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## Deadly addiction: India and Pakistan on the nuclear brink

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#### Abstract

The effects of nuclear weapons on Hiroshima and Nagasaki and the political and moral context surrounding their use are discussed. The rationale for development of the Indian and Pakistani nuclear weapons programmes are summarised and critically examined in comparison to the costs of the programmes and the social needs, which could have been addressed. Alternative routes to provide peace and security are proposed, both for India, Pakistan, and other nuclear-weapon states, with particular emphasis on the role of physicians and other health workers.

**Keywords:** India, Military spending, Nuclear deterrence, Nuclear weapons, Pakistan, Peace through health

### Hiroshima and Nagasaki: the effects of the bomb

In	The Atlantic	: Monthly	of August	1980,	Robert	Guillain v	wrote:	30
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Hiroshima Monday, 6 August 1945. A few seconds after 8:15 AM, a flash of light, brighter than a thousand suns, shredded the space over the city's center. A gigantic sphere of fire, a prodigious blast, a formidable pillar of smoke and debris rose into the sky: an entire city annihilated as it was going to work, almost vaporized at the blast's point zero, irradiated to death, crushed and swept away. Its thousands of wooden houses were splintered and soon ablaze, its few stone and brick buildings smashed, its ancient temples destroyed, its schools and barracks incinerated just as classes and drills were beginning, its crowded streetcars upended, their passengers buried under the wreckage of streets and alleys crowded with people going about their daily business. A city of 300,000 inhabitants – more, if its large military population was counted, for Hiroshima was headquarters for the southern Japan command. In a flash, much of its population, especially in the center, was reduced to a mash of burned and

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bleeding bodies, crawling, writhing on the ground in their death agonies, expiring under the ruins of their houses or, soon, roasted in the fire that was spreading throughout the city – or fleeing, half-mad, with the sudden torrent of nightmare-haunted humanity staggering toward the hills, bodies naked and blackened, flaved alive, with charcoal faces and blind eves.

About 13 square km of Hiroshima were flattened and an additional 25 square km of the city were largely destroyed, with decreasing damage out as far as 11-13 km from the centre. At least 130,000 died, many of them children just starting their school week, the survivors, writhing in pain, looking for water, looking for parents.

Three days later the United States dropped a second atomic bomb on Nagasaki, killing at least another 70,000 people. Censored at the time by the US military, the story of George Weller, an American journalist who entered Nagasaki a month later, finally appeared in the Japanese national newspaper Mainichi earlier this year - two years after his death. Describing people walking through a 'wasteland of war', Weller wrote that:

- In swaybacked or flattened skeletons of the Mitsubishi arms plants is 65 revealed what the atomic bomb can do to steel and stone, but what the riven atom can do against human flesh and bone lies hidden in two hospitals of downtown Nagasaki.
- A woman in hospital 'lies moaning with a blackish mouth stiff as though with lockjaw and unable to utter clear words, her legs and arms covered with red spots'. The affliction he called 'disease X', causing fever, swelling in the throat, sores, vomiting, diarrhoea, internal bleeding, hair loss, pancytopenia or decrease in the blood count, killing people even a month 75 after the bombing, is now known as radiation sickness.

### Hiroshima and Nagasaki: the context

Though we know all too well of the war crimes of the Japanese and 80 Germans, atrocities against civilians were also committed during the war by our side – the 'good guys'. If enough planes attack a small enough area with incendiary bombs, filled with highly combustible chemicals such as magnesium and phosphorus, they cause a firestorm - a conflagration so intense that when it burns, it creates a vacuum, with cold air rushing in at 85 ground level, its 100 mph winds literally sucking people into the horror. The British, under the command of Sir Arthur 'Bomber' Harris, methodically destroyed German cities in this way. On 24 July 1943 Hamburg was bombed, killing about 45,000. On 13 February 1945, with the war almost over, they hit Dresden, the population swollen from its 90 normal 650,000 by refugees fleeing from the advancing Red Army. As a

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result of the firestorm afterwards, though it was impossible to count the number of victims, it seems that anywhere from 35,000 to 100,000 were killed.

