



Nuclear disarmament and non-proliferation towards 2015 – UNA-UK Briefing Report No. 1

Is the Nuclear Non-Proliferation Treaty fit for purpose?

Report written for the United Nations Association of the UK

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About the author

Dr. John Simpson was until 2008 founding Director of the Mountbatten Centre for International Studies at the University of Southampton and Professor of International Relations at that university. He is now one of its Emeritus Professors. In 1999 he was awarded an OBE for "services to nuclear non-proliferation".

During his long academic career starting in 1965, he increasingly focussed on the practical aspects of international relations, and gained an international reputation as an expert on many aspects of nuclear energy. From 1982-84 he served as the UK representative on the UN Secretary-General's Study Group on Conventional Disarmament; from 1987-2002 he was Programme Director of the International Programme for Promoting Nuclear Non-Proliferation (PPNN); from 1993-98 he sat on the UN Secretary-General's Advisory Board for Disarmament Matters; in 1999 he was a member of the Tokyo Forum for Nuclear Non-Proliferation and Disarmament; and from 1999-2010 he was an advisor to UK delegations to the NPT Preparatory Committee Sessions and Review Conferences. From 2008-11 he was a member of the Royal Society's Science and International Security Committee, its study group investigating the future of the UK's stocks of separated plutonium, and more recently, a study group addressing the domestic and international management of spent nuclear fuel. He has researched, lectured and published widely on a range of nuclear-related subjects, including the nuclear non-proliferation regime; weapons of mass destruction terrorism; nuclear strategy and deterrence; and the UK's nuclear-weapon programmes and policies.

His publications include: *The Independent Nuclear State: the United States, Britain and the Military Atom*; *Nuclear Non-Proliferation: An Agenda for the 1990s*; *The Future of the Nuclear Non-Proliferation Treaty*; *Deterrence and the New Security Environment*; and numerous editions of the PPNN, later MCIS-MIIS, NPT Briefing Book.

About UNA-UK

The United Nations Association of the UK (UNA-UK) is the UK's leading source of independent analysis on the UN and a grassroots membership organisation. UNA-UK seeks to increase knowledge of the UN and stimulate thought and debate about how to make it stronger, more credible and more effective.

One of UNA-UK's key programmes – *Towards Zero* – builds on UNA-UK's historic role as a leading campaigner for nuclear disarmament and non-proliferation. The five strands of the programme are: influencing decision-makers and decision-formers in the UK; convening experts in the area of nuclear disarmament and non-proliferation; increasing the 'buy-in' of other nuclear-weapons states; stimulating grassroots campaigning within the UK; and re-establishing nuclear disarmament as a central issue for young people.

For more information, visit www.una.org.uk/towardszero or contact James Kearney, UNA-UK Peace and Security Programme Coordinator, on kearney@una.org.uk or 020 7766 3446.

Cover Photos:

Front – 'Mushroom cloud over United Nations Building in New York City', 1 January 1960
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Back – Preparatory Committee for the Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons meets for first time.
Geneva, Switzerland, 1 April 1974. © UN Photo

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Introduction

When the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) opened for signature in 1968, many feared that the number of nuclear-weapon states would mushroom to 20 or 30 by the end of the century. In fact, it is the list of NPT signatories that has grown significantly. With 189 states parties, the NPT is now the most widely ratified arms control agreement and considered to be the cornerstone of the global nuclear non-proliferation regime. Frank Aiken, the Irish Foreign Minister who first proposed such a treaty at the United Nations (UN), described it as “a practical and vital step away from war and towards a peaceful and co-operative world which all reasonable men desire”.

Since 1975, the NPT’s signatories have held a review conference every five years to assess progress on the Treaty’s provisions and overall purpose – to stem and reverse the proliferation of nuclear weapons. The latest such review concluded in May 2010 and was widely billed as a success. Dispelling fears of an NPT ‘collapse’, which had grown since the acrimonious 2005 conference, the 2010 review agreed action plans covering all three elements of the Treaty: non-proliferation, disarmament and the peaceful uses of nuclear energy. Steps were also taken towards realising commitments made in 1995 on a Middle East Zone Free of Nuclear Weapons and all other Weapons on Mass Destruction (MEZFWMD).

Yet some observers have argued that the 2010 action plan on disarmament offers little beyond what was agreed in 2000 (the so-called ‘13 steps’).¹ States parties also displayed no indication of collective political will to implement the 13 steps or to address effectively the practical challenges facing the international nuclear non-proliferation regime, including:

- Measuring and evaluating moves towards disarmament by the five nuclear-weapon states (NWS) recognised by the NPT (China, France, Russia, the United Kingdom and the United States);
- Determining how these five states could provide ‘negative security assurances’ (guarantees not to use their nuclear weapons against non-nuclear-weapon states – NNWS – in good standing with their NPT obligations);
- Ensuring that the states not party to the Treaty (India, Israel, Pakistan and, arguably, the Democratic People’s Republic of Korea, DPRK²) do not enhance their nuclear arsenals and are brought into the NPT regime; and
- Dealing with states parties, such as Iran and Syria, believed to be acting contrary to their NPT obligations.

A practical and vital step away from war and towards a peaceful and co-operative world which all reasonable men desire

1 Dr. Rebecca Johnson, “Assessing the 2010 NPT Review Conference”, Bulletin of the Atomic Scientist, July August 2010.

2 Because the DPRK did not fully implement all the steps contained in Article X.1 of the NPT when it sought to withdraw from the Treaty in 2003, states such as the UK argue that the DPRK is legally still party to the Treaty. Others take the more pragmatic stance, deeming them to have withdrawn, which makes it easier to negotiate with them bilaterally and in the Six-Party Talks forum (China, DPRK, Japan, Republic of Korea, Russian Federation and the US) on their nuclear disarmament.

Agreement at the 2010 Review Conference was, moreover, in no small part due to a desire to avoid a repetition of the 2005 conference, which did not manage to produce an outcome document.³ Indeed, although the current diplomatic atmosphere is perceived to be more positive and promising than in 2005, it now appears that many challenges might simply have been deferred to a later date. Four months after the May 2010 conference, for example, the high-level meeting convened by the UN Secretary-General to move forward the Conference on Disarmament (CD) produced little of note. The November 2010 review in Lisbon of NATO's strategic concept failed to agree action on removing US nuclear weapons from Belgium, Germany, Italy, the Netherlands and Turkey – a move some states had advocated as a disarmament measure.⁴ And the overt actions of the DPRK, which has tested nuclear devices since it sought to withdraw from the NPT in 2003, and Iran, which lacks an obvious 'peaceful use' for the fissile material generated by its nuclear development programme,⁵ remain rich sources of criticism for those who believe that the NPT framework is not able to deal with states that flout their obligations. There are, however, some reasons to be optimistic. The new bilateral US-Russia START agreement⁶ has now been ratified by both partners, and at a meeting of the NPT NWS in Paris in June 2011, the five states reaffirmed their commitment to the 64-point action plan agreed at the 2010 Review Conference, including on reducing their stockpiles in a transparent manner. Both developments offer hope for progressing to nuclear disarmament in an individual and collective manner, and for realising the 2010 commitments by 2014.⁷

In 2012 there will be three further tests for the 2010 action plan. One will be the start of the 2015 NPT review cycle in the spring of that year. The second is the follow-up meeting, scheduled to take place in April 2012 in the Republic of Korea, to the 2010 Nuclear Security Summit (NSS) held in Washington. The third, and probably most significant for the future of the nuclear non-proliferation system, is the proposed conference of relevant parties on creating a MEZFWMD. Russia, the UK, the US and the UN Secretary-General must finish the process of appointing a facilitator and choosing a venue and date for the conference, due to be held in 2012. The last two activities will have significant influence on the outcome of the 2012 NPT Preparatory Committee (PrepCom), and all will be indicators of whether the 2010 Review Conference has generated new momentum on collective action to define and achieve common goals in the areas of nuclear disarmament and non-proliferation.

