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By Jonathan Power

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CAN WE GET RID OF NUCLEAR WEAPONS?

Jonathan Power*

The art of war has now advanced to the point where it can threaten extinction, if not of the whole planet certainly of whole societies. The arsenal of nuclear weapons, at one time, only a few years ago, was powerful enough to destroy whole continents. The blasts on the eve of the end of the Second World War, at Hiroshima and Nagasaki, can now be repeated one million times. The remains would not be merely the broken arches of the Caesars, the abandoned viaducts and moss-covered temples of the Incas, the desolation of one of the pulsating hearts of European civilization, Dresden or the human emptiness of Hiroshima, but millions of square kilometres of uninhabitable desolation, and a suffering which would incorporate more agony than the sum of past history. It would be a time when "the living would envy the dead" and it would be a world which might well have destroyed the legacy of law, order and love that successive generations have handed over the centuries to another, often enough each one determined to improve on what went before.

In 1996, in testimony before the International Court of Justice, the mayor of Nagasaki recalled his memory of the American nuclear attack. "Nagasaki became a city of death where not even the insects could be heard. After a while, countless men, women and children began to gather for a drink of water at the banks of the nearby Urakami river. Their hair and clothing scorched and their burnt skin hanging in sheets like rags. Begging for help they died one after another in the water or in heaps on the banks. The radiation began to take its toll, killing people like the scourge of death expanding in concentric circles from the hypocenter. Four months after the atomic bombing, 74,000 people were dead and 75,000 had suffered injuries, that is, two-thirds of the city population had fallen victim to this calamity that came upon Nagasaki like a preview of the Apocalypse."

At the height of the Cold War the superpowers, together with France, Britain and Israel, possessed 100,000 nuclear warheads, equivalent to two million of this weapon dropped on Nagasaki.

The great president of France, Charles de Gaulle, observed, "After a nuclear war, the two sides would have neither powers, nor laws, nor cities, nor cultures, nor cradles, nor tombs." Nikita Khrushchev who presided over the Soviet Union in the days of the Cuban missile crisis later wrote, "When I learned all the facts about nuclear power I couldn't sleep for several days. Then I became convinced that we would never possibly use these weapons, and I was able to sleep again." The scientific chief of the Manhattan project that developed the first American nuclear test, Robert Oppenheimer, wrote, "At that moment ...there flashed through my mind a passage from the Bhagavad-Gita, (he sacred hook of the Hindus: "I am become Death, the shatterer of Worlds." And Arundhati Roy, the prize-winning Indian novelist, wrote after the first Indian nuclear weapons test in 1998, "If there is a nuclear war, our foes will not be Pakistan, China or America or even each other. Our foe will be the earth it self. Our cities and forests, our fields. And villages will burn for days. Rivers will turn

* A columnist, activist and filmmaker, Mr. Power is one of the leading opinion makers of the world. He writes regularly for the *International Herald Tribune, Prospect* (Britain's most influential monthly) and *The Statesman* (India). Mr. Power was editorial advisor for the Independent Commission on Disarmament and Security chaired by Olof Palme. Along with his wife Jean-Christine Eklund, he lives in Lund (Sweden).

to poison. The air will become fire. The wind will spread the flames. When everything there is to burn has binned and the fires die, smoke will rise and shut out the sun. The earth will be enveloped in darkness, there will be no day-only interminable night."

There are two main issues in any discussion on nuclear weapons, moral and political. For some nuclear armaments are so wicked, so evil, in their capacity to execute life as we know it that there can be no talk of modifying or controlling them; they must be banned, if necessary unilaterally renounced. Deterrence, even if it could be proved to have kept the peace, is profoundly immoral in concept and in tone, for the threat to destroy is as wrong as the act itself.

This latter observation is true. But equally it can lead to the conclusion that we have to deal with the problem by multilateral means — by agreement between the antagonistic nuclear parties — rather than by unilateral cuts. The means of getting rid of them is as important a moral issue as the means of deterrence. If the reduction of a part of the stockpile were done in such a way as to increase instability and the likelihood of war, this would as reprehensible an act as one which provoked war by initiating a new round in the arms race, or which caused untold suffering and grief by being the first to use nuclear weapons.

Thomas Nagel, in his essay "War and Massacres"[1] has suggested we are working between two poles of moral intuition. We know that there are some outcomes that must be avoided at all costs and we know that there are some costs that never can be morally justified. We must face the possibility, Nagel argues, "that these two forms of moral intuition are not capable of being brought together into a single coherent moral system, and that the world can present us with situation in which there is no honourable or moral course for a man to take, no course free of guilt or responsibility for evil."

But we have to be careful not to be carried away with the tortuous logic of such an argument. I suspect that John Mearsheimer, America's pre-eminent balance of power theorist, might even find comfort in this rather fine moral balancing. He has called nuclear weapons "a powerful force for peace", that worked as they were meant to as the perfect deterrent during the Cold War. Today, he advocates "well-managed" proliferation. He would like to see Germany armed with nuclear weapons and even would "let proliferation occur in Eastern Europe.

One thing that is quite remarkable about the proponents of nuclear weapons is not so much their moral certainty that they are saving the world from more and more wars than already occur, it is the elegance with which over more than half a century they have refined their arguments. One mark of entry into the rather exclusive circle of high level strategic thinking is the intellectual ability to be able to turn a bald argument into a graceful phrase — what Barbara Ward once called the fatal felicity that distinguishes their books and articles from what might otherwise be termed Machiavellian gobblygook. Their chat, when stripped of its well cut cloth, is as banal as a man disrobed. As General George Lee Butler summed up his life as head of the U.S. Strategic Air Command the man responsible for putting into action a president's order to begin a nuclear attack) "I spent hours at the blackboard, walking my students through those convoluted corridors: flexible response, assured destruction, essential equivalence and the dynamic between strategic offence and defence...As I puzzled through all this, I became, to some extent, enthralled by it. Here was an intellectual

[1] Quoted in *Just and Unjust* wars by Michael Walz, (Allen Lane, 1978), p.325.

riddle of the most intricate kind — a puzzle to which there appeared to be no solutions. The wonderful title of Herman Khan's book, *Thinking about the Unthinkable* captured the dilemma perfectly: that it is unthinkable to imagine the wholesale slaughter of societies, yet at the same time it appears necessary to do so, in the hope that you hit upon some formulation that will preclude the act; but then in the process you may wind up amassing forces that engender the very outcome you hope to avoid."

During the relatively long history of nuclear deterrence during the Cold War there was always something going on that gave the more sophisticated insiders a reason for doubt. During the election campaign of John Kennedy much was made by him that the U.S. was vulnerable to a pre-emptive attack by the new Soviet heavy missiles. Partly under the impetus of this so-called "missile gap," the U.S. then developed its own heavy missiles armed with multiple warheads. Only later did the great theoretician of nuclear balance, Henry Kissinger, admit that this development had made the process of negotiating missile limits with Soviet Union much more complex.