The Americans quietly refused to participate in such 'uncivilised' activities, choosing instead 'pinpoint' targets. Two weeks before Hiroshima, US President Harry Truman wrote of the bomb in his diary, 'I have told [them] to use it so that military objectives and soldiers and sailors are the target and not women and children'. Yet when Hiroshima's turn came, more than 60 of Japan's largest cities had been burned. Two B-29 incendiary raids on Tokyo killed about the same number as died at Hiroshima and Nagasaki. General Leslie Groves thought that the ancient Japanese imperial capital of Kyoto would be an ideal target, but Secretary of War Henry L Stimson, who had spent a second honeymoon in Kyoto and was afraid that the Japanese would never forgive its wanton destruction, refused to place it on the list.

Historians continue to debate the background to the dropping of the bomb on Hiroshima. Were the Japanese ready to surrender? Were the Soviets going to claim the island? Could the same goals have been managed by bombing a non-populated centre? But many of those who believed that the bombing of Hiroshima was 'justified', in hastening an early Japanese surrender and thereby saving lives, nonetheless felt that the Nagasaki bomb was criminal.

On the night of Hiroshima, Robert Oppenheimer, the leader of the Manhattan project, was overjoyed by the bomb's success; his only regret was that he wished it had been available to be dropped on Nazi Germany instead, prior to its surrender. But on 9 August, following the destruction of Nagasaki, the thrill was gone and Oppenheimer soon offered his resignation. The next year, on meeting President Truman, he confessed, 'Mr. President, I have blood on my hands', to which Truman apparently replied, 'It'll all come out in the wash!'

Some said that the second atomic attack was intended more as a message to the Soviet Union, which however soon developed the bomb. An arms race ensued between the superpowers, leading at one time to a world-wide stockpile of over 70,000 nuclear weapons. As the Cold War ended and nuclear weapons were reduced the risk of intentional nuclear war between these adversaries diminished. Now, 'The Indian subcontinent may be the most likely place in the world for a nuclear war' [1]. How did it get that way?

#### India and Pakistan: development of the bomb

The Indian Atomic Energy Commission (IAEC) was formed in 1948. Jawaharlal Nehru, India's first prime minister wished for the country to 'develop [atomic energy] for peaceful purposes'. But at the same time he asserted that 'if we are compelled as a nation to use it for other purposes, 95

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possibly no pious sentiments will stop the nation from using it that way.' India detonated a plutonium weapon with an explosive yield of 5–12 kilotons at Pokhran on 11 May 1974. Indira Gandhi was informed of the successful test with the coded phrase 'The Buddha has smiled.' (India chose not to test again till May 1998, followed less than two weeks later by Pakistan.) But India needed a delivery system for the weapons. In 1983 the Integrated Guided Missile Development Program was set up under the leadership of the renowned rocket engineer Abdul Kalam. In 1988 India tested its first short-range surface-to-surface missile, and by April 1999 it had a missile that could fly 2,000 km, deep into the heart of China. India has a stockpile of plutonium sufficient for between 55 and 110 weapons, and about 30–35 nuclear warheads, including up to 20 nuclear bombs that could be deliverable by Jaguar or Mirage 2000 aircraft. The rest could be fitted to Agni or Prithvi missiles.

Pakistan's Atomic Energy Commission was established in 1954, began 150 operating its first research reactor in 1965 and opened its first commercial reactor in 1970. After the 1965 war with India, many amongst the Pakistani intelligentsia pressed for the development of nuclear weapons, and the then Foreign Minister, Zulfiqhar Ali Bhutto, declared that if India developed an 155 atomic bomb, Pakistan would follow 'even if we have to eat grass or leaves or to remain hungry'. After Pakistan's defeat in the December 1971 war, Bhutto became prime minister and accelerated efforts to make the bomb for some, 'an Islamic bomb'. In 1975 Dr Abdul Oadeer Khan, a metallurgist who had worked at an enrichment plant in the Netherlands, returned home, bringing with him classified design information and lists of 160 component suppliers in the West. By 1979 Pakistan had achieved enrichment of small quantities of uranium. Since then, Pakistan is estimated to have produced sufficient enriched uranium for 25-50 bombs. Each year it produces enough for another 4–6 bombs, including up to 20 165 bombs that could be dropped from F-16 fighter jets. The remainder could be fitted to Shaheen, Ghauri or Hatf missiles.

