

BRAHMA CHELLANEY

Nuclear India: The Catalyst Role of the Comprehensive Test Ban Treaty

Critics of India's nuclear-deterrent posture see it as a muscle-flexing irrevocable retreat from the pacifism espoused by the country's independence leaders. In reality, India's plans to go overtly nuclear had remained frozen for nearly a quarter century under successive governments because of self-instilled fears. When finally the country broke out of its fetters, the sanctions it faced were even milder than the best-case scenario it had drawn.

The continuing controversy over India's nuclear-weapons programme is not surprising. India was unique in engaging in an open debate over whether to build nuclear weapons. No other nuclear democracy has publicly debated various aspects of its nuclear policy as India has done, despite being the only country to share disputed borders with two nuclear-armed neighbours (China and Pakistan) with a long history of covert strategic collaboration. The second nuclear neighbour, Pakistan, emerged as India was trying to make up its mind on the nuclear issue.

While the other nuclear democracies (the United States, Britain, France and Israel) went down the nuclear path secretly and as soon as it became technologically feasible, India publicly debated whether to go nuclear from the time China exploded its first atomic device in 1964. Despite that abnormally long debate, critics contended that India could have waited longer, and debated the pros and cons further, before crossing the nuclear threshold in May 1998. Debate and controversy come naturally to India's raucous, divisive political traditions and to the loquacious Indians' love for endless discussions. Controversy thus is likely to dog the development of an Indian nuclear force structure and doctrine.

Role of CTBT

It took exactly 24 years from the time of its first nuclear test for India to remove the veil of ambiguity from its strategic posture and go overtly nuclear. By detonating five nuclear devices based on different warhead configurations in a space of less than 45 hours, India sent an unequivocal message to the world: It is determined to secure itself with its own capabilities.

Prime Minister Atal Bihari Vajpayee's pro-nuclear government managed to detonate five highly sophisticated nuclear devices within two months of assuming office because India already had the basic materials, equipment and skills for nuclear deterrence in place. Every Indian government contributed to the building of that base. While independent India's first Prime Minister, Jawaharlal Nehru, laid the foundation of India's nuclear programme, his daughter, Prime Minister Indira Gandhi, opened up the nuclear option by conducting the first test in 1974, and his grandson, Prime Minister Rajiv Gandhi, helped establish a nuclear-delivery capability through the 1989 test of the *Agni* intermediate-range ballistic missile (IRBM).

With a broad-based nuclear infrastructure built over decades and first-class nuclear research facilities, India demonstrated its capabilities to manufacture and test the most modern nuclear weapons – thermonuclear, boosted fission and low-yield types – in one go in 1998. No other country has ever demonstrated such a range of weapon capabilities in one shot, although multiple tests have been conducted simultaneously by some other nuclear powers. Such a demonstration was deliberate on India's part. It was intended not only to herald India's arrival as a nuclear-weapons state but also to deal with external pressures. If India had

conducted one test at a time to certify its warhead models, it could have come under swirling coercive pressures, possibly hindering its movement forward. By doing five bangs over two days, India gate-crashed the nuclear club, presenting a *fait accompli* to an astounded world.

The tests were a natural corollary to India's firm opposition to the Comprehensive Test Ban Treaty (CTBT), which was taken through the backdoor to the UN General Assembly for endorsement after India vetoed its adoption in the negotiations at the Geneva-based Conference on Disarmament (CD). By blocking the CTBT's adoption in 1996 and then conducting the nuclear tests less than two years later, India showed its determination to stand up for its rights even if it meant swimming against the international tide. Sceptics never believed that the Vajpayee government would honour its election-time pledge to take India down the nuclear road, just as they never expected New Delhi earlier to not only oppose the CTBT but actually veto the treaty's adoption in Geneva. By opposing the CTBT tooth and nail, however, India had already signalled to the world that the testing option was essential for its security. If the Vajpayee government had not gone ahead, India would have got stuck as a threshold state, bearing the burden of an open option but not reaping the security benefits.

