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EDITOR'S NOTE

Nearly a decade has passed since the NPT was indefinitely extended—ten years that have witnessed the testing of nuclear weapons by two states outside the regime; growing distress over proliferation of technology, materials and knowledge as well as lack of progress in disarmament; widespread alarm about the possibilities of nuclear or radiological terrorism; and unresolved ambiguities about some nuclear programmes. There appears to be little agreement within the international community on how to respond to these issues. Some critics have suggested that the NPT is no longer able to cope with proliferation challenges and that new responses are merited. Others defend the nuclear non-proliferation and disarmament regime as sufficient, only hampered by states parties through its selective implementation.

This issue of *Disarmament Forum* examines the state of the regime, looking ahead to the 2005 NPT Review Conference. Articles focus on recent developments, questions concerning supply networks, the value of new responses such as voluntary measures, safeguards and how to strengthen the NPT.

The next issue of *Disarmament Forum* will focus on the intersection of biotechnology and non-lethal weapons. The revolution in the life sciences is facilitating new discoveries and applications in medicine, psychology and health. However, the possibilities for malign use of these breakthroughs are both terrifying and vast. International discussion and the legal regimes lag far behind the science. What can be done to harmonize the legal prohibition of chemical and biological weapons with the fast pace of technological and scientific discovery? This issue will present an overview of current research on non-lethal weapons, before turning to worrying applications made possible by developments in neuroscience and immunology, exploring how to strengthen the existing biological and chemical weapons regimes, and discussing the desirability of new legal or voluntary measures.

In cooperation with the Arms Control Center's Scientists Working Group on Biological and Chemical Weapons, the Verification Training and Information Centre (VERTIC) and the NGO Committee on Disarmament, Peace and Security, UNIDIR is sponsoring a lunchtime seminar in New York entitled 'Should the UN Have a Standing Capability for WMD Investigations?' on 7 October 2004. Speakers will include Ambassador Henrik Salander (Secretary-General, WMD Commission), Barbara Hatch Rosenberg (Chair, Scientists Working Group on Chemical and Biological Weapons at the Center for Arms Control and Non-Proliferation) and W. Pal S. Sidhu (International Peace Academy). UNIDIR Director Patricia Lewis will chair the session.

UNIDIR's 'Weapons for Development' project is in its final phase (see page 71 for a description). *Exchanging Weapons for Development in Mali: Weapons Collection Programmes Assessed by Local*

People, one of the project's case studies, examines the role and perceptions of the people directly involved in and affected by weapons collection programmes. Two further studies, focusing on the experiences of Cambodia and Albania, are being prepared. Details of these publications and ordering information are available on our website.

Kerstin Vignard

Preserving the Non-Proliferation Treaty

Next year's Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) will mark the passage of a decade since the treaty was extended indefinitely—as part of a package of decisions on a strengthened review process, principles and objectives for nuclear non-proliferation and disarmament, and a resolution on the Middle East which, *inter alia*, urged the establishment of a nuclear-weapon-free zone. Next year will also mark five years since the 2000 NPT Review Conference came to a historic agreement on 'practical steps' for nuclear disarmament.

Some have questioned the wisdom of indefinitely extending the NPT in 1995, given the rise of new challenges both from within the treaty membership and from those outside it. The expectations of systematic and progressive efforts for nuclear disarmament clearly have not been met. Proliferation concerns have arisen regarding the nature of the nuclear programmes in some NPT states.

It is clear that the NPT regime is facing new challenges that threaten its authority and integrity. The final session of the Preparatory Committee for the 2005 NPT Review Conference, held in April-May this year, failed to agree on any substantive recommendations or even on an agenda for next year's conference.

Thus, the 2005 NPT Review Conference faces a number of formidable tasks: finding ways to improve the implementation of the treaty; and negotiating an agreed approach towards measures that could shore up the NPT regime. This 'Special Comment' addresses some of these challenges.

The Non-Proliferation Treaty and its security benefits

While the events of the past few years have placed the NPT regime under stress and exposed some of its limitations, it is important to emphasize that the treaty remains the *essential anchor* for global nuclear non-proliferation and nuclear disarmament. Without the NPT, there would not exist the obligation that non-nuclear-weapon states (NNWS) party to the NPT place the entirety of their nuclear programmes under International Atomic Energy Agency (IAEA) safeguards. And, it is *only* in the context of the NPT that the five recognized nuclear-weapon states (NWS) are legally bound to pursue and achieve nuclear disarmament.

The NPT contains a triangular linkage: verified nuclear non-proliferation; cooperation in peaceful uses of nuclear energy; and nuclear disarmament. Without this linkage, there would have been no agreement on an NPT in 1968—and it is hard to envision any new international non-proliferation compact that would not inherently contain such a linkage.

For the vast majority of NNWS, the NPT provides real security benefits—in that they are assured, with the help of safeguards administered by the IAEA, that their neighbours are not misusing nuclear energy for weapon purposes. Without this system of safeguards, the number of states with nuclear weapons would not likely have remained in the single digits. Moreover, the resulting security assurance provides the basis for global commerce in and use of peaceful nuclear applications ranging from nuclear medicine to crop production to electricity supply. Only three states remain outside the treaty; all other states have accepted the treaty with its rights and obligations.

Post-Cold War adjustments and changes

In recent years, it has become clear that nuclear technology and know-how is no longer confined to relatively few countries; that clandestine nuclear programmes have been conducted within the framework of NPT membership; and, most recently, that an illicit international network has been operating with some capability to supply nuclear equipment, expertise and material. However, before turning to these problems and considering possible solutions, it should be considered that these trends have occurred over two or more decades, and it is important to understand some of the adjustments in the international scene that have taken place during that period.

During the Cold War, global security depended heavily on a nuclear standoff—a balance of terror, if you will—between two broad alliances, NATO and the Warsaw Treaty Organization. As alliance leaders, both the Soviet Union and the United States protected and managed their respective spheres of influence, and were able to minimize the number of nations acquiring nuclear weapons. The near-miss of the 1962 Cuban missile crisis led to a process of ‘nuclear learning’, whereby the two superpowers sought to avoid nuclear crises and set about establishing a common strategic language and process of nuclear arms control.

In the aftermath of the break-up of the Soviet Union and the end of the Cold War, some regional conflicts and tensions that had been kept in check erupted to the fore. Rather than the much heralded emergence of a ‘new world order’, this has resulted in a sort of ‘new world instability’, characterized by civil wars, asymmetric conflicts, religious and ethnic tensions that cut across national boundaries, and more visible terrorist activity by sub-state or inter-state groups.

Nuclear weapons are largely ineffective in such conflicts, even in terms of any deterrent effect; yet the Cold War legacy remains. Some thirty NNWS, through their membership in alliances, continue

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to rely upon nuclear weapons for security. The five NPT NWS continue to retain large numbers of nuclear weapons—some 30,000 by last count—failing to recognize that their possession of nuclear arsenals and delivery mechanisms, not to mention modernization or use scenarios, serves as a powerful example for emulation by those states that perceive serious security threats.

The international security landscape has changed dramatically. But rather than trying to understand these changes and adapting to address the new threats, the disturbing trend has been away from reliance on a global security system and multilateral treaties to more ad hoc, self-help initiatives. Previously negotiated treaties have been cast aside, work on new treaties has been stalled, and the linkage between non-proliferation and security has been weakened.

Against this backdrop of insecurity and instability, perhaps we should not be surprised that it is in the areas facing security deficits—the Korean Peninsula, the Middle East and South Asia—that we find

states that have either already developed or are suspected of having nuclear-weapon ambitions. It is also in these same regions that the problems of compliance with global arms control treaties are the most severe.

The twin crises of compliance with NPT obligations—namely, the engagement of some NNWS in undeclared nuclear activities, coupled with the failure of the NWS to take concrete, verifiable and irreversible steps to eliminate their nuclear arsenals—have led in turn to a crisis of confidence in the NPT regime.

The solution is not to wish for a return to the oppressive Cold War stand-off of ‘Mutually Assured Destruction’, but to work towards an equitable system that will provide for the security of all. Despite any appearances to the contrary, this is an achievable goal—but only if it is rooted in rule-based multilateralism.

Lessons from recent cases

Since the early 1990s, four undeclared nuclear programmes—in Iraq, Iran, Libya and North Korea—have come to light. At the IAEA, we have learned a number of valuable lessons from our recent experience in verifying these undeclared nuclear programmes.

Perhaps the most important lesson is that verification and diplomacy, used together, can work. The Iraq experience demonstrated that inspections, while requiring time and effort, can be effective even when the country being inspected is less than cooperative. All the evidence indicates that Iraq’s nuclear-weapons programme had been effectively dismantled through IAEA inspections in the 1990s, as we were nearly ready to conclude before the war. Inspections in Iran over the past year and a half have also been key in uncovering a nuclear programme that had remained hidden since the 1980s.

One of the most disturbing lessons to emerge from our work in Iran and Libya lies in the relative ease with which A.Q. Khan and his associates were able to set up and operate a multinational illicit market network for nuclear items. Nuclear components designed in one country could be manufactured in another, shipped through a third, and assembled in a fourth for use in a fifth. The fact that so many companies and individuals could be involved is extremely worrying, and demonstrates the inadequacy of the present export control system.

Nuclear non-proliferation initiatives for the twenty-first century

In a modern society characterized by electronic information exchange, interlinked financial systems and global trade, the control of access to nuclear-weapons technology has grown increasingly difficult. The technical barriers to designing weapons and to mastering the essential processing steps have eroded with time. Much of the hardware in question is ‘dual use’, and the sheer diversity of technology has made it much more difficult to control or even track procurement and sales.

In 1970, the assumption was that relatively few countries had the know-how to develop nuclear weapons. Now, with this knowledge spreading (thirty-five to forty countries, by some estimates), the margin of security under the current non-proliferation regime is becoming too close for comfort. In this context, it is not hard to see the need to find new approaches.

Common sense and recent experience make clear that the NPT, which has served us well for over three decades, must be supplemented with new measures to fit these twenty-first century realities.

There is no fix-all solution, but I find it encouraging that both governments and members of civil society are beginning to come forward with ideas on how to move forward. In my view, the series of proposals that follow could do much to strengthen the existing nuclear non-proliferation treaty regime.

Tighter controls must be put in place over the export of nuclear material and technology. The current system relies on informal arrangements that are not only non-binding, but also limited in

The nuclear export control system should be universalized and treaty-based—while preserving the inalienable rights of all states to peaceful nuclear technology, as noted in Article IV of the NPT.

membership, and do not include many countries with growing industrial capacity. Moreover, some members fail to control the exports of companies unaffiliated with government enterprise. The nuclear export control system should be universalized and treaty-based—while preserving the inalienable rights of all states to peaceful nuclear technology, as noted in Article IV of the NPT.

In addition, the actions of individuals and companies that seek to assist others in nuclear proliferation should be criminalized.

In parallel, *nuclear inspectors must be empowered.* Much effort was recently expended—and rightly so—in persuading Iran and Libya to give the IAEA broader rights of inspection, by accepting the provisions of the Additional Protocol to safeguards agreements. But the Agency should have the right to conduct such inspections in all countries. Verification of NPT and nuclear-weapon-free zone treaty obligations requires more stringent measures, but to date, only sixty-one states are implementing additional protocols allowing broader IAEA inspection rights.

It is time to consider *limits on the processing of weapon-usable material (separated plutonium and high-enriched uranium) in civilian nuclear programmes, as well as the production of new material through reprocessing and enrichment,* by agreeing to restrict these operations under multilateral controls. These limitations would need to be accompanied by proper rules of transparency and, above all, by a reliable assurance that legitimate would-be users could get their supplies.

Multilateral approaches should also be considered for the management and disposal of spent fuel and radioactive waste. More than fifty countries have spent fuel stored in temporary sites, awaiting reprocessing or disposal. Not all countries have the right geology to store waste underground and, for many countries with small nuclear programmes for electricity generation or for research, the costs of such a facility are prohibitive. Considerable advantages—in cost, safety, security and non-proliferation—would be gained from international cooperation in these stages of the nuclear fuel cycle. I am encouraged that the Russian Federation has recently expressed interest in a collective disposal initiative, and has agreed to work with the Agency in giving consideration to its feasibility.

I have recently appointed an international group of experts to analyse these two issues—as well as other, related proposals—and I hope to have their recommendations in hand by early next year, in advance of the NPT Review Conference.

Nuclear energy systems should be deployed that, by design, avoid the use of materials that may be applied directly to making nuclear weapons. These systems should have built-in features that would prevent countries diverting material to weapons production; prevent the misuse of the facilities and equipment for clandestine manufacture of such materials; and facilitate efficient oversight to ensure continued peaceful use. This is not a futuristic dream; much of the technology for proliferation-resistant nuclear-energy systems has already been developed or is actively being researched. In addition, existing facilities around the world that use high-enriched uranium (HEU) applications—for example, to produce medical radioisotopes—should continue, gradually but irreversibly, to be converted to low-enriched processes.

Global stocks of HEU should be eliminated. Most of the thousands of tonnes of HEU produced during the Cold War is located in the states with nuclear weapons, while smaller quantities are in use in

NNWS in research reactors. The use of HEU globally should be phased out. All existing HEU should be down-blended to low-enriched uranium for use in civilian reactors to generate electricity, and all HEU should be placed under the highest standards of physical protection.

The international community should 'turn off the tap', for all countries, for the production of new material for nuclear weapons. This year will mark the eleventh anniversary of a historic United Nations resolution calling for a verified ban on the production of fissile material for weapons use—the Fissile Material (Cut-off) Treaty—but negotiation on such a treaty has yet to commence. This treaty could cap the production of weapon-usable fissile material, and serve as a starting point for further future nuclear arms reductions.

No country should be allowed to withdraw from the NPT without clear consequences. The treaty now allows any member to do so with three months notice. This provision of the treaty should be curtailed; at a minimum, notice of NPT withdrawal should prompt an automatic review by the United Nations Security Council. Furthermore, any NPT state found to be in non-compliance should first resolve all outstanding compliance questions in order to benefit from the treaty.

Whatever the framework for these initiatives, the discussion should be inclusive. NWS, NNWS and even those outside the current non-proliferation regime should all have a seat at the nuclear non-proliferation/nuclear-disarmament table. The security concerns of all parties should be heard, and the aim should be a new security structure that does not depend on nuclear deterrence. We can only hope to make meaningful progress if we seek a comprehensive solution that addresses the security concerns of all.

As a starting point, we must recognize that the current crisis of international insecurity will not be resolved by anything short of a functional system of collective security, as clearly hoped for in the United Nations Charter. The Security Council must be able and ready to engage effectively in both preventive diplomacy and enforcement measures, with the tools and methods in place necessary to cope with existing and emerging threats to international peace and security.

The earlier we focus on collective security reform, the earlier we can move forward towards agreement on strengthening the Non-Proliferation Treaty and towards a concrete programme for verified, irreversible nuclear disarmament, complete with a timetable. Such a course of action could be achieved in the context of a protocol to the present NPT. Once in force, this new framework should be regarded as a 'peremptory norm' of international law—in short, it should be enduring and permanent.

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Conclusions

We cannot conclude the unfinished business of the Cold War until we adjust our concepts of security accordingly. This requires moving from a security system based on nuclear deterrence and alliances to one based on cooperation and human solidarity. Failure to achieve success in this endeavour is at our peril.

Mohamed ElBaradei

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Is the NPT up to the challenge of proliferation?

Rebecca JOHNSON

There is much talk now of a post-Cold War nuclear paradigm and the challenges of the 'new proliferation game'.¹ The 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT) has 188 or 189 states parties, depending on whether North Korea is counted in or out, but appears to be more at risk than at any time previously. Scholars debate how to bring India, Pakistan and Israel into the regime 'as if' they were nuclear-weapon states.² Others debate whether the new nuclear weapons that the Bush Administration covets would be good or bad.³ The United States and Britain initiated an unprovoked war ostensibly to remove the threat of Iraqi weapons of mass destruction (WMD), though they have since failed to find evidence of such weapons or programmes being retained or developed after UNSCOM was forced out of Iraq in 1998.

In different ways and with different outcomes, the long-suspected nuclear programmes of North Korea, Iran and Libya have been brought into the open, together with Abdul Qadeer Khan's well-connected nuclear procurement network, on which they all depended. The Bush Administration's Proliferation Security Initiative (PSI) was launched in September 2003 and quickly grew to fifteen members,⁴ with more expected; others, including India, have agreed to abide by the rules; and Panama and Liberia have made bilateral agreements with the United States to permit vessels carrying their flags to be boarded and searched in accordance with the principles of PSI. On 28 April 2004, the United Nations Security Council adopted resolution 1540 on WMD, which built on the PSI and established a Committee of the Security Council to report back on the resolution's implementation.⁵

As the Security Council debated this resolution in their heavily guarded chamber on the United Nations' second floor, down in the basement representatives of 123 states parties to the NPT were enmeshed in the worst Preparatory Committee (PrepCom) meeting of recent times. As the final PrepCom before the 2005 Review Conference, the meeting was supposed to produce recommendations and finalize arrangements for the 2005 Conference, such as the rules of procedure, documentation and agenda. It failed to adopt any substantive recommendations. Many had expected this: unlike the Review Conferences, the PrepComs lack the structure and authority to take substantive decisions, leaving the states parties ill-equipped to push for the kind of difficult compromises entailed in making recommendations on controversial issues. More significantly, however, the United States and France—with tacit support from the other weapon states—were prepared to sacrifice timely agreements on the agenda and preparatory documents as they played politics with the NPT in their efforts to diminish the significance of consensus agreements adopted as part of the Final Document at the 2000 Review Conference. The United States and France did not seek to minimize reference to the 2000 agreements because they objected to the emphasis placed on the additional protocol that strengthened IAEA

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safeguards or the sections on nuclear safety and security. Their sole reason for trying to sideline the Final Document of the 2000 Review Conference lay in paragraph 15, the so-called 'Thirteen Steps' on nuclear disarmament.⁶

Even if Article VI was originally included in the NPT to entice the non-nuclear-weapon states, the prevention of 'vertical proliferation' has over the years come to be widely accepted as a central requirement of the NPT-based non-proliferation regime. In the age of PSI and resolution 1540, can the dominant state(s) now achieve their non-proliferation goals without bothering about nuclear disarmament? Can proliferation be countered effectively by supply-side denial of access to nuclear technologies and materials, imposed by the dominant supplier states, backed up by coercive military force? Is disarmament now irrelevant, and if so, what does that mean for the NPT?

As the NPT states parties look towards 2005, what do they hope to achieve? Some are already looking back at 1995 and regretting the deals they made then. The point is not to question whether the non-proliferation regime would have been stronger if the treaty had been given a shorter rolling, rather than indefinite, extension, but to look at what changes—especially what tools and mechanisms—would be needed to address present-day compliance challenges and carry forward the underlying hopes of those who had pushed so hard for a strengthened treaty with more explicit principles and objectives, especially relating to nuclear disarmament. The dilemma for the major powers is that successful non-proliferation and arms control require that curbs be imposed on everyone. The credibility of the regimes is undermined if a dominant country seeks to control others while keeping all options open for its own military and commercial interest groups. In 1999, the Tokyo Forum summed up this non-proliferation dilemma rather succinctly. 'The world faces a choice between the assured dangers of proliferation or the challenges of disarmament.'⁷

The NPT in context: proliferation threats and actors

To assess the relevance of the current non-proliferation regime, it is important to understand the perceived nuclear-related threats to international security: from non-state actors; nuclear trade and black market procurement; clandestine weapons programmes in certain states; states seeking to hedge bets and develop nuclear-weapon options under the guise of NPT-permitted nuclear power programmes (but with no weaponization programmes as such); de facto weapons and programmes in three non-NPT states, whether openly declared, as in India and Pakistan, or opaque but assumed to be significant, as in the case of Israel; and the continued existence of large arsenals among the five declared nuclear-weapon states, together with continuing policies that appear to associate high levels of military, security or political power with nuclear weapons.

Initiatives such as the PSI and resolution 1540 assume that the priority threat is the acquisition of nuclear devices, materials or weapons usable technology by non-state actors or 'rogue states' with terrorist intentions.

Initiatives such as the PSI and resolution 1540 assume that the priority threat is the acquisition of nuclear devices, materials or weapons-usable technology by non-state actors or 'rogue states' with terrorist intentions. Acquisition of a nuclear explosive device would be the greatest calamity, but there is growing awareness of the massive contamination and economic damage that could be inflicted by a radiological dispersal weapon, the so-called 'dirty bomb', with potentially devastating long-term health and environmental risks. The revelations about Libya and North Korea's declared nuclear-weapons ambitions, as well as Iran's failure to be fully transparent about parts of its nuclear programme, including uranium enrichment, have prompted growing international concern about the acquisition of nuclear-weapons programmes by further states, whether or not one shares the Bush Administration's classification of who is 'rogue'. Depending on standpoint,

the world is more dangerous because such examples of non-compliance show what is possible and there might be more violators that have not yet been revealed; or, alternatively, these examples give confidence that the non-proliferation regime is working—whether directly deriving from the treaty or other security measures, there is the capability to detect and at least contain non-compliance. There is a third view: that the treaty-based regime is essentially sound but needs a great deal more strengthening, and the best way to protect the world from the threat or use of nuclear weapons is through eliminating and prohibiting the weapons, not discriminatory approaches that appear to differentiate between good and bad, responsible and irresponsible.

Some Western powers, notably the United States, appear increasingly comfortable with the acquisition of nuclear-weapon arsenals by Israel, India and Pakistan—at least provided they remain allies in the ‘war on terrorism’ and their nuclear ambitions stay within certain qualitative and quantitative limits. The rest of the world is less sanguine, concerned about regional instability and porous boundaries. Two countervailing tendencies are clearly visible among NPT parties: those who argue for according the three de facto nuclear-weapon states (D3) some form of recognition in return for their adopting and fulfilling the obligations that apply to the declared nuclear-weapon states under the NPT; and those who refuse to countenance any recognition that could be construed as acceptance of the D3s’ weapon status, and who demand instead that the international community must continue to push them to get rid of their nuclear weapons and join the NPT as non-nuclear-weapon states. The latter group inevitably contains neighbours or opponents, but is not confined to regional rivals.

The policy predicament pits two competing perspectives about the threats and choices against each other. Those preferring to treat the D3 ‘as if’ they were weapon states argue that this is best for international security and would reduce the risks of accidental or belligerent nuclear-weapon use. They see recognition as opening the door to better accountability and control, providing some measure of monitoring to ensure the D3 behave responsibly with regard to safety, security, command and control, and international efforts to prevent the transfer, trade or proliferation of nuclear materials and technologies.