> Even a limited exchange would leave large areas of India practically uninhabitable and all of Pakistan's food and water contaminated. Despite the experience of dealing with a tsunami, humanitarian assistance experts say that:

We don't even know where to start in thinking about how to deal with a humanitarian crisis on this scale. There are simply no models for it. We don't even know how we would get aid in the immediate aftermath [2].

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International Physicians for the Prevention of Nuclear War (IPPNW) asserts that there cannot be any effective medical response to a nuclear attack: 'In the case of a nuclear attack, don't bother to call your physician.' These weapons destroy the very systems and institutions that can help in more 'normal' disasters: firefighting, hospitals and other emergency

services (typically located in city centres, which are likeliest to be hit). According to the first scientific study of how much damage a 15-kiloton bomb dropped on Bombay would cause, over the first few months, between 150,000 and 850,000 people would die [3]. Yet India has also attempted to design a defence, using its underground Metro system to provide bunkers to prevent decapitation of its leadership, and giving iodine to citizens to protect them from the effects of some of the radiation. Such protective measures were rejected as unfeasible by most in the West 50 years ago.

#### Purported benefits of nuclear weapons

90% of Indians are cited as taking pride in their bomb; in Pakistan the feelings are similar. Both Abdul Kalam and AQ Khan became national heroes, and the former is now President of India. The arguments used by proponents of nuclear weapons in India are multiple.

The first argument is security. Initially feeling that nuclear weapons gave them the upper hand against Pakistan, Indian decision-makers now see Pakistan's demonstrated capability (if they believe the Pakistani test not to have been a sham) to reinforce the need to maintain armaments. Though India has fought three wars against Pakistan, many policy makers see China as the real threat. Indians remember Nehru proclaiming *Hindi Chini bhai bhai* ('India and China are brothers'), and felt betrayed when their socialist brothers attacked in 1962. Not long after that China acquired nuclear arms and India felt incapable of a response. This argument for security against neighbouring powers seemed justified recently, when the US attacked nonnuclear Iraq while leaving a possibly nuclearly-armed North Korea alone.

Indians continue to see their nuclear programme as peaceful. Unlike some nuclear-weapon states (though like China), India has committed itself not to launch a first strike with nuclear weapons. We are even told that India's nuclear weapons could be an incentive for other countries to disarm.

The second set of premises for the possession of nuclear weapons is pride and honour. Indians – who have launched satellites, manage much of the information technology needs of the US and have more English-speaking technical personnel than any other country in the world – believe that to deny they can keep weapons safely smacks of colonialism.

The nuclear Non-Proliferation Treaty (NPT) that others want India and Pakistan to sign is discriminatory. The five recognised nuclear-weapon states are disregarding their obligations under Article VI of the treaty, attempting to maintain possession of their arsenals indefinitely and at the same time denying others the same security alleged to be afforded by these weapons. Having the bomb makes India a player on the international stage: for some Hindu nationalists it is a question of a response to Islamic nations having the bomb. The bomb was certainly a technological marvel in 1974, helping to gain India notice (and most Indians believe respect) by nations 185

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such as the US. And as the five recognised nuclear-weapon states are also the five permanent members of the Security Council, Indians believe that the possession of nuclear weapons may be their ticket to such recognition.

Pakistanis are also sold the arguments of security in response to India's weapons and of national pride. I grew up in an Indo-Canadian household, a child of refugees from what is now Pakistan, and I have heard these arguments regularly. Though ostensibly rational, how valid are they?

### 235 Nuclear weapons as a defence

In peace studies, security implies not just protection from physical harm but access to resources to meet basic needs. It is only in an illusory psychological dimension that operates at the level of belief systems that nuclear weapons arsenals provide any security. Killing more of the other side offers no more real security, so for nuclear weapons to provide security they must act as a deterrent.

Deterrence is premised on certain necessary underlying assumptions. Firstly, the deterrent message must have some degree of credibility: the deterrent must be capable of inflicting unacceptable damage. Secondly, the threatening nation must have the plans and the readiness necessary to demonstrate that it can deliver on its 'message'. Thirdly, it must successfully communicate this message to its opponent. For deterrence to succeed, states must be physically, psychologically and emotionally prepared to commit genocide.

