



## Getting to Omega: Structural Impediments to Nuclear Disarmament

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# Getting to Omega: Structural Impediments to Nuclear Disarmament

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*A review of the obstacles to deep nuclear reductions including security, verification, asymmetries and policy impediments reveals that while many impediments directly relate to states in possession of nuclear weapons, some are associated with the practices of the Non-Nuclear Weapons States. Thus, in order to make significant progress towards disarmament, how states approach nuclear arms-related issues must change.*

With bilateral strategic arms control coming to a standstill, the negotiation of multilateral nuclear arms reductions, much less a nuclear-weapons-free-world (NFWF), may seem more remote than ever. Disarmament efforts over the last decade have focussed either on the Strategic Arms Reduction Talks (START), a bilateral Cold War process, or on limited multilateral measures such as the Comprehensive Test Ban Treaty, both of which are part of a step-by-step disarmament approach. However, the lack of progress in nuclear weapons disarmament has generated increased attempts by the Non-Nuclear Weapon States (NNWSs) to participate in the negotiation process. Their agitation has been heightened by U.S. plans to develop a national missile defense system, despite Bush Administration promises that the United States will couple deployment to nuclear arms reductions. The NNWS agitation is hardly surprising. Early indications are that the Administration favors a less constrictive, unilateral approach to reductions. While unilateral cuts should not be discredited, there are limits to how far the disarmament process can proceed without the establishment of a legal framework supported by verification measures.

Deep nuclear reductions have not been possible because states are failing to face obstacles which require significant changes in policy. A review of the obstacles to deep nuclear reductions including security, verification, asymmetries and policy impediments reveals that while many impediments directly relate to states in possession of nuclear weapons (N-8s) [1], some are associated with the practices of the NNWSs. The implication is that to make significant progress, very broad changes will be needed regarding how states approach nuclear arms related issues. Arms control skeptics will see this discussion as a set of reasons why nuclear disarmament cannot be achieved in any reasonable timeframe. Arms control advocates can see the findings as guidance for long-term solutions to some key disarmament obstacles. Whether or not it is possible to overcome these impediments is left to the reader's judgement.

## Security Impediments

The first set of impediments to deep nuclear reductions falls under the rubric of security. These factors relate to how views on its own security will discourage a state from

\*The views expressed in this paper are the author's own and do not reflect those of DynCorp.

engaging in disarmament. There are several different types of security impediments that inhibit states from initiating or participating in nuclear arms control. Among these are the perceived needs to retain nuclear weapons to deter attacks by other states, to counter perceived weaknesses in conventional forces and to sustain power–projection capability.

Although an international norm seems to be emerging that the use of nuclear weapons is not morally acceptable, terrorist groups seeking nuclear weapons and some states view such weapons as desirable [2]. While nuclear weapons have been assigned to different warfighting roles, they are usually categorized as a last resort or deterrent. The impact of disarmament on nuclear deterrence is therefore a central issue for governments considering nuclear reductions. In nuclear weapons states, nuclear forces tend to be integrated into defense plans. Nuclear weapons play differing roles and their doctrinal prominence varies from state to state. Roles change as a state’s security environment evolves. Since the end of the Cold War, the emphasis on countering nuclear weapons with nuclear weapons has decreased for the United States and Russia, but has increased for Pakistan *vis-à-vis* India and for India *vis-à-vis* China. States benefiting from an external nuclear umbrella also tend to view nuclear weapons as important for preserving peace [3].

For states that have possessed large nuclear forces for decades, the security strategy impact of reductions would be significant. During the Cold War, the United States and the Soviet Union built up huge nuclear forces, adopting the strategy of mutually assured destruction and assured second strike capability. Reductions between the United States and Russia have taken place with the implementation of START. In the late 1990s, however, United States Strategic Command (STRATCOM) recommended no cuts below levels of 2000–2500 warheads. These levels were chosen to cover what STRATCOM believes to be an appropriate target list. They justified their determination, noting an increased nuclear target base caused by complications from rogue nations and developments in China. The expanded threat assessment required higher warhead numbers to sustain a sufficient quantity of operational nuclear weapons [4].

As the numbers of nuclear weapons decline, these states will likely perceive that the deterrence provided by their nuclear forces is impaired, making strategic stability problematic [5]. Arguments that low levels of warheads generate strategic instability, which were dormant when warhead numbers were in the thousands, will reemerge as reductions proceed [6]. Among the potential concerns are second–strike capability and inducing nuclear arsenal growth among second tier nuclear weapon states or nuclear weapon–capable states. The latter issue may become an important sticking point if second–tier states insist that the U.S. and Russian warhead stockpiles reach parity with their own before subjecting themselves to some control measures.

If nuclear weapons strictly served to deter other nuclear forces, balanced reductions might be a relatively simple exercise. As technological capability has diffused however, nuclear forces have become a mechanism to deter attacks by states possessing chemical and biological weapons (CBW) [7]. The biological weapons threat continues to grow with advances in biotechnology. Developing a credible verification regime for the Biological Weapons Convention that satisfies the need for extraordinary intrusiveness while protecting commercial secrets has not been achievable. The proposed regime provides increased transparency, which may build confidence. However, it is unable to provide stronger assurances based on comprehensive accountancy and containment measures of dangerous materials and production facilities as seen in the International Atomic Energy Agency’s (IAEA) safeguards system.

Chemical weapons present a much lower level threat, but the Chemical Weapons Convention is not universal, and several states alleged to possess active chemical weapons pro-

grams do not participate. Although transparency provided by the regime has revealed the existence of some unknown chemical weapon programs, critics still find the regime lacking in providing assurances. The Organization for the Prohibition of Chemical Weapons has struggled with limited funding, variable political support and a lack of cooperation from member states [8]. This inability to properly implement the convention has resulted in extensive chemical arsenals remaining in a number of states.