In December 2010 a round-table on nuclear disarmament and non-proliferation was organised by the United Nations Association of the UK (UNA-UK). The meeting brought together leading experts and practitioners from the UK, other EU states, non-European NPT countries (including China and the US), and the North Atlantic Treaty Organisation (NATO), to discuss the prospects for future progress in these areas. One noteworthy issue raised at the meeting received little attention in the May 2010 outcome document, namely the delicate and divisive question of whether the international institutions, procedures and diplomatic structures created decades ago – including the NPT and the International Atomic Energy Agency (IAEA) – to monitor and manage nuclear disarmament and non-proliferation are still 'fit for purpose' and what, if anything, might replace them. Inspired by the UNA-UK round-table discussions, it is this strategic question that will be the subject-matter of this report. The report seeks to: describe how we got to where we are; identify some of the stresses and cognitive differences on the NPT regime that now exist within the international community; and offer suggestions for future national policy pathways and collective actions.

3 Dr Owen Greene, *2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons*, UNA-UK, July 2010.

4 Oliver Meier, "NATO Revises Nuclear Policy", *Arms Control Today*, December 2010.

5 *Iran's Nuclear, Chemical and Biological Capabilities*, International Institute for Strategic Studies, February 2011.

6 "Treaty between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms", (New START), Embassy of the United States, Moscow, <http://moscow.usembassy.gov/start.html>

7 NPT/CONF.2010/50 (Vol.I), in particular Action 5 and Action 21.

How did we get here?

An overview of the NPT regime

The NPT and the IAEA safeguards system⁸ were negotiated during the Cold War when the nuclear arms race was both global and bipolar. Latin American states had sought to insulate themselves from the impacts of this race by negotiating the first regional Nuclear Weapons Free Zone (NWFZ), the February 1967 Treaty of Tlatelolco, covering both Latin America and the Caribbean. The NPT followed closely in July 1968. Although the international security system was a global, nuclear-based one, it was focussed on the Euro-Atlantic world of NATO and its Soviet-led counterpart, the Warsaw Pact, with developing adjuncts in East Asia. The potential nuclear proliferators of the period were states intimately connected to this East-West conflict, particularly US allies such as Australia, Italy, Japan, Sweden, Switzerland and West Germany. Yet both the US and USSR had a common interest in preventing nuclear proliferation, as it would threaten their ability to control an outbreak of hostilities in central Europe or elsewhere, and to prevent it going nuclear, which would inevitably entail their involvement. For the US, NATO arrangements to store nuclear weapons in Europe and provide them to its allies for use with their own delivery systems in the event of general hostilities, often described as ‘nuclear sharing’, was seen as a powerful tool for this purpose.

During this period, little knowledge about the technology of nuclear weaponry entered the public domain. The path to disarmament being discussed at the UN and elsewhere visualised a sequential, three-step process:

- Stopping the development of nuclear weapons by banning all explosive tests;
- Preventing the production of additional weapons by terminating the manufacture of weapon-usable material; and
- Reducing existing stockpiles of weapons and fissile materials.

A Comprehensive Nuclear-Test-Ban Treaty (CTBT) was proposed for the first phase; a Fissile Material Cut-Off Treaty (FMCT) for the second; and for the third, a combination of treaties to halt nuclear dissemination to, and proliferation by, non-nuclear-weapon states, and capping and reducing existing stockpiles. The driving force behind this envisaged treaty regime was the spectre of thermonuclear weapons with theoretically unlimited yields (i.e. over 100 Megatons) and their increasing stockpile numbers, which generated visions of the total destruction of humankind. Plans for international non-proliferation mechanisms were premised on the assumption that nuclear power generation activities could be clearly separated from military ones by the ‘denaturing’⁹ of plutonium in a reactor operating on a civil cycle and through the operation of IAEA safeguards. It was also assumed that weapons-grade uranium and plutonium were necessary for nuclear explosive purposes. These assumptions led to the NPT defining a nuclear-weapon state as one that had “manufactured and exploded a nuclear weapon or other nuclear device before 1 January 1967”,¹⁰ even though the NWS knew that nuclear explosive testing was not necessary to certify the reliable

8 The IAEA safeguards system was created to provide states with assurances that their neighbours were not diverting fissile material from peaceful nuclear activities to weapon uses. Originally, it involved an accountancy system with the regularity and nature of international inspections determined by the existence of holdings of “significant quantities” of fissile materials. The objective was to give “timely warning” of diversion of such materials from declared uses.

9 When the creation of the IAEA was first proposed in 1954, it was believed that if fuel rods were retained in a reactor beyond a certain period of time, the isotopes of plutonium created within the rods would be “denatured” and not easily usable in stockpiled nuclear weapons.

10 NPT Article IX Para.3.

operation of first-generation nuclear devices – the UK and US having successfully tested devices using reactor-grade plutonium.

In practice, efforts to make progress through multilateral institutions between 1968 and the end of the Cold War were dominated by attempts to push the blame for the continuing East-West nuclear arms race onto either the US or the USSR, part of the wider political competition for the support of the non-aligned movement (NAM) in international fora, in

By default, proliferation is now restricted to states party to the NPT

particular the UN. As a result, a CTBT was not agreed until 1996 and has still not entered into force; the CD has spent the last 15 years attempting to start FMCT negotiations with little prospects for success; and work on a Nuclear Weapons Convention is still at a formative stage.¹¹ Nuclear arms control and management has been more successful, with

the US and USSR (and later the Russian Federation) adopting several bilateral nuclear arms limitation agreements, and the number of states acceding to the NPT more than tripling since the Treaty entered into force in 1970. The states that remain outside the NPT framework, however, are significant: India, Israel and Pakistan (and some would argue the DPRK¹²) all have nuclear explosive capabilities. By default, proliferation is now restricted to states party to the NPT. This in turn has placed an increasing focus on the weaknesses within the NPT text and what constitutes non-compliance with its commitments.

¹¹ For a recent copy of the proposed convention, see NPT/CONF/2010/PC.1/WP.17, submitted by Costa Rica to the 2007 session of the Preparatory Committee to the 2010 NPT Review Conference. Follow-up papers on this include NPT/CONF.2010/WP.47 – Elements for a plan of action for the elimination of nuclear weapons, Working Paper submitted by the Group of Non-Aligned States Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, and NPT/CONF.2010/WP.72 submitted by Costa Rica and Malaysia.

¹² See footnote 2.