Similarly, much later on in the 1980s, under the threat of the newly deployed short range heavy Soviet missile, the SS-20 in Europe, Chancellor Helmut Schmidt led a mighty campaign that tore at the heart of European political life to introduce into Western Europe a new American rocket, the Pershing, to counterbalance the SS-20 and to tie more closely America's destiny in with Europe's. Yet it was never clear, as again Kissinger, disarmingly confessed, if America would launch a nuclear assault, once Europe had been attacked, since this would mean making U.S. cities vulnerable to a similar bombardment. Speaking in Brussels in 1978 Kissinger made it clear that he believed the U.S. would never initiate a nuclear strike against the Soviet Union, no matter what the provocation. "Our European allies should not keep asking us to multiply strategic assurances that we cannot possibly mean or, if we do mean, we should not execute because if we execute them we risk the destruction of civilization." Moreover, as Mr. McGeorge Bundy, the former National Security Advisor to President Kennedy wrote, the Pershing deployment row was all quite unnecessary, because if an imbalance had developed in Europe all that had to be done was to move an American nuclear-armed submarine into the Baltic and Moscow would be under the hammer of a missile with a flight time of less than three minutes (Leningrad even less).

Even at the apogee of America's nuclear arsenals there was always the worry that with its submarines close offshore to Washington the Soviet Union could decapitate the American command structure almost before it had time to blink. (Desmond Ball of the International Institute for Strategic Studies and John Steinbrunner of the Brookings Institution were the single most influential contributors to this argument.)

In the early 1970s Bruce Blair served as an air force launch control officer for Minuteman nuclear missiles in Montana. Now he is a senior fellow at the Brookings Institution and has become, as the *Washington Post,* described him "the leading expert" on nuclear command and control. More than anyone else, apart from General Butler, he has shown up the startling inconsistencies of U.S. launch policies. In public the position has been consistent over many administrations - in order to deter the Soviet Union the U.S. must possess an invulnerable force capable of surviving a first strike and then retaliating afterwards. The purpose of this posture was to give the President a second choice on receiving a warning that a Soviet nuclear attack was on

its way. On the supposition that the warning could be wrong (and there had been many such due to computer malfunction and other deficiencies in the system) or that the attack was an unauthorized one (launched by a "rogue" or mentally deranged Soviet officer — and the U.S. itself had two or three near disasters with its own officers); or that the Soviet leadership had decided only on a limited attack (which the U.S. had spent years persuading them that if nuclear war should ever come to be it should start gradually to give diplomacy a final chance before Armageddon), or the belief was the President needed time to judge what was actually occurring and the flexibility to go with it.

Blair demonstrated, however, that he was almost never called on lo carry out a drill in which he fired off his missiles after the U.S. had sustained a full-scale Soviet attack. Instead (hey were drilled to fire in situation where no Soviet attack had occurred. The U.S. was preparing either to launch on warning of an incoming attack or even pre-emptively.

The short answer to those who say "deterrence" worked during the Cold War is that, technically speaking, it never quite existed. George Butler has made this point in his uniquely devastating way, "[Deterrence] is fatally flawed as a logic in two respects. First and foremost deterrence required that you make yourself effectively invulnerable to an enemy's attack. In the nuclear age, the requirements are especially high, because the consequences of even one nuclear weapon slipping through your defences are going to be catastrophic. Yet your perfect invulnerability would spell perfect vulnerability for your opponent, which of course he cannot accept. Consequently, any balance struck is extremely unstable and each side is led to build larger and larger arsenals, to discover more and more elegant technologies. Yet these never strike the desired balance either — the second logical flaw — because in the history of warfare from which nuclear war is not immune, neither the offence nor the defence has ever remained dominant for any significant period."

What Butler has convincingly demonstrated was that although deterrence was the aim the competitive nuclear arms race effectively turned the doctrine of deterrence on its head. It became a circle that could never be squared. Because by conveying to the enemy the ability to retaliate massively even if attacked, your forces in a state of alert that from the enemy's point of view looks as if you are preparing for a pre-emptive first strike. Whatever the theorists have said at the operational level the requirements of deterrence have proved to be impracticable. "The consequence was a move in practice to a system structured to drive the president inevitably toward a decision — one that he would have at the most one or two minutes to think about to launch under attack or on warning of one. Indeed it would be difficult for any president (assuming he were still alive) to override a decision to fire. Since there were provisions to delegate this authority down the line if the president were incapacitated who is to say what might happen under the stress of a supposed attack. Senior officers might assume, if communications were interrupted, that the president was incapacitated and take the decision into their own hands. Besides, submarine commanders at sea have long possessed autonomy when submerged and unable to make radio contact with headquarters. There has always been a contradiction between the necessity to be submerged to ride out a supposed attack and the need to surface to receive an up to date order.

It is true of course that this nuclear stand off did work to produce great caution among the protagonists. But it worked best when needed least. When there was a crisis as over the decision by Khrushchev to introduce short range nuclear-tipped missiles into

Cuba "deterrence appeared to become almost irrelevant."

"Talk to Robert McNamara (Kennedy and Lyndon Johnson's Secretary of Defence) and others." says Butler, "They will tell you there was not real talk of deterrence in those critical thirteen days. What you had was two small groups of men in two small rooms, groping frantically in an intellectual fog, in the dark, to deal with a crisis that had spun out of control."

It was this experience together with the failure of his Vietnam policy that led McNamara to question the whole basis of nuclear deterrence. In fact the doubts began early during the first year of his time in office. He told both Presidents Kennedy and Johnson that he "recommended without qualification, that they never initiate, under any circumstances, the use of nuclear weapons, I believe they accepted my recommendations."

He confessed this in an article in *foreign Affairs* magazine in 1983 and he was immediately accused of single-handedly destroying the West's nuclear deterrent. "In reality", he later wrote "I was destroying the *illusion* of nuclear deterrence." lie knew from the inside, so he believed, that no American president "under any conceivable circumstances" was going to authorize the use of NATO nuclear forces in response to an attack on Western Europe using only conventional Soviet-controlled Warsaw Pact forces. "In truth, for nearly 40 years, with respect to our stated nuclear policy, it could be said the emperor had no clothes."

Outsiders may wonder how this policy to use nuclear weapons in the case of a Soviet conventional attack survived unmarked for so long. It is as McNamara has revealed and as Butler personifies "because so many who had served in the West's nuclear chain of command (including the time of Presidents Kennedy and Johnson) had not revealed their true beliefs regarding the utility of nuclear weapons because of their institutional commitment to the standing NATO policy of potential first use of nuclear weapons against a Warsaw Pact Conventional force attack in Europe."