While states with highly advanced armed forces are likely to be less sensitive to CBW threats, smaller states with rather limited resources can be more easily intimidated. France and the United Kingdom, with smaller territories and economic bases than states such as China, Russia and the United States, are more likely to be concerned about CBW programs in their near abroad without their limited nuclear forces. Israel also utilizes nuclear weapons to deter CBW and its case is especially acute considering its hostile relations with regional rivals with declared or suspected CBW programs.

In addition to deterring states with overt WMD programs, nuclear weapons have served, particularly for the United States, to deter actions by clandestine state proliferators. The United States, some NATO members and a number of NATO allies are sensitized to proliferation but concrete action has been difficult. Ratification of the Additional Protocol strengthening the IAEA safeguards systems to provide greater assurance in detection of clandestine programs, has been a very slow process and the impact of these new measures will be unclear for several years [9]. In addition, globalization and technology development has undermined supplier policies while strengthening supplier or non-proliferation verification controls tends to be unpopular. For many industrialized and developing countries promoting economic development takes priority over proliferation threats, which are not perceived as immediate if a national rival is not involved.

Some states have cast a role for nuclear weapons as an affordable equalizer. During the Cold War, the United States considered nuclear weapons as an effective and economical means to counter superior Soviet conventional forces. In light of its economic collapse and diminished conventional capability, Russia increasingly relies on nuclear weapons for security [10]. Israel uses its nuclear force as an equalizer, not against a single superior rival, but against several national forces that collectively pose what they see as an overwhelming threat to state survival. The use of nuclear weapons to deter superior conventional forces demonstrates the reasoning behind Article VI of the Treaty on the Non-Proliferation of Nuclear Weapon's (NPT) reference linking nuclear disarmament to general disarmament. The relationship between nuclear forces and the conventional stability has long been recognized but has not been addressed in successful nuclear arms reduction negotiations. The problem will become more acute as warhead levels are negotiated down, particularly for states that placed great faith in nuclear deterrence. These states may be required to significantly increase investment in their conventional forces.

Another security impediment that needs to be addressed is the impact of reductions on the international power balance. To overcome this obstacle a paradigm shift will be required regarding how states provide for their national security. Nuclear disarmament implies that power balances based on economic, technological or conventional force development will increasingly come into play. In the current environment, the United States and, to a lesser extent, China would benefit while other nuclear weapon states (NWSs) risk a deterioration in their position.

Shifting power balances can be traumatic for the superpowers but even more devastating for smaller powers without other reliable security structures in place prior to reductions. N-8 states, especially those which have had nuclear weapons for more than a generation, might feel quite vulnerable minus their large deterrents. The United Kingdom and France, for example, are not engaged in any serious conflicts and their main threats

link to general global instability. Although they participate in western alliances, limited concerns such as proliferation and instability in the Middle East and Asia, give added value to their small deterrents. If the larger nuclear powers genuinely seek a multilateral agreement, a few token cuts could be anticipated from France and the United Kingdom. A significant change in the European nuclear landscape, however, will require the development of an effective independent European standing force somewhat more substantial than the proposed NATO Rapid Reaction Force.

The shift would be a challenging concept for both the United States and Europe. If China, Russia and the United States did manage to negotiate deep cuts, the United States would eventually need to withdraw its European nuclear forces—a move that would be interpreted by some states as a withdrawal of the U.S. commitment to defend Europe [11]. At the same time, a standing independent European force is a problem for some elements of the United States power structure from both a security and an influence standpoint. Some U.S. critics claimed that the Rapid Reaction Force would “dilute” NATO and weaken the Alliance [12]. For the Europeans, a larger force would require both substantial political integration and increased military spending. The commitment necessary may not be forthcoming.

The behavior of states not engaged in reductions will become an increasing concern. While the NWSs will have the psychological advantage of a simpler return to nuclear weapons status, they will also present a less daunting picture to their foes. These states presently lack security concepts appropriate to a disarming and globalizing world. While the search for security concepts has yielded proposals such as Former Soviet General Secretary Mikhail Gorbachev’s mutual security, such proposals have quickly disappeared as the Post Cold War thaw showed signs of chill [13].

The final security impediment is the need for the N-8s to relinquish an effective mechanism for power projection. The policy adopted by some N-8s reserving the right to use nuclear weapons in response to a chemical attack is an example. This is in spite of the idea that a nuclear response to a chemical attack would be viewed as overkill. The option, however, serves as a convenient means to project a resolute stance. Nuclear weapons’ impact on state relations remains undeniable. The question remains valid—if Iraq had nuclear weapons would the coalition have invaded during the Persian Gulf War. Likewise, if the United States did not possess nuclear weapons, would Iraq have used its chemical weapons against the coalition forces as it had against Iran? Finally, was Saddam Hussein’s confidence increased that he could successfully invade Kuwait, believing that he would soon have a nuclear capability? Possession of nuclear weapons does accord freedom of action, which is the core of proliferation. Drawdowns to zero warheads may not change current perceptions of the N-8s, but a reevaluation of N-8 capabilities cannot be ruled out.

## Verification Impediments

A second group of impediments to disarmament are those related to verification. These can be either a technical deficiency due to the nature of verification systems or a political challenge created by actions of states when interacting with a verification system. Unlike the security impediments, which primarily relate to the NWSs, verification impediments are relevant for both NWSs and NNWSs. Among the verification impediments are conceptual problems with verification, structural limitations of the nuclear non-proliferation regime and structural problems with existing verification organizations. These all breed mistrust in the workability of disarmament verification systems.