SUMMARY OF INDIA'S 1998 NUCLEAR-WEAPONS TESTS

<u>Test No.</u>	<u>Type</u>	<u>Time/Date</u>	<u>Calculated Yield</u>
1.	Thermonuclear	15.45/May 11	45 kiloton
2.	Fission	15.45/May 11	15 kiloton
3.	Experimental	15.45/May 11	~0.2 kiloton
4.	Experimental	12.21/May 13	~0.5 kiloton
5.	Experimental	12.21/May 13	~0.3 kiloton

(Source: Bhabha Atomic Research Centre, Trombay, India)

India began its nuclear programme much before China. China's first atomic test came just two years after it invaded India and inflicted a humiliating defeat. India, in fact, acquired the basic materials for nuclear weapons before the Nuclear Non-Proliferation Treaty (NPT) was concluded in 1968, but for three decades it concentrated its efforts on „saving“ its nuclear option rather than on building a nuclear-deterrent force. So engrossed had India become in battling „inequity“ that it turned its much-venerated nuclear option into a sermonising ideology than a tool for self-defence. By not weaponising or testing its nuclear capability for almost a quarter century, India had been tacitly observing the terms of the treaties it despised, the NPT and CTBT.

All that changed in one stroke on May 11, 1998, when India demonstrated its capability to manufacture and test the most modern nuclear weapons. Unlike 1974 when a crude fission device was detonated without being configured as a warhead, the five devices tested on May 11 and 13, 1998, were warhead prototypes. The tests, according to the head of India's nuclear programme, Dr. R. Chidambaram, validated three different weapon designs: (i) a fission warhead; (ii) a thermonuclear bomb; and (iii) very-low-yield devices for possible use as tactical weapons. The tests showed India had graduated from the implosion-type „pure fission“ design of 1974 to the sophisticated „boosted fission“ and „thermonuclear“ weapons that are at the heart of nuclear deterrence. A thermonuclear weapon (also known as a „fusion“ or „hydrogen“ bomb) employs nuclear fusion to generate much of its energy, while a boosted

fission warhead uses thermonuclear fuel, usually a mixture of deuterium and tritium gas (or lithium hydrides), to boost its fission efficiency.

A key catalyst in the Indian decision to go overtly nuclear was the nuclear test ban treaty. No treaty has impacted as much on Indian thinking and policy as the CTBT. But for the CTBT, India would still have been trying to make up its mind whether to go overtly nuclear. The CTBT awakened India to the technical imperatives of its long-held nuclear option and to its closing window of opportunity. Due to the pressures generated by the CTBT, each of the five governments India had since 1995 came close to testing, with the plans being finally carried out in 1998.

Deterrence flows not from just what a nation has but from what it credibly demonstrates and conveys. Also, no option can be kept open indefinitely without degrading. India's nuclear option had come under siege, with all the five traditional nuclear powers joining hands for the first time in the 1990s to enforce nonproliferation as a global norm. India became a key target of the CTBT and the planned fissile material cut-off treaty (FMCT), both measures being part of a dragnet strategy to capture those not in the NPT regime. In the same way that the NPT was a country-specific treaty targeting Japan, Germany and Italy in particular, the CTBT is a country-specific measure aimed especially at India, according to Mexican Ambassador Miguel Marin-Bosch, a leading arms-control expert in the field of diplomacy. That was the reason for the CTBT's convoluted entry-into-force clause (Article XIV).

The controversial clause stipulates that the CTBT will not take legal effect until it is signed and ratified by India, among other states. India was sought to be forcibly „captured“ under the CTBT even though, during the Geneva negotiations, it had unequivocally rejected the proposed treaty and vowed never to sign it. India had explicitly warned on June 20, 1996, that although it was loath to veto the adoption of the CTBT, which it saw as riddled with loopholes, it would be left with no other choice but to cast its veto if attempts were made to forcibly lock it in. As if to mock the Indian warning, a new entry-into-force formula was unveiled eight days later to capture New Delhi. In effect, the great powers and their allies armed New Delhi with the ultimate veto – on whether the treaty would become international law.

After their failure to get the CTBT adopted by unanimity in Geneva, these countries took the lead in commandeering the CTBT from the Conference on Disarmament (CD) to the UN. In the words of the chief U.S. negotiator in Geneva, Ambassador Stephen J. Ledogar, that was the „single hijack“. If that too had failed, Ledogar had visualised a „double hijack“: An international conference bypassing both the UN and CD to open the treaty for signature. However, the single hijack successfully pushed the CTBT through the UN General Assembly in the form of a simple resolution designed to prevent a debate on the treaty's provisions.