Dysfunctional multilateralism? Issues in interpreting the NPT

One major problem with the NPT is lack of agreement on how its provisions should be interpreted, further complicated as a result of key elements of the Treaty having been based on US domestic legislation¹³ and the 1963 Partial Test-Ban Treaty.¹⁴ For instance, should interpretations be derived from its negotiating history or its meaning in a contemporary context? Initially, this opacity made it easier for states to sign and ratify the treaty as they could interpret it in a manner favourable to them during domestic ratification debates. In the lead-up to the NPT's ratification by the US Senate in 1970, for example, the US administration argued that only those actions by non-nuclear-weapon states that were specifically prohibited by the Treaty – i.e. the transfer of complete nuclear weapons and the explosion of nuclear devices – were unlawful and that 'nuclear sharing' with allies was thus compatible with its and their Treaty obligations.¹⁵

By extending this interpretation to civil dual-use technologies such as enrichment and reprocessing, it is therefore possible for states parties to make the case that operating plants designed for this purpose is legitimate, even if they could be used to build up stockpiles of weapon-usable enriched uranium and separated plutonium. It then becomes extremely difficult, as the case of Iran has proved, to demonstrate that safeguarded activities of this type are unambiguously intended for weapon purposes.¹⁶ In the absence of an explosive test, the international community has to rely on evidence of clandestine enrichment or reprocessing activities, hence the significance of the adoption in 1997 of a Model Additional Protocol¹⁷ to the standard IAEA NPT safeguards agreement¹⁸ between the Agency and NPT NNWS. This voluntary protocol was designed to give the IAEA authority to investigate information supplied by states parties and observations by its own inspectors about nuclear activities taking place outside declared facilities. In addition, from 1974 onwards, there have been guidelines, collectively agreed by those states in a position to supply nuclear technology and materials to others (the Nuclear Suppliers Group – NSG) on the transfer of 'sensitive items', such as enrichment and reprocessing plants, to others.¹⁹ The NPT also obligates NWS not to "assist, encourage, or induce any [NNWS] to manufacture or otherwise acquire nuclear weapons" and NNWS "not to seek or receive any assistance in the manufacture of nuclear weapons".²⁰

Contested interpretations of the Treaty are not merely theoretical possibilities. Indeed, they are highly relevant to the ongoing proliferation suspicions attached to the DPRK and Iran. The DPRK sought to withdraw from the Treaty at a time when many states believed it to be in breach of its IAEA safeguards agreements.²¹ This raised three wider issues:

- How should states parties react when one of their number fails to give proper legal notice of its intention to withdraw from the Treaty?
- What role does Article X.1 accord the UN Security Council (UNSC) during the three-month notice period for withdrawal from the Treaty?

13 Especially the wording and definitions used in the US Atomic Energy Acts of 1946, 1954 and 1958.

14 The wording of NPT Article X.1 was based on Article IV of the PTBT of 1963, though more detail was added on the process to be followed in order to withdraw, in particular the need to give the UNSC notice of withdrawal.

15 "Questions on the Draft Non-Proliferation Treaty Asked by U.S. Allies Together with Answers Given by the United States" in "Non-Proliferation Treaty, Hearings before the Committee on Foreign Relations", U.S. Senate, Executive H90th Congress, 2nd Session, Washington, 1968, pp262-263.

16 *Iran's Nuclear, Chemical and Biological Capabilities: A net assessment, The International Institute for Strategic Studies*, February, 2011, Chapter 1, pp. 7-46.

17 Protocol Additional to the Agreement(s) between [state] and the International Atomic Energy Agency for the Application of Safeguards (IAEA Information Circular 540, September 1997, as corrected by INFIRC/Corr.1, 12 October 1998).

18 The Structure and Content of Agreements between the Agency and States Required in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons (IAEA Information Circular 153 (corrected) June 1972).

19 Guidelines for Nuclear Transfers: Nuclear Suppliers Group, INFIRC/254/Rev.9/Part 1, November 2007.

20 NPT Article II.

21 This has been chronicled in numerous reports from the Director General of the IAEA to his Board of Governors from the early 1990s onwards at www.iaea.org/newscenter/focus/iaeadprk/

- What residual IAEA and other commitments is a withdrawing state legally obliged to continue to fulfil when the notice period expires?

In all three areas, attempts by the European Union (EU) and other developed states to gain consensus on interpretations of the Treaty have been opposed, apparently for political reasons, by non-aligned states. It has been argued variously that the Treaty is self-explanatory on these issues; that NPT review conferences should not seek to re-interpret the Treaty; and that re-interpretation and expansion of non-proliferation commitments can only take place if they are balanced by developments in the nuclear disarmament area.²²

The window of opportunity to prevent a state from withdrawing from the NPT and exploding a device could be extremely short

In the case of Iran, a situation has developed where the 'peaceful use' freedoms contained in the Treaty appear to be at variance with the technical realities of the situation. These realities have been variously described as the problems of 'latency',²³ 'weaponisation'²⁴ and 'dysfunctional multilateralism'.²⁵

Latency

In this context, the term 'latency' relates to the ability of a NNWS to develop or acquire nuclear weapons in a short timeframe. It focusses in particular on the decreasing technical time gap that potentially exists between NNWS giving the three months' notice of withdrawal mandated by the NPT and qualifying as a NWS by exploding a nuclear device once IAEA safeguards have terminated. A state could potentially get to the second stage very quickly by using enriched uranium and separated plutonium from stockpiles derived from its declared and safeguarded 'peaceful' activities or from undeclared programmes and plants, or through clandestine transfers of direct use material from states outside the Treaty. The window of opportunity, therefore, to prevent a state from withdrawing from the NPT and exploding a device could be extremely short, potentially just the three-month notice period, giving little time for political action such as negotiations, UN resolutions and sanctions.

One response to the threats posed by 'latency', which open a state to terrorist acquisition and use of fissile materials, has been spearheaded by the US and involves enhancing the physical security of nuclear materials through Nuclear Security Summits involving leading nuclear states. After 2012, a possible widening and institutionalisation of this process is envisaged, moving away from removing highly-enriched uranium (HEU) from research reactors towards 'securitising' all fissile materials in the nuclear fuel cycles of all those with nuclear reactors, including new entrants into the nuclear power field.²⁶ What impact this potential new networking mechanism might have on the NPT remains to be seen.

Weaponisation

Linked to 'latency' in the materials field is the potential for acquisition of nuclear-weapon knowledge by transfer (as shown by the Libyan blueprints acquired via the A.Q. Kahn network from Pakistan)²⁷ or from conventional chemical explosive programmes. Indicators of the latter may be found in the increasingly effective designs of improvised explosive devices (IEDs), as used, for example, by insurgents in Iraq and Afghanistan. The IAEA has no direct authority to search for and/or monitor nuclear 'weaponisation' programmes, though in practice it has addressed such issues on the basis that they could indicate possible diversion of safeguarded fissile materials. More visible indicators include the development and acquisition of ballistic missiles, particularly those with limited accuracy, and thus military effects, if carrying a conventional warhead.