Verification combines two important activities: the acquisition of comprehensive information pertaining to the object of control and the application of control measures. Transparency may build treaty participants' confidence that other members are also in compliance by providing sufficient information to make such a determination. However, where strategic reductions are involved, transparency is a necessary condition but not likely a sufficient one. Transparency functions well in societies where a free and vibrant press exists. A credible demonstration of political goodwill must be followed by control measures that not only detect non-compliance but prevent weapons acquisition. However, since governments do change, making continued compliance questionable, control must include robust enforcement.

The nature of verification can be problematic if a state has very high security requirements or a low tolerance for verification burden. Verification systems cannot provide a 100% guarantee that a state is not pursuing a WMD program. When a state has high threat perceptions, it will require stronger assurances, if not demand an adversarial type verification regime. Multilateral verification regimes, however, tend to be minimalist rather than maximalist in nature as the increasing number of states negotiating promotes lowering regime intrusiveness to obtain consensus. As broad participation in verification regimes is as important as credible measures, multilateral negotiations set the stage for conflict over measures that some view as costly, excessively intrusive, and an unnecessary invasion of sovereignty, and others see as insufficient to assuage their fears. This assurance-burden conflict can also present a paradox for governments domestically. States, particularly those having both high threat perceptions and an advanced technological base, need a system to incorporate both intrusiveness to assure security and measures to protect military and/or commercial secrets. If the needs are high for both requirements, compromise may not be possible and inertia may result.

The challenge that verification systems provide strong guarantees becomes even greater when providing assurances that long-term nuclear-weapon states have disarmed. The case of South Africa, which possessed nuclear weapons for a fairly short duration in comparison to the N-8s, demonstrates the challenges involved. When South Africa decided to dismantle its nuclear weapons program and join the NPT as a NNWS, it offered unprecedented access to the IAEA to verify its initial declaration. Piecing together South Africa's very short nuclear history was a considerable challenge for the IAEA. The effort was a success, not because the IAEA was able to assemble a complete picture of the program, but because of the political support and goodwill put into the exercise. The change in the South African regime also added to the credibility of its efforts. Despite the short duration of the South African program, several kilograms of nuclear material were unaccounted for. Only the unprecedented level of cooperation and openness demonstrated by South Africa convinced the IAEA that there was no attempt to sequester fissile material. Due to the larger size and longer existence of the NWS weapons programs, it is unclear whether the same approach without regime change could provide sufficient confidence if the N-8 were to disarm.

The structure of the nuclear non-proliferation regime may also be an impediment. States have opted to pursue the disarmament process in incremental steps. Each new step is accompanied by new verification activities. However, as each new nuclear disarmament agreement is adopted, the verification measures for each prior step become increasingly valuable. While one can argue that synergy among the various arms control mechanisms strengthens global security and stability, the converse is also true. A state perceiving the assurances provided by one or more arms control mechanisms as weak may see each subsequent disarmament step as inherently riskier. Thus, the credibility of any nuclear

non-proliferation regime's verification structures will become increasingly critical with each numerical reduction.

There are several impediments generated by the difficult past experiences of arms control treaty organizations, particularly the IAEA and the United Nations Special Commission on Iraq (UNSCOM). While neither was designed to function as a system for global disarmament, their experiences have both shaped state's beliefs regarding what international organizations can or cannot achieve and have highlighted some important organizational deficiencies not easily resolved without the full cooperation of the international community. These skeletons in the closet are problematic because a properly functioning treaty verification organization is a key component of any disarmament end solution. As noted in a NATO Press Communiqué, "Progress in arms control should also be measured against the record of compliance with existing agreements" [14]. Shedding the image of failure requires changes by the international community as a whole.

Problems of treaty organizations include their verification systems, which rarely provide avenues for third parties to be directly involved in the compliance determination process, conducive to confidence if adversarial relations are present. Concerned parties must take the conclusions of the verification organization at face value since requirements to protect commercial or military secrets limit what information treaty organizations can share with concerned parties [15]. Current complaint procedures have not inspired confidence. The United States has stated that it holds intelligence indicating that Iran is pursuing nuclear weapons, but it is unwilling to turn over compelling evidence of a clandestine program to the IAEA.

The lack of trust is hardly surprising in view of the difficulties of enforcing compliance with safeguard agreements in Iraq and North Korea. While the Agreed Framework signed by the United States and North Korea in 1994 was negotiated to bring North Korea into compliance with its safeguards agreement, North Korea has resisted cooperation with IAEA inspectors and remains in violation. Iraq's resistance has been more willful and direct. Short of a change in regime, Iraq's interest in acquiring nuclear weapons is unlikely to change. Both cases serve as a daily reminder of the international community's inability to resolve compliance where states make a determined effort and support the arguments posited, particularly in the United States, against pursuing deep cuts in nuclear arsenals.

Another verification system problem is that changing the system as the international environment changes is difficult and often requires a crisis. Reports on Iraqi proliferation were rampant in the late 1980s, but changes required discovery of a clandestine program proving that the system was broken. Dynamics in an international treaty organization favor the state whose needs are average; the states needing to make reductions are on the fringe, making the final step to a NWFW incredibly difficult. Several states were concerned regarding Iraqi activities before the Persian Gulf War but could not muster support for revisions to the safeguards system.

Adding to the negative perception of international treaty organizations is that parties generally compliant with their arms control commitments have hindered arms control treaty organization effectiveness through various means. Poor cooperation, such as not responding promptly to inspector designation, has created problems for organizations in the past. States can also debilitate organizations by limiting funding. The IAEA has struggled on a zero growth budget for 15 years and in August 2000 experienced a cash shortfall that threatened its ability to meet its payroll [16]. While initially limiting funds ensures that international organizations streamline activities and reduce waste, long-term cash starvation forces an inspection agency to rationalize verification activities [17].