On the other hand, an opponent's fear of retaliation may or may not prevent them from launching a nuclear attack based upon irrationality, faulty information, human error, or even mechanical or computer malfunction.

### The circular logic of nuclear weapons

Nuclear weapons now are primarily useful to 'protect' against other nuclear weapons. While proclaiming friendship and citing no real reason to believe the other might launch a first strike, the US and Russia continue their policies of targeting, high alert status, and launch on warning. Even with the perceived dangers of the recent turn of the millennium such as computer malfunction, the only safeguards each could imagine were sending members of their militaries to the other side. And both, while proclaiming their own peaceful intentions, continue to maintain their stockpiles to deter the other. Britain and France see it as impossible to disarm as their weapons give them independence. The enemies that they might target are unknown.

Deterrence theory held that nuclear powers were less likely to launch conventional attacks on each other. Pakistan was not deterred from supporting insurgents in Kashmir after India's 1974 test. The aftermath of the conflict in Kargil, Kashmir, refuted the argument that two

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nuclearly-armed states would not menace each other, with Pakistan tacitly supporting attacks on both the Kashmiri and Indian Parliaments. With the prevention argument discredited, the debate now shifts to the untestable – mitigation: that the damage from each of these inevitable events was limited by each side's fear of the other's nuclear arsenal.

From 1964 to 1974 China held nuclear superiority over India; what was it able to do differently during that time, than before or afterwards, in terms of opposing Indian interests? China is now so occupied with its own economic concerns and advancement that there are few situations in which it might be prepared to attack without major provocation or to accept any significant military damage from conventional retaliation. The only areas in which it might conceivably see its interests threatened enough would be over matters of national honour such as Hong Kong, Taiwan or possibly Tibet.

Deterrence to nuclear attacks in today's world does not appear to be primarily military. Even if Pakistan were capable of launching an attack with its current delivery systems, would it risk a change of wind dropping fallout on it, conventional retaliation and world opinion?

Some say that India's weapons will motivate the big powers to disarm, but others may perceive a different message. If India needs weapons to be secure, what of others in the region – Bangladesh, Sri Lanka and Nepal? An article claimed that nuclear weapons protected the peace by maintaining a delicate balance of terror [4]. I wrote in response that:

it was terrible logic. Iraq wants nuclear weapons to balance Israel's, which built them to balance Arab conventional superiority. Pakistan wanted to balance India, which had to balance China, which had to balance Russia, which had to balance the US and its allies, which had to balance Russia's presumed European-theater superiority. Throughout this balancing act, the world has been no more than 30 minutes away from Armageddon. The only logical way to keep nuclear weapons out of the hands of madmen is to renounce them ourselves [5].

The argument for possession of nuclear weapons by the superpowers shifted seamlessly from the balance of nuclear terror or mutually assured destruction to being a response to terrorists or rogue states after the Cold War. Yet in 2002 the then Indian Foreign Minister, Jaswant Singh, acknowledged that nuclear weapons made India more insecure, when the weapons got in the hands of the 'bad guys':

The abolition of nuclear weapons, through 'a multilaterally agreed, legally-binding undertaking', had acquired a pressing imperative. 'It has taken on a new urgency with the current rise of non-state actors as powerful military threats.' 'Availability of arms and weapons in the hands of terrorists and insurgents who operate impervious to the law and 275

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outside its realm is a major challenge to the maintenance of peace in the world [6].

## 320 Security challenges and costs

India fights insurgencies in its northeast and in Kashmir, and in the past has had to deal with Tamil Tigers in the south and Sikh Khalistani supporters in the north, each of whom have assassinated a prime minister. To its credit, Indians refused to follow those who preached hate and intolerance and have thrown out governments that tried to profit politically from events such as 'honour' killings perpetrated for a wide range of offences including marital infidelity, pre-marital sex, flirting, bride burnings, the demand for dowries, and the caste system. In 2002 riots caused the deaths of 2,000 Muslims, countless burnings, rapes and 100,000 refugees, 40% of them children. This was in response to the killing of 58 Hindus returning from the disputed site of Ayodhya, when their train was set alight as it pulled out of a station in Godhra, Gujarat.