In Europe, a one time protagonist of the standard NATO view, the former Chancellor of Grmany, Helmut Schmidt who spent much of his political capital in persuading the European electorate to beef up U.S. nuclear forces on European soil later admitted in l987 in a BBC interview, "Flexible response [NATO's weapons calling for the use of nuclear weapons in response to a Warsaw pact attack by non-nuclear forces] is nonsense. Not out of date, but nonsense ... The Western idea, which was created in the 1950s, that we should be willing to use nuclear weapons first, in order to make up for our so-called conventional deficiency, has never convinced me."

Nevertheless, for all his inhibitions, McNamara makes clear that even he would have gone along with the use of weapons if there was a nuclear attack on the U.S. Writing about the threat of Fidel Castro to use his Soviet nuclear weapons if the U.S. had launched a conventional attack on Cuba "no one should believe that had American troops been attacked with nuclear weapons, the U.S. would have refrained from a nuclear response. And where would it have ended? An utter disaster."

It appears that so embedded in the military chain of command was the notion of replying with nuclear weapons if an attack was launched that no one individual, neither a Butler-type who had his finger on the real button, nor a President Kennedy-type who had a great moral loathing of nuclear weapons, could have avoided or resisted the impetus to do what they had been laboriously drilled to do.

But that is speculation. Never has a former U.S. president gone on the record on this point. The nearest we get to an insight is a remarkable interview conducted by Jonathan Schell of *The Nation* magazine with the former Soviet president, Mikhail Gorbachev. "I recalled that when I was trained in the use of the nuclear button or the nuclear suitcase, I once was briefed about a situation in which I would be told of an attack from one direction, and then, while I am thinking over what to do about that, new information comes in — during these very minutes — that another nuclear offensive is coming from another direction. And I am supposed to make decisions!" Gorbachev laughed. "Nevertheless, 1 never actually pushed the button. Even during training, even though the briefcase was always there with my codes, and sometimes it had to be opened. I never touched the button."

And when Schell pressed him with the most difficult of all questions, "Would you have given the order to use nuclear weapons in retaliation for a nuclear attack." He replied, "Well, let me tell you right off that this did not concern me, not because I lacked the will or the power, but because I was quite sure that the people in the White House were not idiots."

(Even so, Gorbachev, like most people close to the chain of command, was pre-occupied about "nuclear weapons might be used with the political leadership actually wanting this, or deciding on it, owing to some failure in the command and control systems.")

This is a very different way of looking at nuclear weapons given me by Zbigniew Brzezinski, the influential former National Security Advisor to President Jimmy Carter. In a long full-page interview he made with me[2] whilst in office he observed in reply to my question "could he recommend to the president that he push the button and kill millions of people?" "I certainly think I would without too much hesitation if 1 thought someone else was launching a nuclear attack on me." To which I said would you still do this knowing that it might make the chance of the regeneration of human society that much more difficult, even impossible. "Well first of all that is all baloney," replied Brzezinski. "As far as human society and all that is concerned it sounds great in a rally. The fact of the mailer is and I don't want this to be understood as justifying nuclear weapons about 10% of humanity [500 million people] would be killed.

Now this is a disaster beyond the range of human comprehension. It is a disaster that is not morally justifiable in whatever fashion. Bui descriptively and analytically it's not the end of humanity."

He also added in a sentence he asked to be removed from publication according to the rules of a pre-interview agreement.[3] "I actually feel that if I and the society live in were going to be destroyed that I would want the satisfaction of knowing our enemy's society would soon be destroyed too."

While this admission reflects with almost naive honesty the darker reaches of the human soul common to many policy makers and military officers, it would be a dreadful mistake to assume that is or was the dominant mode of thought. The moral

[2] Printed in the *International Herald Tribune* and the *Washington Post*

[3] Alter a 25-year delay, I have decided that enough time has passed for such an agreement to have lapsed, as is the practice with much U.S. Government secret documentation.

revulsion of the use of nuclear weapons at all times during the Cold War ran perhaps equally strongly the other way- and with it an almost rabid urge to get rid of them and the moral dilemmas they posed for unhappy decision makers. How else to explain how the ultra-conservative but bomb-detesting president, Ronald Reagan came so near to agreeing with the Soviet president Gorbachev at their summit in Reykjavik in 1988 to get rid of all their nuclear weapons? Only the muscular intervention of their senior staff, who saw that both presidents could be impeached by their legislatures for such extraordinary behaviour, woke both men up to the other realities of power.

The more we examine the nuclear weapons policy the more we discover how boxed in everyone has become. The sheer inbuilt dynamic of the military-industrial complex, the legislatures, academia, public opinion at large and the press, the latter sheltering public opinion for much of the time from the tortured thinking of high-level policy makers, has made it impossible for any one individual, even a president as popular as Reagan, to find he has much room for breaking with the consensus. Only out of office might something individualistic be said and then as McNamara and Butler have found "the public recrimination can be quite poisonous," as Butler has observed and experienced.

McNamara's recounting of the dark 13 days of the Cuban missile crisis sheds some light (but not enough) on how policy making actually works when a decision to use nuclear weapons becomes only a step from reality. (None of the participants has demurred from the view that this was the occasion when the Soviet Union and the U.S. came closest to unleashing their nuclear arsenal.)

The dice with death ended only when the Soviet leader, Nikita Khrushchev, signalled his willingness to remove his newly placed nuclear missiles from Cuba, in exchange for a public pledge from the U.S. (revising its then current policy) that we would not invade Cuba and overthrow the government of Fidel Castro.

The crisis began when the U.S. discovered the Soviet Union had placed nuclear missiles in Cuba and that more were on the high seas en route to Cuba. The U.S. responded by mounting a naval blockade around Cuba. The Soviet ships were a mere 72 hours sailing time away. Richard Neustadt and Graham Allison in their book on the crisis recorded: "If the Russians held their course for a mere 72 hours, we would have had to escalate a step, probably by bombing Cuban sites. In logic, they should then bomb Turkish sites. (One of the triggers for Khrushchev's audacious move was that a few years before the U.S. had put nuclear missiles into Turkey, capable of reaching Russian territory without hardly any warning time.) "Then we.... Then they.... *The third step* is what evidently haunted Kennedy. If Khrushchev's capacity to calculate and control was something like his own, then neither might suffice to guide them both through that third step without holocaust."

It was McNamara who persuaded Kennedy's closest advisors, who met in almost continuous session for 13 days, that they should make it clear to Khrushchev that if a deal were closed on Cuba the U.S. would soon remove its missiles from Turkey. And it was Llewellyn Thompson, the former U.S. ambassador to Moscow who convinced Kennedy to ignore what Khrushchev later had said more aggressively and concentrate on his private letter which seemed to propose a pledge by Khrushchev to remove the missiles from Cuba in return for the U.S. pledge publicly not to invade Cuba.

Nevertheless, even McNamara with all his abhorrence of nuclear weapons, has to admit if Khrushchev hadn't seized this opportunity for a deal "a majority of Kennedy's

military and civilian advisors (and the inference is including himself) would have recommended launching air attacks on the missile sites in Cuba "which as everyone agrees would have led to a nuclear exchange".