The question arises at what point does the rationalization undermine assurances? The lack of support and cooperation ultimately undermines the credibility of multilateral arrangements as a mechanism to provide assurances and contributes to the appeal of the nuclear weapon over the arms control organization.

The rigid linkage between technical assistance and safeguards in some respects de-means the assurances that an arms control verification organization can provide. While this promotes universality, it creates complications in ensuring the viability of a verification system. Some states take an interest in controls as a way to acquire aid. By linking the two issues, a state that wishes to contribute to safeguards improvements is discouraged as it will face criticism that contributing to safeguards is not matched by contributions to aid. With verification becoming the first line of defense for those most threatened by nuclear weapons when disarmament is implemented, the continuation of this practice risks providing disarming states yet another reason to be wary. When a state makes a defense budget, it does not base its estimates on the philosophy of a penny for defense, a penny for economic development.

A final problem will be to find the balance between the necessary rigor and the protection of commercial and military secrets. This has been an ongoing challenge, and will become a greater concern as reductions are negotiated. A regime that is too revealing will be resisted for fear that an adversary may acquire nuclear weapons or valuable commercial technology through inspection while insufficient verification will hinder disarmament and function as a destabilizing element. Deep reductions as well as a nuclear-weapons-free-zone (NWFZ) will, by the nature of the risks involved, require higher standards of verification and intrusiveness. A difficult choice will be for states to learn to live with more transparency—a difficult option at best—or to pull new verification technology out of a hat—always a possibility, but never a guarantee. New technology will still be subject to the same objections as old technology; opponents will find it inadequate and too easily circumvented.

## Asymmetries

Another set of impediments to disarmament derives from the existence of vast asymmetries among the N-8. These states have different cultures, history, style of government, geography, economic situations and *raisonns d'être* for acquiring nuclear weapons. Their force structures aim to achieve diverse objectives regionally and globally. Therefore, they differ in numbers, weaponry classifications, triad configurations, and technological advancement.

On a practical level, asymmetries cause each state to be affected by reductions in different ways. Wide asymmetries tend to reduce the level of common ground that states can find for agreement. Thus, using an approach of isolating certain types of weapons or weapon characteristics for elimination in stages, as was done in the case of the INF treaty, may not be appropriate. When surveying the N-8, what is strategic for some will be tactical for others. In addition, small changes in force structures may radically change a state's perception of its geopolitical situation. This can easily lead states to place other, non-nuclear military elements on the negotiation table. For example, Russian analysts see tactical nuclear weapon disarmament placing Russia at a disadvantage if the United States retains its sophisticated force of conventional smart weapons [18].

National disarmament traditions also complicate the multilateral process. A long history of nuclear arms control cooperation may work to the advantage of the United States and Russia, but some of their approaches, to which new states entering nego-



tiations will not be accustomed, may not be accepted. New states will have different perspectives, values and approaches. Already, the British, seeking to become current on nuclear verification, have launched an initiative to examine multilateral nuclear disarmament verification issues [19]. Multilateral disarmament for many of the N-8 represents a different genre and level of intrusiveness for arms control. Many have never opened up their nuclear forces to verification. China, France and the United Kingdom, have voluntary IAEA safeguards agreements, but the scope of these agreements are limited and address civil, not military, aspects of the fuel cycle. While European Atomic Energy Community (EURATOM) attempted to address military material production facilities for France and the United Kingdom, transparency has been problematic [20]. China's record on transparency has been poor [21].

India, Israel and Pakistan also have very different disarmament experiences. These states have very limited safeguards agreements with the IAEA. India, in rejecting the division between the NWSs and NNWSs, has often taken a rigid approach in negotiating arms control measures. It has been instrumental in limiting intrusiveness during many safeguards negotiations and its resistance to being included as a required signatory of the Comprehensive Test Ban Treaty placed it at odds with the entire international community during Treaty negotiations [22]. It is not clear that, if an effort is made to negotiate deep reductions, India will play a constructive role. As its nuclear program matures, India may become more flexible in its disarmament policies. Its cooperation in negotiating verification measures may hinge on perceptions of its treatment by the first-tier states at the negotiating table. Israel and Pakistan also have very little disarmament experience. Both have only limited safeguards agreements. Pakistan, in view of its difficult financial situation, may prove to be more amenable to disarmament than India and Israel. It has expressed interest in bilateral nuclear restraint regimes with India that include measures of non-deployment [23]. As India has also expressed interest in some limited bilateral measures, it would appear that if hostilities between the two can be kept in check, the two countries may be able to address participation in multilateral disarmament without fully resolving their political disputes. Disarmament of Israel, however, will likely require a full peace settlement in the Middle East containing a hefty verification regime for not just nuclear weapons but all other weapon systems as well.

## Policy Impediments

A third group of impediments belongs to the policy category. These include problems of external linkages, which is the practice of linking non-nuclear-related issues to disarmament negotiations. Other policy impediments are inflexibility, lack of will, mindsets and status. Because these impediments are political in nature, the possibility always exists that they can change at any moment, although the likelihood is remote.

Linkages to external issues, which stymie the disarmament process, are varied and broad. Among the political disputes are territorial disagreements between India and China as well as India and Pakistan; general tensions between the United States and China, conflict in the Middle East and concerns generated by the U.S. pursuit of missile defense. Any one of these issues can easily weaken the political resolve of a key player; collectively, they point to the need for parallel negotiations to handle external conflicts before they start to derail disarmament.