India had contended that the CTBT text bristled with loopholes because it was not a fully negotiated treaty but rather the product of the chairman of the Geneva talks, Ambassador Jaap Ramaker of the Netherlands, and the back-room deals among the five traditional nuclear powers. For example, the treaty is trumpeted as a „zero-yield“ document. However, there is nothing in its text that specifically bans the release of any nuclear energy in experiments. As the official US fact-sheet on the CTBT admits, „With respect to the obligation ,not to carry out‘ any nuclear explosion, the negotiating record reveals that Article I does not limit in any way a State Party’s ability to conduct activities in preparation for a nuclear weapon test explosion or any other nuclear explosion“; nor does it prohibit „all activities involving *a release of nuclear energy*“ [emphasis added]. While claiming the right to conduct experiments involving the release of nuclear energy under a treaty that was supposed to be „zero yield“, the United States and Russia are conducting so-called subcritical nuclear tests without any international monitoring. In June 1999, China was also reported to have conducted an unspecified type of test at its Lop Nor nuclear test site.

The treaty's scope was so drafted that it did not expressly prohibit hard-to-detect hydronuclear experiments, underground „subcritical“ tests and the building of new mammoth machines to take testing from the physical to the information environment. As if to facilitate underground testing at slightly supercritical or subcritical levels, the treaty does not require the closure of existing test sites or ban test-related preparations such as excavation and drilling. For example, in response to the CTBT, the United States is spending \$60 billion over the next decade on its Science-Based Stockpile Stewardship and Management Programme (SBSMP), which seeks to create a virtual testing regime through the construction of 10 new laser and supercomputing facilities.

The groundswell of Indian opposition to the test ban treaty sprang from the popular perception in India that a measure first conceived by New Delhi more than four decades ago as a step toward complete disarmament had been turned into a wily nonproliferation tool directed against it. India was virtually told that whether it liked it or not, it was going to be forcibly dragged into the CTBT. The treaty text calls for unspecified measures „consistent with international law“ against states that refuse to sign and ratify the CTBT. This language was interpreted by India as implying sanctions.

In their zeal to capture New Delhi, the major powers actually pushed India against a diplomatic wall and triggered a popular backlash in that country that helped to unravel its nuclear restraint policy, driving it to become an overt nuclear-weapons state. By designing a coercive entry-into-force provision and hanging the implicit threat of sanctions, they left New Delhi with little choice. With a Damocles' sword hanging over its head, India decided that the costs of action on its nuclear option outweighed the costs of inaction.

Had India not been pushed against the wall, it may have continued to put off the critical decision on testing. After all, for nearly a quarter century it had inconclusively debated whether to go overtly nuclear. Until 1996, it had an inchoate nuclear strategy, and no apparent policy or vision beyond its test ban opposition. However, once its hands were forced, it made up its mind to test and declare itself a nuclear-weapons state. This is what the CTBT did. It compelled Indian policy-makers to reach out for the nuclear option's security benefits, rather than continue to merely bear the option's burden.

The CTBT was not the only reason that motivated India to defiantly carry out nuclear-weapons tests at a time when a global norm against testing was developing. Another strong incentive for India to move forward was the growing military asymmetry with China and the latter's continuing covert nuclear and missile assistance to Pakistan. Those concerns were outlined in Prime Minister Vajpayee's letter to heads of government of the Group of Eight (G-8) states after the tests. „We have an overt nuclear-weapons state on our borders, a state which committed armed aggression against India in 1962“, Vajpayee wrote. „To add to the distrust, that country has materially helped another neighbour of ours to become a covert nuclear-weapons state.“ The CTBT, however, reminded India of its closing opportunity to test and served as a powerful nudge.

India's turning point came when an openly pro-nuclear government took office in March 1998. The new coalition elected to power pledged, in the words of Vajpayee, to „exercise all options, including the nuclear option“. When India finally went nuclear, it did so with a vengeance, carrying out multiple nuclear detonations. While the explosions were received with unprecedented jubilation and outpouring of national pride at home, Indians were as surprised as the rest of the world because they did not believe the Vajpayee government would deliver on its promise to „induct nuclear weapons“ less than two months after assuming office.

India's CTBT options

India, despite its new nuclear-weapons status, has again come under international pressure to sign and ratify the CTBT. The 1998 Indian tests had sounded what seemed to be the death knell of the CTBT. Yet the major powers have not only resuscitated the treaty but expressed confidence to help reverse India's opposition. Not all the traditional nuclear powers, however, have ratified the treaty.

No Indian government can embrace the CTBT without building a political consensus at home in favour of such a step. Although the treaty is no longer a barrier to India's nuclear ambitions as the country has conducted whatever tests it wanted, critics contend that the CTBT is not so much about testing as about verification, including technical espionage by national intelligence assets. If India accedes, it will come under the rigours of the treaty's highly discriminatory verification regime, according to the critics.

