosing. There is a trade-off between the risk of deployment and the risk of non-deployment. A deployed weapon would be easier to protect with sophisticated electronic locks. A stolen weapon fitted with such locks – that is, a fully assembled one – would still be usable as an RDD, but not as a nuclear weapon.

In the event that weapons are assembled, mated to warheads, and deployed, the problem assumes more significant proportions. While at the time of writing, deployment is not considered a serious issue, that may still occur in two kinds of circumstances. Nuclear weapons may be deployed in normal circumstances, as is the case with the five large declared nuclear powers. This may happen over time if the emphasis on "credibility" remains as uninformed by fundamental analysis as it is now, and a decision to deploy is taken in order to be more convincing. Upon deployment, the level of risk to terrorism will be increased. Even if the number of weapons remains constant, vulnerability will increase because their distribution will create more opportunities for terrorists. Once a decision to deploy is taken, weapons will be placed in diverse locations, and will be attached to different kinds of missiles, aircraft and, in the more distant future, submarines. Dispersal will create more opportunities for terrorists by offering a range of target choices. It will also create more points at which a security system to protect warheads from attack could fail. The process of transportation will perhaps be the weakest point at which they may be able to strike, since moving assets are likely to be harder to protect. Terrorists would be able to attack a warhead under transportation at many more points, and might conceivably be able to do so without actually coming into contact with security forces, for instance by blowing up a bridge or a railway track from a distance. Deployment during a crisis would have the advantage of giving little time for terrorists to target weapons. Against this, when times are not normal, the probability of security failure is higher. On the whole, even allowing for high levels of security planning and organization, it would appear that a small deterrent force based on the principles and logic I have presented earlier would carry a much lower level of risk than a diverse, expanding one.

Nuclear Terrorism and War

There are at least two ways in which nuclear terrorism, even a relatively small incident, could have a devastating effect. First, an act of nuclear terrorism could set off a major inter-state crisis. The attack on the Indian Parliament on December 13, 2001 generated a reaction that brought India and Pakistan close to war. The impact of a nuclear-terrorist strike would be far greater. It would generate a mix of panic and anger that would bring to bear immense pressure on the government of the day to act militarily. Mobilization of the kind that occurred in 2001-2002 would not suffice: there would be irresistible pressure to *act*. The result would be a process of military engagement that would be hard to restrain. The risk of war, and with it the possibility of nuclear war, would be high. If the incident occurred during an already existing crisis – and terrorists would have a high incentive to perpetrate an outrage at precisely this juncture – the probability of war would be much higher. Minimum deterrence demands, therefore, that the risk of war be minimized by lowering the overall risk associated with numbers and deployment, and by a single-minded commitment to arms control and political engagement.

A second possibility is that a terrorist attack might be misconstrued as an attack by enemy forces. This could happen in varying circumstances. In the worst case, if a terrorist nuclear device explodes in India – say, in an urban area – it could be interpreted as a Pakistani strike, and a military response will be extremely difficult to resist. Second, a similar attack on military forces would likely be perceived to be a first strike, and a "forceful" response would be almost inevitable. Third, a terrorist attack with conventional explosives on deployed nuclear forces could be viewed as an act of war by the enemy state, which again would evoke a military response. Fourth, the same would apply to a terrorist attack on the nuclear command and control structure. In the last case, admittedly unlikely, terrorists might be able to disrupt a command and control system not only by physical attacks, but electronically. Following India's nuclear tests, internet hackers attacked web sites of the Indian nuclear establishment.[52] It is not inconceivable that terrorists could penetrate or cause a breakdown in the Indian or Pakistani nuclear command and control structure and create havoc, possibly sparking off war.

Conclusion

The risks raised by the interaction of nuclear terrorism and nuclear strategy are acceptable to no one other than terrorists bent on creating nuclear havoc. As states, India and Pakistan have a common interest in preventing this interaction from taking effect. However, they need to recognize the nature of the risk. So far, there has been a sense of control over regional crises because the moves and counter-moves involved have been made by states. However, nuclear terrorism because of its catastrophic nature is likely to undermine the autonomy of states to make considered decisions. The initiatives of terrorists as autonomous actors may well set in motion processes that national leaderships are unable to control. What are the preventive measures that India and Pakistan might take recourse to?

First, there are autonomous measures to improve security of nuclear-terrorism targets. Nuclear infrastructures – from weapons locations and power and enrichment plants to medical, industrial and research facilities – have to be subject to the full panoply of security measures for surveillance, access control and interdiction. Internal security

management to avert insider threats is particularly important, since most cases of diversion of nuclear material have been attributed to internal sources. Both India and Pakistan have a broader need for similar types of measures over their porous borders.