Arguments about regional instability derive from the fact that these countries have nuclear-weapon capabilities and so would apply whether or not the D3 are formally recognized. The specific opposition to engaging with the D3 as weapon states rests on two related premises: that permitting more than the five declared nuclear-weapon states runs counter to the original NPT deal, thereby betraying those who joined the treaty and gave up their own options on the basis that there would never be more than five nuclear-weapon states; and that such recognition would be tantamount to rewarding proliferation behaviour once a certain line has been crossed. Thus recognition is variously portrayed as a slippery slope or the thin end of the wedge into greater proliferation, serving as an incentive to those who view nuclear weapons as either an instrument of geostrategic power or a regional or international deterrent and security guarantor. By contrast, among those who advocate recognition are many who deny that it would confer status, but insist rather that the recognition would bring the hold-out states into the regime and provide a basis for applying the NPT’s obligations. This argument is unfortunately undermined by the cavalier attitude of most of the P5 towards their NPT obligations, where they disregard some of the less convenient implications of Article I and treat Article VI as if it were a voluntary concession to the non-nuclear-weapon states rather than a binding obligation to work at eliminating their reliance on nuclear weapons.

Nuclear disarmament: mistaken interpretation or key to non-proliferation?

The concept of an international treaty to forbid the proliferation of nuclear weapons was first introduced in an Irish resolution to the United Nations General Assembly in 1958. In the early 1960s,

when the United States and the Soviet Union began negotiating what would become the NPT they were primarily interested in preventing the spread of the weapons that they themselves intended to keep. The Cuban missile crisis had been narrowly survived and President Kennedy had looked into the future and shivered at the prospect of twenty to twenty-five nuclear-weapon possessors by the 1970s. Britain, by that time little more than a client ally of the United States, was easily brought on board. France and China, suspecting curbs would be imposed on their fledgling weapons programmes, kept away. Significantly, neither became party to the NPT until they were put under pressure to join in 1992, in the run-up to the important decision on extending the treaty that would be taken in 1995. Nevertheless, in accordance with the treaty's definitions, they were able to join as nuclear-weapon states. Apart from the P5, there are no provisions for any state to accede to the treaty as anything other than a non-nuclear-weapon state, with its nuclear facilities fully under IAEA safeguards. The weapon states, by contrast, are subject only to voluntary arrangements with the IAEA that do not encompass their nuclear-weapon programmes.

When it came to negotiating the NPT with other nations that Washington and Moscow wanted to bring on board, especially those with nuclear programmes or of regional concern, the nuclear powers did not have it all their own way. States with nuclear programmes, including Brazil, India, Germany, Sweden, Canada and Italy, recognized the dangers of unbridled proliferation but were concerned that they would be disadvantaged in economic and security terms. They insisted on and won two important trade-offs: a commitment that those with weapons would end their arms race and pursue nuclear disarmament, which became Article VI; and a promise that nuclear technology would remain available for peaceful purposes, contained in Article IV.

Giving up the option of developing weapons that were widely touted as the ultimate security guarantor and deterrent was no light decision for any country's leaders, and many also pushed for security assurances from the nuclear-weapon states that they would not attack countries whose decision to abjure nuclear weapons might leave them vulnerable, and also that they would come to the aid of countries attacked with nuclear weapons. Security assurances did not get accepted into the treaty text, in part because the weapon states wanted to hedge them with a number of conditions determined by their Cold War strategic rivalry. Instead, the Security Council adopted a resolution on security assurances (resolution 255) in 1968. That this resolution was clearly viewed as part of the NPT package was underscored in 1995, when, in response to repeated calls from the non-nuclear-weapon states, the five nuclear-weapon states updated their security assurances, solemnly declaring them before the Conference on Disarmament (CD) and then adopting a further Security Council resolution (resolution 984) in the week before the 1995 Review and Extension Conference opened in New York.⁸

It is apparent from the negotiating history that nuclear disarmament was considered an integral part of the NPT by contracting non-nuclear-weapon states parties, but was only a peripheral issue for the nuclear-weapon states. Under pressure, the United States and Soviet Union weakened the Article VI obligation by rolling together in one sentence ending the arms race, nuclear disarmament and 'a treaty on general and complete disarmament'. Nevertheless, over the ensuing years, nuclear disarmament has come to be regarded—at least by the growing number of non-nuclear-weapon state parties—as a central obligation of the treaty. At each successive review conference the pressure was increased, with an end to nuclear testing as the pivotal demand. In 1995, the non-nuclear-weapon states insisted that the agreement on indefinitely extending the NPT had to be accompanied by decisions on principles and objectives for nuclear non-proliferation and disarmament and on strengthening the review process. The League of Arab States succeeded in getting a resolution on the Middle East sponsored by the depositary states and adopted at the same time. Among other things, this called for 'a Middle East zone free of nuclear weapons, as well as other weapons of mass destruction'.

The decisions in 1995 paved the way for the successful strategy of the New Agenda Coalition (Brazil, Egypt, Ireland, Mexico, New Zealand, South Africa and Sweden) at the 2000 Review Conference, at which a far-reaching plan of action for nuclear disarmament and non-proliferation was negotiated with the nuclear-weapon powers and eventually adopted as part of a consensus final document. The Thirteen Steps were meant to be a roadmap towards the full implementation of the Article VI disarmament obligations, and so covered a host of issues, including: the unequivocal undertaking by the nuclear-weapon states to accomplish the total elimination of their nuclear arsenals; entry into force of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) and a moratorium on nuclear testing; progress on a fissile materials ban and the disposition of fissile materials; putting the CD back to work on disarmament issues; commitments to irreversibility, transparency and accountability including reporting and verification; reducing the role of nuclear weapons in doctrine, policy and in operational status; and further unilateral steps, deeper bilateral cuts in the American-Russian arsenals and in non-strategic nuclear weapons, plurilateral P5 engagement and multilateral negotiations.

But almost before the ink was dry on the Final Document, some of the weapon states tried to reinterpret the commitments, seeking to back out of the agreements. At first, Britain and the United States claimed credit for the part they played in these agreements, while France and Russia grumbled loudest that they had been pulled into accepting more than they had meant to do. China sat on the sidelines, quietly ignoring the Thirteen Steps and modernizing its arsenal. Since 2001, however, the United States has reneged on many of its promises, withdrawn from the Anti-Ballistic Missile Treaty, publicly expressed opposition to the CTBT, and made clear that it wants the NPT to deal with 'non-compliance', by which it means the nuclear programmes of Iran, Libya, Syria and North Korea, not its own and not really those of India, Israel or Pakistan. John Bolton, United States Undersecretary of State for Arms Control and International Security, the architect of the American strategy at the 2004 PrepCom, was unequivocal about American priorities: 'We cannot divert attention from the violations we face by focusing on Article VI issues that do not exist'.⁹

This, therefore, was the context for the Franco-American alliance at the 2004 PrepCom to delete or, failing that, minimize references to the 2000 agreements. Observers who expressed amazement that two countries in such conflict over Iraq could be so cosy in the NPT have missed an important point: the NPT was itself constructed from an alliance between strategic 'enemies' the United States (with the United Kingdom) and the Soviet Union. Its primary objective was to keep others out of the nuclear club. The P5 may disagree on many things, but they frequently back each other up in order to protect their mutual interests as nuclear-weapon states. This has often been observed at the CD, during negotiations on the CTBT for example, and was apparent in the debates on PSI and Security Council resolution 1540. By contrast, when one of the nuclear club is regarded by others as going too far towards taking the disarmament obligations seriously, it is viewed as breaking ranks. Britain found this out in 2000 when it played a constructive role in negotiations with the New Agenda states and then directed its atomic weapons establishment at Aldermaston to study what would be entailed to verify nuclear disarmament and the elimination of nuclear weapons, a positive response to the Thirteen Steps.

Lost leverage

Ten years after the historic decisions of 1995, NPT parties must face the fact that the hard-won decisions that were taken together with indefinite extension have not delivered better progress on disarmament as hoped. Despite continued bilateral reductions and the dismantlement of those weapons systems that were withdrawn

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as a consequence of the end of the Cold War, the record on disarmament since 1995 has been abysmal. The CTBT, central to the deal on extension, was completed on schedule in 1996, but has still not entered into force. Though by no means dead, the CTBT was badly wounded by the nuclear tests conducted by India and Pakistan in May 1998 and even more seriously undermined by the United States' failure to ratify in 1999. Though the American signature still stands and the P5 moratoria have been honoured so far, the test ban's credibility suffers every time the Bush Administration repudiates the CTBT, which it does regularly in the UN First Committee, the CD and even at the NPT meetings. And despite achieving agreement in March 1995 on a mandate to negotiate a ban on fissile material production for nuclear-weapons purposes, the CD has signally failed to get started.

The New Agenda used the 1995 Principles and Objectives commitment to 'the determined pursuit by the nuclear-weapon states of systematic and progressive efforts to reduce nuclear weapons globally'¹⁰ as the basis for its strategy to get more concrete commitments to specific disarmament principles, measures and steps at the 2000 Review Conference. Whilst the New Agenda plan worked better than expected, its very success has highlighted the limitations of the review process as enhanced in 1995 and again in 2000. Since 2000, the almost annual PrepComs have degenerated into little more than two-week talk shops, lacking the decision-making powers or authority to deal with an array of proliferation challenges, ranging from North Korea's announced withdrawal from the NPT and the failure of Iran to comply fully with its safeguards obligations fuelling suspicions about its nuclear programme and intentions, to Bush Administration policies regarding accelerating test-site readiness and research into new types of nuclear weapons.

It is hardly surprising, therefore, that some states—and not only members of the Non-Aligned Movement (NAM)—should argue with hindsight that agreeing to indefinite extension in 1995 was a mistake. According to this view, a shorter rolling extension would have ensured greater leverage for full implementation. The truth is more complicated. There were only two actual alternatives to negotiating the package of decisions and resolution adopted in 1995: a divisive vote or a twenty-five-year rolling extension. Canada's zealous collecting of signatures made clear that a vote, as provided for in the rules of procedure, could have been won by advocates of indefinite extension. The majority wanted the decision to be by consensus, nonetheless, fearing that a vote would divide states parties and weaken the non-proliferation regime. For this reason, they leaned on the weapon states to negotiate on a set of Principles and Objectives originally proposed by South Africa. If the NAM had been much better organized and prepared, it is possible that they could have got the Western states to accept consensus agreement around a twenty-five-year rolling extension rather than forcing a division on indefinite extension. But by April 1995 it was clear that the NAM countries were so divided amongst themselves that they offered no credible option to those worried about indefinite extension. Moreover, if the weapon states had been forced to accept something less than indefinite extension, it is unlikely they would have agreed to strengthening the review process as well. Nor can it be assumed that a rolling extension would have provided more leverage for implementation of the treaty. Too short a period between extensions, and the norm embedded in the treaty might be endangered, since the temptation for states to hedge their bets would be high.

Had the NPT been extended for twenty-five year renewable periods on the same terms as before, with only the quinquennial review conferences, it is likely that states parties would have had even less leverage than under the present system, at least for the first twenty years. Judging from the period 1970 to 1995, the pattern might have been a brief period of attention and promises once every five years, followed by four more years of neglect and inaction. At least with the strengthened review process, there has been a public forum four years in every five, to which the major states, including the nuclear powers, have had to pay some policy attention, even if it has amounted to little more than writing speeches and issuing reports or working papers. In view of the political conditions in 1995, it is doubtful whether any of the realistic alternatives to indefinite extension would have delivered better leverage.

Meeting the challenges

Five key issues kept recurring at the 2004 PrepCom as states looked towards 2005: non-compliance; implementation; nuclear disarmament; security assurances; and safeguards and verification. In the Final Document from 2000 and the Chairs' summaries from the 2002, 2003 and 2004 PrepComs there are plenty of ideas, but little authority to make them stick. Unless the Review Conference grasps the necessity to address what Canadian Ambassador Paul Meyer called the 'institutional deficit and vulnerability of the Treaty'¹¹, the NPT will be in danger of becoming irrelevant except as an expression of a collective wish-list.

When the government of North Korea announced its intention to withdraw from the treaty in 2003, NPT states appeared powerless. Though some took the view that a state under investigation for non-compliance cannot legally utilize the withdrawal provision of Article X, others seemed to accept North Korea's decision as a *fait accompli*. Lacking decision-making powers, the PrepComs in both 2003 and 2004 dodged the dilemma, even as the 1994 Framework Agreement authored by the United States was tossed aside. By its statute, the IAEA is denied a role in verification of nuclear disarmament and its rights and authority are limited to the bilateral safeguards agreements made with individual states in conformity with Article III of the NPT. Since the NPT has no implementing organization, the matter went straight to the Security Council, which has failed to act with any meaningful effect.

Similarly, faced with IAEA evidence that it has failed to declare enrichment and other facilities, Iran has manipulated the fact that the IAEA has the powers only to enforce its safeguards agreements, not to enforce the NPT as a whole. Ignoring, for the purposes of this essay, that Iran's challenge to the regime rests largely on the contradiction inherent in both the NPT and the IAEA's statutes, by which they seek simultaneously to promote nuclear energy and prevent proliferation, leaving Iran's non-compliance to be dealt with solely by the IAEA Board of Governors is clearly untenable. The IAEA's role as international atoms-for-peace promoter is at least as important as its safeguards functions. By contrast, the primary purpose of the NPT is to prevent proliferation, and Article IV is subordinate to Articles I, II and III. In this connection, it must be recalled that the legal basis for the IAEA to investigate and eliminate Iraq's nuclear programme during the 1990s derived more from UN Security Council resolution 687, after Iraq's invasion of Kuwait led to Saddam Hussein being defeated by a UN-sanctioned war. Nevertheless, since Iraq remained an NPT party, the IAEA retained rights of inspections even after UNSCOM left in 1998. Revelations about Libya have shown that it violated Article II of the NPT by receiving nuclear-weapons technology, materiel and even a warhead blueprint via A.Q. Khan's procurement network. The case of Libya, where even inspections under the Additional Protocol would have turned up little, again points to the gaping hole in non-proliferation enforcement.

At the 2004 PrepCom, several states suggested ways to strengthen the non-proliferation regime. Germany argued that the Review Conference should determine the rules and procedures to be followed for withdrawal under Article X to be valid. Germany proposed, for example, that a state wishing to withdraw from the treaty would have to give prior notice to all NPT parties setting out its concerns, and engage in consultations to explore ways to address the concerns and avoid its withdrawal. Germany also advocated better communications among NPT parties including procedures for them to convene 'extraordinary conferences ... in cases of serious violations'.¹² Germany also advocated changes to the conditions governing the supply of nuclear technology and materiel, arguing that supplier states could require that in the event of a recipient withdrawing from the NPT, any delivery should either remain under IAEA safeguards or be returned to the supplier, with the possibility of relevant facilities

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being shut down. Most importantly, Germany argued that states parties should determine 'that the right of withdrawal cannot be exercised in cases where the state in question is or is alleged to be (with relevant investigations/procedures underway) in non-compliance with the NPT'. Failing that, 'in accordance with international law, a state withdrawing from the NPT is still accountable for breaches or acts of non-compliance committed while still ... a party to the NPT ... [and] will continue to be subject to decisions of the relevant international institutions such as the IAEA and the UNSC [United Nations Security Council].'¹³

France, which has major vested interests in maintaining nuclear energy trade, made a very similar argument that the Review Conference needed to reaffirm the legal principle that a state remains responsible for violations committed while still party to a treaty, and that it should no longer be permitted to make use of nuclear materials, facilities, equipment or technology acquired before its withdrawal. Calling for 'robust export controls', France listed a set of conditions by which a state's request for nuclear material, technologies or equipment should be assessed by suppliers, and proposed that the transfer of sensitive items should be linked with an intergovernmental agreement. Nuclear cooperation should be suspended if 'the IAEA cannot provide sufficient assurances that [the recipient's] nuclear programme is devoted exclusively to peaceful purposes ...'.¹⁴

Such proposals are gathering interest, but face a central problem that enforcing them would take the IAEA far beyond its established powers or require a level of management and decision-making that the Security Council is not equipped to perform. Going further than France and Germany, Canada built on Ireland's proposal from 2000¹⁵ and proposed that the preparatory process be reconfigured 'into a series of annual general conferences of States Parties to consider the state of implementation of the Treaty and take decisions as required'. The Bureau, which normally consists of the President of the Review Conference and a number of regionally representative vice-chairs, would be made into 'a standing bureau of the treaty to be elected at the Review Conference and to serve until the next quinquennial Review Conference'. While support from a secretariat based at the UN Department for Disarmament Affairs would need to be continued, the NPT Bureau would be empowered to convene 'extraordinary sessions of the General Conference of States Parties' when situations arose that threatened the integrity or viability of the treaty, for example, a notification of intent to withdraw or the violation by a state party of its obligations under the treaty.¹⁶

Even before the Canadian working paper was out of the slips, the British Ambassador, David Broucher, felt compelled in his opening statement to publicly dismiss 'calls from some quarters to introduce new NPT mechanisms, including annual conferences to replace the PrepComs and a standing bureau of the Treaty'. Disagreeing with the view that such measures could strengthen the NPT, Broucher continued, 'Mechanisms to tackle proliferation and non-compliance already exist within the IAEA and the UNSC [United Nations Security Council].'¹⁷

Yet only a few weeks later, at the Conference of the Carnegie Endowment for International Peace, a senior British Foreign Office official joined in his panel's general lament that neither the Security Council nor the IAEA had done a very good job with North Korea. Let's imagine how NPT parties might have been able to deal with North Korea's withdrawal announcement if the changes proposed by Canada had been in place in January 2003. The Bureau would have called an extraordinary session for mid-February. Prior to the session, the Bureau could have commissioned authoritative legal advice making clear that before North Korea could legally withdraw it would have to be certified as being in compliance with the treaty. Adopting this interpretation for Article X (and indeed for international treaties in general) would provide a sound legal basis and more time to deal with any questions of non-compliance.

At the emergency session, held in New York to maximize participation, states parties could discuss and, where appropriate, agree a number of measures that would have greatly enhanced the political pressure on North Korea, while lessening the scope for it to play off against the United States. First,

North Korea would be invited to state its reasons and the 'extraordinary events' perceived to have jeopardized its supreme interests and provoked the decision to withdraw. If discussions to address these concerns didn't work or if North Korea boycotted the conference, as could be likely, other steps would be taken. The six-party talks would no doubt be considered a useful initiative, but with a difference: launched under the auspices of the NPT, the talks would have greater authority and accountability and the NPT parties could appoint a 'special coordinator' to participate in and liaise with the talks and report back to NPT states parties as appropriate. To the extent that North Korea might be deemed to have legitimate security concerns, NPT parties could help to defuse tension ('axis of evil' rhetoric being unhelpful in such circumstances) and the session could reaffirm the right of NPT parties in compliance with the treaty to receive security assurances. The emergency session could discuss a range of incentives and sanctions that individual states parties, especially suppliers and trading partners, could employ, for example including some of what Germany, France and others have proposed. Such measures do not necessarily require consensus agreements: high-level multilateral discussions and declarations of intent among some, if not all, states parties would undoubtedly carry greater political weight than is presently available. To encourage action and accountability, the session could request all states parties to report back to subsequent NPT meetings on the steps they have taken to assist the positive resolution of the non-proliferation crisis.¹⁸

Conclusion

If the NPT appears more vulnerable now, four connected problems need to be addressed: confidence in the regime's ability to meet states' security interests is being eroded; the review process has not been able to deliver more credible pressure for full implementation and accountability under the treaty; the NPT parties continue to be denied effective mechanisms by which they could exert their collective will when faced with non-compliance or violations; and the weapon states continue to treat their disarmament obligations as second-class commitments, to be pursued at their own time and pace and only if completely convenient.

The hypothetical scenario above sketches what could be done with the right institutional tools and authority. Such mechanisms could be adopted by the Review Conference without amending the treaty, and should be viewed as building on the attempts to strengthen the review process made in both 1995 and 2000. Clinging to the letter of these earlier decisions as if they were sacrosanct can only be counter-productive, as their limitations may have already begun to outweigh their benefits. The Thirteen Steps built on the 1995 Principles and Objectives, as the Additional Protocol built on the earlier safeguards agreements, but in both cases the later obligations are both stronger and more specific. A similar process is required to give the international community the necessary powers to deal with non-compliance and encourage full implementation of the treaty. If this does not happen, non-proliferation risks being turned into a privatized, militarized set of policing tasks. While there is much that is useful in both the PSI and Security Council resolution 1540, it would be dangerous to rely solely on such approaches. The importance to non-proliferation goals of the collectively agreed norms and obligations enshrined in the NPT should not be underestimated.

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As for the non-NPT parties, proposals to hold them to the obligations and responsibilities of NPT parties need to be looked at closely. There may be security benefits to such an approach, but formal recognition such as a protocol to the NPT is not necessary and should be avoided.

Finally, it is important to emphasize that giving the NPT parties greater powers in no way undermines the authority of the Security Council, which must continue to be the ultimate authority for judgement

and action to preserve international security. The Security Council must not be drawn into micromanagement of proliferation questions, however, and contrary to British assertions, neither the Security Council nor the IAEA can do the job of overseeing compliance and implementation of the NPT as well as the NPT parties would do if they were given the right tools and mechanisms.

Undoubtedly, some of the weapon states will fear that strengthening the implementation powers beyond the current (toothless) review process could be uncomfortable if they themselves were to violate their obligations. I would indeed argue that an event such as the withdrawal by any of the weapon states of its signature from the CTBT or any resumption of nuclear testing would constitute as grave a threat to the credibility of the non-proliferation regime as North Korea's attempt to withdraw from the treaty. In either case, no state, however hegemonic or isolated, is immune to all pressures from domestic or international opinion and interests, so a high-level conference of NPT parties would inevitably feed into a potential violator's political calculations and could make all the difference.