The arguments in favour of and against the CTBT in the Indian debate can be summarised as follows:

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1. Having conducted the desired tests, the treaty no longer poses a security challenge to Indian interests. India could have – with little domestic opposition – decided to sign the CTBT after conducting the two rounds of tests in May 1998. In hindsight, it was a mistake not to do so.	1. The reality is that the CTBT is not about testing but about verification. A few tests by India have not changed the nature of the treaty or its structural flaws. The CTBT is a central pillar of the NPT regime, which stipulates that only five nations have the lawful right to possess and wield nuclear weapons. Supporting the CTBT will be tantamount to lending support to the NPT regime.
2. There is really no difference between the current Indian test moratorium and a formal acceptance of the CTBT.	2. The CTBT will bind India hand-and-foot, while the unilateral test moratorium imposes no externally-set monitoring or other constraints. The CTBT and its sister, the proposed FMCT, will bring India in political alignment with the NPT.
3. The CTBT simply bans explosive nuclear tests, and since India has no desire to test further, it makes sense to sign up and become part of the international arms-control community.	3. The CTBT is no barrier to the continued transfers of tested warhead designs, as by China to Pakistan. India is the only non-NPT nuclear state that has no nuclear and missile collaboration with an NPT nuclear power. Moreover, CTBT acceptance is not going to bring India any reward, but will only expose it as an opportunistic state that conveniently opposes and then later supports the same arms-control measure.
4. Not signing the CTBT, which has been accepted by the rest of the world, will only reinforce India's image as a „perpetual dissenter“. India gains little by staying out of the CTBT.	4. Had India not been a continual dissenter, fighting for its rights against the powerful, it would not have succeeded in safeguarding its nuclear option or even winning independence. If India should not be a dissenter, then what better way of joining the international „mainstream“ than signing the NPT, the most universally

	accepted treaty, with 181 of the world's 190 nations its members? In contrast, the CTBT, ratified by a tiny number of states, is not even in force.
5. There is no need to worry about the CTBT's verification provisions. India, after all, has accepted the intrusive verification system of the 1993 Chemical Weapons Convention (CWC). Concern over the CTBT's verification provisions only serves as an excuse or a rationalisation of opposition to the treaty.	5. There is a big difference between the CTBT (with its highly discriminatory verification regime) and the CWC (which has an equitable verification regime equally applicable to all states). While the CWC attempts to eliminate an entire class of mass-destruction weapons across the globe, the CTBT seeks to do the opposite: safeguard the nuclear hegemony of certain states by making it very difficult for others to design and build nuclear weapons without testing. These nuclear powers agreed to the CTBT only after developing more high-tech methods of testing that obviate the need for traditional full-scale underground tests.
6. The loopholes in the CTBT can be exploited by India as much as by the other nuclear-weapons states. India can engage in underground „subcritical“ nuclear tests and laboratory-based simulation modelling of nuclear-weapons designs. These loopholes suit India's interests as much as those of the five traditional nuclear powers. So why complain?	6. While the US is investing \$60 billion in its Science-Based Stockpile Stewardship programme to maintain „robust nuclear forces“, Indian scientists have yet to show that they can do subcritical tests and derive useful data. India's top nuclear scientist has acknowledged that it is „100 times more difficult“ to derive the same information from subcriticals as from normal tests. It is also doubtful that India can do sound computer simulation modelling of warhead designs on the basis of data gathered from just six nuclear tests since 1974.
7. The CTBT, unlike the NPT, does not divide the world between the nuclear „haves“ and „have-nots“ and is, in US President Bill Clinton's words, „of singular significance to the continuing efforts to stem nuclear proliferation and strengthen regional and global stability“. Preventing the spread of nuclear weapons to other nations is as much in India's interest.	7. The CTBT's heart lies not in its official text but in the secretly-framed „permissible activities accord“ which sets up the UN Security Council's Permanent Five (P-5) states as ‚CTBT cops‘ and defines the weapons activities they can engage in despite the treaty. By officially consecrating technical espionage, the CTBT in fact allows the P-5 to serve as treaty enforcers. The use of intelligence assets – National Technical Means (NTM), which only the major powers possess – has been allowed. As Clinton has acknowledged, „the US will have a wide range of resources (NTM, the totality of information available in public and private channels, and the mechanisms established by the treaty) for addressing compliance concerns and imposing sanctions in cases of non-compliance.“