McNamara over the years, under the influence of his experience, has moved from the position of being able, in his mind, at least to convince himself that nuclear weapons might have to be used (if not first, at least in replay) to where today he regards the actual continuing possession of nuclear weapons as both counterproductive and immoral.

His inference in retrospect seems to be that Cuba was a sideshow, albeit a horrendous one, that grew out of the Cold War confrontations in Europe. And now we know enough to understand that this central confrontation was very much a concocted confrontation. Neither side in fact coveted each other's territory. Stalin's ambitions in Europe were, by all the accounts of a majority of historians, satisfied by the Yalta settlement made with Churchill and Roosevelt. And neither side would have used nuclear weapons first on purpose, whatever their doctrines (and the Soviet Union was in thrall to the naive doctrine that it could actually win a nuclear war, exhibiting the same thought as some American neo-conservatives.)

Thus the Cold War, the 50 year of stand-off with nuclear weapons, was essentially a manufactured one, albeit manufactured by a mixture of paranoia, insecurity and ill—informed thinking. Yet not even in the best of times, at the end of the Cold War, could two powerful presidents, Reagan and Gorbachev, do much to unwind the nuclear bomb business, except at the margins.

In retrospect the Cold War years seemed to have passed relatively uneventfully. Although there was the crisis over the Soviet decision to blockade West Berlin and later over Cuba, and although both superpowers mercilessly used small and insecure Asian, African, Middle Eastern and Central American countries as proxy battlegrounds, never a shot in anger was fired between them. To that extent the fear of nuclear war gave both superpowers a self-discipline that they otherwise might have Found wanting. Of course such self-discipline could have been Formed by a mixture of empathy and diplomacy, but that would have taken a lot more imagination than both sides possessed.

The nuclear arms i-ace continued under its own internal dynamic, the numbers growing, as well as the range and the reach, and the destructive power as well as the number of warheads on each rocket. Despite the attempts under the Strategic Arms Limitation Talks (SALT), which stretched over the life of many administrations, the ceilings negotiated were modest in relation to the growth of technology and firepower. Only under the presidency of Ronald Reagan did SALT metamorphose into START (The Strategic Arms *Reduction* Talks) and for the first time some modest reductions were enacted. Under President Clinton, despite the ending of the Cold War, little effort was made to speed up this process and the greatest window of opportunity for nuclear reductions was to all intents and purposes ignored. Even the move in ogress to win ratification For the Comprehensive Test Ban Treaty, a goal of presidents since Kennedy, that would have worked not just to cap superpower arsenals but those of the would—be new nuclear powers, was defeated, for want of sustained presidential leadership. Only under President George Bush junior was an effort made to dramatically reduce the numbers of nuclear weapons. Yet even this attempt was I agreed with ambiguity. Bush insisted that the decommissioned nuclear

weapons be kept in storage. As for the Russian side, economic circumstances were compelling them to dramatically reduce their number anyway. Although both sides had long ago declared their days of enmity were over, although nuclear deterrence as a concept seemed to have been overtaken by events, still the superpowers kept thousands of missiles pointing at each other on hair-trigger alert with all the dangers of accidental or “rogue” launch that had been feared for years. Inertia seems to trump the small, if well argued, disarmament lobby of both sides. Possessing nuclear weapons became as important as flying the flag. It gave a country status — and this applies as much to France and Britain as it does to the U.S. and Russia — and it seems still to give grossly ill-informed electorates in all countries a false sense of security and self-esteem. Whatever demons there are still out there in the interplay among nations the one thing that will not be useful are the still massive number of nuclear weapons meant for old time superpower deterrence.

If the progress made in nuclear disarmament between the superpowers was both tenuous and verging on the superficial, even the cosmetic, there were over the years substantial positive moves made elsewhere in the globe. In 1986 much of the South Pacific, including Australia, New Zealand and Papua New Guinea made itself into a formal nuclear-free zone. (Later New Zealand went a step further and to Washington’s anger forbade U.S. battleships, supposedly nuclear-armed, from port calls.)

Six years later Ukraine, Belarus and Kazakhstan, all of whom inherited large quantities of nuclear arms when the Soviet Union broke up, went against what must have been a serious temptation to jump into the new nuclear league of economically underdeveloped countries with modern armaments and agreed to surrender them to Russia for dismantling. In 1993 on the eve of black rule South Africa confessed it had built six nuclear bombs but two years earlier had become the first country ever to abolish a nuclear arsenal. The following year Brazil and Argentina, two neighboring countries, that at one time competed to develop nuclear weapons formally announced they had renounced the effort and they finally ratified the 1967 Treaty of Tlatelolco that made South America a nuclear weapon-free zone. The African countries formally did the same.

In May 1995, the Non-Proliferation Treaty signed by 185 Nations, was extended indefinitely. But what should have been a landmark in arms control was in reality more a mark of failure, of promises made and broken by the big nuclear powers, who solemnly undertook to move rapidly toward nuclear disarmament if the Treaty were renewed committing signatories to renounce nuclear weapons. The Treaty was also flawed by a major loophole that any "rogue" nation could sail through one it had done its secret homework and was politically prepared to reveal its nuclear- bomb potential — all it had to do was to give six months warning that it was pulling out of the Treaty.

Back in the 1960s President Kennedy had foreseen a world by the end of the century that would have twenty or thirty nuclear bomb powers. In the event he was over-pessimistic. Only China moved fairly rapidly to join the nuclear club and a short while later Israel, with the connivance of the U.S., its stalwart over-protector, did the same. Later in the late 1980s and 1990s, South Africa, Pakistan and India either built bombs or were “a screwdriver” away from final assembly.

Back in 1982 the American strategic thinker Kenneth Waltz wrote a study for the International Institute of Strategic Studies arguing that the world had less to fear than perhaps it thought from the proliferation of nuclear weapons. "The alternative

to nuclear weapons" he said "for some countries may be ruinous arms races, with the high attendant risk of becoming engaged in debilitating conventional wars."

Waltz in his study, first drafted for the CIA, takes five arguments of those who believe that the spread of nuclear weapons as dangerous and shoots holes through them:

- Coups - It is true, he concedes, that Third World governments can come and go rather quickly. But those that are most coup-prone are the least likely to organize the technical and administrative teams necessary to develop a nuclear bomb. [But what about Pakistan?]
- Irresponsible leadership - There are or have been, he admits, leaders like Idi Amin (the dictator of Uganda). Yet when confronted with foreign countervailing pressure these leaders have been "cautious and modest". Egypt and Libya have been openly hostile since 1973 and there have been commando attacks and air raids, but neither side let the attacks get out of hand [But what about the Iran/Iraq war?]
- The military - Military governments are in power in most Third World countries. Yet military leaders are likely to be more cautious than civilians.
- Preventive strikes- The uneven development of new nuclear states would suggest that first-comers might decide to strike at their rivals before they had a chance to catch up. In practice it is difficult to be sure that the country one wants to attack does not have some warheads. Even if it has only rudimentary nuclear capability there is the prospect of retaliation.