Notes

1. To the author's knowledge, references to the new proliferation game were first made by Professor William Potter, director of the Center for Nonproliferation Studies at the Monterey Institute for International Studies.
2. A. Cohen and T. Graham Jr., 2004, 'An NPT for Non-Members', *The Bulletin of the Atomic Scientists*, vol. 60, no. 3 (May/June), pp. 40-44.
3. Those in favour argue that they would be more surgical, kill fewer people and cause less damage than the massive city-killers of Cold War doctrines, with less risk of nuclear winter. Reflecting a loss of faith in traditional notions of deterrence, advocates of mini-nukes and their ilk also claim that responsible countries are self-deterred by the appalling devastation that would result if they used their regular nuclear bombs, and that smaller, more flexible nuclear weapons would therefore make a more convincing deterrent. Those against fear that any doctrine of non-strategic usability would be destabilizing and would weaken the powerful taboo that has underpinned deterrence so far, thereby lowering the threshold and making actual use more likely. The trouble with arguments about deterrence is that they are only proved, one way or another, when it is too late.
4. Australia, Canada, Denmark, France, Germany, Italy, Japan, the Netherlands, Norway, Poland, Portugal, Singapore, Spain, the United Kingdom and the United States.
5. Security Council resolution S/RES/1540 of 28 April 2004, at < www.un.org/Docs/sc/unsc_resolutions04.html > .
6. Article VI and eighth to twelfth preambular paragraphs, *Final Document of the 2000 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons*, para. 15, document NPT/CONE2000/28 (Vol. 1, Part I and II), 25 May 2000, at < disarmament2.un.org/wmd/npt/finaldoc.html > .
7. Tokyo Forum, 1999, *Facing Nuclear Dangers: An Action Plan for the Twenty-First Century, the Report of the Tokyo Forum for Nuclear Non-Proliferation and Disarmament*, Tokyo, Japan Institute of International Affairs and the Hiroshima Peace Institute, p. 57, at < www.mofa.go.jp/policy/un/disarmament/forum/tokyo9907/index.html > .
8. See R. Johnson, 1995, 'Indefinite Extension of the Non-Proliferation Treaty: Risks and Reckonings', *Acronym Reports*, no. 7, at < www.acronym.org.uk/acrorep/acro7.htm > .
9. John R. Bolton, US Undersecretary of State for Arms Control and International Security, *Statement to the Third Session of the Preparatory Committee for the 2005 NPT Review Conference*, New York, 27 April 2004, at < www.state.gov/t/us/rm/31848.htm > .
10. *Decision 2, Principles and Objectives for Nuclear Non-proliferation and Disarmament*, para. 4c, 11 May 1995. NPT/CONE1995/32 (Part I), at < www.acronym.org.uk/acrorep/a11app3.htm > .
11. Paul Meyer, Canadian Ambassador to the UN for Disarmament, *Statement By Mr. Paul Meyer Ambassador to the United Nations for Disarmament to the Third Session of the Preparatory Committee for the 2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons*, New York, 26 April 2004, at < www.un.int/canada/s-26Apr2004Meyer.htm > .
12. Germany, *Strengthening the NPT against withdrawal and non-compliance: Suggestions for the establishment of procedures and mechanisms, Working paper submitted by Germany*, NPT/CONE2005/PC.III/WP.15, 29 April 2004, at < www.reachingcriticalwill.org/legal/npt/prepcom04/papers/GermanyWP15.pdf > .
13. *Ibid.*
14. France, *Strengthening the nuclear non-proliferation regime: Working paper Submitted by France*, NPT/CONE2005/PC.III/WP.22, 4 May 2004, at < www.reachingcriticalwill.org/legal/npt/prepcom04/papers/Francewp22.pdf > .

15. Ireland, *Revised Working Paper on Strengthening the Review Process for the Treaty*, NPT/CONF.2000/WP.4/Rev.1 of 4 May 2000.
16. P. Meyer, *op. cit.* See also Canada, *Overcoming the Institutional Deficit of the NPT, Working Paper Submitted by Canada*, NPT/CONF.2005/PC.III/WP.1 of 5 April 2004, at < www.reachingcriticalwill.org/legal/npt/prepcom04/papers/canadawp1.pdf> .
17. David Broucher, Permanent Representative of the United Kingdom of Great Britain and Northern Ireland, *General Statement to the Third Session of the Preparatory Committee for the 2005 NPT Review Conference*, New York, 26 April 2004, at < www.reachingcriticalwill.org/legal/npt/prepcom04/uk26.pdf> .
18. Germany's provision for an extraordinary conference in the event of non-compliance could work in similar ways, although it is not clear from Germany's proposal who would provide the leadership and management for such an extraordinary conference.

Strengthening non-proliferation rules and norms— the three-state problem

George PERKOVICH

From the beginning, champions of nuclear non-proliferation have envisioned the participation of all states in the system of rules framed by the Nuclear Non-proliferation Treaty (NPT). This vision largely has been achieved. Nearly all states adhere more or less fully with the terms of the NPT. Today the main exceptions are North Korea (which was in non-compliance when it abandoned the treaty), Iran (which is not in full compliance with its related obligations), and India, Israel and Pakistan (which have not yet joined).

The latter three states pose unique challenges individually and as a group. India and Pakistan have demonstrated their possession of nuclear weapons and proclaim themselves to be nuclear-weapon states. They now press supporters of the non-proliferation regime to remove technology embargoes applied to them. Israel neither confirms nor denies possession of nuclear weapons. Importantly, unlike India and Pakistan, it does not seek recognition or international prestige from nuclear weapons. Nor do Israeli politicians seek political gains through nuclear posturing. Still, Israel's nuclear status causes turmoil within the non-proliferation regime.

Although these three states retain the sovereign 'right' to possess nuclear weapons, never having signed the NPT, their standing outside the system of non-proliferation obligations and rules undermines global security. Many experts and governments therefore seek ways to bring these three states into a process of strengthening non-proliferation norms and rules.

One alternative is to change nothing, but instead go through the motions of pressing these states to sign the NPT as non-nuclear-weapon states. Through bilateral diplomacy and NPT review conferences, states hector India, Pakistan and especially Israel to abandon nuclear weapons and join the NPT. The aim is understandable, but its achievement is not a serious prospect.

Another alternative recognizes that these three states will not relinquish their nuclear holdings in the foreseeable future and that the NPT cannot feasibly be amended to incorporate them as nuclear-weapon states. This alternative, proffered by former American ambassador Thomas Graham Jr. and scholar Avner Cohen, calls for a freestanding agreement or protocol to provide 'associate membership' for the three states in the NPT.¹ Such a protocol would permit the three to retain their nuclear programmes, 'but inhibit further development'. It would require them to cooperate with international nuclear export controls, prohibit explosive testing of nuclear devices, and participate in the phased elimination of fissile material production, according to Graham and Cohen.

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The Carnegie Endowment for International Peace strategy of Universal Compliance calls for a different approach that would not formalize a new category within or adjacent to the NPT. This paper briefly describes the general obligations the three states and the broader international community would undertake through this approach, and then details a number of more specific policies that actors should consider to reduce the nuclear dangers emanating from South Asia and the Middle East.

Universal Compliance

The strategic aim of non-proliferation policy should be to achieve *universal compliance* with the norms and terms of a deepened nuclear non-proliferation regime. ‘Compliance’ means more than signatures on treaties or declarations of fine intent—it means actual performance. ‘Universal’ means that all actors must comply with those norms and terms that apply to them. This includes states that have joined the NPT, and those that have not. It also includes non-state actors—corporations and individuals. The burden of compliance extends not only to states seeking nuclear-weapon capabilities through dual-use fuel-cycle programmes or those abetting proliferation through technology transfers; it also applies to nuclear-weapon states that are not honouring pledges they have made.

All countries do not bear the same global responsibilities or face the same threats. It is unreasonable to expect all to be limited to the same capabilities. Police possess certain powers and capabilities that

The current nuclear order gives five states the temporary right to possess nuclear weapons and, as veto-holding members of the Security Council, great influence in setting and enforcing non-proliferation rules. To sustain—much less strengthen—this order, the ‘advantaged’ minority must ensure that the majority perceives that it is beneficial and fair.

average citizens do not, but in healthy and just societies the use of these powers is constrained by law, and when abuses occur, citizens have recourse to correct them. The current nuclear order gives five states the temporary right to possess nuclear weapons *and*, as veto-holding members of the Security Council, great influence in setting and enforcing non-proliferation rules. To sustain—much less strengthen—this order, the ‘advantaged’ minority must ensure that the majority perceives that it is beneficial and fair. Universal Compliance seeks to achieve this balance of obligations. It tries to correct the impression that the states with nuclear weapons are

getting much more out of the non-proliferation regime than are others. The strategy presumes and requires that India, Israel and Pakistan accept that special responsibilities and obligations come along with their possession of nuclear weapons, and therefore holds the three accountable to all non-proliferation obligations and measures that the five prior nuclear-weapon states undertake.

Briefly, five obligations form the core of the Universal Compliance strategy:

- Proscribe further national acquisition of facilities that can produce materials directly usable in nuclear weapons;
- Secure all nuclear materials;
- Stop illegal transfers;
- Devalue the political and military currency of nuclear weapons; and
- Commit to conflict resolution.

These obligations derive from the logic of the existing nuclear non-proliferation regime, but are extended to address challenges that were not anticipated when this regime was first established during the Cold War. Fulfilment of these obligations by all actors would effectively solve the most pressing proliferation problems. The full Carnegie Endowment non-proliferation strategy, available at www.ceip.org, details subsidiary national and international policies, resources and institutional reforms that would be

necessary to satisfy these obligations. Some of the necessary steps require new international and national laws and voluntary codes of conduct, while others require only the will to live up to existing commitments.

Incorporating the ‘three states’ into the Universal Framework

The Universal Compliance strategy offers a constructive way to deal with the critical challenge posed by India, Pakistan and Israel—the so-called ‘three-state problem’. Under the Universal Compliance strategy, NPT parties would stop demanding that India, Israel and Pakistan give up their nuclear weapons immediately and join the NPT as non-nuclear-weapon states forthwith. In return, the leading states would seek to persuade the three states to commit themselves politically to agree to the non-proliferation obligations accepted by the United States, China, France, Russia and the United Kingdom (the P5).² The three states would accept obligations to prevent proliferation exports, to secure nuclear weapons and materials, to reduce the role of nuclear weapons in their national security policies, to eschew nuclear testing, and so on. If these states failed to comply with their obligations, they would be subject to the same sorts of sanctions and political pressures as others have been over their past transgressions of non-proliferation rules, and conceivably that other nuclear-weapon states could be subjected to if the rest of the international community agreed to do so. *The goal of persuading India, Israel and Pakistan to abandon nuclear weapons would not be dropped; rather these three states would be expected to eliminate their nuclear arsenals as and when the United States, China, France, Russia and the United Kingdom eliminate theirs.*

The goal of persuading India, Israel and Pakistan to abandon nuclear weapons would not be dropped; rather these three states would be expected to eliminate their nuclear arsenals as and when the United States, China, France, Russia and the United Kingdom eliminate theirs.

Tolerating these three states’ current possession of nuclear weapons does not mean rewarding them with nuclear reactors, as India and more recently Pakistan have sought. The United States and others would continue not to sell nuclear reactors to India, Israel or Pakistan, pursuant to the Nuclear Suppliers Group agreement of 1992 barring such sales as long as the proposed recipient operates nuclear facilities that are not under international safeguards.³ This restriction on nuclear commerce is necessary to uphold the incentives that reward other states for complying with their obligations not to acquire nuclear weapons. If non-nuclear-weapon states want to ease restrictions on nuclear commerce with India, Pakistan and Israel, they should propose alternative guidelines.

India, Pakistan and Israel will not find it easy to embrace this arrangement, but each country’s leaders have said they strongly support the cause of non-proliferation. The approach here enables them to contribute constructively to international security without accepting obligations greater or less than those borne by the P5. For explicitly shouldering the obligations of responsible international citizenship, they would gain relief from unproductive, ritualistic hectoring or from coercion to eliminate their nuclear arsenals before others do. India may want additional benefits, but this desire flows from an anachronistic belief that the world somehow owes something to states with nuclear weapons. Today, obligations flow the other way around. States possessing nuclear weapons should be judged by their contribution to the global interest in preventing the spread and use of these devices.

By avoiding creation of a distinct third category within the NPT, the approach recommended here does not obfuscate the fundamental dichotomy that non-proliferation strategy must eliminate—that between nuclear-weapons ‘haves’ and ‘have nots’. By tying India, Israel and Pakistan to the disarmament obligations of the five NPT nuclear-weapon states, this strategy seeks to intensify international efforts to encourage all of these states to comply.

Specific policy approaches for South Asia

The nuclear proliferation problem in South Asia has many dimensions. From the standpoint of potential nuclear-weapon use, two threats stand out: a potential military conflict between India and Pakistan that could escalate to nuclear use; and the possibility that Pakistanis—lone individuals or with state support—will transfer nuclear weapons, materiel and know-how to undeterrable actors.

Non-proliferation policies to protect nuclear materials from being diverted to terrorists and to strengthen export control practices are now mandatory under UN Security Council resolution 1540. Pakistan and India—along with other states possessing nuclear-weapon materials—must implement resolution 1540 and go beyond it. Deep reductions in the threat of nuclear war in South Asia and real prospects for elimination of nuclear weapons will require breakthroughs in Indo-Pak relations and Sino-Indian relations, and domestic reform in Pakistan. A few specific measures are described below.

SECURE NUCLEAR CAPABILITIES AGAINST TERRORIST ACQUISITION

To help prevent terrorists from acquiring nuclear-weapon capabilities, the United States and others should lead an initiative to ensure that Pakistan and India employ state-of-the-art practices and technologies to secure nuclear weapons, materiel and know-how. This is consistent with each state's obligation under Security Council resolution 1540. Pursuant to the NPT, assistance to secure and safeguard nuclear materials, weapons and know-how should be implemented, while assistance should be refused that enhances the operability of nuclear weapons themselves.

The United States and other international leaders should:⁴

- Expand the scope of threat-reduction programmes to fund as a priority measure the protection of radiological and fissile materials in Pakistan and India;
- Provide technologies and procedures to improve the reliability of personnel in organizations responsible for producing, storing, transporting and managing nuclear materials and/or weapons. These improvements also may be implemented through discussions of best practices in other countries;
- Provide assistance to border control and customs agencies in Pakistan and India, in order to improve the detection of nuclear and radiological materials;
- Develop programmes to engage Pakistani and Indian scientists, engineers and technical experts in cooperative work on threat reduction projects such as monitoring and detection systems for border crossings and nuclear-material stockpiles; and
- Provide training and equipment for physical protection, material control and accounting for Indian and Pakistani facility operators and regulators.

India and Pakistan, unlike North Korea and Iran, are not barred under international treaty from having nuclear weapons. As a result, states proffering the assistance recommended here should not expect to gain physical access to sensitive Pakistani or Indian nuclear facilities; rather, they can provide recommendations, descriptions of best practices and security technologies that Indians and Pakistanis would then apply to their facilities.

IMPLEMENT NUCLEAR RISK-REDUCTION MEASURES

India and Pakistan should be strongly encouraged to implement nuclear risk-reduction practices that their diplomats and experts have sketched as recently as June 2004. Priority measures include:⁵

- Establishment of national risk-reduction centres in both countries to administer agreed confidence-building measures;
- Commitment not to develop, produce or use 'tactical' nuclear weapons;
- Agreement not to flight test missiles in the direction of the other country;
- Agreement to flight test missiles only from designated test ranges; and
- Provision of advance notification of the movement of missiles for training purposes.

In addition, the United States has protected certain interests of Pakistani leaders and the Pakistani army in not publicly disclosing all that it has known over the years about nuclear proliferation from Pakistan; disclosure should be considered if Pakistani leaders do not act urgently with India to build confidence in their nuclear stewardship. The United States also should assess Indo-Pak risk-reduction efforts in determining the quantity and quality of military trade with both countries.

PHASE OUT NATIONAL FISSILE MATERIAL PRODUCTION

The single most effective way for Pakistan and India to limit the potential cost and risks of a nuclear arms race, and to contain the pool of material that could potentially be diverted to terrorists, would be to end the production of fissile materials. Strong security and economic arguments can be made that both states would benefit from such a move today. They have material for nuclear arsenals large enough to meet their deterrence needs, as long as China ceases producing more fissile materials for its arsenal. Pakistan would not need further production to fuel its small LEU-based nuclear energy programme, and India's plutonium breeder programme, if it ever proved feasible, could rely on stocks on hand or imports from Russia's vast surplus stockpile. Russian exports to India should be endorsed by the Nuclear Suppliers Group in the event that India agrees to cease the further separation of plutonium. Indeed, were India and Pakistan to dismantle their uranium enrichment and plutonium separation facilities and place all their nuclear reactors under international safeguards, the case could be made strongly for international agreement to open commerce with them in nuclear power reactors and fuel services.

The single most effective way for Pakistan and India to limit the potential cost and risks of a nuclear arms race, and to contain the pool of material that could potentially be diverted to terrorists, would be to end the production of fissile materials.

Nevertheless, Indian and Pakistani leaders will not stop all production of fissile material unilaterally or even bilaterally. They could only be expected to participate in a process of nuclear regulation and agreement that included China; China, in turn, would insist on inclusion of other producers, making the challenge global.

RESOLVE THE KASHMIR DISPUTE

The single most likely cause of deterrence failure in South Asia, and therefore nuclear use, would be an attempt by Pakistan or India to forcibly change the territorial status quo in Kashmir. India

appears to recognize that it cannot gain sovereignty over the part of Kashmir that Pakistan now controls. Thus, the primary challenge is to persuade Pakistan and other possible instigators of organized violence to accept that they cannot forcibly gain sovereignty over the part of Kashmir that India controls.

Creative and courageous political and diplomatic work will be required to stabilize Kashmir. This will entail not only Indo-Pak diplomacy, but also much greater attention by all parties to the needs and aspirations of the Kashmiri people. Indian, Pakistani and international authors have offered numerous constructive policy prescriptions relating to Kashmir.⁶ The task now is for the states with influence in India and/or Pakistan to encourage Indian and Pakistani leaders to pursue these prescriptions. This is a long-term challenge, but it is unrealistic to expect deep progress toward eliminating nuclear weapons in South Asia before it is met.

SUPPORT POLITICAL REFORM IN PAKISTAN

Some governments inspire more confidence as stewards of nuclear-weapon capabilities than others. The transfer of Pakistan's nuclear-weapon designs, centrifuges and related weapon capabilities to North Korea, Iran, Libya and perhaps other destinations raises understandable questions about whether it can be trusted. The absence of real checks and balances in Pakistan limits confidence that dangerous actors and inadequate policies and procedures will be identified and replaced.

The army's dominant role in Pakistan must be recognized as a systemic problem. While the army often claims, with some reason, that it is the only institution that can guide the state, and that elected civilian leaders chronically misgovern, Pakistan cannot be stable over the long-term under army rule. Over time, the army, including its intelligence arm, has intensified the Islamization of Pakistani politics, nurtured the Taliban and opened the political space for extremist parties. To correct these dangerous developments, the army and outside supporters of Pakistan must seek to strengthen civilian institutions so that effective political and economic authority can be transferred to them. Among other things, this is necessary to make the army accountable to someone other than itself, including in nuclear policy. Because the Pakistani army bases its claim to political power and economic resources on the threat that India is said to pose to Kashmiri Muslims and Pakistan itself, the army lacks motivation to find ways to resolve the Kashmir issue. This in turn justifies Pakistan's nuclear-weapon requirements.

For Pakistan's long-term internal stability, and for Indo-Pak rapprochement, the capacity of civilian political parties and institutions must be strengthened so that they can become effective governors of the polity and the economy. Ultimately, this is a key to an effective non-proliferation strategy in South Asia.

PROMOTE STABLE CONVENTIONAL FORCE BALANCES

India is in the midst of major modernization of its conventional forces. It plans to procure from Russia, Israel and the United States advanced aircraft, airborne early warning and command and control systems, and possibly missile defences. These acquisitions could appear to threaten Pakistan's nuclear deterrent. Were that to occur, Pakistan, in the absence of a fundamentally transformed relationship with India, would most likely react by increasing the quantity and survivability of its nuclear force, along with means to penetrate Indian defences. All of this could raise the risks of escalation in crisis and accelerate the Indo-Pak nuclear arms race.

Efforts to constrain both a conventional and nuclear arms race in South Asia are complicated by the fact that India seeks simultaneously to deter and defend against Pakistan *and* China. A triangular security dilemma results, wherein capabilities India acquires to balance China are perceived as threatening by Pakistan, prompting Pakistan to seek greater capabilities, which in turn add to the threats India perceives.

India and China are making progress in resolving their border dispute and improving their relationship; were India and Pakistan to make similar progress, conditions could be created for negotiated measures to regulate conventional and nuclear capabilities on a triangular basis. But hard realities will remain: China will continue to modernize its military capability, which will prompt India to do the same, which will in turn alarm Pakistan, whose wherewithal is significantly inferior. To go further and consider eliminating nuclear arsenals, Pakistan would look for India to make initiatives, and India would react to China's lead. But China's willingness to cut back and eliminate its nuclear arsenal is linked to its nuclear security relationships with the United States and Russia, which is why the Indo-Pak disarmament challenge is now imbedded in the global disarmament process.

A POLICY ON NUCLEAR COMMERCE

Nuclear technology exporters need a clear policy on doing nuclear business with India. Indian officials emphatically urge American, French, Russian and other counterparts to waive or amend non-proliferation prohibitions against nuclear technology commerce (often subsidized) to India. India will not put all of its nuclear facilities under safeguards, but wants nuclear suppliers to change existing rules and sell it nuclear reactors anyway.

Nuclear reactor exporters should not accede to the Indian demand as long as doing so would undermine non-nuclear-weapon states' commitments to strengthening the non-proliferation regime. Some of these states argue that recognizing India as a nuclear-weapon state and providing unrestricted nuclear commerce to India would reward proliferation and thereby devalue their own nuclear abstinence. Such a message combined with deteriorating security could lead some of these countries to reconsider nuclear abstinence.

Thus, the long-term costs of according India nuclear-weapon status and opening nuclear reactor commerce to India outweigh the benefits. The burden should not be on exporters to amend global non-proliferation norms and rules for the sake of India; rather it is up to India to persuade the non-nuclear-weapon states that the rules should be changed. Even as many states may recognize that India developed nuclear weapons for its own national interests, and was not precluded by treaty obligations from doing so, nuclear technology exporters must support states that uphold the non-proliferation regime by not acquiring nuclear weapons.

Specific policy approaches for Israel and the Middle East

Recent events in Libya show that nuclear, biological and chemical weapon programmes can be eliminated in a major country in the Middle East without being conditioned on disarmament everywhere in the region. Iraq does also, though at tremendous cost. The United States and other interested parties must ensure that both countries gain significant improvements in security, political standing and international integration as a result of their relinquishing these weapons. The Libyan case is more straightforward and the United States, the United Kingdom and others already are implementing a

course of political and economic engagement with Libya. Iraq is immensely more difficult. In addition to the formidable problems of reconstructing the Iraqi state, the United States, the European Union and the United Nations must ensure that Iraq is sufficiently protected from external threats so that a future government is not tempted to restart unconventional weapons programmes.

To solidify Libyan and Iraqi disarmament, and to generate momentum from it, the United States and other major players need to develop a strategy for regional security and disarmament. The most pressing challenges are to prevent Iran from acquiring nuclear weapons and to persuade Israel to take immediate steps that will enhance the prospect of creating a zone free of weapons of mass destruction (WMD) in the Middle East. Arab states fear each other and Iran, while they variously detest or rely on the American military presence in the region. Iran fears Iraq and, related to it, the overwhelming American presence in the region. This knot of real and exaggerated security threats and status-seeking is pulled tighter still by Israel's undeclared nuclear-weapons status and by the continuing Israeli conflict with the Palestinians and with its neighbours.