Dysfunctional multilateralism

'Dysfunctional multilateralism' is a term that has been used to argue that the NPT and its associated networked regime provide a benign legal framework for a state to move towards 'latency' whilst staying within the letter (if not the spirit) of its Treaty obligations, until circumstances are ripe for a rapid 'break-out' to overt possession of operational nuclear

22 The political resistance to attempts to move forward on these issues is in part a response to the different obligations the Treaty bestows on NWS and NNWS. NWS are only required to "pursue negotiations in good faith" on nuclear disarmament (Article VI) whilst NNWS have an absolute requirement not to develop or otherwise acquire nuclear weapons.

23 Garry J. George, "Integrated Nuclear Security in the 21st Century," *Sandia Report SAND2009-5641*, October 2009.

24 James Acton with Carter Newman, "IAEA Verification of Military Research and Development", *Vertic Research Reports*, Number 5, July 2006.

25 John Van Oudenaren, *Policy Review*, February 2003, No117, www.hoover.org/publications/policy-review/article/7264

26 For a brief description of these activities produced by the US Arms Control Association see www.armscontrol.org/print/4235

27 A.Q.Khan was the Director of Pakistan's centrifuge enrichment programme, making HEU for its nuclear weapons. It has been alleged that the design of these weapons was based on blueprints provided by a Chinese entity, and amended by Pakistani nuclear weapon specialists. Libya and Iran both based their indigenous centrifuge enrichment programmes on Khan's designs, and in the Libyan case he is known to have also provided them with copies of Pakistani weapon design blueprints. For a detailed account these activities, see Wyn Bowen, *Libya and Nuclear Proliferation*, IISS Adelphi Paper, Routledge 2006.

weapons. A state pursuing this strategy could limit the risks of a military response to its actions. Iran might be seen as a potential example of this activity, as it has built and operated an enrichment capability and enriched uranium to the limit of what the IAEA regards as 'low enrichment' (up to 19.99% U-235), despite having no obvious immediate use for the significant quantities of fissile materials being produced. Such material is open to being rapidly enriched to weapon-grade material in a clandestine plant or by reinsertion into a currently declared safeguarded one once IAEA safeguards are terminated.

As with the DPRK, the Iranian situation points to wider issues within the NPT regime. For instance, it is clear that if dysfunctional multilateralism is to be avoided, more comprehensive and intrusive verification arrangements than the current IAEA framework are needed. Likewise, if a convention on nuclear disarmament is to be developed, as provided for by Article VI of the NPT, robust processes for dismantlement and verification will be necessary so that existing nuclear-weapon states would not be in a situation of 'latency' over their disarmament status.²⁸ The UK, for example, would be in a particularly sensitive position if it were to disarm, as it currently has 112 tonnes of non-military separated plutonium stored at Sellafield, of which 84 tonnes are owned by the UK.²⁹

28 Unless arrangements were made to place all nuclear plants under multinational or international ownership and control, or political declarations by NWS states of their disarmed status were deemed sufficient to guarantee against break-back.

29 Management of the UK's Plutonium Stocks, Nuclear Decommissioning Agency, February 2011, www.parliament.uk/deposits/depositedpapers/2011/DEP2011-0241.pdf

Culture clash: diverging views on how to get to zero

Most of the NWS have accepted – both explicitly through Action 3 of the 2010 NPT Review Conference Final Document, and implicitly, through other commitments in the action plan – that it is necessary for them to engage in a multilateral disarmament process and to commit to working towards “the total elimination of their nuclear arsenals”.³⁰ These commitments are backed by a 1996 International Court of Justice Advisory Opinion which found that there exists an obligation to “bring to a conclusion negotiations leading to nuclear disarmament”.³¹ What this entails, however, and how progress is measured, remain open to debate.

Three distinct, and often conflicting, indicators have emerged to evaluate progress in this context: quantification; political and legal commitments; and practical steps on a path towards nuclear disarmament. Through their actions, four of the five NPT NWS have indicated that they believe progress towards disarmament can be measured by reductions in the numbers of nuclear weapons, either operational or in reserve, or both. Moreover, France and the UK have now declared the size of their operational and reserve stockpiles (and, by implication, that they will not henceforth move above these figures).³² Declarations have also been made of their military holdings of fissile material, the dates when national production of such material ceased, and the alert status of national nuclear capabilities.³³

Russia and the US have reached agreements on ceilings for strategic (but not other) warheads and delivery systems, and place great emphasis on the reductions they have implemented since 1991 to reduce their stockpiles by large percentages.³⁴ The US, however, is reputed to have about 150 gravity bombs in storage in five European NATO states (Belgium, Germany, Italy, the Netherlands and Turkey). Removing them, and thus strengthening the international position on the non-stationing or storage of nuclear weapons outside of national territory (other than at sea), is seen by many states as an important metric on the road to disarmament.³⁵ It may also facilitate the creation of further Nuclear Weapon Free Zones (NWFZs).

China has made no declarations of its warhead numbers or military fissile material stockpiles, despite apparently having ceased to produce plutonium for this purpose in 1990 and HEU in 1987.³⁶ This is because it and many other non-aligned states view the path to nuclear disarmament as constituting changes in political intentions and actions, demonstrated through statements, treaties and other forms of national commitment, rather than reduction in technical capabilities. This explains the importance of the language outlining the “unequivocal undertaking by the [NWS] to accomplish the total elimination of their nuclear arsenals leading to nuclear disarmament”³⁷ in securing a positive outcome from the 2000 NPT Review Conference. This formulation suggests that while the elimination of warheads is a necessary precondition for nuclear disarmament, it requires other actions for its accomplishment. It explains too the emphasis placed by the NAM on negative security assurances as a ‘half-way house’ on the way to global nuclear disarmament,³⁸ although for those US allies sheltering under a nuclear security umbrella, nuclear guarantees may be seen more as a desirable destination than an intermediate step to another goal.

30 NPT/CONF.2010/50, p20.

31 International Court of Justice: Legality of the Threat or Use by a State of Nuclear Weapons in Armed Conflict, Communiqué No.96/23, 8 July 1996.

32 In 2008, France declared it was reducing its nuclear stockpile to less than 300 nuclear warheads, BBC News Channel, 21 March 2008, <http://news.bbc.co.uk/1/hi/world/europe/7308563.stm>. The UK has declared it has up to 225 nuclear warheads in total, of which up to 160 are operational, *The Times*, 27 May 2010.

33 For instance, the UK has published figures on military holdings of both HEU and weapon usable plutonium, as well as stating in its 1998 Strategic Defence Review that its missile submarines would be held at several days’ notice to fire. John Simpson, “The United Kingdom and the Nuclear Future”, *The Nonproliferation Review*, Routledge for the Centre for Nonproliferation Studies, Volume14:2. July 2007

34 The Treaty of Prague or New Start treaty signed on 8 April 2010 and now in force will further reduce existing stockpiles. For details see www.bbc.co.uk/news/world-europe-12066494

35 Dr Richard Weitz, *The Future of NATO’s Nuclear Weapons*, Second Line of Defence, www.sldinfo.com/?p=13709

36 International Panel on Fissile Materials, *Global Fissile Material Report 2010*, Section 7, China, pp97-106 www.fissilematerials.org

37 NPT/CONF.2000/28(Part1) Article VI and preambular paragraphs 8 to 12, para 15.6.

38 John Simpson, “The Role of Security Assurances in the Nuclear Non-Proliferation Regime” in Jeffrey W. Knopf (ed.), *Security Assurances and Nuclear Nonproliferation*, Stanford University Press, forthcoming.