Inflexibility regarding how disarmament should be achieved also blocks the progress. The Conference on Disarmament has been so beleaguered by procedural rigidity that launching negotiations concerning even limited measures such as a fissile material

cut-off have been delayed. Prospects for agreement on the most limited measures are dim as many of the N-8 display little genuine interest, tending rather to respond to crises at Non-Proliferation Treaty (NPT) Review Conferences and Preparatory Committee meetings.

The point at which second-tier nuclear powers will be willing to engage in disarmament discussions or agree to restraints versus when the United States and Russia consider that they should become engaged poses a potential problem. China has already demanded reductions to its warhead levels before becoming involved in negotiations [24]. India, which is particularly bitter about the separate NWS status under the NPT, appears unlikely to accept restraints that fall short of allowing it to develop nuclear force parity with the most advanced NWSs, should it decide to do so. Pakistan would unlikely agree to restraints without a similar commitment by India. France and the United Kingdom are likely to accept restraints, but having engaged in unilateral reductions, they are not likely to come down much further without considerable progress by the Russians and the Americans.

In addition, policy obstacles exist regarding the *de facto* nuclear weapon states. If the NWSs invite India, Pakistan or Israel to participate in initial multilateral negotiations, they would be rewarded for defying the norms set in the NPT. Israel presents a separate dilemma in that it is still unable to officially acknowledge its nuclear status. Neither these three states nor any other NWS have indicated an interest in following South Africa's or Ukraine's lead and unilaterally disarm, although sentiment in the United Kingdom for full disarmament is growing. Nevertheless, the nuclear powers with an early involvement in the multilateral disarmament process will need some verifiable commitment from the remaining N-8s before implementing deep reductions, implying a need for flexibility among the remaining N-8s for any genuine disarmament effort.

Another obstacle will be whether states will be willing to acknowledge and pay for the substantial costs engendered by disarmament. These costs are not limited to finances and are applied to many parties in the international community. While there will be costs associated with dismantlement, the current safeguards system will also need to be restructured to meet the requirements of a very different strategic environment. This requires a new level of cooperation from industry to develop higher levels of transparency and may require greater investments to develop verification technology to promote transparency while retaining military or economic secrets. There may also be a high sovereignty cost to states, such as accepting nuclear fuel cycles that are less proliferation prone.

Whether one is aiming to negotiate partial or total nuclear disarmament, changing the mindsets of leaders and populations that were forged during the Cold War poses a serious problem. Mindset changes are required, not only by nuclear weapons states building their new security structure, but also by all states regarding verification, non-proliferation and arms control.

Learning to live with none- or very low-levels of nuclear weapons will require new ways of thinking in all sectors of society. For politicians, nuclear weapons have been extremely useful domestically and internationally. The Bharatiya Janata Party (of India) (BJP) received wide domestic praise for conducting nuclear tests in 1998 [25]. France, in particular, has benefited internationally from nuclear weapons as its permanent seat on the United Nations Security Council would be difficult to justify without possession of nuclear weapons.

Military strategists who remember when nuclear weapons were not integrated into defense plans have retired. Doctrinal changes replacing security derived from nuclear weapons by other mechanisms continue to be resisted [26]. Russia has increased its

reliance in nuclear weapons as its conventional forces collapse. India's new doctrine indicates an interest in an aggressive nuclear weapons program including the development of a full triad. Pakistan bolsters its program to deter India. China has been rapidly modernizing its nuclear force and the United States, finding new targets in rogues and China, has dragged its heels in bilateral talks with the Russians, preferring to pursue missile defense. Thus, rather than seeking ways to reduce reliance on nuclear weapons, the N-8s show signs of moving in the opposite direction.

How states view arms control and cooperative security poses another policy impediment and must change before disarmament is possible. International organizations are viewed as weak, politically driven, overly bureaucratic and wasteful. They have been seen as an appendage to state security, not as a central element, and are very poorly funded. The problem is that in the long term, as disarmament takes place, international arms control organizations or other multilateral arrangements must have enhanced stature to establish global stability.

States, both developing and industrial, also need to change the attitude that nuclear controls should be as limited, inexpensive, and non-intrusive as possible. This mindset evolved because NNWSs wanted to protect industry from safeguard burdens, which had to compete with the less hampered NWS industries. The lack of NWS disarmament reinforced the disincentive for NNWSs to support safeguards; why should they accept anything more than the absolute lowest burden when the NWSs have failed to live up to their disarmament commitments. This view of verification is problematic because if states with higher security needs are to rely on an international arms control mechanism, they need assurances that the central organ will not place security below economics. Without meeting the genuine needs of all members, disarmament has a limited path forward.

The establishment of two classes of states by the NPT also led to the evolution of a mindset that less economically advanced states should be paid for not arming. During NPT negotiations, developing states were especially sensitive to economic colonialism and demanded access to technology and assistance in return for renunciation of nuclear weapons [27]. The assistance benefits were to function as an incentive to join the Treaty and to attempt to make mutual obligations between NWSs and NNWSs fairer. The unfortunate situation that has emerged over time is a mindset that safeguards development and funding are linked to promotion. Support has remained steady that contributions to safeguards must not take place at the expense of contributions to development [28]. Likewise, the Additional Protocol, designed to correct the problems that allowed Iraq to engage in clandestine activities, has suffered from poor subscription. Some analysts have attributed the situation to the Protocol representing an additional burden without an economic reward [29]. Verification is seen as a necessary evil. As a result, the negotiated verification standards adhere to the lowest common denominator of intrusiveness, burden and acceptance, and are clearly deficient.