  Expense- A nuclear weapons programme is thought to be expensive and open-ended. Not at all — only rich countries can afford to consider nuclear war and therefore get caught up in arms races to achieve successful first-strike capability. But Third World countries as long as they have enough for simple deterrence will be satisfied with a small arsenal. Moreover, having thus gained security they will run down (heir expenditure on conventional forces.

In conclusion, he wrote, "the pressure of nuclear weapons makes war less likely."

At the time this was considered very much a minority, if not outrageous, view. Over time as the reality of proliferation became more apparent even such stalwart traditional thinkers as John Mearsheimer began to be won over. Honest enough to take it to its logical conclusion Mearsheimer was able to argue on the eve of the second Gulf War that even if Iraq did possess weapons of mass destruction the U.S. was so superior in both nuclear and conventional arms that deterrence was working as effectively as it could and there was neither a need for war or indeed for the U.S. to openly brandish its nuclear arsenal.

Yet to many this "free thinking" school of thought appeared to be more a coming to terms with sins and omissions of the past than a creative way of dealing with new dangers. Although all the Western powers and the Soviet Union had been committed to controlling their exports to avoid proliferation there was a great deal of evidence to suggest that they knew their nuclear industries were less that watertight. France was particularly at fault, preparing at one time to build plutonium producing reactors for anyone who could pay. But even when the Carter Administration successfully persuaded France to ease up on its nuclear promiscuity industrialists from Germany to

Switzerland, to Britain to the U.S. itself, were able to get away with selling critical materials and the knowledge to go with it. As recently as 2003 the U.S. decided to prosecute Boeing for selling rocket knowledge to China a reminder of what has been going on for decades on without rigorous policing. Besides China had no compunction about aiding Pakistan if it would give its long standing though quiescent enemy, India, pause for thought. Similarly, after the invasion of Afghanistan by Soviet forces and the need to enlist Pakistan in the fight to drive them out a blind eye was turned by the anti-proliferation Carter Administration to Pakistan's nuclear programme. All attempts to pressure Pakistan were simply abandoned through an annual ritual of giving assurances that all was well in Pakistan's nuclear laboratories. It was not only an ill-conceived policy it was an unnecessary one. Only in 1990 with the Soviet occupation of Afghanistan defeated did President George Bush senior belatedly cut off military assistance. Even in 2002, after all the lessons learnt, in return for winning Pakistan's support in defeating the Taliban and pursuing Al Qaeda, Washington appeared to be turning another blind eye to Pakistan's latest acquisition of nuclear-capable rockets from North Korea.

Even on the carrot side great opportunities were missed. Much responsibility needs to be heaped on the shoulders of that most pacific of all American presidents, Jimmy Carter. At that time when India's prime minister was the near pacifist Morarji Desai it could have been possible to persuade India to renounce its pursuit of nuclear weapons if Washington had used a little more carrot and a bit less stick in its attempt to pressure India to sign a safeguards agreement on the use of spent nuclear fuel. The quid pro quo would have been for America to step up the pace in negotiating a Comprehensive Test Ban Treaty and to agree to get rid of its nuclear weapons at a faster pace. Yet Carter found him self unable to move faster, partly because of the degree of opposition to such arms control measures in the Senate. It was a missed opportunity of historic proportions. Such a compromise would not only have slowed the American-Soviet arms race. It would have made the Indian and Pakistan nuclear bombs more difficult to develop. Indeed, Desai might have been then strong enough politician to ram through the bureaucracy the policy he believed in - abolition of Indian work on nuclear weapons.

It is to be seen for how long Waltz's thesis will hold water. Although a nuclear war between India and Pakistan or between Iran and Israel would, unlike a superpower nuclear war, be limited to a fairly confined geographical are, it would still be totally devastating by any historical standard. The risks of nuclear war, already too high for comfort between the careful and now experienced superpowers, are clearly much more with new powers with immature command and control systems, less discipline and more autonomy among possible "rogue" commanders and to be honest, certainly in the case of the subcontinent, a popular opinion that often seems rather carefree about the consequences of nuclear war. But then 80% of Indians alive today know nothing about Hiroshima and Nagasaki, or even the Cuban missile crisis.

Perhaps the one would-be nuclear power we don't have to worry about, although Washington worries a lot, is North Korea. For all its isolationism North Korea has no real active enemies. It has Washington on its back, but it is not actually militarily threatened. Indeed, it is the other way round if anything. The U.S. soldiers embedded close to its border are in fact hostages to be quickly killed in any military blow up.

How to stem the tide on proliferation is an extraordinarily difficult question. Japan, thanks to British and French recycling policies (again their short-term commercial

interest has stumped their long-term political sense) has built up a very big store of plutonium, for no good and apparent reason. It does not need it for its present power-producing reactors and the 1970s dream of fusion reactors that would run forever on one fuelling in plutonium has now been relegated to distant academic pastures. What is more, Japan's post-World War II constitution would prohibit such a development, even if public opinion were not as hostile as it is. Yet clearly the senior circles of the military and politics have decided to take out an insurance policy — after all a pile of plutonium is a highly sophisticated industrial state is almost a virtual arsenal. At the most Japan would need six months to bring it to fruition. As for the enemy — a newly aggressive China, although that seems far-fetched, or a malevolent North Korea, an equally doubtful proposition despite its provocative missile testing over Japan — it defies imagination to conceive of a circumstance in which either country would see the need to stir up Japanese hostility. Nevertheless, there are influential Japanese both politics and academia who attempt to make a plausible case for Japan becoming a nuclear power. Worst case scenarios always win a larger audience in a time of political and economic uncertainty.

China for its part has been a nuclear weapons state since 1964. If Washington chose to do it it could easily "Prove" that China is a "Rogue" state. It has designs on both Taiwan (an American "protectorate" and the Spratley islands (If China refuses one day to accept the obligations of the Law of the Sea, which it says it is committed to) and it has, over many years, aided Pakistan's nuclear development which in turn has aided North Korea's. Mao Zedong used to speak with callous equanimity of China's ability with its large population to "absorb" any nuclear attack and claimed that the U.S.'s nuclear weapons were the armaments of "a paper tiger".

In reality modern day China is not considered even by the Bush administration as a rogue. Momentous efforts have been made to keep China as a friendly nation, albeit not an ally.