This major difference in political perceptions and strategic cultures means that to some extent the current global debates on nuclear disarmament are rather like dialogues between two people speaking different languages, or, to use CP Snow's terms, 'two cultures': the soft-power political and the hard-power scientific/technical ones.³⁹ Where they converge is in the ongoing argument about the process for achieving nuclear disarmament. Two schools of thought exist on how to move towards 'zero' (whatever that may be): either by taking a number of incremental steps or by securing a single, high-level political decision. The former route is the one adopted by the NPT parties in their two 1995 decision documents,⁴⁰ based partially on an argument that progress will depend on context and movement towards zero will only occur if favourable political conditions are created for this. Proponents of the latter route maintain that a political leap of faith is necessary, pointing to the time-bound frameworks that were agreed by the NPT NWS at the April 2010 Nuclear Security Summit⁴¹ and NPT Review Conference the following month. They are challenged by those who argue that a high-level political decision will only be possible if such a time-bound framework for progress is accepted by all parties and that if it does not produce the planned results, it could undermine the feasibility of moving towards a world without nuclear weapons.⁴²

The current global debates over nuclear disarmament are rather like dialogues between two people speaking different languages

A further variation on this debate is the growing support among states, particularly NAM states, and NGOs for negotiations to begin immediately and in earnest on a Nuclear Weapons Convention to supersede the NPT.⁴³ An outline for such a process was proposed by the NAM at the 2010 Review Conference.⁴⁴ While current NWS positions suggest that it may not be possible to move forward with this through the NPT process, the use of a nuclear weapon or similar international crisis could act as a catalyst or trigger for such a development. However regrettable, such a nuclear crisis might change global perceptions of nuclear weaponry and create a unique opportunity for the required political leap of faith.

39 C.P Snow, *Science and Government*, Oxford University Press, 1961.

40 Strengthening the Review Process for the Treaty NPT/CONF.1995/32/Dec.1 and Principles and Objectives for Nuclear Proliferation and Disarmament NPT/CONF.1995/32/Dec.2.

41 For example, for the five recognised NWS to agree a reporting framework for their disarmament activities by April 2014 and for states to secure all HEU by April 2014.

42 Systematic and progressive efforts to reduce nuclear weapons globally: a food for thought paper submitted by the UK NPT/CONF.2100/23, Ken Booth and Nicholas J. Wheeler: *The Security Dilemma: Fear, Cooperation and Trust in World Politics*, Palgrave Macmillan, 2008.

43 See for example *Securing Our Survival (SOS): The Case for a Nuclear Weapons Convention*, International Association of Lawyers Against Nuclear Arms, International Network of Engineers and Scientists Against Proliferation and International Physicians for the Prevention of Nuclear War, 2007, <http://icanw.org/securing-our-survival>

44 Elements of a plan of action for the elimination of nuclear weapons, NPT/CONF.2010/WP.47.

Measuring progress: metrics for nuclear disarmament and non-proliferation

- 45 Oliver Meier, "NATO Revises Nuclear Policy", *Arms Control Today*, December 2010, www.armscontrol.org/print/4590
- 46 Russia in particular has in the past linked its security assurances to NPT parties to not having the nuclear weapons of another NWS on its territory, see Official Records of the General Assembly, Twelfth Special Session, Plenary Meetings and 12th Meeting.
- 47 Working paper submitted by New Zealand on behalf of Chile, Malaysia, Nigeria and Switzerland, NPT/CONF.2010/WP.10.
- 48 John Simpson, "The Future of the NPT" in Nathan E. Busch and Daniel H. Joyner, *Combating Weapons of Mass Destruction*, University of Georgia Press, 2009, pp55-61.
- 49 Working paper on article X (NPT withdrawal) submitted by Australia and New Zealand, NPT/CONF.2005/WP.16 and Withdrawal from the Treaty on the Non-Proliferation of Nuclear Weapons: European Union Common Approach, Working paper submitted by Luxembourg on behalf of the European Union, NPT/CONF.2000/WP.32.
- 50 NPT/CONF.2010/50 (Vol.1.) contained 64 actions, of which 22 concerned nuclear disarmament, 24 nuclear proliferation, and 18 peaceful uses, as well as a 10-point document on the Middle East resolution containing five "practical steps" and a paragraph on "other regional issues".
- 51 Statement by Director General Mohamed ElBaradei to the IAEA General Conference, 15 September 2003, "International Co-operation in the Nuclear Fuel Cycle", www.iaea.org/newscenter/statements/2003/ebsp2003n020.html
- 52 Communication of 1 October 2009 received from the Resident Representative of Hungary to the Agency on behalf of the Participating Governments of the Nuclear Suppliers Group, IAEA INFCIRC /539/ Rev.4.
- 53 The Zangger Committee: A History 1971-1990, Annex to IAEA INFCIRC/209/Rev.1, November 1990, INFCIRC/209/Rev.2, 9 March 2000; and NPT/CONF.2010/PC.1/WP.37, 8 May 2008.

A further element of this debate revolves around non-quantitative technical approaches to disarmament or/and nuclear arms management, as seen through the demands for change in at least three military-related areas. One area is military doctrine, where there is growing pressure to eliminate planning for nuclear-weapon use from national military doctrines and colleges, prompting, for instance, many negative reactions to NATO's failure to significantly amend its nuclear doctrine at the Lisbon Summit in November 2010.⁴⁵ Another area is the lack of progress, noted earlier, in removing US nuclear weapons from storage in five European NNWS and terminating the arrangements for some of those states to have access to them in the very unlikely event of a general war in Europe. If this were to be achieved, it would not only remove a long-standing source of friction at NPT review conferences, but also make it much easier for some NWS to offer revised negative security guarantees to NPT NNWS.⁴⁶ The third area relates to the demands that NWS alter the alert levels of their strategic forces to reduce the risk of accidental nuclear war and concerns over first strike postures.⁴⁷

These cognitive and perceptual differences are also visible in the non-proliferation area, especially given the capabilities and politics of the 3/4 states that are not party to the NPT. Only these states are now outside the NPT framework, and thus numerical increases in membership can no longer be used as a means of charting progress towards sustaining NPT commitments. Indeed, the only movement that seems possible in that context is a loss, not gain, in membership.⁴⁸ As a consequence, priority was given by industrialised states, such as those in the EU, to issues of withdrawal under Article X and compliance and non-compliance with Articles II and III of the Treaty during the failed 2002-5 review cycle, including what criteria should be used to assess this.⁴⁹ In 2010, the Review Conference Final Document reflected a more balanced debate between disarmament, non-proliferation and peaceful-use issues.⁵⁰ However, the potential for fissile materials to have dual civil/military uses inevitably generates suspicions that peaceful activities could mask undeclared military ones. As a result, those viewing the situation from a scientific/technical perspective have seen the denial of access to technology through export controls, or 'voluntary' abstention from seeking it, aided by economic and other sticks and carrots, as the only way to sustain the existing non-proliferation regime.⁵¹

The NAM states, by contrast, regard export controls as a denial of their right to economic development enshrined in Article IV of the Treaty and have consequently blocked all mention of these technology control mechanisms in NPT review conference final documents. By contrast, states within the main international nuclear export management body, the NSG,⁵² argue that its guidelines, and those of the Zangger Committee⁵³ (which determines which exports are to have IAEA safeguards applied to them), are necessary to assist supplier states to comply with their Article I and II commitments not to assist nuclear proliferation. Many of those viewing it through a political perspective also put emphasis on the importance of legal commitments and "duties" because, among other things, they have no capability either to acquire nuclear weapons or to directly influence the actions of the nuclear-weapon states.