Second, it would be in the interests of both India and Pakistan to negotiate an agreement to notify each other of lost, purloined or robbed nuclear and radiological material. Neither would like such materials to fall into the hands of terrorists. Once terrorists acquire nuclear capability, there is no knowing how that capability will be used, and against whom. It would further be in the interests of both countries to inform each other of intelligence obtained that might point toward a potential act of nuclear terrorism.

Third, India and Pakistan need to make common strategic decisions about their nuclear postures. Their tacit understanding on non-deployed arsenals has to be cemented by a formal one in order to minimize the risks posed by nuclear terrorism. A nuclear risk reduction regime could be given a sound start by means of an agreement on non-deployment. While there has been criticism of their poor observance of conventional confidence building measures (CBMs), India and Pakistan have been quick to agree on nuclear risk reduction. Even as covert nuclearizers, they agreed not to target each other's nuclear facilities as early as December 1988. After the 1998 tests, the Lahore Memorandum of Understanding (February 1999) provided for a mutual notification on forthcoming missile tests. Both these CBMs have generally been adhered to even in times of high tension. An agreement not to deploy would reduce the scope for nuclear terrorism directly by reducing potential targets for terrorists. It would also generally reduce the probability of nuclear conflict.

Efforts to set in motion a peace process have failed to deliver the goods. Prime Minister Vajpayee's visit to Lahore in February 1999 could not survive the Kargil crisis. General Musharraf's visit to Agra in July 2000 yielded failed to yield an agreement. The fundamental problem was that the entire spectrum of possibilities rested on a political breakthrough. Given the deeply problematic nature of the Kashmir issue, which may be hard to resolve because of its centrality to both countries' concepts of nationhood, and because both governments would find it difficult to sell a deal on Kashmir to their respective domestic constituencies, a political solution is hardly likely in the near future. The key requirement for stability is the separation of political disagreement from military-strategic risk. Quiet diplomacy rather than publicity-driven summitry would be more effective in achieving this end.

The case of India-China relations illustrates how diplomatic progress can be made in spite of serious military-strategic differences. Notwithstanding their long-drawn-out dispute over large tracts of land, India's bitter memory of military defeat in 1962, and continuing suspicions over each other's nuclear intentions, India and China have been able to engage in a process of positive diplomacy that has led to expanding trade. The India-Pakistan relationship needs to be guided in this direction in order to achieve at least the minimal and vitally important end of strategic stability.

[1] See, e.g., Gavin Cameron, *Nuclear Terrorism: A Threat Assessment for the 21st Century* (Basingstoke & London: Macmillan; New York: St. Martin's Press, 1999); Frank von Hippel, "Recommendations for

Preventing Nuclear Terrorism," *FAS Public Interest Report*, 54, 6 (November–December 2001) <http://www.fas.org/faspir/2001/v54n6/prevent.htm>; Paul Leventhal and Yonah Alexander, eds., *Nuclear Terrorism: Defining the Threat* (McLean, VA: Pergamon-Brassey's International Defense Publishers, 1986); *Report of the International Task Force on Prevention of Nuclear Terrorism*, Washington, D.C.: Nuclear Control Institute, 1986; and *Wild Atom: Nuclear Terrorism*, Center for Strategic and International Studies, Washington, DC, 1998. On South Asia, see Paul Leventhal and Brahma Chellaney, *Nuclear Terrorism: Threat, Perception and Response in South Asia*, Nuclear Control Institute, Washington, D.C., October 10, 1988; and Rajesh M. Basrur and Hasan-Askari Rizvi, "Nuclear Terrorism and South Asia," Occasional Paper 25, Cooperative Monitoring Center, Sandia National Laboratories, Albuquerque, NM, February 2003.

[2] Michael Krepon & Chris Gagné, eds, *The Stability-Instability Paradox: Nuclear Weapons and Brinkmanship in South Asia*, Henry L. Stimson Center, Washington, DC, June 2001;V. R. Raghavan, "Limited War and Nuclear Escalation in South Asia," *Nonproliferation Review*, 8, 3 (Fall-Winter 2001), p. 89; Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate Renewed* (New York and London: W. W. Norton, 2003), pp. 88-124.

[3] There is, of course, a point of view that "rogues states" such as North Korea are likely to be "undeterrable" and hence capable of suicidal nuclear first strikes against the United States, but that may be put down to a dubious separation of proliferation "good guys" from "bad guys" that lacks a sound cognitive basis.

[4] Glenn E. Schweitzer with Carole Dorsch Schweitzer, *A Faceless Enemy: The Origins of Modern Terrorism* (Cambridge, MA: Perseus Publishing, 2002), pp. 51-81.

[5] Potter, "Less Well-Known Cases of Nuclear Terrorism and Nuclear Diversion in the Former Soviet Union."

[6] Jon B. Wolfsthal and Tom Z. Collina, "Nuclear Terrorism and Warhead Control in Russia," *Survival*, 44, 2 (Summer 2002), p. 71.