India has many problems, which have been identified by the United Nations Development Programme. 200 million people are without clean water, 400 million people live in poverty, 600 million without proper sanitation, and there is a lack of spending on health care, electricity and education.

The economic costs of a nuclear bomb programme are huge. It is calculated that the US's entire nuclear programme has cost them more than US\$5 trillion [7]. Only 7% of the costs are due to bomb-making, with much more spent on deploying and targeting, and on defending against others' bombs, and this does not include costs such as maintaining secrecy, waste management, dismantling, and compensating victims.

According to the Stockholm International Peace Research Institute (SIPRI), India's military defence expenditure amounted to US\$ 12.9 billion in 2002, making it the country with the 11th highest military expenditure in the world. However, when national military expenditure is compared on a purchasing power parity (PPP) basis, India, with an expenditure of US\$ 66.2 billion in 2002, ranks third in the world after the US and China, while Pakistan with a military outlay of \$14.2 billion is ranked 15th in the world [8].

A very conservative estimate of the cost of the Indian nuclear weapons programme suggests that a minimum would be 800 billion rupees (Rs, approximately US\$18 billion) over a decade at 1998–99 prices, equivalent to 0.5% of India's Gross Domestic Product every year. The major component of these costs would be the outlay on delivery systems (missiles and nuclear submarines) and on a command and control system.

A comparison of defence with health and education (as a percentage of GDP in 1999) showed Pakistan spending 4.6% on defence, 0.9% on health

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and 1.8% on education. India was a little better with 2.3%, 0.9% and 4.1% respectively, but both countries significantly increased defence spending at the beginning of the millennium. Reallocating some of the resources devoted to nuclear weapons and the military to addressing social problems by investment in education, health and giving people hope could help address security issues also.

The annual outlay of Rs 70–80 billion (approximately US\$ 1.6–1.8 billion) on the nuclear weapons programme in 1998-99 prices was almost the same as the Indian government's total budget for school, university, technical and medical education, teaching and research of almost Rs 70 billion that year, and equivalent to the annual cost of introducing universal elementary education in India, an as yet unmet constitutional requirement of the government of India. The cost of the 20 MiG-29 fighters ordered by India in 1992 could have provided basic education to all 15 million girls out of school [9]. Others have shown that in a decade the spending on nuclear weaponisation could deal with the rural housing shortage of 15 million units. The cost of Rs 600 millions (approximately US\$ 13 million) for one Agni missile could provide for the annual operation of 15,000 primary health care centres. The Rs 5 billion (approximately US\$ 110 million) running costs of a missile production facility could provide drinking water to 37,000 villages under the Accelerated Rural Water Supply Scheme.

Prioritising reducing disparities rather than military spending could provide the rest of India with the security that the religiously pluralistic state of Kerala (with about 60% Hindus, 20% Muslims, 20% Christians and even a small Jewish community) has developed. Despite being one of India's poorest states, Kerala has escaped the violence that plagues much of the rest of India. In 2004, the Nobel Prize winning economist, Amartya Sen, comparing China and Kerala (with 30 million people) found Kerala's life expectancy was superior to China's: 74 to 71 years. The ratio of women to men in the total population in China is only 0.94, in India the overall average is 0.93; Kerala's ratio is 1.06, exactly the same as in North America and Western Europe, a ratio that reflects the survival advantages of women when they are not subjected to unequal treatment. Despite China's coercive birth-control policies, the fall in the fertility rate of Kerala has also been substantially faster than in China. Its infant mortality, which was the same as in China in 1979, when the latter began its current economic reforms (37 per 1000), has declined to 10 per thousand, while China's has only declined to 30 per 1000 [10]. I suggest that even putting the dollars devoted to the nuclear industry into providing for education of girls in Pakistan would provide far more conventional security for India than nuclear weapons provide!

#### Truth and its consequences

Truth, so sensitive that it must be kept even from oneself, becomes the first casualty of the nuclear age. Conservatives delight that the Soviet Union

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collapsed under the weight of its military spending. But the US citing of the fraudulent 'missile gap' as the way of causing the Soviet collapse was either a great miscalculation or a costly deception of its own people, who have been forced into massive debt for years to come. The US threatened the windmills of weapons in Iraq with real weapons and over three years later the GW Bush administration still apparently deludes itself into believing that war has made the country more secure. Meanwhile it failed to even remotely try to protect Iraq's fissile material, which may have disappeared into the hands of terrorists.