A related intangible development is the significant differences that have emerged in the post-Cold War period over the salience of nuclear weapons and disarmament in the security calculations of states. The majority of NAM states and NPT NWS no longer regard the possession and use of nuclear weapons as central to their security calculations. Nor do they see the Cold War concerns over a nuclear war ending the existence of humankind as likely or imminent. One result is that nuclear disarmament now has a much reduced global and domestic political visibility, reinforced by the existence of new high-visibility security threats, such as non-state actors engaged in nuclear terrorism and crises such as global warming and resource shortages. Logically, this change should facilitate the process of nuclear disarmament. However, the lack of domestic political traction appears to have made it more difficult to generate momentum for national and international disarmament actions, in comparison with the Cold War heights of the 1960s-80s. This situation also poses a major threat to the nuclear non-proliferation regime, which now appears more likely to degrade over time from a collective lack of interest, security relevance and political priority within the majority of states party to the Treaty, rather than through nuclear actions taken by individual states within and outside the Treaty. The inability of the CD to move into negotiations of disarmament actions since 1996 is a symptom of this challenge.

The lack of domestic political traction appears to have made it more difficult to generate momentum for national and international disarmament actions, in comparison with the Cold War heights of the 1960s-80s

The networked nature of the contemporary non-proliferation regime

The NPT is a core instrument in the fragmented and decentralised global nuclear non-proliferation and disarmament regime. It provides the regime's normative and legal foundations and through this gives added authority to the UN Security Council to act in cases of alleged non-proliferation. The regime builds on elements that existed prior to the Treaty's entry into force, such as the IAEA Statute of 1956 and the Partial Test Ban Treaty of 1963.⁵⁴ Others have been 'bolted-on' since 1970. Some of these are inclusive – IAEA safeguards, CTBT (not yet in force), UNSC Resolution 1540 and the Convention on Physical Protection – and some exclusive: the NSG; Zangger Committee; Proliferation Security Initiative (PSI); the Group of Eight, Ten or Twenty; regional NWFZs; and nuclear-testing moratoria. The unstated normative aim of the NPT text is an equitable world free of nuclear weapons. Non-proliferation is a pre-requisite for this, and movement towards nuclear disarmament a necessary condition for its attainment. Indeed, the NPT text and its 2000 and 2010 review conference outcome documents contain the only extant commitments by the NWS to nuclear disarmament in legal and political form, while the NPT review process is currently the only operational international negotiating forum in which this issue can be addressed, given the stalemate in the CD.

Until 1998, the Treaty and its linked regime were able to operate on the assumption that no additional nuclear-weapon states were in existence; that those outside the NPT would eventually enter as NNWS; and that disarmament and non-proliferation activity was only relevant to the 'NPT family'. The nuclear tests carried out by India and Pakistan, and subsequent declarations of their nuclear-weapon status, changed this situation radically. Negotiating global nuclear disarmament agreements (and issues such as enhanced negative security assurances) within the Treaty became illusory, as states parties were not prepared to engage with those NWS outside the NPT for fear of undermining the Treaty by rewarding their dubious behaviour. Subsequently, it has become clear that these states, and especially the DPRK and Pakistan, have threatened the NPT's credibility in more direct ways by acting as a clandestine source of materials and technology for NPT parties such as Libya and Iran (and possibly Syria and Burma). Discouraging India from following suit was one of the stated aims of the US-India Agreement for Cooperation of 2007⁵⁵ and a significant factor leading to the NSG's reluctant acceptance of these arrangements,⁵⁶ even if the incentives offered to India by the US suggested that this bilateral initiative might be a precedent for other such agreements, for example, between China and Pakistan. Such actions threaten a basic premise of the NPT: namely that membership of the Treaty should offer its parties benefits not available to those outside. The emergence of this group of states has therefore generated a number of contradictory consequences for the non-proliferation regime that have yet to be fully exposed.

While the networking, rules-based and 'bolt-on' approach to non-proliferation now being pursued has many positive qualities, it also has some obvious drawbacks. One is that some of the elements do not effectively mesh with each other and, in certain cases, actively undermine

54 The IAEA Statute created the basis for the operations of both the safeguarding and promotional activities of the Agency, whilst the PTBT made it illegal for parties to conduct nuclear explosive testing anywhere other than underground.

55 Agreement for Cooperation between the Government of the United States of America and the Government of India Concerning Peaceful Uses of Nuclear Energy (123 Agreement), released 8 August 2007 and Introductory Statement to the Board of Governors, Draft Safeguards Agreement with India, IAEA, Vienna, 1 August 2008.

56 Communication received from the Permanent Mission of Germany regarding a "Statement on Civil Cooperation with India", INFCIRC/734 (corrected), 19 September 2008 and Communication of October 2009 received from the Resident Representative of Hungary to the Agency on behalf of the Participating Governments of the Nuclear Suppliers Group, INFCIRC/539/Rev.4, 5 November 2009.

the regime. For example, the breach of an IAEA comprehensive safeguards agreement by diverting material to non-declared uses does not in itself provide hard evidence that a state is actually engaged in making nuclear weapons (though most will regard it as a strong indicator that this is occurring). Operating a national enrichment or reprocessing plant producing weapon-grade materials is also a legitimate activity under the NPT as long as there is no evidence of a breach of IAEA safeguards, even if evidence exists to suggest that a state is engaged in testing components for a nuclear explosive device. Moreover, key potential supporting elements of the network still await further action: the CTBT lacks the necessary ratifications to enter into force while FMCT negotiations have yet to commence as a result of continuing obstruction by an NPT non-signatory state. And arrangements seen by some states as necessary to implement their Article I and II commitments – export controls – are alleged by many NAM states to breach Article IV of the Treaty by restricting potential peaceful uses of nuclear energy and thus economic development.

The breach of an IAEA comprehensive safeguards agreement by diverting material to non-declared uses does not in itself provide hard evidence that a state is actually making nuclear weapons

Towards 2015: the NPT and new nuclear realities

The new century has brought with it radically changed visions of future political and nuclear worlds. After the 11 September 2001 terrorist attacks, the prime nuclear security fear among Euro-Atlantic states has been nuclear and radiological terrorism pursued by networked non-state groups, some with religious agendas, rather than interstate nuclear war between nominally capitalist and communist states. In parallel, there has also been a geographical shift in the list of possible conflicts that might escalate into nuclear war. This list now focusses on states outside the Atlantic area, in particular India/Pakistan; Israel/the Arab States/Iran; and the DPRK and its neighbours. Moreover, there has been a revolution in the trading links between the four Euro-Atlantic NWS and China. Increasing globalisation of trade not only means that a nuclear war between them would destroy their peoples, it would also generate unacceptable chaos in the economies of all those involved, given the complex network of energy and other interdependencies between them (i.e. the economic fallout might extend well beyond any nuclear one). The nuclear threats they now prioritise are thus ones of internal disruption by non-state groups and external disruption of their “just in time” procurement systems for energy, raw materials and consumer goods sourced from states outside their region, rather than direct P5⁵⁷ nuclear interstate war.