Nevertheless the future is uncertain. The Taiwan Strait is without doubt the world's most dangerous potential flashpoint. It could bring the two nuclear powers nose to nose, if one of the three parties allowed their present self-discipline to lapse, as they did four years ago when the U.S. sent its fleet into the Strait to deter China from firing more warning missiles over Taiwan. It is not so much nuclear deterrence that keeps the two big powers sober; it is the fear of economic disruption that war of any kind would bring. The U.S. is China's largest market and Taiwan is its main source of high technology investment. The better tactic is to keep the present relationship in a state of equilibrium, whilst encouraging the development of human rights in China to reach the state of sophistication of Taiwan. If the "two Chinas" could both be democratic it is reasonable to think that the reasons for mutual hostility would fade into relative insignificance.

Compared with proliferation on the Indian subcontinent, China and North Korea and the would-be proliferation that has alarmed the Bush administration in Iraq and Iran is relatively small beer. The crisis and war of 2003 made clear that Iraq has no nuclear weapons and that its remaining arsenals of chemical and biological weapons were small and unsophisticated. The UN disarmament process following the first Gulf war in 1991 did its job better than Washington ever imagined.

Whether Iran is or is not building nuclear weapons is an on going argument among experts. It certainly has every reason to, if one accepts the argument that an underdog who wants to challenge American interests for whatever reason and who feels

insecure before America's uncompromising secularisation can easily persuade itself that nuclear weapons are the only thing that could dissuade America from trying an attack.

The U.S. in fact is trying to ride two horses and on both the saddle is slipping. The first is the Nuclear Non-Proliferation Treaty, which most countries have signed and wish to adhere to, despite the broken promises of the big nuclear powers to take rapid steps towards nuclear disarmament. At the moment there is not one wit of evidence that Kennedy's gloomy prophecy of twenty or more nuclear powers will turn out to be true. The second is to isolate those regimes it regards as threatening which are trying to pre-empt the striking of American wrath by building a small nuclear arsenal. At the moment the number is small, even on the most pessimistic of scenarios. It can be no more that Iran and North Korea. Only if Pakistan ware seriously destabilised and fundamentalists came to power would Pakistan join this group. But, thanks to the war in Afghanistan in 2002 America has already elite troops based in Pakistan who would seize Pakistan's nuclear weapons and disable them in such an eventuality. Indeed the Bush administration has made it clear that it will pre-empt any effort by such countries to build nuclear weapons.

Only North Korea gives it pause because it may have already at least a couple. Since Washington vividly detests being stopped in its tracks it will make sure there are no more North Koreas.

At the time of the first crisis between the U.S. and North Korea in 1994 it became apparent with its supposed possession of two nuclear weapons and its massive standing army massed close to the border with South Korea what a formidable deterrent the North possessed. President Bill Clinton decided that the U.S. had to negotiate. Confrontation could lead to a nuclear attack on South Korea's cities and American troops based in the South.

Under an agreement midwifed by former president Jimmy Carter the North agreed to close its plutonium-producing nuclear power plant and seal up the cooling rods from which weapons grade plutonium could be extracted. In return America with Japan and South Korea agreed to build two modern, non plutonium-producing nuclear power stations to be in production by 2003. Also the U.S. agreed that it would end its economic embargo and help the North with fuel oil. food and electricity. But the deal had been coming aparl almost from the day it was signed. All along there have been winnings that if these stumbling blocks weren't put right we would end up where we were in 1994, with the threat of nuclear win staring us in the face. For few doubt, even those who me touches! on North Korea, that if comes to *a* military conflict and North Korea feels it has everything to lose it will use the two nuclear weapons it supposedly already has (for a full account of this see my book L*ike Water on Stone* (Penguin, 2002).

It was this threat that persuaded the Republican hardliners in Congress during the days of the Clinton administration to go along with the main elements of the deal, even as they provoked the North with their constant attempts to minimize the commitments the U.S. had made to secure it. There were a number of times when the fuel oil deliveries or the food supplies were seriously slowed. There was the successful effort in Congress to break the promise of ending sanctions, delaying action on this until 1999 when they were finally but only partially lifted. There was

the blockage on talking about ways to help the North receive electricity supplies from the South to tide it over until the new reactors were built. Not least, there was the slowdown on the building of new nuclear reactors, with the prospect of them being finally completed five years behind schedule. It has become clear that the earliest date they could be ready is 2008.

All these setbacks have been reason enough in the North's mind for ratcheting up the confrontations. Confrontation, Pyongyang appeared to decide some time ago, is the only way to get results. Whether it is digging an enormous hole that convinced the Americans that the north was about to test nuclear triggers (wrongly as it turned out, after paying a huge sum for the U.S. to be allowed to inspect it) Or test- flying a long range rocket over Japan, which was what persuaded Congress to ease the economic embargo.

Still, the 1994 agreement limped along (and even looked as if it might be enlarged to include a restriction on missile sales) until president George Bush junior came into office and made his "Axis of Evil" speech in which Iran, Iraq and North Korea were singled out. Even though the Bush administration did not move at first to discontinue its aid programme (the largest America has in Asia) or to stop work on the building of two nuclear reactors, it did lean on South Korea to slow clown its so-called "Sunshine" policy of political reconciliation. It also refused to talk about other sources of electricity supplies, prohibited its ally, South Korea, to honour a promise to send electricity to the North and refused all talk and consideration of a refurbishment of the North's electricity grid despite the growing delays on the new reactors. And it gave the impression that it was in such a confrontational mood of its own that it might well give up on further negotiations with the North. Out of the window would go a new deal that Clinton believed he was close to settling that would freeze deployment of missiles with a range of more than 500 kilometers? Maybe out of the window would also go the nuclear freeze deal itself that probably stopped the North building 30 nuclear bombs a year in the last few years.

It has come as no surprise to North Korea watchers that Pyongyang has decided to up the ante in 2003. Over many years it has discovered the offence is the best defence in dealing with the U.S. Now it not-so- subtly says it is to bring back into use its mothballed plutonium- producing power reactor to make up the shortfall in its energy needs. The U.S. has only two choices — the old ones — either to go to war and risk a nuclear exchange or, for the first time, to honour its side of the 1994 deal and to go full steam ahead, with no ifs and buts, to help the beleaguered North Korean economy to get back on its feet.

Despite the big questions over tactics one can in fact conclude that no Administration has been more committed to stemming the proliferation of nuclear weapons than this one. Compared with the vapid posture of his predecessor, that of Bill Clinton, who made no serious effort, despite inheriting the end of the Cold War, to strike nuclear disarmament deals with Russia and, after its run-in with North Korea, adopted an easy going attitude to proliferation, at least the Bush Administration cannot be accused of lacking purpose.

The weakness — and it is the fatal weakness of the Bush Administration -— is that it cannot carry the world with it in its chosen approach — military confrontation. With

its war with Iraq only Britain and Australia stood shoulder to shoulder on the battlefield, unlike the war of Bush senior when over a dozen countries offered troops. Even if the politicians wanted to be more helpful public opinion would not allow them, as Prime Minister Jose Maria Aznar found in Spain and King Fahd found in Saudi Arabia, as indeed was the case almost everywhere. Public opinion has never been expressed with such singularity of purpose or with such widespread unanimity as it was on this occasion.