8. India needs no recognition, de facto or de jure, as a nuclear-weapons state to protect its interests under the CTBT.	8. If India accepts the CTBT without even a de facto recognition of its nuclear-weapons status, the parallel P-5 „permissible activities accord“ will not extend to it and it could get into trouble for engaging in the very activities the P-5 are engaged in. Under that accord, the P-5 have defined tests and other experiments they will conduct despite the CTBT and what data and technologies they will share. Unlike Pakistan and Israel which can rely on China and the US for continued weapons-related assistance, India is the only non-NPT nuclear state that needs to conduct subcritical and other hydronuclear tests. It has to ensure it will not be at the receiving end of the CTBT's on-site inspections (OSI) trigger mechanism. The revelations on the spies-infested UNSCOM point to the potential hazards of any discriminatory verification regime that sets up the P-5 as treaty cops and allows unencumbered „challenge“ inspections, overflights and use of intelligence assets.
9. The treaty is of unlimited duration, but contains a „supreme-interests“ clause entitling any state party that determines that its supreme interests have been jeopardised by extraordinary events related to the subject matter of the treaty, to withdraw from the CTBT upon six-month's notice. This protects India's future interests.	9. CTBT's Article IX is a standard withdrawal clause found in many treaties. If India cannot resist international pressure to accept the CTBT, there is no way it can take on the world by walking out of a treaty it had solemnly agreed to honour.
10. The treaty cannot be amended now, so it is pointless to argue that it lacks disarmament content or to insist on the CTBT's linkage with a disarmament timetable. Also, it is high time India abandoned its rhetorical stand on disarmament.	10. Complete nuclear disarmament is very much in India's long-term interest. A nuclear weapons-free Asia and world, in fact, will serve India's interests better than the present nuclearised regional and global situation. One of the reasons that motivated India to go overtly nuclear was lack of disarmament progress. As it builds a credible minimal deterrent, it should continue to work vigorously for nuclear disarmament. Without progress on disarmament, India will have to keep investing more and more in nuclear weaponry. The CTBT, devoid of any disarmament content, is essentially a nonproliferation tool.
11. Signing the CTBT is an essential step to building bridges with the United States and other major powers incensed by India's defiant nuclear-weapons tests.	11. India's actions should be governed by its national interests. Pleasing the United States or any other major power cannot be a national interest of India. Signing the CTBT will only make India more vulnerable to external

pressure, whetting American appetite for additional Indian concessions. If India reverses its stand on a treaty it had rejected with a solemn „not now, not later“ pledge, it will be sending a message to the world that it could similarly be made to reverse its position on other key issues too.

The CTBT is an issue that still arouses strong political passions in India. Therefore, any Indian government will have to move cautiously on this issue, taking Parliament and all political parties into confidence. Since the original opposition to the CTBT arose from a political consensus at home, the reversal of opposition to the treaty has also to be backed by a bipartisan consensus.

While India's aim is to build a petite, affordable but survivable nuclear force, its emergence as a declared nuclear-weapons state has only sharpened its political and technical challenges. The CTBT, however, has no connection with those challenges. Indian scientists are content with the results they got from the five tests in 1998. In fact, another shaft for a sixth test was kept ready during that operation, but the detonation was not carried out as all the other devices worked well. The post-shot radiochemical analysis of rock samples – the most reliable technique of investigation – has confirmed that the five tests produced a total yield at 60 kilotons and that the thermonuclear bomb ignited properly in both its stages.

In structuring its nuclear deterrent, India has to properly address its central challenge that, unlike deterrence relationships elsewhere, it has to adequately deter two closely-linked nuclear adversaries – China and Pakistan. India will have to achieve a high level of confidence in the reliability, effectiveness and survivability of its nuclear force.

The broad parameters of the Indian nuclear doctrine have been clearly outlined by the Indian government. These principles, which seem non-controversial and nationally acceptable, include a minimal arsenal, actual deployment of weapons, credibility of deterrent posture, survivability of nuclear force, no first use (NFU), and no arms-control fetters on research and development. Moreover, India's nuclear force is to be flexible and versatile.

India's retaliation-only nuclear posture places it in a „sitting duck“ posture whose credibility to ride out an enemy first strike is directly linked to a high rate of survivability. And unlike the relatively simpler, more cost-effective first-use posture, such as Pakistan's, no-first-use mandates or investments in second-strike assets exist, particularly in the least vulnerable submarine-based weapons at the heart of all deterrence strategies. With a puny nuclear force expected to grow very slowly, India's minimum deterrence has to be such that its constraints do not become handicaps. The expected high costs will be staggered over years, and be incremental to the investments India made over the past half century in creating a broad-based nuclear infrastructure that has already produced the bulk of the weapons-related materials and components it presently needs.

Prof. Brahma Chellaney
Professor of Security Studies
Centre for Policy Research (CPR), New Delhi