Israel's nuclear capabilities provides a popular *political* pretext for potential Arab proliferation efforts. More pertinently, Israel's nuclear status undermines Egypt's and other Arab states' support of a non-proliferation regime that has failed to compel Israel to relinquish nuclear weapons. Jordan, the United Arab Emirates and other Arab states are key transit points for suspect exports/imports. The A.Q. Khan proliferation network, for example, operated through the United Arab Emirates and the full extent of its 'buyers' in the region is not publicly known. Arab states and Pakistan are politically less likely to devote resources and leadership to strengthen export and customs controls and intelligence cooperation with key NPT states and institutions like the IAEA if they feel that champions of the non-proliferation regime are not treating Israel on par with Muslim countries.⁷

A ZONE FREE OF WEAPONS OF MASS DESTRUCTION

Thus, even as the United States and others should press disarmament and non-proliferation objectives one state at a time, non-proliferation leaders also must act on an ambitious regional initiative. Key parties in the Middle East, including Israel, already have endorsed the objective of creating a zone free of WMD. This objective was reiterated in the 1995 decision by parties to extend the NPT indefinitely, and in UN Security Council resolution 687, which created UNSCOM to oversee the disarmament of Iraq after the 1991 war. At the 2000 NPT Review Conference the American representative offered that: 'Israel has stated that it is prepared to surrender its nuclear-weapons option in the context of a just, stable, and enduring Middle East peace. The US is making every effort we can to bring about such a peace, and we believe that once that is achieved, that Israel can and should join the NPT as a non-nuclear-weapons state.'⁸ Rather than defensively trying to ignore Israel's nuclear status, the United States and Israel should proactively call for regional dialogue to specify, negotiate and then implement the conditions necessary to achieve a WMD-free zone.

Many profound changes must be effected to achieve this goal, given the concern over the existence of chemical, biological and nuclear-weapons programmes and arsenals in the region. Yet, not long ago few imagined that in 2004 Iraq and Libya would be verifiably disarmed of WMD. To pursue a zone free of WMD in the Middle East, leading parties in the UN Security Council and the NPT review process should offer their good offices and commitments to provide economic and security assurances as necessary to facilitate the process. They should clarify certain threshold conditions for a serious process:

- All regional states and parties must recognize the existence and right to security of all other regional states and parties. This means all the Arab states, Iran and various armed sub-state groups must avowedly recognize Israel's right to exist, and Israel must recognize the right of existence, the statehood and the security of the Palestinians.⁹
- Negotiations can occur only among parties who recognize each other's legitimacy; negotiations to create a region-wide zone free of WMD must necessarily include all constituent parts of the region.

As a precursor to negotiations, friendly states and NGOs should conduct studies and dialogues exploring key material conditions that would have to be met for a treaty to be implemented. The following conditions appear indispensable:

- To persuade all parties that relinquishing all of their strategic weapons would not undermine their security, each must be highly confident that the others are fulfilling their commitments. This in turn requires robust verification procedures and practices. Technical expertise is necessary to design such procedures and practices. Non-official dialogues or joint projects by regional and international verification experts could be initiated to design verification mechanisms and to educate regional governments about undertakings they would eventually have to make in this regard. This will be an extremely difficult process given the complexities and sensitivities involved. Anyone serious about the objective should commit human and diplomatic resources now to begin designing verification mechanisms.
- Sufficient verification in turn will require high levels of transparency in national policies, budgets and facilities. Informal dialogues on security issues among well-briefed officials and non-officials from the region could build confidence that requisite transparency can be effected.
- Regional actors may gain confidence if major outside powers provide independent intelligence to help verify that parties are fulfilling their pledges. Current and/or former officials from the five permanent members of the Security Council could be encouraged to meet with regional actors to establish technical groups that could work in parallel as and when official negotiations on a zone free of WMD begin.

To impart momentum to this process, Israel, as the only state in the region with nuclear-weapon capability, should take initiatives:

- To augment disarmament momentum generated in Iraq and Libya, Israel should ratify the Chemical Weapons Convention it signed earlier, and should join the Biological Weapons Convention; and
- When and if confidence grows that Iran will permanently forego acquisition of capabilities to enrich uranium and separate plutonium, and that new norms and rules are in place preventing other states from acquiring bomb-fuel production capabilities, Israel should declare that it has adopted an indefinite moratorium on producing plutonium and ceased separation of plutonium from spent fuel and is prepared to make this permanent. The means to verify such a moratorium should be explored through the expert dialogue suggested above.

To help buttress the NPT, Israel should be encouraged to communicate to the 2005 NPT Review Conference that, if and when a regional zone free of WMD is verifiably implemented and proved durable, Israel would be prepared to join the NPT as a non-nuclear-weapon state.

Many of the steps outlined above will take considerable time. What should not be delayed is the public acknowledgement by the United States that Israel's nuclear status is a central problem that must be addressed.

TAKING DISARMAMENT SERIOUSLY

Article VI of the NPT obligates parties to ‘pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament.’ In 2000, this obligation was reaffirmed by an ‘unequivocal undertaking’ of treaty members ‘to accomplish the total elimination of their nuclear arsenals.’

Many officials in nuclear-weapon states think this commitment should not be taken seriously today. Much of the rest of the world recognizes this and hesitates to strengthen enforcement of non-proliferation because they believe that the nuclear-weapon states are not committed to disarmament. States that have given up programmes to produce nuclear weapons are particularly frustrated. Argentina, Brazil, Canada, Germany, Japan, South Africa and Sweden are among the influential countries that demand clearer commitments to disarmament to ensure their continued cooperation in non-proliferation efforts. Not only could these states someday choose to resume their own nuclear-weapon programmes, they are vital participants in making and enforcing the rules on which effective non-proliferation depends.

Like it or not, the United States and the other nuclear-weapon states must address the disarmament issue more directly than they have in the past.

Like it or not, the United States and the other nuclear-weapon states must address the disarmament issue more directly than they have in the past. This must include India, Israel and Pakistan, each of whose leaders in one fashion or another have committed to nuclear disarmament as a long-term proposition.

In the near term, the United States and other states that possess nuclear weapons should take four steps to comply with commitments the nuclear-weapon states made in 1995 when persuading the rest of the world to extend indefinitely the NPT:

- Disavow development of new types of nuclear weapons;
- Reaffirm the moratorium on nuclear-weapon testing and enable the entry into force of the Comprehensive Nuclear-Test-Ban Treaty;
- Narrow rather than widen the role of nuclear weapons in national security policies; and
- In the case of Russia and the United States, make irreversible and verifiable the nuclear reductions negotiated under the Moscow Treaty.

By complying with political obligations they undertook as part of NPT bargains, the established nuclear-weapons states would strengthen their capacity to persuade others to follow suit and to accept and enforce tougher non-proliferation rules.

More fundamentally, proponents and sceptics of nuclear disarmament must take the issue seriously enough to go beyond high-minded slogans and wrestle with the immensely difficult technical and political security challenges that must be overcome in order to eliminate nuclear arsenals.

To start this process, at the 2005 NPT Review Conference the nuclear-weapon states should urge the IAEA to request *all* states possessing nuclear weapons and/or stocks of fissile materials to produce white papers addressing the following questions:

- For states with nuclear weapons, what technical facilities, capabilities and procedures would be required to verifiably eliminate each nation’s nuclear arsenal and securely dispose of the fissile materials contained in them? What steps and resources would be required to implement full-scope safeguards in these states? Physically, how long would a phased dismantlement-disposition process take?

- What technologies and procedures would be necessary to allow international verification of nuclear disarmament while protecting sensitive weapon design or other information from being 'proliferated'?
- For all states possessing nuclear-weapon materials (including Israel), what is the national capacity to account for all fissile materials produced?¹⁰ Given that most of the acknowledged nuclear-weapon states do not have accurate records of their distant-past production of nuclear-weapon materials, what procedures or policies do states recommend to provide high confidence that no state is secreting away material or weapons while claiming to have eliminated its nuclear arsenal or never having possessed one in the first place?¹¹
- For all states with unsafeguarded fissile materials, what level of confidence would the state require in disarmament verification before it could verifiably dismantle the last nuclear weapon and/or put the last kilogram of fissile material under IAEA safeguards?
- Would the production of fuel for nuclear reactors, including plutonium separation, be feasible in a world without nuclear weapons? Would such production need to be managed differently? If so, why and how? What would be the cost implications for nuclear power generation?

Asking and answering these questions is a minimal way for states possessing nuclear weapons to demonstrate that they take their disarmament commitments seriously. Variations of these questions would have to be answered by individual states, the international community and the IAEA if and when the total elimination of nuclear arsenals were actually on states' agendas. The task is similar to that which South Africa undertook with the IAEA to verify the dismantlement of its nuclear arsenal and implement full-scope safeguards in the early 1990s. The white papers could be directed for submission to the IAEA Board of Governors (or an appropriate UN body); India, Israel and Pakistan as members of these organizations should be expected to produce such papers. Public versions of these papers should then be made available for analysis and debate by concerned citizens, NGOs and inter-governmental bodies that have an interest in these topics. The United Kingdom has set an important precedent for beginning such work.¹²

The international debate of these papers would raise appreciation of the challenge of implementing nuclear disarmament. Not only states with nuclear weapons, but all states that possess nuclear materials and related infrastructure would have to become more transparent. Gaps in accounting of nuclear-weapon materials would be inevitable, raising international security questions that are off the radar screen today. In short, expectations regarding the challenge and benefits of complete nuclear disarmament would receive the serious scrutiny they deserve.

The founders of the non-proliferation regime recognized that a dichotomous order of nuclear 'haves' and 'have nots' would be unstable over time. The obligations to pursue nuclear disarmament sprang from this understanding. If, upon examination, the challenge of eliminating the absolute last nuclear weapon is too fraught with uncertainty, too technically daunting, and too politically and economically demanding for the international community—and not just the nuclear-weapon possessing states—then an alternative basis must be found for stabilizing the nuclear order. This will require a shared understanding that expectations need to be adjusted.

Notes

1. T. Graham Jr. and A. Cohen, 2004, 'An NPT for Non-Members', *Bulletin of Atomic Scientists*, vol. 60, no. 3 (May/June), pp. 40–44.
2. These obligations are reflected in the Principles and Objectives agreed by NPT parties when they indefinitely extended the treaty in 1995, and in the Thirteen Steps agreed at the 2000 NPT Review Conference. India already

- has moved in this direction, as its Foreign Minister in 1999 declared that India supported NPT Articles I, II and VI. Israel could make this commitment without publicly acknowledging possession of nuclear weapons; it would commit simply to do as the other named states do.
3. Were these states to dismantle uranium enrichment and plutonium reprocessing facilities, and place all nuclear reactors under international safeguards, international cooperation in supplying power reactors and fuel-cycle services would make sense from a global security standpoint.
 4. For a detailed analysis and policy agenda in this area, see R. Gottemoeller with R. Longworth, 2002, *Enhancing Nuclear Security in the Counter-Terrorism Struggle: India and Pakistan as a New Region for Cooperation*, Carnegie Working Paper no. 29, Washington, DC, Carnegie Endowment for International Peace, at < www.ceip.org/files/pdf/wp29.pdf> (accessed 11 May 2004).
 5. For outstanding recommendations on nuclear risk reduction, see M. Krepon, 2001, *Moving from MAD to Cooperative Threat Reduction*, Stimson Report no. 41, Washington, DC, Henry L. Stimson Center, at < www.stimson.org/southasia/pdf/MADtoCTR.pdf> (accessed 27 April 2004).
 6. See, for example, M. Krepon and Z. Haider (eds), 2004, *Reducing Nuclear Dangers in South Asia*, Stimson Report no. 50, Washington, DC, Henry L. Stimson Center, at < www.stimson.org/southasia/pubs.cfm?ID=92> (accessed 28 April 2004). See also reports by the Kashmir Study Group, at < www.kashmirstudygroup.com> (accessed 28 April 2004) and the International Crisis Group, at < www.crisisweb.org/home/index.cfm?id=1268&l=2> (accessed 28 April 2004).
 7. For example, one of the grievances cited by Al-Qaeda's strategist, Ayman Al-Zawahiri, is that 'the Americans and the Jews' have weakened Egypt and other Muslim states 'through signing peace agreements and treaties that ban weapons of mass destruction for us only, disarming Sinai, and allowing direct US occupation of our land and holding joint military exercises.' Ayman Al-Zawahiri, 2001, *Knights Under the Prophet's Banner, Al-Sharq Al-Awsat* (London), at < www.fas.org/irp/world/para/ayman_bk.html> (accessed 11 May 2004).
 8. N. Wulf, 2000, interview with Ralph Dannheisser, 21 April, at < hongkong.usconsulate.gov/uscn/wh/2000/042101.htm> (accessed 27 April 2004). In speaking of Israel's 'nuclear-weapons option', this American statement acknowledged this capability more starkly than Israel ever has. Secretary of State Colin Powell reaffirmed at a press briefing that 'it has always been U.S. policy that we would like to see that whole region free of weapons of mass destruction.' C. Powell, 2003, 'Foreign Press Center Briefing', remarks in Washington, DC, 15 April, at < www.state.gov/secretary/rm/2003/19662.htm> (accessed 6 May 2004).
 9. The chemical and biological weapon conventions (the CWC and BWC) conclude that there is no legitimate basis for possessing these weapons. The greatest and perhaps only legitimate ground for possessing nuclear weapons is to deter threats to the existence of the possessing state or its allies. It is not surprising, then, that a state facing adversaries that reject its right to exist would perceive an existential threat and not sign or implement agreements requiring it to forego acquisition of the sort of strategic deterrence that nuclear weapons may provide. Even if such a deterrent is not militarily necessary, relinquishing such a deterrent may be politically impossible in the face of existential threats.
 10. As Israel does not admit having nuclear weapons, it would comply with its obligation to contribute to non-proliferation by explaining how it could secure and account for its fissile materials.
 11. The United Kingdom admirably has taken the commitment to nuclear disarmament seriously enough to commission official assessments of how it might be accomplished. According to an official report by its Ministry of Defence, 'the Government does not believe that it will ever be possible for any of the relevant States to be able to account with absolute accuracy and without possibility of error or doubt for all the fissile material they have produced for national security purposes.' This conclusion appears plausible not only for the United Kingdom and raises questions that must be addressed to assess the meaning and feasibility of securely and verifiably eliminating all nuclear arsenals. See United Kingdom, Ministry of Defence, 2003, *A Summary Report by the Ministry of Defence on the Role of Historical Accounting for Fissile Material in the Nuclear Disarmament Process, and on Plutonium for the United Kingdom's Defence Nuclear Programme*, September, at < www.mod.uk/publications/nuclear_weapons/accounting.htm> (accessed 27 April 2004).
 12. United Kingdom, 2003, *Verification of Nuclear Disarmament: First Interim Report on Studies into the Verification of Nuclear Warheads and Their Components*, Working Paper submitted by the United Kingdom of Great Britain and Northern Ireland to the Preparatory Committee for the 2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, 23 April 2003, at < www.awe.co.uk/Images/n0333117_tcm6-1769.pdf> (accessed 27 April 2004).

A.Q. Khan and the limits of the non-proliferation regime

Christopher CLARY

From around 1987 to 2003, Dr Abdul Qadeer Khan was moonlighting. During the day, he was the venerated head of Khan Research Laboratories (KRL) and self-styled 'father' of the Pakistani nuclear bomb. At night, he was dispensing nuclear technology and information to both Pakistan's friends and enemies. For these sixteen years, Khan—as either sanctioned head of KRL or unsanctioned head of an illegal proliferation network—ticked his way down the list of states of proliferation concern, making contact with Iran, Iraq, North Korea, Libya, Syria and Saudi Arabia.

The present nuclear non-proliferation regime was crafted during a different time for different threats. Today, the Cold War-era treaties, laws, export controls and norms have to function in a global economy, which hosts increasingly powerful non-state actors, and with a slowly growing number of states who are either opting out of or internally subverting the Nuclear Non-Proliferation Treaty (NPT). The A.Q. Khan proliferation network skirted on the edges of commerce, avoided the tangles of national and international law, and developed an impressive list of suppliers and clientele.

The international community is not just the passive recipient of the present structure of nuclear constraints. Concurrent with revelations about the size, scope and scale of the A.Q. Khan network, the international community—with urgent American prodding—has sought to reform certain aspects of the status quo. Not all of these changes were targeted to prevent the next A.Q. Khan, but many of them are relevant to that task. This essay begins by analysing how the Khan network functioned, where it was located, and who were its members. Then the essay will examine the subsequent American and international policy responses, their relevance and their potential for success.

A televised confession

Reports of Pakistani complicity in illicit technology transfer had been floating around Western capitals since the late 1990s.¹ But besides rumours and the periodic demarche, the Pakistani government was not provided with actionable intelligence about Khan's proliferation network. The statements of concerned Western representatives were viewed with suspicion in Islamabad.

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Why should Pakistan trust the very governments who had consistently opposed Pakistani efforts to gain a nuclear deterrent? Was this just another ploy to hamstring Pakistan's legitimate right to defend itself?

As the severity—and credibility—of the rumours began to grow in late 2002 and early 2003, it was becoming more difficult for Islamabad to ignore. Up to then, Pakistani interlocutors would argue that centrifuge technology was not the state of the art. Fifties-era centrifuge designs, pioneered by Dr Gernot Zippe, were accessible in rudimentary form through old United States Atomic Energy Commission documents. The investigation of the International Atomic Energy Agency (IAEA) into Iran had revealed data that, unlike Western intelligence, could be given to Pakistan. That data was very difficult to refute with Pakistan's normal responses. It seemed to indicate that in Iran, the enrichment programme was not some generic knockoff of the Zippe device, but rather that these were Pakistani designs, Pakistani components and, perhaps, small traces of enriched fissile material from Pakistan.

Armed with this information, the Pakistani government had to do something. In a carefully sequenced series of events, Khan was interrogated, confessed and was pardoned. Perhaps Seymour Hersh was overly harsh in calling it 'a make-believe performance in a make-believe capital'.² But even Khan's choreographed confession is indicative of the public confusion about what occurred. He stated in an address before the nation, 'The recent investigation was ordered by the government of Pakistan, consequent to the disturbing disclosures and evidence by some countries to international agencies, relating to alleged proliferation activities by certain Pakistanis and foreigners over the last two decades. The investigation has established that many of the reported activities did occur, and that these were invariably initiated at my behest.' An explanation of what the activities were, where they were conducted or why they were initiated was not given. Instead, Khan said that his 'activities', whatever they might have been, 'were based in good faith but on errors of judgment related to unauthorized proliferation activities'. This confusing sentence was muddied by the next: 'I wish to place on record that those of my subordinates who have accepted their role in the affair were acting in good faith, like me, on my instructions'. If his deputies were acting on instructions, was Khan as well? The next sentence answered, 'I also wish to clarify that there was never ever any kind of authorization for these activities by a government official.'³

The next day, President Pervez Musharraf disclosed that he had pardoned Khan for his wrongdoing. Domestically, he had to frame the issue carefully. In his decades of public service, Khan had cultivated a cadre of journalists and surrogates who would proselytize on his behalf.⁴ This metallurgist and lab director managed to become 'father of the Pakistani bomb' in the public imagination, a title that ignored the role of other prominent scientists in the Pakistani programme. The public investigation of proliferation activities had struck all the discordant notes in Pakistani politics: foreign intervention into Pakistani security affairs in collaboration with a military government. Musharraf's opponents were using the Khan affair to challenge the military ruler's commitment to the nuclear programme. The alliance of religious parties had started a violent protest march in Karachi—a distressingly easy feat in the once-cosmopolitan city.⁵ The Alliance for the Restoration of Democracy, an umbrella group of opposition parties, was planning to launch a 'Remove Musharraf and Save the Country' movement.⁶ And while neither effort threatened the stability of the Musharraf government, the need for careful political manoeuvring was apparent.

Musharraf was emphatic in his address to the gathering of domestic and foreign press: 'This country will never roll back its nuclear assets, its missile assets.' He stressed that he was not influenced by outsiders. 'Not a single foreigner was involved' in the investigation. 'There is no pressure on us ... to let him go, free him or punish him, do this or do that.' Moreover, Musharraf said he was personally hurt by the investigation. Khan 'is my hero', the general stated. 'He always was and still is, because he made Pakistan a nuclear power.' But in the end, the investigation had been clear: 'Unfortunately, all

proliferation... [took place] under the supervision or orders of Dr. A.Q. Khan. No government official, no military man is involved... . The proliferation started in the 80s and Dr. A.Q. Khan retired, roughly, around 2001 and it ended around that time.' But after meetings of the National Command Authority and the Cabinet, Musharraf decided to accept Khan's clemency petition, 'because he is our national hero.'⁷ Though Musharraf did not say so on that Thursday evening, Khan would be under virtual house arrest indefinitely and his pardon was conditional on his continued cooperation with the investigation.

The Khan network

Without diminishing the difficulties of indigenous nuclear programmes, all nuclear weapons programmes after the Manhattan Project have relied upon illegally acquired knowledge, technology or material. On the evening that Musharraf pardoned Khan, the Pakistani president was blunt: 'If all the nuclear powers of the world are reviewed from the start, all of them established themselves through the underworld. We have also acquired it [nuclear capability] through the underworld. India has also acquired it through the underworld.'⁸

In 1974, India demonstrated that guarantees of 'peaceful' and 'civilian' use were quite flexible to interpretation. Having developed a sizeable indigenous nuclear structure—at dramatically reduced costs because of the 'Atoms for Peace' programme—India was able to conduct a 'peaceful nuclear experiment'. The eight-kiloton explosion at the Pokhran test range did not comfort its next-door neighbour. Pakistan was also unlucky because the explosion forced the international community to create an enforcement structure to support the six-year-old NPT. Building on deliberations of the Zangger Committee, by the end of 1974, the United States created the Nuclear Suppliers Group (NSG) with six other countries (the Soviet Union, the United Kingdom, France, the Federal Republic of Germany, Japan and Canada).

These countries—partially because of American insistence—were extremely careful in their cooperation with Pakistan, out of a fear that it would quickly follow India's lead down the nuclear path. All of the Pakistan Atomic Energy Commission's major projects suffered disruption. Canada refused to supply nuclear fuel, heavy water or spare parts for the Karachi Nuclear Power Plant.⁹ Germany halted construction of a heavy-water production facility. And, after initially delaying, in 1978 France abandoned an agreement to build a plutonium reprocessing facility for Pakistan.

Pakistan was lucky because as the plutonium route was closed down, a uranium pathway was opening. A.Q. Khan had studied in Western Europe and, after completing his post-graduate education, worked for the Anglo-Dutch-German centrifuge enrichment partnership, Urenco. In 1974, Khan wrote President Zulfikar Ali Bhutto that he was willing to return to Pakistan. He left the firm in 1976, bringing with him stolen centrifuge designs and, crucially, a list of 100 companies that supplied centrifuge parts and high-quality materials. After returning to Pakistan, he found the nascent NSG still had difficulty enforcing its non-proliferation agenda. He later said, 'My long stay in Europe and intimate knowledge of various countries and their manufacturing firms was an asset. Within two years we had put up working prototypes of centrifuges and were going at full speed to build the facilities at Kahuta.'¹⁰ The European firms were eager to do business: 'They literally begged us to buy their equipment', Khan recalled.¹¹

The NSG was a response to state-to-state technology transfer. Khan circumvented it by creating firm-to-firm relationships. Even if these were interrupted, he could quickly reform the acquisition network. Procurement pathways could be found through Pakistani

The Nuclear Suppliers Group was a response to state-to-state technology transfer. Khan circumvented it by creating firm-to-firm relationships.

government offices overseas, front companies for A.Q. Khan, or middlemen who shipped through trading hubs in Malta or Dubai. During these early years in particular, the network was able to keep ahead of the supplier cartel. The omission of many key sensitive technologies helpful in centrifuge production from the NSG trigger list further increased the ability of the network to navigate around the obstacles that did exist.