Furthermore, projections on how these threats would manifest themselves no longer consist of the doomsday scenarios of the Cold War but rather of regional conflicts with deep historic and religious roots, pursued, at least over the next decade, by nuclear weapons which the NPT NWS would regard as crude in design and limited in both yield and numbers in comparison with the previous nuclear era. Due to the intrinsic nature of nuclear explosions and the anticipated negative political and economic consequences of testing above ground, these weapons are likely to be similar in yield to those used against Japan in 1945 i.e. users would seek to maximise the number of weapons they could produce from a limited stock of fissionable material (UK decisions in 1952/3 on its future stockpile offer a precedent for this). In a situation of relatively low yields, nuclear weapons may be regarded as more usable, both in terms of war and for strategic deterrence. Yet there is also the possibility that increasing political and technical pressure to provide ‘more bang for the buck’, may lead states to break the existing moratorium on testing overground in order to acquire proven thermonuclear designs. The Partial Test Ban Treaty and entry into force of its successor, the Comprehensive Test-Ban Treaty, are therefore likely to play an increasingly important role, given that knowledge of the detailed design of a thermonuclear device is currently not widely available.

Such scenarios raise the question of the political drivers of nuclear proliferation. Two US scholars have argued that centralised, totalitarian regimes isolated from the globalised trading world are more prone to proliferation than comparatively open states, as acquiring nuclear weapons would likely play a larger role in their internal political structures and debates.⁵⁸ The nuclear policies of the DPRK and Burma are often contrasted with the industrialising societies on the peripheries of South and East Asia to support this argument.

57 The five nuclear powers recognised by the NPT are also the five permanent members of the UN Security Council.

58 Jacques C. Hymans, *The Psychology of Nuclear Proliferation: Identity, Emotions and Foreign Policy*, Cambridge University Press, 2006 and Etel Solingen, *Nuclear Logics: Contrasting Paths in East Asia and the Middle East*, Princeton University Press, 2007.

The continued economic development of these states appears likely to have significant security by-products. As former US President Bill Clinton stated at the January 2011 Davos World Economic Forum: “at the end of the Cold War, there was a brief moment when we were the sole political, economic and military superpower. In the 21st century we will have to share the position with a lot of countries”.⁵⁹

The global political dominance that the Euro-Atlantic world has enjoyed through its advanced research and production capabilities appears likely to be challenged, if not overtaken, in the near future by South and East Asian states. This will bring with it increased pressures for political change at the UN, most prominently reform of the Security Council, to reflect global economic realities, as well as a re-balancing of relative military capabilities between the regional blocs. How this evolution will affect nuclear proliferation seems likely to be determined by domestic politics in UNSC permanent-member candidates, in particular by the proportion of their national resources allocated to economic and military growth. Its effect on the perceived need for the nuclear security guarantees the US provides to allies in Europe, the Middle East and Asia is unclear. However, if, as some argue, these guarantees act as significant non-proliferation mechanisms, this re-balancing in economic and military power could generate an enhanced sense of insecurity in Asian-Pacific allies like South Korea, Japan and Australia. Mitigating this could involve the development of new regional integration arrangements along EU lines or enhanced national security capabilities, including energy security through additional civil nuclear power plants, commercial or IAEA fuel banks, or national fuel cycles, with military security being sought through the expansion of military vessels requiring nuclear power reactors, among other things.

If the civil nuclear world becomes more multinational and privatised, how are security and non-proliferation concerns arising from the reduction in direct state control to be managed?

Since the mid-1980s, the centre of gravity of nuclear power operations has also been moving from Europe and the US to East Asia, and it is these countries, especially China, which seem destined to dominate the industry in the future. How these states will view existing standards of nuclear safety, security and non-proliferation remains to be seen, but their agreement will be essential if existing arrangements and standards are to be sustained and enhanced. Moreover, this development will inevitably reduce the ability of the US to take a global lead in nuclear non-proliferation policies, and may make it necessary for the EU states – in particular the UK – to adjust their current policies and forge new diplomatic alliances if they are to play a significant role in managing the non-proliferation regime.

What remains profoundly obscure at the moment is how the structure of the nuclear power industries will evolve in the decades to come. Will they operate on the basis of privatisation or state ownership? What will be the relationship between the multinational operation and ownership of nuclear facilities and single-state operation and control? Above all, if the civil nuclear world becomes more multinational and privatised, how are safety, security and non-proliferation concerns arising from the reduction in direct state control over these global industries to be managed?

Is a ‘fit for purpose’ NPT regime possible?

As the outlines of the post-Cold War nuclear world become more visible, it appears likely to contain many contradictions and paradoxes. The interstate nuclear threats to the Euro-Atlantic world have diminished significantly and the national security value of nuclear weapons is dissolving. Nuclear-weapon capabilities are becoming heritage assets militarily, politically and technically, sustained in part by their very existence. Nuclear threats are now centred on other regions. Nuclear weapons, therefore, are of relevance to the Euro-Atlantic world mainly as insurance against possible future neighbourhood nuclear threats to its military activities in other regions. How warfare is conducted also appears to be changing. On the one hand, there seems to be a return to 19th Century infantry operations with 21st Century equipment in out-of-area locations. On the other are the very advanced forms of warfare generated by the revolution in military affairs, including activities conducted between machines operating in or supported by the satellite-based global internet space. Where nuclear weapons fit into this evolving global security environment is profoundly unclear, as are the consequences of their use.

In parallel, the layered regional/global structure of this new environment, although akin to that envisaged in Chapter VIII of the UN Charter, makes it difficult to predict what the future nuclear world will look like. Will it be a world of increasing proliferation, increasing disarmament or both? How will these trends be measured? Can we ensure non-proliferation in those regions where declared and undeclared nuclear-weapon states co-exist? How will zones of nuclear peace interact with those of potential nuclear instability? What impact will the potential withdrawal of US nuclear ‘umbrellas’ have? What status will nuclear weapons have in a world where they are increasingly at odds with the most pressing security threats? If they remain a symbol of power for states but no longer appear sufficiently threatening to their publics, what will convince politicians and diplomats to devote their scarce political capital to disarmament? And finally, is a world without nuclear weapons possible if climate and fuel insecurity drive more states to develop nuclear power generation?

The future of the NPT

It is highly likely that the NPT will remain in existence in this new world and continue to act as the normative justification for aggressive policies to deter and punish states acquiring nuclear weapons, as it has for the last four decades, not least because all parties would have to agree for it to be terminated. However, its relevance to non-proliferation outcomes will likely decline. It cannot move forward as a Treaty in a meaningful way because those few states remaining outside it are unlikely to join in the foreseeable future and there is little chance that the NPT can be amended in ways acceptable to them. Its review process will also continue to function as at present, primarily because it appears to be amendable only at review conferences where delegates invariably prioritise negotiations of substantive texts rather than procedural matters. What may start to change, however, are the dynamics of the review process, as the existing three regional groups – Western, Eastern and NAM – are gradually supplanted by regional groupings overlain by global networks such as the New Agenda Coalition, P5 and G20.