The lack of commitment by the international community to dealing with non-proliferation threats is also an impediment. Proliferation threats compete with many other international problems and for many states it falls behind health, social and economic issues. Threats tend not to be immediate for many states unless proliferation involves a direct rival. While this situation is understandable, a failure to sufficiently respond to proliferation issues undermines efforts to de-legitimize nuclear weapons. If a state feels threatened and does not view the international community as taking sufficient action, they will act unilaterally. This may involve pursuing a nuclear program or retaining weapons in hand. For example, India and Pakistan weathered the short initial global condemnation

and limited sanctions after testing nuclear weapons. Before long, international attitudes returned to 'business as usual' with the exception that in disarmament fora the call for nuclear disarmament is now directed at two additional states. This raises the following question: in the event of deep or complete disarmament, are states collectively willing to put aside other interests and defend a non-proliferation norm; demonstrating to disarmed states that a nuclear weapons threat will be answered. The current answer is no.

The status accorded to states possessing nuclear weapons is another impediment to disarmament. While norms against use and possession of nuclear weapons continue to grow, entrance into the nuclear club is still a mark of distinction. Status is not easily quantified, as state perceptions are based on their culture. States with nuclear weapons may reflect their perceived status in a popular celebration of a nuclear test or a simple increase in national confidence. The status accorded by nuclear weapons can be a positive as a technological achievement or a negative as a threat to and rejection of the international community. Even in a negative light, a state possessing nuclear weapons attracts attention from the international community by virtue of the nuclear weapon threat. While negative attention can lead a state to draw the conclusion that their nuclear activities are unacceptable and pressure them to disarm, they are still attracting attention and stature.

One could argue that the status problem is widespread. For Russia, with the collapse of its social and economic structures, nuclear weapons contribute to sustaining its rank as world-class power, sick though may it be. While disarmament would assist Russia economically and limit U.S. activities, total disarmament could eliminate its influence since, in a disarmed world, economic and technological power will likely dominate. The United States, as the world's strongest economy and most advanced conventional power, would remain in a strong leadership position but perhaps not an insurmountable one. Status plays a role in the retention of nuclear weapons by both France and the United Kingdom. Both being former empires, their fortunes are fading as other nations rise economically, unless the European Union bears golden fruit. India has taken a great deal of pride in becoming part of the nuclear league, struggling to overcome her colonial history and to claim a leading role in regional and world affairs [30]. Pakistan, in competition with India and under a strong domestic pressure to test nuclear weapons, took pride in matching the Indian effort [31].

Status will complicate not only achieving a NFWF but even deep reductions which proceed incrementally. Belief systems change very slowly. As the advanced powers proceed with cuts, they will require some commitment from the second tier nuclear states that they will at least freeze their forces. A problem could emerge if they require such commitments before reaching the numeric levels of the second tier nuclear states. Past experience will make some N-8s hesitant to commit to a freeze before the superpowers bring their levels to parity. The 'temporary' establishment of a two-class system between the NWSs and NNWSs appears to be increasingly permanent. States have tended to resist measures that would appear to contribute to status division among states. India, in particular, is highly sensitized to status freezes, and China has already indicated that it would not become engaged in the multilateral process until the superpowers bring their warhead levels to something on a par with its levels.

## Environmental Factors

The general geopolitical environment is unique in that it is not necessarily an ever-present impediment since at a given moment the particular environment can be conducive or destructive. The constant evolution of the global economic and political environment

can make disarmament a priority one moment and arms acquisition desirable the next. Agreements such as the ABM treaty can be a cornerstone of disarmament one day and rejected the next as governments rise, fall and change their policies. This complicates efforts because initiatives involving deep reductions will require long-term solutions. An ill-timed environmental hiccup can derail a promising effort.

Domestic environments in key states will play an important role hindering achievement of a negotiated multilateral disarmament agreement. The multilateral process will require that all N-8s eventually participate. However, each states' situation is uniquely influenced by a range of actors with interests in military, commerce, energy, and foreign affairs. The intransigence of a single state may ruin the process. For example, U.S. policies over the past several years have put a strong damper on global arms control efforts. In addition, unpredictable events can work for or against achieving disarmament, and efforts to influence these forces from outside each country will be difficult if not precarious. National crises, like the terrorist attack on the World Trade Center and the Pentagon may encourage states to take a greater interest in physical protection and tighter controls on dangerous materials. However, it is also likely to heighten the insecurity of the United States and increase its reluctance to disarm despite the idea that a nuclear weapon does not provide a realistic means for dealing with terrorists.

## Implications

The four categories of security, verification, asymmetries and political impediments point to the existence of some considerable obstacles in the way of disarmament. The difficulty in overcoming many of these obstacles is that significant changes in state behavior are required. Those who support nuclear reductions need to recognize that these obstacles cannot be ignored. Long-term, broader approaches, which address questions of state security, may offer some solutions. Debate should focus on not just disarmament measures but the reasons why states want nuclear weapons and the means to deal with the wider ramifications of the disarmament process. This includes building the necessary military and political, national and international structures to enhance security.

Structures to fill the security void left by disarmament may take a variety of forms—creating tighter multilateral security arrangements, developing additional non-proliferation agreements, overhauling arms control verification measures and adjusting military and non-military domestic policies. Gradual de-emphasis and removal of nuclear weapons from security doctrines will be key in promoting new mindsets and make the disarmament process psychologically more acceptable. A change in doctrine, even without reductions, will likely require that the N-8s review their conventional force structures. Regional CFE-type arrangements may contribute to preventing rash reactions in crises and contribute to stability. However, cooperative mechanisms need to be fairly fluid. To act as a deterrent, mechanisms based on alliances must be responsive in meeting individual states needs without creating excessive bureaucracy.