The NSG was most successful at preventing large-scale projects. In practice, this meant the NSG was much better able to stop plutonium efforts, which required unsafeguarded power plants, then it

The NSG was much better able to stop plutonium efforts, which required unsafeguarded power plants, then it was in stopping the myriad components necessary for a centrifuge cascade.

was in stopping the myriad components necessary for a centrifuge cascade. To stop the flow of magnets, high-quality steel and countless other small and large parts, nuclear suppliers had to rely on outdated infrastructures. Ministries of industry and commerce, customs agents and immigration officials became the first line of defence. Militaries and diplomats were secondary to this endeavour.

After a decade of supplier controls, two trends were apparent. First, a growing 'community' of unprincipled suppliers, shady middlemen and corrupt financiers had developed to circumvent those controls. While these networks might have begun to carry out one country's acquisition efforts, they could be modified easily to satisfy another customer. In fact, for the 'service providers' the economies of scale that came with additional channels for trade must have been attractive. What emerged, though, is a loose collection of individuals and companies that may or may not be loyal to a government or subject to state control.

The second trend is also a result of supplier controls. The higher cost and uncertain reliability of illegally procured components increased the incentives for indigenous programmes to supply the demand. This trend had added impact when combined with the inevitable diffusion of scientific know-how. The effect was a growing cadre of nuclear scientists and a larger manufacturing base for components that previously would have only been accessible abroad.¹²

By the mid-1980s, Pakistan had acquired a nuclear-weapons capability, in spite of the supplier controls. In 1987, two events—one loud and one quiet—marked this transition. First, in an interview with an Indian journalist, Khan stated that Pakistan had the ability to produce nuclear weapons.¹³ This remark was meant to be noticed and it was. The second event had a lower profile. Khan Research Laboratories' scientists published their first papers on constructing more difficult centrifuges of maraging steel, rather than earlier aluminium-based designs. This was followed in 1991, when KRL scientists published details of how to etch special grooves into the bottom bearing of the centrifuge to incorporate lubricants.¹⁴ At this same time, Khan was apparently ordering excess spare parts. These four factors—autonomy because of successfully acquiring a nuclear deterrent, less urgency because of the same, over-ordering of parts, and technological innovation—meant that Khan had the time and resources to sell to others, if he desired. Khan reversed the flow of his network—and instead of procuring, he began proliferating.

The network functioned through transit hubs, front companies and, most ambitiously, creative off-shoring of manufacturing. Components would be purchased from mostly European firms with false end-user certificates destined to Dubai or Malta or some other trans-shipment point. There, they could be off-loaded and sent on to their true destination. This trade was not just carried out by a few firms. Just the nationalities mentioned in press accounts—American, British, Dutch, German, Israeli, South African, Swiss and Turkish, to name a few—indicate the scope of the problem. Such businesses could just be a small father-and-son outfit, they could be connected to organized crime, or they could be unscrupulous or just unsuspecting import-export firms.

The Malaysian investigation into one individual—Buhary Seyed Abu Tahir—reveals this complexity. According to the report of the Malaysian Inspector-General of Police, Tahir began working with Khan

Research Laboratories in 1985, ostensibly selling air conditioning equipment. Tahir was principally involved in establishing a factory for the production of centrifuge components in Shah Alam, Malaysia. Tahir is co-owner with his brother of the SMB Group based in Dubai. The factory he organized in Malaysia, however, was owned by SCOMI Precision Engineering (SCOPE), which is itself a subsidiary of the SCOMI Group. In Malaysia, Tahir worked closely with Peter Griffin and his son Paul, British owners of a Dubai-based company, Gulf Tech Industries. Griffin recommended that Tahir receive quality-control advice from Urs Tinner, whose father, Friedrich, is president of a Swiss firm called CETEC. Tinner and Griffin helped ensure that the factory received production equipment from the United Kingdom, France, Spain and Taiwan to make precision parts. That Malaysian factory made parts which could be used in centrifuges that were sent to Libya via a trading company in Dubai. SCOPE, the company that owned the factory, was judged by the Malaysian police to be unaware that they were even involved in nuclear proliferation. Malaysian export control officials did not suspect that a firm in the NPT-signatory country would be circumventing the treaty.¹⁵ What should be evident from this single example is that Khan's trading network was complex and multinational—with over a half-dozen companies from several different countries involved in just this one portion of the overall operation. Press accounts suggest that maybe six such workshops existed elsewhere, implying an even denser web of families, old friends and front companies. What did they all do?

A damage report

The available open sources indicate that in the last two decades A.Q. Khan almost certainly provided significant nuclear technology assistance to Iran, Libya and North Korea.¹⁶ He attempted to offer support to a pre-Persian Gulf War Iraq. He may have provided technology or information to Syria. And his contacts with Syria and some sub-Saharan African countries are at least a cause for concern. There are eight important points to draw attention to regarding Khan's transfer of nuclear technology.

First, Khan's operation began almost immediately after Pakistan had achieved a nuclear capability for itself and lasted until very recently. The most likely first customer was Iran, which began receiving foreign centrifuge assistance 'around 1987', according to the IAEA.¹⁷ In 1990, Khan appears to have contacted Iraqi intermediaries offering his services.¹⁸ Supplying nuclear technology to an antagonistic couple like Iran and Iraq might have proved very lucrative, but Saddam Hussein's government apparently rejected the proposal as a ploy by the United States. While all available evidence indicates that the Iranian relationship was maintained until the mid-1990s, the 'best guess' dates for the beginning of cooperation with North Korea and Libya are both around 1997.¹⁹ The gap in securing new customers is inexplicable from our current data.

Second, as might seem intuitive with such a diverse group of countries, there does not appear to be a single set of motivations. The commencement of nuclear cooperation with Iran could be explained by the tenure of a former Pakistan Army chief, General Aslam Beg. Beg held peculiar notions about an Iranian-Afghan-Pakistani alliance that would engage in 'strategic defiance' of the West. In his eyes, nuclear cooperation may have been a way to cement such an arrangement. If that was his objective, it was unfulfilled, as Pakistani-Iranian relations quickly soured as a result of the civil war in Afghanistan. Instead, any Pakistani nuclear technology given to Iran has now come back to haunt Pakistani strategic planners, who may one day face two nuclear neighbours. Islamic unity may explain Pakistani cooperation with other countries—though unlikely with Shi'ah Iran—but fails to explain the North Korean relationship. Strategic cooperation arrangements, which could explain the North Korean partnership, do not make sense in the context of a state like Libya, which has little to offer Pakistan in return. In fact, of the four countries (Iran, Iraq, Libya and North Korea) where credible evidence exists

of either cooperation or an offer of such cooperation, Pakistan has had historically strained relationships with three of them (Iran, Iraq and Libya).²⁰ The only common explanation for all the cases might be personal avarice on the behalf of A.Q. Khan and his associates. But even then, why would Khan want more money if the Pakistani state was happy to let him skim money from KRL coffers?

Third, the prices for this nuclear assistance were relatively affordable. The most extensive information relates to the Pakistani-Libyan relationship, where American government officials estimate that the Khan network received only US \$100 million.²¹ In comparison to the cost of conventional military armaments—for instance, the Saudis paid China US \$2 billion for between thirty-six and forty Chinese CSS-2s²²—this seems quite affordable for a strategic planner looking for asymmetric advantage.

However, the price may be correct for the incomplete product Khan seems to have sold. Of several thousand centrifuges that suppliers were supposed to provide to Libya, they had only received all of the parts for two units.²³ Iran expressed displeasure with the quality of the product they received from their foreign suppliers. As the IAEA summarized, '[Iranian] efforts had been concentrated on achieving an operating centrifuge, but many difficulties were encountered as a result of machine crashes attributed to poor quality components.'²⁴ Further, Iran's centrifuges appear not to have been a turnkey affair—Iran was still on the market for 4,000 ring magnets of specifications suitable for use in the P-2.²⁵ Of the largest three customers, perhaps only North Korea managed to create a functioning centrifuge cascade, and even that is speculative.

Fifth, there appears to be no evidence that Khan was transferring missile technology. Perhaps this is because KRL did not test the liquid-fuelled, Nodong-based Ghauri missile until April 1998, which is comparatively late in the game. Perhaps North Korea was already well established in the missiles-for-rogue-states market. Or perhaps Khan did not have the indigenous infrastructure and supplier networks to manufacture extra missile components and transport them overseas.

Sixth, over nearly two decades of proliferation activity originating in Pakistan, the only individuals that have been accused of illegal involvement have worked in Khan Research Laboratories. As Pakistani Foreign Minister Khursheed Kasuri noted:

To place matters within their proper context, we say that from 6,500 scientists who work in the nuclear programs out of 62,000 who work in nuclear and missile establishments, we investigated 11 persons, including seven scientists, one technician, and three from the security agencies. Four of these were released after the investigations proved their innocence. Yes, there were accusations against seven people. Unfortunately, one of them, Abdul-Qadeer Khan, is admired by all in Pakistan.²⁶

While this fact does not eliminate the mistakes that Pakistanis made in establishing their safety and security arrangement, it does seem to indicate that the problem was endemic to KRL, not to Pakistani nuclear stewardship more generally.

Seven, the Khan network may have left 'damaging debris' in the open domain. Libya received nuclear-weapons designs from the Khan network—supposedly as 'a bonus'—which were transferred inside of an Islamabad dry cleaner bag.²⁷ Many of the blueprints, designs, sketches and instructions found in Libya appear to have been copies of copies of copies. If the copies were passed on through middlemen, control of the information may have been irrevocably lost. In addition to such intangible transfers, Libya also is still waiting to receive centrifuge components that it ordered and paid for, but which were never delivered.²⁸ If the parts had already been manufactured, they may simply have been diverted to another customer.

Eighth, and finally, there may be more revelations to come. In addition to relationships that have been publicly reported in great detail, there are three possible relationships that, while largely unsubstantiated, are still troubling. Recent reports that Syria was operating centrifuges—when combined

with reported visits by A.Q. Khan and associates to Syria in 1997 and 1998 and meetings with Syrian officials in 2001—have led to considerable curiosity.²⁹ The visit by Saudi Arabian defence minister Prince Sultan Bin Abd al-Alziz to the Kahuta enrichment facility in May 1999 and A.Q. Khan's September 2000 visit to Riyadh have done little to assuage concerns over potential Saudi-Pakistani nuclear cooperation. Reports that Khan and his entourage took four trips to Africa, visiting Chad, Mali, Niger, Nigeria and Sudan, opened up a new continent to concern.³⁰ And while none—or all—of these reports may be true, they should indicate the incredible difficulty of discerning a visit from a business trip. Proliferation networks can be impenetrable organisms. Does the international community have a chance?

Policy responses

The above transfers have simultaneously highlighted four trends of crucial importance for international security:

- the global diffusion of knowledge, technology and engineering necessary for the production of weapons of mass destruction (WMD);
- the growing access that non-state actors have to WMD technology;
- an emerging illicit international market of WMD technology; and
- the increasing number of states with (partially) indigenous WMD research, development and production efforts, who are able to pass that knowledge to third parties.

In the United States, the Bush Administration has pursued five inter-related strategies to combat these trends. First, it hopes to reinforce the international non-proliferation regime by gaining compliance from key suppliers, most notably China and Russia, while ensuring adequate safety and security measures are taken in other WMD-possessing nations. Gaining Chinese accession to the NSG and the passage of UN Security Council resolution 1540 on weapons of mass destruction were both significant steps in this direction. Interestingly, the United States views the resolution as having broad applicability. As United States Assistant Secretary of State for Nonproliferation John S. Wolf argued, 'I would submit that the resolution also looks at state-state transactions, as well as state-nonstate transactions. There's a whole universe of state-state, state-nonstate, nonstate-nonstate, nonstate-state [transactions], and all of those need to be covered by comprehensive export controls and rigorous enforcement.'³¹

Secondly, and complementing the goal of Security Council resolution 1540, the United States hopes to work with the Group of Eight (G8) to secure and eliminate existing nuclear, chemical, biological and radiological materials. In the 2002 summit in Kananaskis, Canada, G8 leaders identified their priority concerns as 'the destruction of chemical weapons, the dismantlement of decommissioned nuclear submarines, the disposition of fissile materials and the employment of former weapons scientists,' and committed themselves 'to raise up to \$20 billion to support such projects over the next ten years.'³²

Third, the Bush Administration envisions a radical reform of the NPT, closing off enrichment and reprocessing to those states that do not already possess such capabilities and prohibiting the importation of civilian nuclear equipment by states who have not signed the Additional Protocol. However, the ability for the United States to fundamentally alter the NPT bargain seems doubtful at best.

Fourth, in a creative mix of norm- and institution-building with military force, the United States also hopes to increase the capability and the authority of the United States and like-minded countries to interdict the illegal trade of WMD technology or material. Through greater intelligence, military and law enforcement cooperation, combined with the creative application of antiquated piracy and

contraband laws, the Proliferation Security Initiative (PSI) hopes to complicate the trade in WMD technology. However, the Libya case is both a salutary and cautionary tale. After the ship *BBC China* was intercepted in Taranto, Italy in October 2003, the Libyans opted to stop pursuing their nuclear programme. Interdiction, it would seem to indicate, can be a powerful policy lever. But, even though the American-led team had precise intelligence and managed to seize five containers of proscribed materials, they apparently missed one container full of centrifuge components, which continued on to Tripoli aboard the *China*.³³ The Libyans, serious about their desire to be rid of their nuclear programme, were kind enough to report the surprise shipment to the United States, but the incident does reveal the limitations of even well-executed PSI operations.

Fifth, the United States military capability will perform a range of policy functions for the Bush Administration. Abstractly, the United States hopes to dissuade WMD aspirants from initiating acquisition efforts. While dissuasion is one of four American defence policy goals,³⁴ it remains unclear how to be so threatening that others do not respond with threatening postures of their own. If dissuasion fails, the United States hopes to enhance deterrence through the possession of overwhelming conventional superiority and the maintenance of a flexible and more usable nuclear arsenal. And finally, the United States will deny, degrade and, if necessary, destroy WMD technology possessed by dangerous states.

What should be apparent is that American strategy only tangentially deals with the threat of proliferation networks. By reducing the number of states who possess WMD, it hopes to starve networks of a source of technology and material. By securing sensitive technology and reinforcing export controls, it hopes to further reduce the supply that leaks into the non-state arena. Finally, by significantly increasing interdiction efforts, the Bush Administration seeks to decrease the profits for proliferation networks and/or increase the costs for acquiring states.

An uncertain future

In March of 1963, United States President John F. Kennedy warned that fifteen to twenty-five states could possess nuclear weapons by the 1970s.³⁵ Luckily that future has not come to pass. But the technology underlying nuclear weapons is in an increasing number of hands. More and more states have the capability to develop a nuclear arsenal, but choose not to. The A.Q. Khan proliferation network was troubling, but not disastrous. The technology provided, while significantly aiding recipient states, was nowhere close to providing a 'turnkey' nuclear programme. Though the proliferation network was outside of state control, sales of its wares apparently only went to state entities. And while Pakistan's nuclear stewardship has been deeply questioned, the confinement of these activities to just one of Pakistan's labs is a cause for hope.

The Bush Administration's agenda for dealing with proliferation seems unlikely to advance far. The United States is simultaneously seeking to reinforce its deterrence through military strength, trying to maintain its room for manoeuvre by avoiding international commitments, and hoping that others subscribe to new rules and responsibilities. Having invested enormous political capital in an ultimately flawed counter-proliferation campaign in Iraq and still pursuing a diplomatic exit from negotiations with North Korea, it seems unlikely that American diplomats will also be able to assuage the concerns of the international community about its package to reduce the WMD threat. For now, the international community will probably have to be content with the slow and measured progress of the IAEA investigation in Iran, the British and American investigation in Libya, and the Pakistani domestic investigation of A.Q. Khan.

Notes

1. The Butler Commission summarizes the state of British knowledge: 'During the 1990s, there were intermittent clues from intelligence that A.Q. Khan was discussing the sale of nuclear technology to countries of concern. By early 2000, intelligence revealed that these were not isolated incidents. It became clear that Khan was at the center of an international proliferation network.' See United Kingdom, 2004, 'Review of Intelligence on Weapons of Mass Destruction', Report of a Committee of Privy Counsellors, 14 July, p. 18, at < www.official-documents.co.uk/document/deps/hc/hc898/898.pdf>.
2. S. Hersh, 2004, 'The Deal', *The New Yorker*, 8 March.
3. Khan's statement is reprinted in full in R. Ali, 2004, 'Dr Khan Seeks Pardon', *Dawn* (Karachi), 5 February.
4. An excellent example is Z. Malik's hagiographic *Dr. A.Q. Khan and the Islamic Bomb*, Islamabad, Humat Publications, 1992.
5. 'Several Hurt in Karachi Violence', *The News* (Islamabad), 6 February 2004.
6. 'ARD Planning to Launch Remove-Musharraf Drive', *Dawn* (Karachi), 6 February 2004.
7. PTV World in Urdu, 'Musharraf Addresses News Conference on Proliferation, Pardons Khan', 5 February 2004, FBIS-SAP20040205000124.
8. *Ibid.*
9. For a detailed description of the challenges this created, see M. Ahmad Khan, 1998, 'How Pakistan Made Nuclear Fuel', *The Nation* (Lahore), 7 and 10 February, FBIS-FTS19980211000724 (posted 11 February 1998).
10. P. Edidin, 2004, 'Pakistan's Hero: Dr. Khan Got What He Wanted, and He Explains How', *New York Times*, 15 February.
11. W.J. Broad, D.E. Sanger and R. Bonner, 2004, 'A Tale of Nuclear Proliferation: How Pakistani Built His Network', *New York Times*, 12 February.
12. For an examination of how Iran has sought to develop its nuclear 'human capital', see J. Boureston and C.D. Ferguson, 2004, 'Schooling Iran's Atom Squad', *The Bulletin of the Atomic Scientists*, vol. 60, no. 3 (May-June), pp. 31-35.
13. Khan gave an interview with the Indian journalist Kuldip Nayar on 28 January 1987, in the midst of a crisis over India's 'Brasstacks' exercises. Nayar does not publish the account until 1 March, however, shopping around for an appropriate venue.
14. 'From Rogue Nuclear Programs, Web of Trails Leads to Pakistan', *New York Times*, 4 January 2004.
15. 'Press Release by Inspector-General of Policy in Relation to Investigation on the Alleged Production of Components for Libya's Uranium Enrichment Program', *The Star* (Kuala Lumpur), 21 February 2004, FBIS-SEP20040221000035.
16. These 'big three' relationships are explored in greater detail in C. Clary, 2004, 'Dr. Khan's Nuclear Walmart', *Disarmament Diplomacy*, no. 76 (March-April), pp. 31-36.
17. IAEA, 2003, 'Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran', report by the Director General to the Board of Governors, 26 August, GOV/2003/63, p. 6, < www.iaea.org/Publications/Documents/Board/2003/gov2003-63.pdf>.
18. Memo from Iraqi Mukhabarat to PC-3, 'Subject: Proposal', 6 October 1990, < www.isis-online.org/publications/southasia/khan_memo_scan.pdf>; and D. Albright and C. Hinderstein, 2004, 'Documents Indicate A.Q. Khan Offered Nuclear Weapon Designs to Iraq in 1990: Did He Approach Other Countries?', Washington, DC, Institute for Science and International Security, 4 February, < www.isis-online.org/publications/southasia/khan_memo.html>.
19. These dates are discussed in greater detail in C. Clary, *op. cit.*
20. People often refer to Libya's early support of Pakistan's nuclear programme as a potential explanation for Pakistani technology transfer. However, there are two reasons this seems implausible. First, such support occurred in the mid-to late 1970s, and beginning repayment in the late 1990s seems somewhat tardy. Second, and more importantly, after military dictator Zia ul-Haq hanged deposed Prime Minister Zulfikar Ali Bhutto in 1979, relations between Libya and Pakistan soured. Bhutto and Libyan President Moammar Gadhafi had formed a close relationship.
21. D.E. Sanger and W.J. Broad, 2004, 'Pakistani's Nuclear Earnings: \$100 Million', *New York Times*, 15 March. Despite the article stating that Khan 'netted \$100 million', the quote by administration official Jim Wilkenson seems ambiguous about whether this figure was net or gross.
22. M. Hibbs, 2003, 'Pakistan believed design data source for centrifuges to be built by Iran', *Nuclear Fuel*, 20 January.
23. D. Horner, 2004, 'Bolton: U.S. Okay with Response by Pakistan to Khan Network', *Nuclear Fuel*, 12 April, p. 11; and J. Warrick, 2004, 'Libyan Nuclear Devices Missing', *Washington Post*, 29 May.
24. *Ibid.*

25. IAEA, 2004, 'Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran', report by the Director General to the Board of Governors, 1 June, GOV/2004/34, p. 5, <www.iaea.or.at/Publications/Documents/Board/2004/gov2004-34.pdf>.
26. Interview with Pakistani Foreign Minister Khursheed Mehmood Kasuri by Jamal Rayyan from the "Today Encounter", Al-Jazeera Satellite Television Channel (Doha), 29 February 2004, FBIS- GMP20040301000119.
27. W.J. Broad, 2004, 'Libya's Crude Bomb Design Eases Western Experts' Fear', *New York Times*, 9 February.
28. J. Warrick, 2004, 'Libyan Nuclear Devices Missing', *Washington Post*, 29 May.
29. D. Frantz, 2004, 'Ring May Have Aided Syria', *Los Angeles Times*, 25 June.
30. R. Carroll, 2004, 'Pakistani Nuclear Chief's African Visits Revealed', *The Guardian* (Manchester), 20 April.
31. 'The Bush Administration's Non-proliferation Policy: An Interview with Assistant Secretary of State John S. Wolf', *Arms Control Today*, vol. 34, no. 5, June 2004.
32. Statement by G8 Leaders, 2002, 'The G8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction', 27 June, <www.g8.gc.ca/2002Kananaskis/globpart-en.asp>.
33. W.J. Broad and D.E. Sanger, 2004, 'After Ending Arms Program, Libya Receives a Surprise', *New York Times*, 29 May.
34. United States, Department of Defense, 2001, *Quadrennial Defense Review*, Washington, DC, United States Government Printing Office, 30 September, p. 12.
35. Press Conference, 21 March 1963, *Public Papers of the Presidents of the United States: John F. Kennedy, 1963*, Washington, DC, United States Government Printing Office, 1964, p. 280.