On 4 February 2004, Dr AQ Khan appeared on a state-run television network in Islamabad to confess that he had been solely responsible for operating an international black market in nuclear-weapons materials to Iran, Libya and North Korea. President Musharraf sounded shocked as he pardoned Khan, but few doubt that others in the Pakistani military or intelligence were aware, or even complicit in such activities.

But many in the West expect Pakistan, Iran and North Korea to follow international norms such as the NPT while brazenly flouting it themselves. In its Advisory Opinion, the International Court of Justice stated that the use or threat of use of nuclear weapons is generally contrary to international law, except in the extreme case where the possible survival of a state was at stake; even in this instance, any use would have to comply with international humanitarian law.

What of the argument that Indians and Pakistanis are as rational as Americans and Soviets (an argument that I, of South Asian birth, might like to support)? Unlike the US and the former Soviet Union, which had as much as 30 minutes to react between a suspected missile launch and impact during the Cold War, missile flight-time between some of India's and Pakistan's biggest cities, such as Delhi and Lahore, Karachi and Mumbai, is 3–8 minutes – far too short an interval to cancel missile launch orders.

### **Cognitive distortion**

We have designed societies that are dependent on nuclear weapons militarily, psychologically, economically, institutionally, and politically. Otherwise intelligent people believe that nuclear weapons have prevented nuclear war, yet only the threat of these weapons could cause nuclear war. The argument that nuclear weapons prevented a world war during the Cold War is similar to the argument used during the period prior to the First World War that the alliance system was actually preventing war, when in retrospect, most historians believe it to have been a major triggering factor. How can such a system, which at best has some sort of perverse internal logic, continue?

Lifton defined 'nuclearism' as: 'psychological, political, and military dependence on nuclear weapons, the embrace of weapons as a solution to a wide variety of human dilemmas, most ironically that of 'security'.'

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(1) He also coined the term 'psychic numbing' – an incapacity to feel or confront certain kinds of experience due to the blocking of inner imagery connected with such an experience [11]. In a horrific or inescapable situation, this is a protective survival mechanism, but in a situation that one can change, psychic numbing is maladaptive and threatens survival.

Nuclear weapons have caused distortions in our thinking and even affected us spiritually. We seem prepared to sacrifice all else, including health and well-being, for the fiction of pride and security, when the weapons demonstrably lead to insecurity and should be a cause for shame. Indifference to their effects may represent tolerance, and we can certainly argue that this perception is based on fear and lack of control. Amartya Sen cited his fellow Bengali Rabindranath Tagore, who argued in 1917 that if 'in his eagerness for power', a nation 'multiplies his weapons at the cost of his soul, then it is he who is in much greater danger than his enemies' [12,13].

In medical practice I have noticed something even more familiar about the arguments to keep nuclear weapons: they echo the arguments that I hear from alcoholics, and to a lesser degree drug addicts and smokers. I have been told by alcoholics that alcohol is the only way they can relax, be respected by their associates, be the life of the party. For some it appears to be the only way of dealing with panic attacks; others claim against all evidence that it helps them concentrate and makes them better drivers. Some deny the physical consequences from high blood pressure, cirrhosis, or cancers of head, neck and oesophagus, pointing to their associates who drink more than they do, or to others who have lived long lives and drank heavily. Others claim that they are only hurting themselves, and, told that they may be setting a bad example for their children, say that their children will learn from their bad example, or that they have told them not to drink and the kids will listen.

But these perceptions are self-deception. They cannot sleep and are more anxious. Occasionally families may also buy into these arguments, but more often than not, their families avoid the alcoholic and try to hide their problems from the outside world.

By analogy with substance abuse nuclear weapons are guilty of causing international legal, social and interpersonal problems, impeding the ability of governments to meet their basic obligations to their citizens, particularly in health and education, and may even have endangered physical security.