The saddle on the Nuclear Non-proliferation Treaty has more than slipped. It has become undone. For America to carry the world on this issue it has to be convincing. It has to demonstrate that what it is asking of others it is also doing itself. It is not that it need fear further break-out from the NPT — most countries are aware that to become a nuclear power would be on balance a negative asset — but to stymie the efforts of those the U.S. considers are “rogues” it needs to carry out its side of the central bargain of the NPT, which is to begin serious nuclear disarmament itself.

Public opinion in Europe certainly, but also in much of the rest of the world which may not be so well informed, seems to have an intuitive understanding that a) war over alleged nuclear weapons capability is hypocritical whilst America is so over-armed; b) is doubly hypocritical given the West's long tolerance of exporting the ingredients for making weapons of mass destruction; c) is hypocritical given the blind eye it turned to Iraq's use of chemical weapons against Iran and the Kurds and Israel's manufacture of a large nuclear arsenal.

There is also a further point, perhaps too sophisticated for the man or the woman in the street — that neither Iraq, nor Iran, nor North Korea could have logical purpose in actually using a nuclear weapon unless they had their back against the wall in the face of a massive overwhelming attack, and the only country that could actually make such an attack is the U.S. If America has to fear anything it is an attack from a nuclear suitcase carried into the U.S. by a terrorist with no fixed address, not from a state that would be open to retaliation.

America has no choice but to find a way to become credible again. Moreover, it has no choice but to look with a fresh eye at the arguments of the nuclear dissenters. Their main point is that by possessing nuclear weapons there is a risk they will be used by accident or by a rogue commander. None of the major technological developments of recent years appeals lo have diminished this risk. Their second argument is that nuclear deterrence is at best an unproved point. The Soviet Union never sought to intrude on Western territory and had no ambitions in the direction. In its own eyes Soviet nuclear weapons were developed only lo match America's. Yet America likewise had no active designs on Soviet controlled territory, although it has been quick to assert its interests there and elsewhere in Eastern Europe once the Soviet Union collapsed.

The India/Pakistan confrontation also suggests deterrence does not work. Both sides have continued direct conventional fighting — in the Pakistan case using proxy guerrilla forces. Both sides seem prepared to risk nuclear war and have moved several times to the brink, without the heartache or the reticence that seized Kennedy and Khrushchev at the time of the Cuban missile crisis. By developing nuclear weapons both sides have given themselves more severe political and military problems then they had before. India was clearly the superior of the two when both just had

conventional forces. Now the playing field has been levelled. Pakistan for its part has introduced a major new element of instability into its already precarious and incendiary body politic.

The only two cases where arguably nuclear weapons appear to work as a deterrent are Israel's vis a vis the Arab world and North Korea's vis a vis the U.S. Yet Israel was effectively invulnerable to a major conventional attack before it became nuclear armed and its decision to pursue nuclear arms had the counterproductive effect of persuading Iraq and perhaps Iran lo try to develop theirs. And North Korea is only in such a strong position because 50,000 U.S. troops are deployed in an essentially static formation so close to its southern border. Even if North Korea develops rockets capable of reaching the U.S. heartland and chose to use them it could not, in the foreseeable future, obliterate more than a handful of small cities or parts of large cities and would know that even if the U.S. didn't launch a retaliatory nuclear strike that it could with conventional means subdue the country and overturn the government and no one, not even China, would come to its aid. It is more deterred by America's conventional power than its nuclear weapons.

The forth argument of the nuclear disarmers is that, given the above, the continued possession of nuclear weapons must be immoral, General Butler's conclusion is that "Nuclear weapons are irrational devices. They were rationalised and accepted as desperate measure in the face of circumstances that were unimaginable.... I have arrived at the conclusion, that it is simply wrong, morally speaking, for any mortal to be invested with the authority to call into question the survival of the planet."

General Charles Horner, who was the allied air forces commander in the first Gulf War and from 1992 to 1994 commander of the U.S Air Force Space Command, concludes that the moral opprobrium against using nuclear weapons would be such that "the nuclear weapon is obsolete: I want to get rid of them all." Even for Israel, where the culture is “eye-for-an-eye”, he argues that if the military replied to a chemical Scud attack on Tel Aviv with a nuclear weapon, "they would lose all legitimacy as a nation… they'd be a pariah." Indeed if the U.S. used a nuclear weapon, even a small one against an Iraqi command bunker, America would effectively make it self an outcast for decades lo come. World opinion would regard the act as simply unforgivable, all the more so for being unnecessary with today's sophisticated conventional weapons. America would simply make itself, for all its wealth and power, simply isolated.

But apart from saying nuclear weapons should be got rid of, how do these nuclear disarmers think they can actually be got rid of?

Most important is to win the intellectual battle that there are no situations imaginable when they could be useable. Robert O'Neill, the Professor of the History of War at All Souls College, the University of Oxford, is the academic at the forefront of this discussion. They are not much use, he says, in deterring other weapons of mass destruction, biological or chemical. "They destroy a massive area, killing the wrong kinds of people and they do nothing to protect your own forces because chemical and bacteriological weapons will probably be released from sites all over the adversary's country, as were Iraq's missiles in the first Gulf War."

There is a long history of America, Soviet and French presidents of looking at how to use nuclear weapons in regional crisis. Truman considered using them in Korea as did Eisenhower. The French though of using them to avoid their catastrophic defeat at

Dien Bien Phu in Vietnam. And the U.S. seriously considered using them in the Berlin crisis - as recently as 1980 a U.S. Pentagon study said it would be necessary to "threaten or make use of tactical nuclear weapons" if the Soviets moved their forces into northern Iran.

On the Soviet side Moscow warned the West at the time of the invasion of Suez in 1956. So that it was prepared to use nuclear weapons. Georgi Arbatov, at the lime Brezhnev's adviser on foreign policy, told me that there had been a number of crises when influential advisers had counselled the president to threaten the U.S. with the use of nuclear weapons.

More recently, at the time of the first Gulf war, there was the memorable conversation between Dick Cheney, the Secretary of Defence, and Colin Powell, then Chairman of the Joint Chiefs of Staff. According to Powell's account in his autobiography, "He had a third question and I jotted it down in my notebook simply as 'Prefix 5', my nuclear qualification code. 'Let's not even think about nukes'. I said 'You know we're not going to let that genie loose.' 'Of course not', Cheney said. 'But take a look to be thorough and just out of curiosity.'" I told Tom Kelly to gather a handful of people in the most secure cell in the building to work out our nuclear strike options. The results unnerved me. To do serious damage to just one armoured division dispersed in the desert would require a considerable number of small tactical nuclear weapons. I showed this analysis to Cheney and then had it destroyed. If I had any doubts about the practicality of nukes on the field of battle, this report clinched them."