IAEA safeguards and the NPT

Ben SANDERS

This paper is written at a time when belief in the efficacy of the international nuclear non-proliferation regime is becoming increasingly shaky. If there had been any doubt that the regime was facing a crisis of confidence, the debates at the recent third session of the Preparatory Committee for the 2005 Review Conference of the Non-Proliferation Treaty (NPT)—the treaty that is the cornerstone of that regime—should have put an end to it. As those discussions showed, the treaty—and with it the regime—is rapidly losing credibility in each of the three areas in which it is supposed to operate: deterring the spread of nuclear-weapon capability ('nuclear non-proliferation'); nuclear disarmament; and the promotion of the peaceful uses of nuclear energy. This article deals with one particular aspect of the nuclear non-proliferation function, namely the verification by the International Atomic Energy Agency (IAEA) of compliance with undertakings not to acquire nuclear weapons—the so-called safeguards. While they, too, are criticized for their perceived shortcomings, the IAEA's safeguards are the one element of the regime that, though surely susceptible to improvement, is widely recognized to work as they are intended to. One must wonder, however, to what extent safeguards will be allowed to go on working if the international community loses its belief in the system that they have been devised to sustain.

Ideas to limit the risk of nuclear proliferation have surfaced from the moment the political world became aware that there was such a thing as an atomic bomb—in fact, almost as soon as it became obvious in principle that such a thing could be created. The story of the attempts that were made to reduce that risk has been often told. Still, it is useful in this context to go over it once again, briefly—all the easier since it is in fact a fairly simple story.¹

The very first resolution of the United Nations General Assembly² dealt with the need to deter the spread of nuclear weapons. In the discussions that followed, the United States, which had meanwhile concluded that 'a system of inspection superimposed on an otherwise uncontrolled exploitation of atomic energy by national governments [would] not be an adequate safeguard'³, presented its so-called Baruch Plan (named after the representative to the UN who submitted it). The Baruch Plan, which held that the only secure way to keep nuclear material and equipment from being misused for military purposes was to bring and maintain all nuclear activities that could lead to such use under the strict control of an International Atomic Development Authority (IADA) and in effect internationalize the nuclear fuel cycle. This ambitious plan failed, in part because by then, although the United States was accused of advancing it in the hope of maintaining its apparent atomic monopoly, others had already begun to work on their own atomic weaponry. The discussions in the UN framework ended in

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deadlock. In 1949 the United Nations Atomic Energy Commission (UNAEC) wound up its first formal attempts to tame the powers of the atom. In 1952 the UNAEC was formally abolished by the General Assembly, and with it the idea of an IADA.

Some of those ideas were revived in 1953, in the American 'Atoms for Peace' Plan. In a speech to the UN General Assembly on 8 December of that year, American President Dwight Eisenhower proposed that states that had nuclear material should draw down their military stockpiles and move the material thus withdrawn to an international 'pool' that would be at the disposal of states for peaceful purposes. The plan was based on the assumption that 'the secret' was out but that a substantial measure of control could be assured if states were helped in their nuclear activities, on condition that those activities took place under the supervision (described in the speech as 'the impounding, storage and protection of the contributed fissionable and other materials') of an international agency. This led to the birth of the IAEA in 1957.⁴

As foreseen in the 'Atoms for Peace' Plan, the IAEA's main task was to supply, or to function as the conduit for the supply of nuclear material withdrawn from military stockpiles, and to ensure that this was used safely and not for military purposes; in this respect the plan was to have functioned in the first place as an arms control measure. Through a variety of factors, the supplier's function never really took off, and in addition to the ever-expanding and still-increasing range of non-energy uses that it promotes, the IAEA has been doing a growing amount of work in the regulatory and supervisory areas, notably in applying safeguards against non-legitimate uses.⁵

The safeguards function started modestly. At the beginning there was little demand for the Agency's services. Around that time, in the late 1950s and early 1960s, several states that had acquired a proficiency in such matters, mostly through wartime cooperation with the United States, supplied research reactors to a few select customers on condition that they would be used only for peaceful purposes.⁶ Among them, the United Kingdom and the United States maintained their own supervision over the way such supplies were handled. As this trade increased, however, this supervisory activity posed a growing burden for suppliers, while some of the recipients felt uncomfortable with the periodic presence of inspectors from supplier states.⁷

The Statute of the IAEA provided for just this kind of situation, where it said that the IAEA is authorized '[t]o establish and administer safeguards designed to ensure that [nuclear items supplied by or through the Agency] are not used in such a way as to further any military purpose; and to apply safeguards, at the request of the parties, to any bilateral or multilateral arrangement, *or at the request of a State, to any of that State's activities in the field of atomic energy*'.⁸ This provision enabled states involved in an agreement for the supply or the receipt of nuclear items to let the Agency take over the safeguards function on the items in question. It seems that the phrase was added at the last moment of the negotiations on this part of the Statute, attention having all along been focused on the organization's role as a primary supplier of installations and material. In fact, without a provision of this kind the Agency would not have been able to apply safeguards pursuant to the NPT or of agreements for the denuclearization of given geographical areas, such as the Treaty of Tlatelolco.

The Statute lays down in general terms the rights and obligations of the Agency in applying safeguards. It provides a framework for a safeguards system but it does not specify how those safeguards should be applied; that was left to be worked out in specific agreements with the states concerned. The Agency was asked to do this for the first time in 1958, in connection with the supply to Japan of a small Canadian research reactor. The issue was highly controversial and met with resistance in the Agency's Board of Governors. India reiterated the position it had formally stated in ratifying the Statute (in an argument very similar to the one used fifty years later by members of the Non-Aligned Movement in criticizing the NPT) that safeguards threatened to separate the world into two categories: 'the small and less powerful ones being subject to safeguards while the Great Powers are above them'. The Soviet

Union and its allies saw safeguards as a novel means of spying and an infringement of states' sovereignty, and therefore resisted the creation within the organization's Secretariat of any special unit for this function.⁹ But a majority of the Board decided to set up a division for the purpose and asked it to prepare a set of standard safeguards regulations, containing provisions that could be used in future similar cases, permitting states to see in advance what procedures they could expect, ensuring that similar situations would be dealt with in the same way, and avoiding time-consuming discussions whenever the Agency would be asked to apply safeguards.

The result, in 1961, after long discussions in various expert groups and committees in the Agency's Board of Governors and in its General Conference, was the first 'Safeguards Document', which held principles and procedures for the application of safeguards to reactors up to 100 MW(th)—i.e. mainly research reactors. The same year saw the adoption of the 'Inspectors' Document', which established rules for the designation of safeguards inspectors and for their conduct. This document dealt with an entirely new and controversial issue—the intrusion of representatives of an international body into the territory of sovereign states. Distinguished mainly by the restrictions it set on the selection and access of inspectors, this document was a portent of problems that even now bedevil the applications of the Agency's safeguards under the NPT.

As supplier states' requests for the application of safeguards to material and equipment became more frequent, and the items supplied more sophisticated, the safeguards document had to be adapted. Over the years, the document was revised piecemeal, first to cover reactors of any size and later also other elements of the fuel cycle, including fuel fabrication and reprocessing.¹⁰

The resulting system, contained in document INFCIRC/66 and generally referred to by that symbol, was intended to assure that supplied items were not used for military purposes. While its effects would spread with the growth of the number of facilities and of the amount of material to which it would pertain, it was not initially conceived with the idea of covering entire fuel cycles in a state, but rather to apply to individual items: facilities, installations and given lots of nuclear material. As soon as the NPT was opened for signature in 1968, the Secretariat began to work on appropriate adjustments of the existing system, but it soon became obvious that the new situation called for a new regime that would be not only effective, but economical and widely acceptable as well, and that the INFCIRC/66 system would no longer do.¹¹

A new approach had been presaged in the treaty itself, where the fifth paragraph of the Preamble and Article III, on safeguards, posited the 'principle of safeguarding effectively the flow of source and special fissionable materials by use of instruments and other techniques at certain strategic points'. This wording was inspired in particular by technological developments then going on especially in Germany, which were supposed to give a high level of assurance for relatively modest effort.¹² Thus, in order to minimize the intrusiveness of safeguards and the risk of industrial espionage—which at the time was a subject of great concern within the nuclear industry—and in hopes of making safeguards more economical to states and operators, in terms of money, time and labour, the treaty itself dictated a set of parameters for safeguards application. On that basis, an open-ended committee of the Board of Governors drew up a new safeguards system, focused on nuclear-material accounting and the verification of states' declarations on their holdings of such material and the use they were making of it. By the end of the millennium, agreements providing for safeguards incorporating these principles were in force with 128 states.¹³ Critics of the efficacy of the Agency's safeguards liked to dismiss the system as meaningless bookkeeping, but in and of itself it worked more or less as intended. Most of the discrepancies and anomalies in the determination of material quantities that almost inevitably arose in the course of various industrial operations could be satisfactorily explained and in virtually all the cases with which the Agency dealt it saw no reason to report that significant quantities of material were unaccounted for.

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The question was, of course, whether this system, which was inherently a set of procedures to check the validity of information provided by states, was capable of detecting cheating, such as, for instance, the introduction into the fuel cycle of undeclared nuclear material or the development of a second, undeclared fuel cycle. As we have seen, it was in fact unable to do so, for the safeguards regime based on the strict parameters referred to here also reflected some specific, and as we now see, largely misplaced assumptions. Citing from a range of political utterances: by joining the NPT states showed their good intentions and demonstrated that they found security in their non-nuclear status. This should give them the benefit of the doubt and it would be logical that the verification procedure should be based on the state's own declarations—the state was innocent until the Agency proved it to be guilty or, in other words, the situation was as the state had said it was, unless the IAEA had reason to find otherwise. In retrospect, this should not be seen as just a matter of naive belief and hope. As stated before, at the time the system was introduced, international verification was a unique and novel political phenomenon, which many governments found hard to accept. So 'a soft and careful approach' was called for.¹⁴

The approach became too careful and soft and tended to erode the effect. An example is found in the subsidiary arrangements, a kind of executive arrangements that, under the model agreement, were to specify in advance how safeguards were to be applied in given situations and installations.¹⁵ Although the frequency of inspections was set in the model safeguards agreement, the figures given there became considered as the maximum and states demanded to be given figures for 'actual' frequencies, which found their way into the subsidiary arrangements. There they were further whittled down. States compared those frequencies and made sure that 'their' frequencies were no higher than anyone else's. In the end, the final number became the lowest common denominator among the various states. Similar things inevitably happened in regard to other elements of safeguards implementation and the Secretariat was not in a position to argue.

This had of course never been the intention of the ordinary folk in the Secretariat who had done so much work on the model agreement and the subsidiary arrangements. They had set out to design an objective system of oversight that would with a high degree of confidence catch the diversion of a given amount of nuclear material within a given time span. The difference between the attitude of the technical secretariat and those who had the political oversight is well illustrated in an exchange that took place when the safeguards system was being developed, between the Deputy Director General in charge of the safeguards department and a high-level delegation from an important industrial country. At one point in the conversation, the senior Agency official was asked why he needed so much information: didn't he trust the state? Which elicited the answer that if he was sure the state could be trusted, there was no need for safeguards. Not surprisingly, in that climate of political compromise, the man was promptly called to the Agency's Director General to account for his 'misplaced and irresponsible remark'.¹⁶

The discoveries made in Iraq in the early 1990s showed that the Deputy Director General's instincts had been right. They led, after thirty years of routine safeguards implementation to the adoption of a set of new and more intrusive ways of verifying the truth of the state's declarations, in the form of an 'Additional Protocol' to the standard safeguards agreement. That Additional Protocol is as yet far

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from generally accepted, and the break-outs from the regime that have become evident in the past few years have shown that the trust the international community was presumed to have was by no means always justified. We saw this in the Democratic People's Republic of Korea (DPRK) ten years ago, when the Agency found traces of undeclared plutonium production. The DPRK reacted to the disclosure of its bad faith by denouncing the treaty, which is hardly to be blamed on the Agency's safeguards. We see it also now in Iran, which appears to be engaged in several uranium-

enrichment processes of which it had not initially notified the Agency, and which, even now that the international community has pressured it into accepting the Additional Protocol, it may not have stopped altogether.

We recognize that the proliferation world in which we find ourselves is more dangerous than our optimism had led us to expect. But if the belief in the overall regime is waning it is not the safeguards system that is at fault. Safeguards, if applied properly and supported by *honest* intelligence, *objectively* analysed, can work as they are supposed to do: serve as a reliable confidence-building instrument and a means of warning if something is amiss. We have seen this in Iraq, where an international verification system during the 1990s, using elements of IAEA safeguards and operated by its staff, has turned out to be more effective than the intelligence apparatus of the world's most powerful nation;¹⁷ and we have seen it in Iran, where the IAEA seems to have unearthed information that American intelligence had not found.¹⁸

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The non-proliferation regime is facing a crisis. The dwindling belief in the promises of the NPT can only detract also from states' trust in the Agency's safeguards and reduce their continuing willingness to submit to a meaningful safeguards regime. Common sense demands that states should be aware of the security rewards they derive from continuing participation in that regime and from helping to strengthen it wherever possible. It is in the interest of the entire world community to keep that knowledge alive.

Notes

1. As it is an often-told story, one finds many useful references. The most authoritative of these (and the least entertaining) is *The United Nations and Disarmament 1945–1970*, United Nations Publication 70.IX.1, which is particularly informative on early events in the UN framework (pp. 11–24) and on the events leading up to the conclusion of the NPT, pp. 257–306. Brief lucid overviews may be found in D. Fischer, 1997, *History of the International Atomic Energy Agency—The First Forty Years*, Vienna, IAEA, pp. 15–28 and in J. Goldblat, 1982, *Agreements for Arms Control—A Critical Survey*, London, Taylor & Francis, pp. 12–15. See also P.C. Szasz, 1970, *The Law and Practices of the International Atomic Energy Agency*, Vienna, IAEA Legal Series No. 1, pp. 11–19. As for the term 'safeguards', this appears to have been used in this context for the first time in a 'Three Nation Agreed Declaration on Atomic Energy' of 15 November 1945, by the Prime Ministers of Canada and the United Kingdom and the President of the United States.
2. Resolution 1 (I) of 26 January 1946, which inter alia created the United Nations Atomic Energy Commission (UNAEC) with the task of making specific proposals for the elimination from national armaments of atomic weapons (and all other major weapons of mass destruction).
3. The phrase appears in the report of a committee established by United States Secretary of State Byrnes and chaired by Dean Acheson and David E. Lillienthal, the so-called Acheson-Lillienthal report, which formed the basis of the Baruch Plan. See United States, *The International Control of Atomic Energy*, 16 March 1946, Publication 2498, United States Government Printing Office.
4. The rationale for the establishment of the International Atomic Energy Agency and the early history of the nature and development of the Agency's safeguards are brilliantly described in the books of P.C. Szasz and D. Fischer, *op. cit.* Both books have benefited from their authors' personal experience of the substance they deal with.
5. This oft-forgotten fact might well be cited in response to allegations, voiced regularly both in the IAEA and at NPT review conferences, that the organization's budget is unfairly slanted towards its safeguards function, at the expense of technical assistance. According to Szasz, safeguards is '... perhaps even the uniquely important function without which the organization need not and possibly would not have been created'. See Szasz, *op. cit.*, p. 531.
6. The French Dimona reactor in Israel was ostensibly supplied for peaceful purposes but I have heard from a senior Israeli official instrumental in that deal that Israel intended to use it for the production of weapon-grade plutonium from the start. This is confirmed in the brilliant expose of this issue in A. Cohen, 1998, *Israel and the Bomb*, Columbia University Press.
7. Fischer asserts on the contrary that most bilateral partners of the United States at first objected to the transfer of the safeguards function to the IAEA, but were persuaded by Washington to accept the new situation (Fischer, *op. cit.*,

- p. 250). In the course of negotiating on a series of these so-called 'safeguards transfer agreements' I became convinced of the opposite, namely that, although most of the governments in question were not unhappy with American safeguards, they generally preferred the principle of international safeguards, presumably because this avoided a possible image of subservience. The facility operators, however, presented a different case; many of them initially expressed a preference for the continuation of American safeguards, if only because they knew the inspectors and were confident of their ability and discretion. Aware of this attitude, incidentally, Agency inspectors have generally tried to gain operators' confidence and maintain good working relations with them. This approach has caused some critics to pillory the IAEA for what they see as an overly cooperative approach in the way the IAEA has applied safeguards and even of an ethic of carelessness to possible diversion of nuclear material.
8. Statute of the IAEA, Art. III, 5, italics mine. I have heard that Myron Kratzer, the head of the American delegation to the negotiations on the Statute, called for the inclusion of this clause as a kind of 'afterthought'. Without it, the Agency would have lacked the authority for most for the application of safeguards under the NPT. See also Szasz, *op. cit.*, p. 536.
 9. In the mid-1960s, reputedly as a result of the discovery that China had been using its nuclear assistance for military purposes, the attitude of the Soviet Union to safeguards underwent a drastic change. In 1968, at the occasion of the Conference of the Non-Nuclear-Weapons States, which was held in Geneva to discuss the newly minted NPT, the head of the (observer) delegation of the Soviet Union, Prof. Emelyanov (who was his country's member of the Agency's Board of Governors) presented me, as the IAEA representative, to Ambassador Rozchin, head of the Soviet delegation to the Eighteen Nation Disarmament Conference, which had produced the treaty. Memorably, Emelyanov introduced me with words to the effect that I was one of those clever Agency people who, against the wishes of the Soviet Union, had so felicitously insisted on developing the IAEA's safeguards system, without which the NPT would hardly have been feasible.
 10. The final product, which is still applied to some facilities in states that are not subject to safeguards on all their nuclear activities, such as India, Israel and Pakistan, became known as INFCIRC/66. The term subsumes the document of 1965, covering reactors, and the two revisions: INCIRC/66 Rev.1 of 1966 and Rev.2 of 1968. See < www.iaea.org/Publications/Documents/Infcircs/Others/inf66r2.shtml >.
 11. See B. Sanders, 1975, *Safeguards Against Nuclear Proliferation*, Cambridge, MA and London, MIT Press, p. 6.
 12. Some of the instruments referred to in the Preamble to the treaty were developed at the Nuclear Research Centre of Karlsruhe, Federal Republic of Germany, and highly publicized by the latter not only as a means of simplifying safeguards and helping to assure their effectiveness, but also as potentially lucrative export items. A problem with some of these devices, however, was their cost and size, which was never fully solved and which made them unsuitable for use by the IAEA. This also made the system of material management that Karlsruhe had elaborated, and which assumed the presence of such equipment, less readily applicable.
 13. IAEA, *IAEA Annual Report 2000*, GC(45)/4, at < www.iaea.org/Publications/Reports/Anrep2000/index.html >.
 14. An illustration from personal experience: I once asked a senior American official how Agency inspectors should react if they were told that a particular facility where they had been supposed to verify the nuclear material inventory was being decommissioned and no longer contained relevant material: should they not make sure that this was indeed the case? The answer was no, the state's word was to be accepted. If possible, for instance if it was a small storage facility, the plant might be sealed; if not, the matter would end there. On another occasion, my informal request to look into a decommissioned research reactor that was being used for storage of non-nuclear items and was no longer on the state's inventory earned me a reprimand from Headquarters.
 15. IAEA, *The Structure and Content of Agreements Between the Agency and States Required in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons* (also known as the model comprehensive safeguards agreement), IAEA document INFCIRC/153 of June 1972, para. 39, at < www.iaea.org/Publications/Documents/Infcircs/Others/inf153.shtml >.
 16. Direct information.
 17. Before its invasion of Iraq in 2003 and to have a convincing pretext for that event, the American Administration made every effort to find proof that Iraq had resumed its attempts to manufacture nuclear weapons. Statements at the highest level of the Agency that there was no evidence or plausible indication to that effect were jeeringly dismissed by members of the Administration, particularly its Vice President and senior officials of the Department of Defense. It would have been courteous if, after Dr David Kay, the head of the American investigation into the presence of weapons of mass destruction in Iraq, had publicly come to the same conclusion, not only with regard to nuclear but also to chemical and biological weapons, the Administration had apologized to the Agency for its unfair treatment. See H. Blix, 2004, *Disarming Iraq*, New York, Pantheon Books, in particular pp. 234-36.
 18. *New York Times*, 23 May and 2 June 2004. The case of Libya also deserves a brief comment. Reportedly, that country (like Iran and Iraq a party to the NPT) was found to have tried to use clandestine imports of technology, nuclear material and equipment to acquire a uranium-enrichment capacity, but since that discovery the IAEA has found that it was still quite far from reaching that stage. Apparently found out through the interception of a shipment

of telltale machine parts, Libya has now adopted an Additional Protocol to its comprehensive safeguards agreement. It is a fair bet that, if the Protocol had been in place earlier, the IAEA's safeguards would have been able to discover the clandestine programme by its own means.

Voluntary action in the fight against weapons of mass destruction

Rose GOTTEMOELLER

National and international laws are today inadequate to protect against the global threat of proliferation. Iran may still receive foreign assistance in building up its nuclear capability, even while the International Atomic Energy Agency (IAEA) has not certified that Iran is in full compliance with its obligations under the Nuclear Non-Proliferation Treaty (NPT). A.Q. Khan and his cohorts in Pakistan sold nuclear-weapon-related technology and know-how around the world without violating any law that would subject them to arrest and trial. National and international laws must be strengthened to protect the global community against these weaknesses in the non-proliferation regime.

The most powerful and effective answer to this problem would be to develop a universal international law to criminalize nuclear weapons and material proliferation and facilitate prosecution of states and non-state actors. This ambitious international legal regime would strengthen deterrence against illicit activities, and also strengthen states' basis for prosecuting those who proliferate. As Matthew Meselson and Julian Robinson have noted, 'National criminal legislation, so far enacted by only a majority of states, is no substitute for international criminalization.'¹

Such an international regime would strengthen the NPT, enhancing its enforcement potential as well as the international norm against proliferation of nuclear weapons and materials. Without question, the international community should pursue this goal through negotiation and agreement among all states. If such a regime could be accomplished, it would be the optimal response to this gap in existing measures available to prevent nuclear proliferation.

Security Council resolution 1540, which was adopted unanimously on 28 April 2004, is a good step in this direction. It calls on all states to establish domestic controls to prevent proliferation, and to adopt national laws to that effect. It also provides international authorization for seizure of illegal materials transfers by making them subject to Chapter VII of the UN Charter. Chapter VII permits the Security Council to use sanctions or military force in response to threats to international peace and security.