When states build security structures, they need to construct frameworks that promote mutual rather than individual states' security. The security of the NWSs and NNWSs are intertwined. The NWSs, finding security in their nuclear weapons, have failed to appreciate the resentment and concerns of the NNWSs and the long-term threat to the non-proliferation regime. Their retention of nuclear weapons provides motivation for proliferators and generates a lack of support from the NNWSs on non-proliferation and verification issues. The retention of weapons by the NWSs to enhance their security also feeds the threat nuclear weapons are trying to address.

While the NWSs have used the obstacles to disarmament as a crutch to avoid their disarmament commitments, the NNWSs need to develop greater appreciation that many states possessing nuclear weapons genuinely perceive security threats, which reduce their motivation to disarm. A blasé attitude by the NNWSs to those concerns does not help encourage disarmament. By becoming a NNWS, states embrace the idea that they are more secure without nuclear weapons than with them. The N-8s are unable to reconcile themselves with this idea. The role of the NNWSs should evolve beyond applying pressure on the NWSs to disarm to include seeking ways to create an environment in which the NWSs feel they can disarm. For example, taking an increased interest in proliferation concerns might be conducive to U.S. interest in disarmament.

One implication of the verification impediments is that all states need to reevaluate the support that they give to international arms control verification. As verification mechanisms in a disarming world will make up the bulwark of states' defense against nuclear weapons, they will need to be strengthened and treated as an important element of all states' national security. Verification, transparency, and intrusiveness must receive a better reception, not condemned as a burden on developing countries or a threat to industry. Where loopholes in verification are identified, corrective action must become an international imperative.

Although verification can never provide total assurances, current attitudes and approaches to verification greatly undermine the credibility of multilateral verification systems and provide strong disincentives for nuclear reductions. Currently, disarmament carries higher economic burdens and sacrifices of sovereignty than the international community has been willing to accept. If states are serious about disarmament, standards will need to be raised considerably. Prevention as opposed to the current multilateral standard of providing warning may be an appropriate goal for verification systems at low levels. Multilateral mechanisms for deep reductions must be designed under the assumption that they will manage rivalry.

Disarmament may require that states be given the opportunity for a greater role in verification, rather than be forced to rely on the conclusions of an international organization. In order for Argentina and Brazil to discontinue their nuclear programs, they established the Brazilian–Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) which gives them a direct role in verification. Although this example is bilateral, the concept of increased state participation in verification where higher assurances are needed represents a different type of relationship between state parties and the international inspecting body than currently in existence.

Better formulas than the existing ones will be needed to cope with non-compliance. As long as the international community fails to fully resolve the non-compliance of Iraq and North Korea, some N-8s have yet another motivation not to disarm. Concerns regarding the intentions of peaceful programs cannot be left to fester, as they provide motivation to break away from arms control commitments and provide disincentives to disarmament. Likewise, the international community must be wary of enforcement fatigue when dealing with non-compliant states. Multilateral arrangements must incorporate a complaint resolution mechanism, which, like some bilateral arrangements, provides more efficient avenues for a state with concerns to resolve a problem to its satisfaction.

This is not to argue that increased verification is a panacea. The Iraqi experience has taught that full access rights are not sufficient to find clandestine programs. Building a credible verification regime is more than accounting for materials and taking measurements. While transparency is an important key to reductions, verification politics are equally important to increasing verification regime credibility when the science falls

short. States' receptiveness to inspection and their support to ensure system functionality can affect general perceptions of the system as a whole.

The rigid linkage of verification measures or safeguards to technical assistance ultimately needs to be reevaluated. No state directly links its defense needs to fund housing works. Operating a verification system on such a basis discourages states to provide support to ensure that a system remains credible. A stable system can only be established and sustained if states believe it meets their objectives. Acceptance of new measures should not be based on bribes of technical assistance or promises that the new measures will make the system cheaper to operate. New measures should be developed and readily accepted on the basis that an environmental development has reduced system effectiveness.

Stronger verification and increased transparency do not imply that states' and industry's right to protect information should be disregarded. However, governments and industry need to change their focus on how they protect sensitive information. Rather than creating legal impediments to transparency, governments need to pursue better solutions through developing improved verification methods and technology in conjunction with industry and verification organizations. Governments need to make a much greater contribution to supporting international verification. Current international treaty organizations are in no position to invest in verification research and development at the level necessary to ensure the interests of all parties are met. Increased investment by the international community will also signal an interest in ensuring that verification structure functionality will be sustained.

There are no particular formulas to address the political impediments undermining the disarmament process. Changing the embedded belief systems of populations and national governments, particularly those regarding status, is even more challenging. While non-governmental organizations may play an important role in implementing a change in societal thinking, government leaders and researchers must examine the cues that the international community gives off which makes a state with nuclear weapons believe it has status. Do importers of technology reflect preconceptions that technology from the N-8s is more advanced or reliable? Are international condemnations of states acquiring or retaining nuclear weapons sufficient and sincere enough? Are states feeding the perception that nuclear weapons bring status by the manner in which they give negative attention?

The impediments collectively point to a difficult situation when one conducts a disarmament cost-benefit analysis. Nuclear weapons are costly, hazardous to maintain, repulsive from a normative perspective and feed rivalries with adversaries. The N-8s are under increasing pressure from the NNWSs to disarm and it is to no one's advantage to see the non-proliferation regime disintegrate. However, the N-8s have incentives linked to one or more impediments that appear to override their reasons to disarm. At the same time, the NNWSs have every incentive to pursue policies that will further complicate disarmament efforts. The question arises whether both groups have the will to raise the incentives to disarm by resolving a sufficiency of obstacles.

The challenges to disarmament presented by the various obstacles discussed above bode ill for the prospects of successful negotiations if states continue to use their current approaches to the disarmament. When going forward with incremental steps, governments have avoided confronting structural impediments, which require fundamental changes as to how states approach security building, arms control and verification. Multilateral measures can no longer be negotiated to meet short-term-political goals but need to be part of a sound security strategy. Without developing national strategies that address the impediments elucidated above, each incremental step will become increasingly difficult, and the whole disarmament process will be short-circuited.