[7] Cameron, *Nuclear Terrorism*, p. 2.

[8] Cameron, *Nuclear Terrorism*, pp. 2-13.

[9] Wolfsthal and Collina, "Nuclear Terrorism and Warhead Control in Russia," p. 73.

[10] Basrur and Rizvi, "Nuclear Terrorism and South Asia," pp. 52-55. See also Gaurav Kampani, "Safety Concerns about the Command and Control of Pakistan's Strategic Forces, Fissile Material, and Nuclear Installations," Center for Nonproliferation Studies, Monterey Institute for International Studies, Monterey, CA, September 28, 2001(web site) <http://www.cns.miis.edu/research/wtc01/spna.htm>. Both commentaries are relatively optimistic.

[11] A. Gopalakrishnan, "Evolution of the Indian Nuclear Power Program," *Annual Reviews Energy & the Environment*, 27 (2002), pp. 369-395.

[12] For an overview, see Government of India, Department of Atomic Energy, *Annual Report 2001-2002*. Official publications, however, are not informative with respect to the military and security aspects of the nuclear program.

[13] The CISF's own website at <http://cisf.nic.in/> does not even mention its role in the protection of nuclear facilities directly. For a more useful – but still sparse – overview, see Mallika Joseph A, "The Central Industrial Security Force," Article no. 687, Institute for Peace and Conflict Studies, Delhi, January 31, 2002 (web site) <http://www.ipcs.org/issues/newarticles/687-mi-mallika.html>.

[14] For a review of these functions, see Nuclear Power Corporation of India Limited, *Emergency Preparedness in Nuclear Power Plants*. <http://www.npcil.org/docs/emergency.htm> (downloaded on August 8, 2002).

[15] Humphrey Hawksley, "India's Nuclear Muscle," BBC News, January 13, 2003 (web site) <http://news.bbc.co.uk/1/hi/world/south_asia/2646979.stm>.

[16] P. R. Chari, "Protection of Fisslile Material: The Indian Experience," *ACDIS Occasional Paper*, Program in Arms Control, Disarmament and International Security, University of Illinois at Urbana-Champaign, September 1998, p. 6.

[17] For an overview, see Ved Marwah, "India," in Yonah Alexander, ed., *Combating Terrorism: Strategies of Ten Countries* (Ann Arbor: University of Michigan Press, 2002). For a full list of terrorist groups in India, see "India – Terrorist, Insurgent and Extremist Groups," South Asia Terrorism Portal (web site) < http://www.satp.org/satporgtp/countries/india/terroristoutfits/index.html> (downloaded on February 13, 2003).

[18] Navnita Chadha Behera, *State, Identity and Violence: Jammu, Kashmir, and Ladakh* (New Delhi: Manohar, 2000).
[19] Ajai Sahni, "Extremist Islamist Terror & Subversion," in K. P. S. Gill and Ajai Sahni, eds., *The Global Threat of Terror: Ideological, Material and Political Linkages* (New Delhi: Bulwark Books, 2002), p. 215, Table 1.
[20] Sahni, "Extremist Islamist Terror & Subversion," pp. 185-196.
[21] B. Raman, "The Hydra-Headed Monster," *Outlook*, October 4, 2002 (web site) <http:www.outlookindia.com/full.asp?fodname=20021004&fname=raman&sid=1>.
[22] For an exception, see Kanti Bajpai, *Roots of Terrorism* (New Delhi: Penguin, 2002), pp.18, 21-22.
[23] Afsir Karim, "Religious Extremism & National Security," *Hindu*, February 6, 2003 < http://www. thehindu.com/2003/02/06/stories/2003020600031000.htm>.
[24] Dionne Bunsha and Praveen Swami, "The Terror Trail," *Frontline*, October 12-25, 2002 (web site) < http://www.frontlineonnet.com/fl1921/stories/20021025007001200.htm>.
[25] For a post-September 11 retrospective assessment, see Manoj Joshi, "Fight against Terrorists Has to Be Indivisible," *Economic Times*, September 13, 2001; available at the Government of India, Ministry of External Affairs web site: < http://meadev.nic.in/OPn/2001sept/13et.htm> (downloaded on February 13, 2003).
[26] On the Gujarat riots, see Anjali Mody, "Genocide in the Land of Gandhi," *Hindu*, March 10, 2002 (web site) <http://www.hinduonnet.com/thehindu/2002/03/10/stories/2002031000011600.htm>.
[27] V. Sudarshan, "Cynical Gambit," *Outlook*, January 13, 2003 (web site) < http:www.outlookindia.com/full.asp?fodname=20030113&fname=Terrorism+%28F%29&sid>.
[28] Mandavi Mehta and Teresita Schaffer, *Islam in Pakistan: Unity and Contradictions*, Center for Strategic and International Studies, Washington, DC, October 7, 2002, p. 15.
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