An additional step would be for the Security Council or a specialized institution such as the IAEA to develop a declaration system to distinguish between legitimate and illegitimate cross-border trade. A transparent reporting requirement would establish a legal basis for discriminating between legitimate commerce and illegitimate proliferation. Undeclared exchanges, such as those by A.Q. Khan and his network, would be blatantly illegal, while declared exchanges would be conducted under existing export control and customs regulations.²

But putting in place new laws, national or international, can be a long and complicated process. Even if the process of passing a law is relatively quick in the national legislature, the implementing rules

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and procedures take time to develop, and then entities must be trained to carry them out. The receiving end of such laws, such as manufacturing or service firms, must also be informed of the impact on their operations.

In addition, considerable variation in standards of implementation exists, even in countries where laws are well-established on the books. Export control regimes are a case in point. They have normally been imposed on companies by governments, and companies have worked to implement or avoid such regimes, depending on how stringent the national implementation of them has been. In the United States, companies usually work hard to remain within export controls, to stay on the right side of stringent American laws and fairly effective enforcement, and also to ensure that they remain in good stead with the government, a major source of industry contracts.

Other countries, however, might have similar export control laws on their books, but be lax in their implementation or inadequately prepared to do so. At times, countries are simply at an early stage in implementing new export control laws. They have to develop not only a full regulatory system to underpin the laws, but also the enforcement agencies trained to implement them.

Still other countries simply have inadequate systems of law, whether for export controls or for other matters. They may come under pressure from other countries, such as the United States, to bring their export control laws and regulations up to a certain standard, but this process can be time-consuming and uncertain of success.

The voluntary principle

In this range of circumstances, companies, banks, and even non-governmental organizations should join forces to ensure that international trade and lending practices address the problem of weapon of mass destruction (WMD) proliferation. *Voluntary measures* are a way to do so relatively quickly. In recent years, such measures have been pursued as a means for states and non-state actors alike to avoid new regulation or mitigate serious problems that have occurred, in the absence of or pending the passage of new laws.

It is important to stress at the outset that voluntary measures would be no substitute for seeking an international regime to criminalize proliferation.

It is important to stress at the outset that voluntary measures would be no substitute for seeking an international regime to criminalize proliferation. Such negotiations should be launched on an expedited basis. At the same time, voluntary measures could be undertaken as a matter of state, corporate or NGO policy, rather than a multilateral legal regime. Such measures would permit key players, especially in the commercial arena, to take early action in addressing the problem. International consensus about the need for such measures would add moral force to the measures themselves, but also strong impetus to the ongoing negotiations.

Countries, for example, might volunteer to pursue a code of conduct that would prohibit aiding and abetting proliferation of WMD components and technologies. The international code of conduct regarding proliferation of missile components is an example of such an approach. The Missile Technology Control Regime (MTCR) is already in place, and has long operated as a mechanism to control exports from producers of missile-related technologies. The missile technology code of conduct has recently come into existence, as a way to reinforce the MTCR. The code draws additional countries, those that are not members of the MTCR, into an international consensus on the need to control missile technology-related exports. Thus, it is a voluntary mechanism that both reinforces an existing regime, and seeks to expand the circle of countries that hold to its principles.

Banking and lending institutions

The banking industry has already become involved in an array of voluntary mechanisms in recent years, such as those that address concerns about environmental and labour policy. The 'Equator Principles', which originated with the World Bank, provide guidelines for lending to countries that have not historically shown a great deal of concern about maintaining environmental or social standards in large projects. The Equator Principles ask lenders to require that such standards be maintained in a project as a condition of lending. An increasingly wide array of banks subscribe to the principles in their lending practices, if only to escape the embarrassment of lending to a project that turns out, downstream, to be environmentally unsound or harmful to local cultures.³

Banks could also embrace 'non-proliferation soundness' as a principle of their international lending. Arguably, the damage caused by the proliferation and use of a weapon of mass destruction would be as destructive as and more immediate than the effects of long-term environmental or social damage, as grave as they might be in their impact on mankind. Even more seriously, the damage caused by certain weapons, such as a nuclear bomb, would have a long-lasting depressing effect on the international system. Some have argued that a single nuclear bomb, detonating in lower Manhattan, would cost the world economy three trillion US dollars within the first year.⁴ Preventing such an event is thus, for banks, a good business practice.

To consider how such a voluntary approach might work in international lending, let us consider the case of the company in Malaysia that was producing centrifuges for Libya on contract to a front company in Dubai. The Malaysian manufacturer apparently had to buy a great deal of equipment and re-tool a factory in order to produce the centrifuges for the Libya job. Although it has not been disclosed whether it had to borrow money for this upgrade in its capacity, any viable company has to seek loans from time to time.

Therefore, banks might consider, as one condition for granting a loan, whether a company has a clean non-proliferation 'bill of health'. This non-proliferation standard might be added into an existing mechanism, such as the Equator Principles. Alternatively, a wholly new code of conduct might be drawn up to highlight the particular problems associated with WMD proliferation. If a company has contributed to building an illicit nuclear bomb somewhere, and that bomb falls into the hands of terrorists, then the damage to the international community would be profound.

A wholly new code of conduct might be drawn up to highlight the particular problems associated with WMD proliferation.

Not all lending, of course, comes from the big multinational commercial banks or international lenders such as the World Bank. In many countries, especially in Asia, lending takes place in 'sweetheart deals', on highly beneficial bases, often with a significant amount of subsidy from the state banking system. Here it may be necessary to develop a kind of hybrid system. For example a state bank in China would be required by the Chinese government to incorporate a non-proliferation standard into lending. This would be a kind of extension of the increasingly developed Chinese export control system.

Manufacture and service industries

Large industries and manufacturing firms, including multinationals, could adopt their own codes of conduct to combat proliferation problems. Like the banking and lending institutions, at least one industry group has already developed a voluntary programme to address a significant international

issue. The De Beers Group, the world's leading diamond producer, worked together with governments and NGOs to develop the Kimberley Process, a mechanism to halt the trade in conflict diamonds.

In 1998, the British NGO Global Witness published a report documenting the role that rough diamond sales was playing in the Angolan civil war. The rebel group UNITA was mining diamonds in territories under its control, selling them on the international open market, and using the proceeds to fund its war effort. Global Witness followed up its report with an extensive media campaign, which led to a UN determination that buying diamonds on the open market could undermine the sanctions under UN Security Council resolution 1173, which prohibited (among other things) the purchase of rough diamonds from UNITA.

The report and media campaign thus had a good effect, with De Beers agreeing to cease the purchase of Angolan diamonds on the open market. The issue resurfaced again in 2000, however, in the course of the civil war in Sierra Leone. Again, NGOs publicized the issue, and De Beers came in for unwelcome attention, although it had not been purchasing diamonds from Sierra Leone. At that point, the South African government, with the interested NGOs and De Beers, convened a series of technical discussions in the town of Kimberley—hence the Kimberley Process.⁵

Over two years, Kimberley produced both an agreed international system for certifying diamond shipments, and additional recommendations for diamond mining, exports and imports, and standardized statistics on the diamond trade. It was a complex but ultimately successful process that engaged industry, government, the NGO community and the United Nations. An important factor in its success was the media spotlight that the NGOs were able to shine on the impact that trade in conflict diamonds was

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having. As Andrew Bone put it, 'Images of children mutilated by factions within the (Sierra Leone) rebel movement aroused significant media attention through the world.'⁶

Given the dire consequences of a potential nuclear, chemical or biological attack, media and public attention should also be a factor in influencing companies to take voluntary measures to control trade in possible WMD components. However, because—mercifully—such attacks have not yet occurred on a large scale, the media and public have been notoriously immune to the dangers. Pictures of the Aum Shinrikyo sarin attack in the Tokyo subway, or of the Kurds gassed by Saddam Hussein, have had some impact, but it has been ephemeral. Lack of media and public attention is one issue that could constrain development of such measures in the non-proliferation arena.

Another issue is the dual-use nature of many components that could be used in WMD programmes. The Malaysian company implicated in the sale of centrifuges to Libya for uranium enrichment pleaded that it was only manufacturing certain components, and it had no idea what their exact end use was to be. This problem occurs particularly in the chemical and biological spheres, where every fertilizer plant could be turned to the production of chemical weapons, and every pharmaceutical plant to the production of biological weapons.

Despite the diverse nature of trade in WMD components, technology as well as procedure could be put to work in solving the complicated problems of tracking and certifying end use. Such measures could be fairly intensive, such as marking individual pieces in shipments with a bar code, fibre optic chip, or some other indelible identifying and tracking device. These technologies are already widely in use for business practices such as inventory control. Non-proliferation assurance in this case would be an add-on to well-established procedures.

Other technologies and procedures, already existing in other sectors, might be used to track the transfer or shipment process itself. For example, satellite monitoring of ships at sea is already established

for certain purposes, such as tracking legal fishing operations to discern them from illegal or pirate activities. Alternatively, procedures established to ensure proper labour or environmental practices for ships in port might be developed to provide non-proliferation assurance.

The North Koreans, for example, have complained that tight Japanese implementation of International Maritime Organization (IMO) regulations on environmental practices, including shipboard inspections, have slowed their sea-going trade with Japan to a virtual stand-still. This is an outcome the Japanese might be welcoming, given their difficulties with illicit North Korean trade in drugs and other contraband. Since international concern has grown about North Korean trade in weapon materials or components, such well-established measures might also play some role in the non-proliferation arena.

Indeed, it is high time to undertake a comprehensive review of how existing maritime and customs control measures could contribute to new, tougher enforcement activities such as the Proliferation Security Initiative (PSI). Already existing technologies and procedures, not only under the IMO aegis, but also under international agreements involving endangered species, or preservation of natural resources such as fisheries, might provide important insights into, or even the early stages of, an eventual layered approach to defeating WMD proliferation.⁷

Indeed, such a layered approach is an important direction to pursue. As welcome as new, tougher measures are, they are only now in early implementation. If well-established procedures and technologies can be married up efficiently with the PSI, then the new initiative will gain a higher level of effectiveness at a faster rate. The emphasis, of course, must be on efficiency in the marriage—if established measures in some way weakened or slowed enforcement, then they would not be welcome. Hence emerges the importance of a careful and comprehensive review of how they might contribute.

The international community must achieve, as quickly as possible, a higher level of controls over proliferation of WMD. It must have more effective means of enforcing those controls, including efficient prosecution of those who trade in WMD components. Some international legal measures, such as the Security Council resolution 1540, are relatively quick to pursue. Others, such as new national laws banning trade in WMD proliferation components, are likely to take much longer.

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Thus, the international community should encourage speedy adoption of other mechanisms, e.g. by supporting state-led policies such as PSI. These will be important measures to have in place while more extensive international and national arrangements are negotiated. They will have the cumulative effect of raising universal awareness of the dire nature of the problem and establishing key aspects of the international legal system that must be put in place.

At the same time, a new focus on voluntary measures should be established to provide non-proliferation assurance. Multinational corporations and banks are already placing an emphasis on self-regulatory measures in the environmental arena, whether to escape embarrassment or regulation imposed from the outside. In the proliferation arena, such measures have not thus far been widespread, but could be developed quickly, based on already existing models. They would have the benefit of strengthening the export control regimes already on the books, but in a way that could occur quickly and without imposing a new regulatory burden on industry. Bringing the focus around to action by corporations and banks also makes good business sense, given the dire consequences for the world economy of an attack involving WMD.

Notes

1. Cited in G. Perkovich et al., 2004, *Universal Compliance: A Strategy for Nuclear Security*, Carnegie Endowment for International Peace, Draft, June 2004, p. 30, at < www.ceip.org > .

2. For more on strengthening international law in the non-proliferation arena, see G. Perkovich et al., *op. cit.*, pp. 29–32.
3. See ‘The Equator Principles: A framework for banks to manage environmental and social issues in project financing,’ at < www.equator-principles.com >. Another voluntary regime worth examining in this context is the challenge by UN Secretary-General Kofi Annan, the Global Compact, which brings companies together with UN agencies, labour and civil society to support nine principles in the areas of human rights, labour and the environment. It was launched on 26 July 2000. See < www.unglobalcompact.org >.
4. For an interesting analysis of the costs of such attacks, see C.C. Abt, 2003, *The Economic Impact of Nuclear Terrorist Attacks on Freight Transport Systems in an Age of Seaport Vulnerability*, Contract # DTR57-03-P-80130, Cambridge, MA, Abt Associates, Inc.
5. For an excellent description of the Kimberley Process, see A. Bone, ‘Conflict diamonds: the De Beers Group and the Kimberley Process’, in A. Bailes and I. Frommelt (eds), 2004, *Business and Security: Public-Private Sector Relationships in a New Security Environment*, Stockholm International Peace Research Institute, Oxford University Press, pp. 129–47.
6. A. Bone, *op. cit.*, p. 131.
7. I am indebted to Lee Kimball for important insights into existing international regimes in these areas. Kimball is a legal expert specializing in institutions that address the problems of environment and development, with a particular focus on international ocean management. She has served as the founding director of the Council on Ocean Law and as a Senior Associate at the World Resources Institute on International Institutions.

Contextualizing past, present and future challenges to the NPT regime

Rhianna TYSON

In this age where crucial disarmament mechanisms remain blocked to the point of paralysis, it seems that actors throughout the international security community can scarcely agree on anything. Yet advocates across the spectrum—from counter-proliferation trumpeters to nuclear abolitionists—certainly agree on one truism: non-proliferation is facing one of its most formidable crises in the history of the nuclear age.

With only a few months remaining before the 2005 Nuclear Non-Proliferation Treaty (NPT) Review Conference (RevCon), activists, analysts, experts and governmental representatives are seeking to understand what has gone wrong with the disarmament and non-proliferation regime, and how they can address the current challenges within the NPT system. Even as the oft-cited ‘cornerstone of disarmament’ has, for over thirty years, halted the proliferation of new nuclear-weapon states prophesized by John F. Kennedy, the current challenges are prompting the international community to scrutinize the nuclear disarmament and non-proliferation regime, doubt its current efficacy and seek to understand where things went so wrong.

After a short assessment of the missteps that contributed to the situation we are faced with today, it is time to ask ‘what can we now do right?’ What alchemy was at work in 2000 that facilitated the Thirteen Steps of the 2000 RevCon Final Document? What opportunities lay ahead of us that could create more favourable conditions for strengthening the regime?

Contextualizing current challenges

UNACCOUNTABLE PERMANENCE

Perhaps the fragile state of the NPT today is due in large part to what many would hail as one of the most significant successes of the post-Cold War world. In 1995, the States Parties to the NPT convened in New York, mandated to sentence the treaty to the pages of the history books or endow it with permanent life. Most recognized that the treaty did indeed prevent many states from acquiring nuclear weapons, just as it enticed some nuclear-capable states to disarm and reap the benefits of (non-nuclear status) membership. Yet not all states parties were convinced that an unconditionally and indefinitely extended treaty was in the best interest of disarmament. After much debate, it was agreed

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that the indefinite extension would be adopted as part of the package of decisions that characterized the 1995 RevCon's success, thus prolonging the NPT's claim to the 'cornerstone of disarmament' crown.

Upon adoption of the indefinite extension, RevCon President Jayantha Dhanapala mollified the doubtful and warned the Nuclear-Weapon States (NWS) that with such an extension comes 'permanence with accountability', a phrase borrowed from Canadian Ambassador Chris Westdal. The indefinite extension was not to be interpreted as a free pass for the NWS to continue to possess nuclear weapons. This warning, however, was undermined from the start, as evident in the fact that the United States had already invested considerable political and economic capital in its Stockpile Stewardship programme, thereby ensuring its long-term nuclear-weapons capability.¹

As the 2005 RevCon approaches, some Non-Nuclear-Weapon States (NNWS) have appropriated Dhanapala's prosaic warning, employing it in the most recent Preparatory Committee (PrepCom)

The NPT is in existence today due to the promise of permanence with accountability. So long as that stipulation remains unheeded, the NWS run the risk of damaging the NPT's credibility and, as a consequence, the chances for indefinite NNWS compliance.

meeting in April-May 2004. South Africa, Mexico and Algeria were among those who reminded the NWS of the 1995 bargain, statements that could be interpreted as a hint of forewarning: the NPT is in existence today due to the promise of permanence with accountability.² So long as that stipulation remains unheeded, the NWS run the risk of damaging the NPT's credibility and, as a consequence, the chances for indefinite NNWS compliance.

WITHER THE NAM?

Others attribute the weakening of the NPT, in some degree, to the NNWS themselves.

The Non-Aligned Movement (NAM), historically one of the most vocal champions of nuclear disarmament, suffered a blow to its disarmament support when India, with Pakistan in immediate pursuit, tested nuclear weapons in May 1998. The final statement of the ensuing 1998 NAM summit failed to condemn the nuclear tests and, as a result, weakened the NAM's stand and credibility on nuclear disarmament. Some perceive the NAM's ineffectual nuclear disarmament stance as a result of re-prioritization; to many non-aligned countries, more immediate security threats stem from, for example, economic and environmental issues.³

While the efficacy of NAM pressure may have waned, it is perhaps their strategy, rather than the force of their pressure, that has indeed faltered and therefore contributed to the growing inefficacy of their leverage. In the lead-up to the 2004 NPT PrepCom, for instance, NAM leaders exhausted themselves in the futile battle for an agenda for the mostly ineffective UN Disarmament Commission, rather than shoring up support and strategy for highly important issues to be addressed at the PrepCom, such as negative security assurances and a subsidiary body on nuclear disarmament at the 2005 RevCon.

Still others attribute NAM's weakened involvement to the strong role that the New Agenda Coalition (NAC) has played in recent years.⁴ In 1998, the Foreign Ministers of Brazil, Egypt, Ireland, Mexico, New Zealand, Slovenia, South Africa and Sweden issued a Joint Declaration calling for a 'new agenda' toward a nuclear-weapon-free world. The NAC—a diverse group of states from nearly every continent—raised the bar for disarmament expectations by calling upon the NWS and the nuclear-weapons-capable states '... to give a clear commitment to the speedy, final and total elimination of nuclear weapons.' This new agenda, while decidedly more ambitious than other proposals for disarmament put forth in 2000, was regarded as more 'credible' than those set forth by the NAM, which included predictable calls for timeframes for disarmament.⁵ The subsequent General Assembly resolutions

sponsored by the NAC served to aggregate support for the New Agenda position.⁶ In the months leading up to—as well as during—the 2000 RevCon, the negotiating power of the NAC was formidable, and enabled the necessary pressure to persuade the NWS to agree to the Thirteen Steps, including, most notably, to the ‘unequivocal undertaking’ embodied in Step Six. While adoption of the Thirteen Steps was indeed a victory for the NNWS and for the cause for disarmament, some NNWS objected to the opacity of the NWS-NAC negotiation process and to the compromises that NAC made on their behalf.

DISARMAMENT? WHAT DISARMAMENT?

To many it appears that the United States has all but dropped the pretence of working towards disarmament. Unverifiable and reversible arms control measures, like that embodied by the Strategic Offensive Reductions Treaty (SORT or Moscow Treaty), seem to be the only offering coming from the United States. Non-proliferation initiatives, supplemented by counter-proliferation policies, appear to have supplanted the United States’ interest in concrete disarmament measures. According to Under Secretary of State John Bolton, the ‘cornerstone of disarmament’ would be more effectively utilized if only States Parties could concentrate on suspected cases of proliferation, rather than focusing on, as he deemed them, ‘Article VI issues which do not exist.’⁷

The policy of the other NWS has settled into a comfortable, if not tiring, refrain: they are willing to undertake further disarmament measures pending much larger cuts from the two biggest arsenals—those of Russia and the United States. In the absence of any verifiable and meaningful reductions coming from the former Cold War adversaries, the smaller NWS are looking to maintain and even upgrade their existing arsenals, which remain, as they perceive it, justified in the shadows of the American and Russian stockpiles.⁸

UNDERMINING MULTILATERALISM

Concurrent with the shift in focus away from disarmament and towards non-proliferation and counter-proliferation, multilateral mechanisms, long since paralysed from any substantive progress, have been circumvented in favour of ad hoc plurilateral initiatives to halt the spread of nuclear, chemical and biological weapons.⁹ While these initiatives can and do make vital contributions to disarmament and non-proliferation, and while creative thinking and new approaches to combat these threats are welcome and needed, an over-reliance on plurilateral responses undermines the multilateral institutions that have been built up over the past half century by sending a negative signal to the international community. This preference for plurilateralism implicates an impatience with multilateralism and a distaste for the compromises inherent within such processes.

An example of this sentiment is embodied in the debate surrounding the recent Security Council resolution on weapons of mass destruction. First proposed by the United States in December 2003, the draft underwent intensive consultations amongst the Permanent Five (P5) for months. Original drafts failed to include even the slightest reference of disarmament, although the P3 (the P5 less China and Russia) acknowledged that they were willing to concede a reference to it in the preamble, and anticipated that the non-permanent members would insist upon it. When the non-permanent members, backed by throngs of civil society actions,¹⁰ demanded a more active role for disarmament in the draft, the P3 balked, crying foul at the ‘linkage’ that would be made between disarmament obligations and the non-proliferation obligations. Member States would not feel compelled to comply, they reasoned,

if the disarmament obligations went ignored. Such messy linkages were sure to undermine the intent of the resolution: to halt transfers of nuclear, biological and chemical weapons and its related material to non-state actors.

In the resulting resolution, disarmament and non-proliferation are presented as two distinct and separable goals, as if one could be achieved in the absence of the other. A second, more troubling, consequence of the separation of disarmament from non-proliferation is that when backed by the P5, non-proliferation can be construed as an issue of the nuclear elite, rather than a goal that promotes the security of all. Regrettably, calls during the debate on the resolution for inclusion of guidelines and a foundation for future multilateral negotiations that take the concerns of all states into account went unheeded.¹¹

The circumvention of multilateral processes serves to undermine coordinated and sustained efforts undertaken by all actors within the international community. Over-reliance on ad hoc plurilateral initiatives—such as the Proliferation Security Initiative—could exacerbate the paralysis that has gripped the multilateral mechanisms and divests the political will necessary to remedy them. Correspondingly, when states are able to participate more directly in the decision-making process, and when their concerns and priorities are incorporated in the new policies, the results are more comprehensive, efficacious and enduring. States feel more ‘ownership’ of the goal of the resolution (or treaty), thereby enhancing prospects for compliance.

BLOWS TO CIVIL SOCIETY

A further element that has retarded significant progress in disarmament has been the steady weakening of civil society engaged in these issues. In the 1980s, anti-nuclear protests were able to attract millions of supporters. With the fall of the Iron Curtain came the disintegration of a strong, unified and populous disarmament movement, leaving only a core group of activists. When the threat of all-out nuclear war between the superpowers subsided, the myth of the ‘end of the nuclear threat’ took root in the popular movement and society at large.

Today, most people associate the word ‘nuclear’ with that of terrorism, Iran, North Korea or other states relegated to the Bush Administration’s ‘Axis of Evil’. Anti-nuclear activists are spending much time and energy explaining to their compatriots in the peace movement that the NWS’ continued reliance on these weapons is not only inciting their adversaries to pursue their own weapons procurement, but that the threat of nuclear warfare ensures that peace will always be just out of reach.