#### Hope for the future

If nuclearism is an addiction, what of treatment? As with alcohol, we must develop an ability to reject the common but illogical premises in its support in order to avoid the major physical damage that nuclear weapons can cause our planet. Indians justifiably take pride in their exports to other countries of technology, doctors, computer scientists, and engineers. They feel proud to be launching satellites, being self-sufficient in food and accepting no foreign aid. The social milieu of acceptability of nuclear weapons as 455

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currency in the international community may need to change. Countries without the nuclear bomb such as Germany, those whose militaries are forbidden to fight aggressive wars such as Japan, and those without an army such as Costa Rica, have ample reason for pride. If the UN Security Council is expanded, India will be the only nuclear power among those countries proposed for admission, but it is likely that makes it a candidate is its size and strategic value rather than its nuclear weapons.

## 505 Peace through health: the role of physicians

As physicians we have a special role in ridding the world of the blight of the nuclear menace, as has been described in a model of Peace through Health [14]. We have the knowledge, skills and values to do so effectively. Physicians are respected for being thoughtful, impartial, altruistic and caring, for understanding mental health processes, and for knowledge of epidemiology which allows us to see through the smoke of nuclear weapons as a defence. We must explain the consequences of nuclear weapon possession and use – physical, psychiatric, social, legal, interpersonal, occupational and spiritual problems that this addiction entails – to help change society from a sociocultural milieu that accepts weapons possession, a political system that rewards weapons possession and a media that takes for granted the illogical assumptions of our leaders. We must inform people of the psychological consequences of unilateralism and disregarding world opinion: these create a climate of fear, hatred, anger, humiliation and anxiety, which does not enhance our own security.

A Twelve-Step Program to End Nuclear Weapons Addiction has been proposed:

- Nuclear Weapons Convention enforcement;
- Showing weaknesses and fallibilities of deterrence;
  - Publicly acknowledge the illegality of the threat or use of nuclear weapons under international law as stated by the International Court of Justice in its 1996 opinion;
- Publicly acknowledge the immorality of threatening to annihilate millions;
- De-alert all nuclear weapons and de-couple all nuclear warheads from their delivery vehicles;
- Declare policies of No First Use of nuclear weapons;
- Establish an international accounting system for all nuclear weapons and weapons-grade nuclear materials;
- Sign and ratify the Comprehensive Test Ban Treaty;
- Re-affirm the commitments to the 1972 Anti-Ballistic Missile Treaty;
- Support existing nuclear weapon-free zones;
- Set forth a plan to complete the transition under international control and monitoring to zero nuclear weapons by 2020;

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• Begin to reallocate the billions of dollars currently being spent annually for maintaining nuclear arsenals (\$35 billion in the US alone) to improving human health, education and welfare throughout the world [15].

In the West we must acknowledge that the NPT, as it is interpreted by the nuclear-weapon states is discriminatory and acknowledge that US policy in particular has been hypocritical. IPPNW and its affiliates must continue to press the nuclear-weapon states to comply with their 'unequivocal undertaking' given at the 2000 NPT Review Conference 'to accomplish the total elimination of their nuclear arsenals leading to nuclear disarmament'.

I am proud of India, of its history of tolerance of religion and multiethnicity, and spoke about this last year at a gathering of Nobel Laureates in Rome. Indians and Pakistanis must make themselves better at this time. In renouncing nuclear weapons, India and Pakistan can become beacons to the world, to develop a culture of peace.

On the sixtieth anniversary of the atomic bombing of Hiroshima and Nagasaki the Mayors of Hiroshima and Nagasaki, along with the co-Presidents of IPPNW and the late Sir Joseph Rotblat, the 97-year-old Nobel Peace Prize-winning physicist, made an appeal to the world:

Morality is at the core of the nuclear issue: are we going to base our world on a culture of peace or on a culture of violence? Nuclear weapons are fundamentally immoral: their action is indiscriminate, killing people alive now and generations as yet unborn. And the consequence of their use might be to bring the human race to an end. We do not believe that the people of the world would accept a policy that is inherently immoral and likely to end in catastrophe.

We all have a common interest: survival. We have to move forward from a now outdated security system based on nuclear deterrence and alliances, to one based on cooperation and allegiance to humankind. In the words of the Russell-Einstein Manifesto, signed by Albert Einstein as one of the last acts of his life: 'We appeal, as human beings to human beings: Remember your humanity and forget the rest. If you can do so, the way lies open to a new Paradise; if you cannot, there lies before you the risk of universal death. Above all: remember your humanity.'

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