## Notes

1. China, France, India, Israel, Pakistan, Russia, United Kingdom, United States.
2. The anti-nuclear weapon norms vary from state to state. Many NNWSs support non-possession and non-use of nuclear weapons. The N-8s hold different views regarding under which circumstances nuclear weapons can be used.
3. *Report on Options for Confidence and Security Building Measures (CSBMs), Verification, Non-Proliferation, Arms Control and Disarmament*, Press Communiqué M-NAC-2(2000)121, December 14 2000.
4. Hans M. Kristensen, *The Matrix of Deterrence*, The Nautilus Institute, May 2001, p. 17.
5. STRATCOM as noted on START II nuclear arms reductions concluded that as cuts were implemented, the characteristics of the force structure would become increasingly important for deterrence and war fighting. (Ibid., p. 17.)
6. For example see James Scouras, "Redefining Strategic Stability: Unilateral Reductions and START III in Perspective", in Stephen J. Cimbala and James Scouras (eds.), *Nuclear Deterrence and Arms Control: A New Century*, Praeger Publishers, Westport, Ct., forthcoming.
7. NATO for example retains the possibility to use nuclear weapons against states armed with biological or chemical weapons Darel Koster, "An Uneasy Alliance: NATO Nuclear Doctrine & the NPT", *Disarmament Diplomacy*, August 2000, No. 49, pp. 9-10.
8. Alexander Kelle, "Implementation on a Low Flame", *Disarmament Diplomacy*, No. 57, May 2001, pp. 18-22.
9. As of 5 January 2001, 53 states signed an Additional Protocol of which 18 have entered into force.
10. "Russian Federation Military Doctrine, Approved by Russian Federation Presidential Edict of 21 April 2000", reprinted in *Nezavisimay Gazeta*, April 22 2000, pp. 5-6
11. However, a number of NATO members, Canada, Germany, Italy, Netherlands and Norway, have supported reform of the Alliance's nuclear policies to encourage reduced reliance on nuclear weapons and disarmament.
12. "Weinberger Criticizes NATO Reaction Force" *NewsMax.com Wires*, February 23 2001.
13. See *Statement by the General Secretary of the CPSU Central Committee* [Mikhail Gorbachev], Moscow, January 15 1986.
14. M-NAC-2(2000)121, *op. cit.*
15. On the conservative attitude in the history of IAEA negotiations see Allan McKnight, *Atomic Safeguards*, United Nations Institute for Training and Research, New York, 1971; David Fischer and Paul Szasz, *Safeguarding the Atom: A Critical Appraisal*, Taylor & Francis, London, 1985.
16. William Drozdiak, "UN Nuclear Agency in Financial Straits", *The Boston Globe*, August 8 2000, p. A9.
17. For example, see NPT/Conf.1995/MC.III/1, para. 7.
18. Vladimir Semenovich Belous, Anatoli Stepanovich Diakov, Timur Tairovich Kadyshev, et. al, *Nuclear Arms Reduction: The Process and Problems*, Center for Arms Control, Energy and Environmental Studies, Moscow Institute of Physics and Technology, June 1998.
19. Christine Comley, Mike Comley, Peter Egging et. al., *Confidence, Security & Verification: The Challenge of Global Nuclear Weapons Arms Control*, paper prepared for the United Kingdom Ministry of Defence, Atomic Weapons Establishment, Aldermaston, AWE/TR/2000/001, 2000.
20. For background see Darryl Howlett, *EURATOM and Nuclear Safeguards*, The MacMillan Press, London, 1990, pp. 182-189.
21. For example, their IAEA Voluntary Agreement is considerably more restricted than that of the United States or United Kingdom.
22. On IAEA negotiations see *Conference on the Statute*, Verbatim Records of the Meetings of the Main Committee, IAEA/CS/OR.1-37, October 1956. In negotiating a CTBT, which unlike safeguards was a non-discriminatory agreement, India vigorously resisted the conclusion of the



Treaty when its signature was required for entry-into-force, in spite of that, it was highly supported by a large percentage of the international community.

23. *Statement by Ambassador Munir Akram, Permanent Representative of Pakistan to the United Nations, in the General Debate of the First Committee of the 55th Session of the UNGA*, October 13 2000.

24. For a discussion see Robert A. Manning, Ronald Montaperto, Brad Roberts, *China, Nuclear Weapons and Arms Control, A Preliminary Assessment*, (Chairmen's Report of a Roundtable jointly sponsored by the Council on Foreign Relations, the National Defense University, and the Institute for Defense Analyses), Council on Foreign Relation, 2000, pp. 64–66.

25. "India Congratulates Itself on Nuclear Tests", *BBC New Online*, May 12 1998.

26. The current U.S. nuclear war fighting strategy can be traced to 1981 Kristensen, 2001, pp. 17–18.

27. Richard Butler, *The Safeguards System of the International Atomic Energy Agency—A Study of the International Politics of Atomic Control*, Thesis, Australian National University, Sidney, October 10 1968, pp. 108–110.

28. NPT/CONF.2000/28, *op. cit.*, p. 3, para. 32.

29. Olivier Meier, "Strengthened Nuclear Safeguards", *VERTIC Briefing Paper*, No. 00/2, April 2000, pp. 6–8.

30. Statement by Prime Minister Vajpayee, May 27 1998 in *Disarmament Diplomacy*, No. 26, May 1998.

31. Statement by Nawaz Sharif, May 28 1998 in *Disarmament Diplomacy*, No. 26, May 1998.