The 1995 indefinite extension decision has also left a legacy of division within the core group of activists, analysts and nuclear watchdogs. It articulated a spectrum of advocacy wherein, at one end, internationally focused activists talk of nuclear abolition and a future Nuclear Weapons Convention, while at another end, nationally focused analysts concentrate on more limited arms control measures, such as nuclear de-alerting.

This unresolved debate could be construed as a contributing factor to the fragmenting of support for the arms control and disarmament agendas. The disarmament advocates believe that the limited arms control measures, including the indefinite extension, have subverted the obligation to disarm; meanwhile, arms control groups look upon the internationalists as naive dreamers, entangled in their utopian visions of a world free from nuclear weapons.

Regardless of where they are situated on the spectrum, many of these groups are facing one of their worst financial crises to date. Like the general public, the major funders underestimate the continued

threat posed by *existing* nuclear weapons. Those that continue to fund nuclear-weapons policy research and advocacy generally ignore groups that focus on internationally negotiated efforts toward the complete elimination of nuclear weapons in favour of those focusing on a 'threat reduction' approach.

MEDIA COVERAGE

These challenges—the loss of interest by the general public, strife within the NGO community, the lack of proper funding to disarmament groups—are exacerbated by the dearth of coverage by the mainstream media.

The media has a critical role to play in informing the public of security threats. However, during the 2004 NPT PrepCom, for instance, the *New York Times* failed to run a single article on the events taking place at the UN. The general public was completely unaware of what was at stake, what the parties to the treaty were doing, and how their action (or inaction, as it resulted) would affect nuclear policy around the world.

Throughout the mainstream coverage on suspected proliferation in Iraq, North Korea, Iran and elsewhere, the linkage between proliferation and the lack of disarmament has been widely ignored, relegated to the occasional op-ed or letter to the editor. This deficiency serves to reinforce the myth that existing arsenals have nothing to do with the rise of proliferation, and exculpates the NWS from the role that their nuclear policy plays in the decision of additional states to seek nuclear weapons.

MILITARIZING SOCIETY

Finally, today's world is marred with the growing militarization of both NWS and NNWS. The Western world, joined by many allies in the Southern hemisphere, finds itself in an ongoing, indefinite and undefined 'war on terror', a mentality that requires a permanent military economy, supplying as much justification for the continued reliance on nuclear weapons as the heaviest-handed nuclear-weapons advocate could want. A permanent war negates the hopes for the long-overdue realization of Article 26 of the UN Charter—the promise of the Security Council to formulate plans to promote international peace and security with the least diversion for armaments of the world's human and economic resources.

Security continues to be defined in the context of 'nations', despite the progress of globalization, the growing number of NGO and government initiatives for local and regional security. Many activists, analysts and UN staffers, as well as some governments, have begun to advocate for shifting the disarmament and security debate away from national security and toward a framework predicated on human security. A human security approach offers 'an alternative way of seeing the world, taking people as its point of reference, rather than focusing exclusively on the security of territory or governments.'¹²

A human security framework focuses on the threats to personal and communal safety, rather than the defence of borders.¹³ Efficacy of the human security framework is evident in the near-global ban on anti-personnel landmines, the establishment of the International Criminal Court, the protection of refugees, progress in small arms control, and the campaign against human trafficking.¹⁴ Despite these achievements, the human security approach has rarely been applied as a framework for nuclear weapons and disarmament.

What to do next?

Having recognized some of the deep-rooted challenges facing the disarmament regime, we now must attempt to locate some avenues of agency so that we do not relinquish the opportunity presented by the 2005 NPT RevCon.

REINFORCE THE LINKAGES

Of all of the recent backsliding, perhaps none is as interminably damaging as the de-linkage of disarmament from non-proliferation. This separation carries serious implications for the goal of disarmament, which is the ultimate goal of the NPT. It is forcing a false division among various governments and civil society groups and seemingly pitting progress in disarmament against that in non-proliferation. With the most powerful states firmly entrenched in the latter camp, NNWS and civil

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society groups feel compelled to harp only on the disarmament requirements of the NPT. This polarization damages both disarmament and non-proliferation goals. The non-proliferation measures of the treaty are an indivisible means to the goal of nuclear disarmament. Disarmament will remain unattainable in the absence of multilateral-based, effective and verifiable non-proliferation measures. Likewise, without verifiable, irreversible disarmament, the treaty is doomed to failure.

Each of the recent non-proliferation measures—including Security Council resolution 1540, the Global Threat Reduction Initiative and the Proliferation Security Initiative—is divorced from the principles and objectives of disarmament. Their efficacy, especially in the long run, will remain dubious so long as they are not paralleled with disarmament programmes at the unilateral, plurilateral and multilateral levels.

We must utilize every opportunity presented to reinforce the linkage between disarmament and non-proliferation. The heads of state or foreign ministers of the NNWS should articulate this linkage in their statements to the fifty-ninth session of the General Assembly. Some NNWS might even want to consider a draft resolution in the First Committee on vertical proliferation, with a preamble that emphasizes the link between getting rid of weapons and preventing others from acquiring them. NGOs must use all creative approaches at their disposal to make this linkage clear.

DISARMAMENT DIPLOMACY

New approaches to disarmament must be discussed at next year's RevCon. The most obvious way to facilitate this discussion is through a subsidiary body of Main Committee I to deal specifically and solely with nuclear disarmament. There have been repeated calls for such a body, not only at the 2004 PrepCom, but also in a recent European Parliament resolution.¹⁵

All delegates engaged in debates next year must practice what former United States Secretary of State Madeleine Albright and former British Member of Parliament Robin Cook called 'person-to-person' diplomacy.¹⁶ Diplomats employing this approach seek first the perceptions of their colleagues and then attempt to understand their needs, their security concerns and their expectations, without placing any outright demands on them. In this way, they are in a better position to engage their counterpart in an attempt to harmonize each other's agendas.

The 2000 Review Conference, widely regarded as the watermark of nuclear disarmament diplomacy, was a diplomatic achievement precisely because of the NAC's person-to-person approach. Direct negotiations with the NWS, taking a non-belligerent yet firm approach, comprised the primary basis upon which the positive outcome of the Review Conference was founded.

This person-to-person approach, for instance, should be applied by all NNWS when dealing with the NWS, particularly the United States. For instance, rather than continue to insist in public settings on the merits of reporting in the NPT context—an issue to which the United States has been highly adversarial—the champions of reporting would do better if they demonstrated how reporting could benefit the goals of export controls and verified civilian nuclear programmes, two of the top priorities of the United States. The Global Threat Reduction Initiative, announced by United States Secretary of Energy Spencer Abraham in Vienna in May 2004, calls for a comprehensive database of research reactors and fissile materials around the world. Regular reporting, such as mandated by Step Twelve of the 2000 Final Document, could contribute to this work immeasurably.

A ROADMAP FOR DISARMAMENT

NWS and NNWS alike could use a boost to the credibility of their commitment to disarmament. This applies also to the nuclear-capable states outside of the NPT regime.

The onus is upon the NWS to demonstrate to the world that they are indeed committed to a world without nuclear weapons. Even if they believe that the current security environment is not conducive to nuclear abolition, they are obligated to 'pursue in good faith'—and 'unequivocally', at that—plans for the total elimination of nuclear weapons. All nuclear-capable states should begin developing unilateral plans for disarmament. What would disarmament look like in the United States? In France? In China? In India? What conditions would have to be met in order for them to start seriously dismantling—in an irreversible manner—their nuclear stockpiles? Each NWS should be drawing up these plans, perhaps with the intention to present them before the sixtieth anniversary of the Hiroshima and Nagasaki bombings. Such an effort would signify that they are committed to disarmament, that they are thinking about it and planning for it, and will implement it when they feel the time is right. It would give disarmament advocates—on the non-governmental as well as the governmental side—something to work with, a point of reference and food for thought.

Meanwhile, the NNWS should be drafting their own plans for how they could contribute to the global disarmament process, plans that also incorporate serious and verifiable non-proliferation initiatives. Through these contributions, the NNWS can set the bar for real progress on disarmament while enticing the NWS to participate by linking it to creative, multilateral non-proliferation programmes.

CONCRETIZE FUTURE AGREEMENTS

The neglect of the Thirteen Steps confirms that future agreements must include milestones and timeframes for implementation. 'Gentlemen's agreements' no longer suffice in an era marked by shifting alliances, regime overhauls (in democratic as well as non-democratic societies), and growing discontent with a unipolar world. Milestones and timeframes—in both disarmament as well as non-proliferation measures—would strengthen existing enforcement and verification mechanisms on both sides of the security spectrum, and benefit the security concerns of *all* states. Diplomats must focus their efforts in convincing their contemporaries of this truth.

SUPPLEMENTAL PROGRESS

Challenges to disarmament and non-proliferation cannot be sufficiently addressed by a sole treaty or in a single forum. Movement on several interrelated fronts is required, at the unilateral, bilateral, multilateral and plurilateral levels. As we attempt to ascertain how best to address the nuclear disarmament deficit, progress in other disarmament fora could supplement our approach and propel progress within the NPT framework.

Similarly, more must be done to strengthen the severely inadequate missile regime, which now lacks any sort of universal, legally binding mechanism. The current regime consists primarily of the Hague Code of Conduct, devoid of any missile reduction stipulations. The non-proliferation goals of the NWS would be served by limiting the number of missiles that any country could have. Caps, in conjunction with a universal register of missiles in national arsenals, would greatly enhance the recent attempts at halting the transfer of weapons of mass destruction and their related materials. Support should also be generated for regional approaches to missile control.

More must also be done to convince the United States and other hold-outs of the link between disarmament and development.¹⁷ Non-proliferation goals would be well-served through addressing the security concerns of poorer states. Understanding the security concerns, perceptions, needs and motives of potential proliferators (citizens as well as government officials) is perhaps a more effective, less costly and safer way to curb proliferation, in contrast to the present pre-emption policies of some states that have already mired this century in war.

REFRAMING THE NUCLEAR DEBATE

A reassessment of security needs could be facilitated by two emerging perspectives: human security and gender analysis.

As stated above, a human security framework, while at the heart of other successful disarmament initiatives, has yet to set the context for discussions of nuclear weapons and disarmament.

The independent Commission on Human Security (CHS) defined a framework of human security as one that protects 'the vital core of all human lives in ways that enhance human freedoms and human fulfillment.'¹⁸ Furthermore, the CHS noted that threats to people's security are not always a threat to state security. In this way, a human security approach entails a more comprehensive assessment of security needs.

A security approach with nation-states at its focal point concentrates on protecting borders and ensuring that state's hold on power (on the international stage as well as with its own people); an approach that puts the daily security of human beings at its centre has very different priorities. A human security framework looks at what human beings need to feel secure in their daily lives. Do they have enough to eat? Are they literate, educated and able to make life choices? Are they comfortable walking the streets, free from the fear of gun violence, sexual violence or racial violence? Do they feel safe travelling outside of their native areas, without fear of retribution for what their government has done to others in their name?

Human security also involves analysing how people *don't* define security. Most people do not define security through the destruction of other human beings, nor would their definitions include the threat of nuclear annihilation. Moreover, when people define security through means such as availability

of health care and education, they are more likely to view nuclear weapons as a source of *insecurity* as they recognize that resources for economic and social needs are diverted for armaments.

Using gender as an analytical lens offers a second way to examine security needs and might facilitate this necessary paradigmatic shift towards human security. 'Gender analysis begins with people, their experiences and their lives, rather than with notions of state security' and 'offer(s) critical approaches to the concept of national security grounded in military superiority and the threat of the use of force.'¹⁹ Gender perspectives enable us to move away from militarized notions of security, thereby facilitating disarmament processes of weapons, both large and small.

If states are to live up to the obligation codified in Step Nine (e) of the 2000 Final Document, which calls upon all NWS to seek 'A diminishing role for nuclear weapons in security policies', they must understand the role that gendered perceptions play in their security policies. For example, Indian filmmaker Anand Patwardhan's documentary 'War and Peace' examines the reactions of Indians and Pakistanis immediately after the South Asian nuclear tests in May 1998. One of the most common reactions of men on the streets of Delhi, Mumbai, Islamabad and Karachi was one of exuberance and pride in their country. Many men spoke of 'feeling like a man' due to the tests, or that the show of nuclear power allows their country 'to play with the big boys'. So long as these perceptions of strength and masculinity remain affixed to nuclear weapons—in India and elsewhere—it will be difficult if not impossible to persuade governments to relinquish them.

Understanding the motives of those who seek nuclear weapons will help disarmament advocates to adjust their approaches and strategies. So long as armaments are equated with security, no international fora will make progress in disarmament. Such a gendered perception must be dispelled in the face of the perpetual conflict and ever-increasing arms expenditures that terrorized the twentieth century and threaten the century that lies before us.

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STRENGTHENING CIVIL SOCIETY

While many governments regard NGOs as a homogenous bloc, the dozens of groups that are represented at the NPT conferences and meetings are quite diverse. Other disarmament NGOs never make the trip to New York or Geneva meetings at all, focusing their advocacy in their own communities and capitals.

The success of the 2000 Review Conference was in large part due to the unprecedented unity and organization of these different groups, all supporting the position of the New Agenda Coalition.

This organization and unity must be replicated in the upcoming months and throughout the 2005 RevCon. NGOs should be building linkages to other groups in the peace movement and to the general public, as well as launching major initiatives to engage the media in these critical issues.

Governments must lend as much support to these groups as possible. For those which are not in the position to directly fund projects undertaken by civil society groups, it is important that they engage civil society in their consultations and provide them with the information that they need to effectively advocate for disarmament. In turn, NGOs can supply governments with resources, expertise and analysis that supports effective engagement with other governments during the NPT consultations and debates.

This past PrepCom, while a failure in terms of consensus-based recommendations for the RevCon, did witness a significant achievement: the unprecedented access of NGOs to the cluster debates. NGOs

have been left out of the debates due to an erroneous interpretation of Rule 44.4, which was finally recognized as such after South Africa made a point of order during the first week of the PrepCom. The hostility of some states to increased transparency and NGO access was palpable, however, and states must be prepared to stand their ground if this access is challenged.

Conclusion

All hope is not lost. While indeed we may stand at a historical crossroads for disarmament, the international peace and security community has nudged out achievements in bleak times before. The 2000 Final Document was achieved in the shadows of challenges such as the South Asian nuclear tests, resumed nuclear testing by China and France, a stalemated Conference on Disarmament, and three consecutive failed PrepComs. It is neither inconceivable nor naive to believe that the current divisions, stale disarmament programmes and ongoing vertical proliferation will be just the sort of catalyst needed for real political will to emerge. Understanding our current dilemma, as well as the missteps of the past, is the only way to find any hope for the future.

Notes

1. At the time of the 1995 Review Conference, many NGOs and some governments opposed the unconditional indefinite extension of the treaty based on the American Stockpile Stewardship programme. See M. Veiluva et al., 1995, 'Laboratory Testing In a Test Ban/Non-Proliferation Regime: Above Ground Experiments Threaten Compliance with Article VI of the Non-Proliferation Treaty', Western States Legal Foundation and Greenpeace International, April, at < www.wslfweb.org/docs/agex.htm > .
2. All statements from the 2004 PrepCom are available at < www.reachingcriticalwill.org/legal/npt/prepcom04/statements.html > .
3. J. Simpson, 2004, 'The Nuclear Non-Proliferation Regime: Back to the Future?', *Disarmament Forum*, no. 1, pp. 9–16, at < www.unidir.org/pdf/articles/pdf-art2015.pdf > .
4. As suggested by T. Rauf, 2004, *Towards NPT 2005: An Action Plan for the 13 Steps*, Monterey Institute for International Studies, Center for Nonproliferation Studies, at < cns.miis.edu/pubs/reports/pdfs/npt2005.pdf > .
5. *Ibid.*
6. In 2003, the NAC omnibus resolution garnered a vote of 133 to 6, with 38 abstentions; the resolution on Non-Strategic Nuclear Weapons garnered 128 to 4, with 43 abstentions.
7. Statement by the United States during the General Debate of the 2004 PrepCom, at < www.reachingcriticalwill.org/legal/npt/prepcom04/usa27.pdf > .
8. Reaching Critical Will, Western States Legal Foundation and the Lawyers' Committee on Nuclear Policy presented an overview of current trends in vertical proliferation at an NPT workshop at the Indonesian Permanent Mission to the United Nations New York in March 2004. The paper based upon the presentation is available at < www.reachingcriticalwill.org/legal/npt/context04.pdf > .
9. Ideas for this section were developed through the NGO presentation 'Beyond the NPT: Recent initiatives to prevent proliferation', delivered at the 2004 NPT PrepCom in New York. The presentation was drafted by this author and John Burroughs of Lawyers' Committee on Nuclear Policy, and edited by a group of over twenty NGOs. The presentation is available at < www.reachingcriticalwill.org/legal/npt/prepcom04/NGOpres.html > . The list of participating NGOs is available at < www.reachingcriticalwill.org/legal/npt/prepcom04/NGOpres.html#NGOs > .
10. Abolition 2000, a network of over 2,000 NGOs working toward the abolition of nuclear weapons, was at the forefront of civil society action during the debate on the resolution on non-proliferation. Statements from their press conference, memos to the network, letters to the Security Council members, as well as statements from governments during the open debate, can be found at < www.reachingcriticalwill.org/political/SC/SC.html > .
11. Read the Abolition 2000 letter of appeal to Security Council members at < www.reachingcriticalwill.org/political/SC/Abo2000_SC_letter.pdf > .
12. Canada, Department of Foreign Affairs and International Trade, 1999, *Human Security: Safety for People in a Changing World*, Ottawa, at < www.summit-americas.org/Canada/HumanSecurity-english.htm > .

13. Human security, as defined by the Canadian Consortium on Human Security. See < www.humansecurity.info/CCHS_web/ABOUT/en/Human_Security.php> .
14. See < www.humansecurity.info/CCHS_web/ABOUT/en/Human_Security.php> .
15. The European Parliament resolution of 26 February 2004 is available at < europa.eu.int/abc/doc/off/bull/en/200401/p106017.htm> .
16. M. Albright and R. Cook, 2004, We Need a Global Attack on Nuclear Proliferation, *Los Angeles Times*, 5 July, at < www.nuclearpolicy.org/NewsArticle.cfm?NewsID=1639> .
17. At the fifty-eighth session of the General Assembly First Committee, the United States was the only country to vote against draft resolution 58/L.29 on 'Relationship between Disarmament and Development', stating in their explanation of vote 'that disarmament and development are two distinct issues that do not lend themselves to be linked.' Their explanation of vote to 58/L.29 can be found at < www.reachingcriticalwill.org/political/1com/1com03/res/resindex.htm> .
18. The Commission on Human Security was chaired jointly by Sadako Ogata, former UN High Commissioner for Refugees and Amartya Sen, Nobel Laureate. See Commission on Human Security, 2003, *Human Security Now*, New York, at < www.humansecurity-chs.org/index.html> .
19. The United Nations Department for Disarmament Affairs Gender Mainstreaming Action Plan, at < disarmament2.un.org/gender/gmap.pdf> . For an in-depth discussion of the Action Plan, see A. Marcaillou, 2003, *Disarmament Forum*, no. 4, pp. 47-52, at < www.unidir.org/pdf/articles/pdf-art1997.pdf> .

Background information concerning the NPT

compiled by Anne MARRILLET

NPT Treaty disarmament2.un.org/wmd/npt/NPT%20text-English.pdf

Preparatory Committee for the 2005 NPT Review Conference

disarmament2.un.org/wmd/npt/2005/index-PC3.html

Includes Final Reports, press releases and lists of documents of the 2002, 2003 and 2004 PrepComs.

Final Document of the 2000 NPT Review Conference disarmament2.un.org/wmd/npt/finaldoc.html

2000 NPT Review Conference

disarmament2.un.org/wmd/npt/nptrevhome.html

Includes links to the decisions and resolution adopted at the Conference, as well as links to documents from the 1997, 1998 and 1999 PrepComs.

Decisions and resolution adopted at the 1995 Review and Extension Conference

disarmament2.un.org/wmd/npt/1995nptrevconf.html

The International Atomic Energy Agency

www.iaea.org/NewsCenter/Focus/Npt/index.shtml

Pages focusing on the NPT, including background information, status, safeguards and inspections. Also includes pages related to previous Review Conferences.

Reaching Critical Will

www.reachingcriticalwill.org/legal/npt/nptindex1.html

An excellent resource for statements, working papers, reports and official documents from the 2000 Review Conference and the 2002-2004 PrepComs. During the conferences, statements and papers are posted on-line in near 'real time'.

The Acronym Institute for Disarmament Diplomacy

www.acronym.org.uk/npt/index.htm

Comprehensive coverage of the 1995 and 2000 Review Conferences, as well as the intervening PrepComs.

UNIDIR FOCUS

ACTIVITY

UNIDIR presented the results of two years of fieldwork and analysis of its 'Weapons for Development' project at a conference in Geneva on 14–15 September. Held in collaboration with the Ministry of Foreign Affairs of Japan, the conference examined the devastating impact of small arms and light weapons and various means to control them. Conference participants, representing governments, donors and practitioners, discussed how to increase the effectiveness of weapons collection programmes through their improved design and implementation.

The conference concluded the UNIDIR research project that engaged local communities and affected individuals in assessing the impact and relevance of weapons collection programmes that provide developmental assistance as an incentive for handing in weapons. Using Participatory Monitoring and Evaluation (PM&E) techniques, UNIDIR researchers Geoffrey Mugumya and Shukuko Koyama harnessed the direct experience and knowledge of local people affected by such weapons collection schemes. Through community visits and discussions with different social groups, the project identified best practices for 'weapons for development' programmes as well as refined tools for designing and implementing weapons collection projects.

Their research has shown that engaging a local community in weapons collection has positive multiplier effects that consolidate sustainable disarmament and peace-building. In post-conflict societies, the voluntary surrender of weapons is more effective if the community members take active roles and are fully involved in the disarmament process than if external agencies impose weapons collection programmes. Community involvement, at the design, implementation and evaluation phases, is crucial to ensure ownership by the affected community, which leads to wider participation and higher chances of successful collection activities. By adapting their funding and capacity to consult with affected communities, donors and implementing agencies could have greater reach and generate more successful outcomes.

A series of five volumes summarizes the research results. Three volumes focus on case studies of individual countries: Albania, Cambodia and Mali. Two further volumes contain a comparison of different PM&E methodologies and a synthesis of lessons learned and best practices. All of the publications can be ordered from UNIDIR, at www.unidir.org.

In each issue of *Disarmament Forum*, UNIDIR Focus highlights one activity of the Institute, outlining the project's methodology, recent research developments or its outcomes. UNIDIR Focus also describes a new UNIDIR publication. You can find summaries and contact information for all of the Institute's present and past activities, as well as sample chapters of publications and ordering information, online at < www.unidir.org > .

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