The second line of argument must be to elucidate a plausible scenario of reductions. Few disarmers believe the U.S. can go to zero overnight, much as they see zero as their ultimate goal, but all believe there will be no real impetus in the non-proliferation battle unless the big nuclear powers (and that includes France, Britain and China, as well as the U.S. and Russia) show a desire to set the ball rolling. As George Perkovich argued in *Foreign Affairs* (in April 2003) the recent disarmament agreement made by Putin and Bush is riddled with holes. "Because the treaty lacks a schedule of phased reductions, either party could defer cuts until December 31, 2012, at which point violations would be moot because the treaty expires on that day. The treaty also does not require the elimination of a single missile site, submarine missile, warhead, bomber or bomb."

Although the U.S. and Russia have formally de-targeted each other's forces re-targeting can be programmed in a matter of a few seconds. Nuclear disarmament seems an idealistic goal, even Utopian goal, it is in some ways. Richard Perle talks of the disarming Generals as men whose "stars not on their uniforms but on their eyes." But then to see an end to the Cold War was regarded by an overwhelming majority of experts and politicians as Utopian until the moment it happened. France and Germany so recently mortal enemies are now the bedrock of the European Union. There can be profound changes in the way human society works. We are more than hallway there. We have to pound away and believe at some point resistance will suddenly crack. One thing we know from the experience of Reagan and Gorbachev that right at the top of present day power-structures[4] there are probably people who

[4] Other senior ex-military men and arms negotiators who have joined the disarmament cause include Paul Nitze, Reagan 's hard-line arms negotiator, Field Marshal Lord Carver, former chief of the British Defence Staff and Admiral Andrew Goodpaster, former Supreme Allied Commander in Europe.

want the same thing as the most idealistic disarmament advocates.

It is a question, less of convictions, than finding the key to the box that holds political society in a straightjacket. The mechanisms of disarmament are profoundly important. The public in the nuclear powers must never be allowed to feel that disarmers want to strip them naked. Unnecessary though more conventional arms may be it is probably necessary to stress the need to improve those even further, so there can be no question that if a "rogue state" did break out of a universal move led by the big powers to rid themselves of nuclear weapons a conventional force would always be sophisticated enough to deal with it.

Many disarmers have argued that the first steps should be horizontal disarmament - de-alerting weapons, de-mating warheads from delivery vehicles, removing parts from warheads or rockets (or adding parts that spoil their performance or adulterating weapons grade fissile material. As Jonathan Schell puts it "Vertical disarmament (reducing numbers) makes a catastrophe, should it ever occur smaller. Horizontal disarmament makes a catastrophe of any size less likely to occur."

This actually happened when George Bush senior was president in 1991. He decided to de-alert all bombers, 450 Minuteman missiles and the missiles in ten Poseidon submarines. Gorbachev, taking the cue, deactivated live hundred land based rockets and six submarines. This wasn't the cosmetic de-alerting talked about today. Silo and submarine crews actually had their launch keys taken away from them.

McNamara, for one, has little time for deploying energy into the horizontal issues. I le focuses very lightly on reducing numbers. His aim is zero. Any horizontal deal would enable its owner to fairly quickly re-activate its arsenal. "The risk of nuclear catastrophe" he writes, "derives from the combination of the *magnitude* and the *imminence* of the threat: too many lethal weapons, too little time to decide."

McNamara believes that in the absence of a movement towards zero there will be more and more nuclear states. Moreover, the dangerous stockpiles of the nuclear weapons states will become increasingly at risk of theft. He accepts there will be risks with a nuclear weapons-free world — cheating or a "breakout" by a country or even a terrorist group is possible, but they are less than the risks with a nuclearized world.

Robert O'Neill too has argued against the notion that in a nuclear-free world a cheater would be king, "Well, no king, because using a few nuclear weapons or threatening to use them would be of very limited value. Either the bluff would be called, or, if it turns out not to be a bluff, and someone does use them, they would open themselves to unimaginable retaliation by the whole international community, backed by intense public outrage around the world. For the nation that did use nuclear weapons, it would just be another way of committing suicide. We might leave to go through an incident like this before the point was driven home, but I think it's better to accept that risk than to accept, as we do now, the continuing risk of the whole planet being blown sky-high."

McNamara sees 100 weapons each for the superpowers, as a first step. After that then there would need to be discussion about security guarantees to be given to smaller states - Britain, France, India, Pakistan, China and Israel - so that they could be persuaded to join the march to zero. There is, he emphasizes, an important "psychological" component to the effort and he likes the way Field Marshal Michael

Carver has argued this point — "The most important thing at this moment is to persuade everyone, even those not inclined to accept it, that the target has got to be total elimination. If you start peddling solutions, which are not quite total elimination, but something which comes close to it, you lose the whole force of the argument. Until you've dramatically fixed zero as the target, you'll just get the sort of silly thing you get now. Of course, when you come to actual details and a verification system, you've got to face all these problems; and of course you have to have steps along the way. But don't let's say that a target less than the absolute target would be acceptable."

The passion brought to the discussion by these military men suggests that we have averted accidental nuclear wars by accident more than by clever balance of power politics and that if we roll the dice for much longer and the number of players increases one day for sure the number will come up.

Yet against this passion is raged popular inertia on one side and an extraordinarily deeply embedded culture of "nuclear deterrence" on the other, one that has powerful allies not just in the military-industrial complex, as one would expect but also in the highest levels of academia and the media. As former West German Chancellor Helmut Schmidt (ex-nuclear hawk, now a dove) has analysed it, "there is an enormous body *of* vested interests not only through lobbying in Washington and Moscow but through influence on intellectuals, on people who write books and articles in newspapers or do features on television. *It's very difficult as a reader or as a consumer of television to distinguish by one's own judgement what is led by these interests, and what is led by rational conclusion. "*

To break the defences of this world is going to be a highly laborious exercise. If the ending of the Cold War could not do it can anything else do the trick? Can the fear of the raw material for making nuclear weapons being stolen and perhaps passed on to the terrorists? It seems not for the first. According to those best informed it has already happened and the second is likely before long.

In the 1960s the late Herman Kahn, arguably the greatest nuclear strategist of all time, pondered pessimistically on the conditions necessary for returning to a nuclear-free world. He thought it would take a U.S.Soviet nuclear war followed by an immediate pact never to use them again. But Kahn said they must not have time to bury the dead, otherwise the old mistrust and enmity will quickly return.

Perhaps Kahn today would point to a nuclear war between India and Pakistan or the accidental launch of a Russian or Chinese missile on Los Angeles or the use by North Korea of a nuclear missile on South Korea and its American troops.

Perhaps then popular passions would be roused enough for the disarmers to win an audience. But in performances now it is clear they speak to a near empty theatre. We have lived with nuclear weapons for so long that although, apart from a small minority of strategic thinkers, we certainly have not learnt to love the bomb we have not sufficiently learnt to fear it.