Is the time ripe for a Nuclear Weapons Convention?

The disjunction between existing diplomatic structures and geopolitical realities will continue to drive attempts to reform the UNSC, and adapt UN mechanisms to address a new multipolar political world with cross-cutting and strengthened regional groupings. Whilst this may go some way to assuage the existing loss of faith in the UN as an equitable international forum, it may also place regional security interests over global non-proliferation ones (with the 2007 US-India Agreement for Cooperation a template for this), thus making the outcomes of multilateral diplomacy less predictable.

These developments are also likely to lead to greater emphasis being placed by some states and NGOs on a portmanteau Nuclear Weapons Convention to supersede the NPT, address the contradictions and gaps identified in earlier sections of this paper, and provide a framework for global nuclear disarmament. To achieve this, the negotiating process would have to involve non-NPT states, thus bringing together the two groups of nuclear-weapon states, and take place outside the NPT context. Possible options include the CD, a special UN forum or an independent process (e.g. G20 or Nuclear Security Summit), which could then expand into a more inclusive one. It could also emerge from discussions between a geographically-integrated NWFZ caucus and the P5 states. Given that future nuclear threats may prove to be of a regional rather than global nature, they are perhaps best addressed in that context.

One of the weaknesses of most current approaches to nuclear disarmament is the assumption that it can be divorced from the wider security context

The impact of asymmetric military force

The roles and types of military force will likely become increasingly asymmetric in the future. This could have at least two consequences for non-proliferation and disarmament. One is that current Chinese strategic nuclear policies (20 intercontinental ballistic missiles on low levels of alert) and the doctrines of minimal nuclear deterrence discussed at the start of the nuclear age could move to centre stage in all nuclear-weapon states, and with them, reductions in nuclear stockpiles to very low levels, from which zero might be attainable though not guaranteed. The second is that asymmetries could reduce the deterrent value of all advanced weapons, including nuclear. However, this would likely also result in pressures to negotiate the details of any nuclear disarmament process in a much wider political and military context. Indeed, one of the weaknesses of most current approaches to nuclear disarmament is the assumption that it can be divorced from the wider security context, which would inevitably make progress conditional on benign, random and independent developments in limiting conventional weaponry, rather than negotiated and integrated ones. In short, the reference in Article VI of the NPT to "a treaty on general and complete disarmament" may re-emerge as significant, especially if the ongoing diplomatic argument about whether the placing of the comma in the full sentence should be interpreted as implying that nuclear disarmament should take place in parallel to, or within this wider context, rather than in isolation from it.⁶⁰

Regional powers and differences

The resurrection of historic local and regional differences, often cutting across state boundaries and leading to state fragmentation, is also likely to continue, in parallel with the rise of a number of well-resourced regional powers. These emerging regional 'superpowers' are unlikely to be open to military or economic coercion should they decide to acquire nuclear weapons.⁶¹ Meanwhile, there is a danger that the financial crisis and resulting need to reduce sovereign monetary deficits may contribute to a degradation in the Euro-Atlantic world's diplomatic expertise in the nuclear area at a time when this may be essential to steer a positive path in an increasingly contradictory and complex nuclear world.

If the future involves such a regionally-differentiated world, two further contradictory trends may result. One is for smaller states to seek global assistance to defend themselves against pressures from emerging regional powers. The second is for Euro-Atlantic states to leave

60 Article VI reads "pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race and nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control." Disagreement persists on whether the comma implies a process in three phases with general and complete disarmament as the final one, or three parallel and linked processes, where nuclear disarmament can only occur in the context of the existence of general and complete disarmament.

61 For a detailed discussion about the theory and practice of Proliferation Chains, see William C. Potter and Gaukhar Mukhatzhanova (eds), *Forecasting Nuclear Proliferation in the 21st Century*" (2 volumes), Stanford Security Studies, 2010.

regional conflicts to be settled by states within the region. It is not possible to know at present how the 'Arab awakening' and current international involvement in that region will impact on this process, though it could increase the risk of non-nuclear WMD being used internally in domestic conflicts and nuclear devices being sought to deter external (Western) interventions. The use of social networking capabilities in organising these peaceful protests also raises questions about how such technology could influence the international nuclear disarmament debate if NGOs were to find ways of using them to affect political decisions on nuclear weapons at both the intra- and inter-state levels.

These developments could drive regional groups into giving a high priority to creating NWFZs that incorporate regional CTBT and FMCT provisions and EURATOM-type⁶² nuclear energy organisations, as well as seeking positive and negative security guarantees from states outside the region. The recent entry into force of the African NWFZ treaty, a decade after it had first been signed, can be seen as an indicator of this trend. Such a trend would complicate both the future of the NPT and the leadership role played within its framework by Euro-Atlantic states, in particular the US. In its place, two developments are possible:

- A new network of stronger regional arrangements with more intrusive verification provisions than those of the IAEA; and/or
- The emerging Asian states become the driving force for nuclear disarmament and non-proliferation within the NPT context, with outcomes shaped by their policy preferences such as no-first-use agreements and negotiations on a Nuclear Weapons Convention.

Twin tracks to move forward

What appears to be needed now is movement down two distinct tracks. One is to try to cut the complex links between nuclear-weapon possession and permanent membership of the UNSC, in order to reinforce the proposition that nuclear disarmament and non-proliferation are intimately connected and will deliver security outcomes of benefit to all. This may require a new form of NPT politics, focussed on developing a fresh understanding of what is required to move the twin objectives of disarmament and non-proliferation forward in the new economic and political environment. Whether this requires a new global nuclear security instrument or a further series of 'bolt-ons' to existing structures remains unclear. So too is whether these should be negotiated within the CD or outside it, given the negative CD experience over the last 15 years. The Euro-Atlantic world may also have to accept that the movers and shakers in this new world will likely be emerging economic powers who have different ideas on how to move these objectives forward.

The second track is strengthening regional nuclear security arrangements. Increasingly, the impetus for a state to move from nuclear latency to declared possession may be found in regional frictions and conflicts, despite the globalisation of finance and manufacturing suggesting that nuclear weapons have little or no relevance to economic development and the social well-being of citizens within states. Agreements, therefore, on protecting nuclear power facilities whilst ensuring that they will not be used for nuclear-weapon production, are vital, especially if national energy provision is to be diversified. The EURATOM and Argentina-Brazil ABAAC⁶³ arrangements may be important templates for such developments.

The immediate priorities, however, should be:

- Sustaining the momentum generated by the 2010 NPT Review Conference by agreeing metrics and targets for progress in disarmament and nuclear security, both among the P5 and at the April 2012 Nuclear Security Summit in the Republic of Korea; and
- Making progress towards a NWFZ in the Middle East at the conference of interested parties mandated for the same year.

It is relatively easy to identify the disjunction between the nuclear non-proliferation instruments created half a century ago and the weaknesses and gaps in the current international non-proliferation and disarmament regime, and to therefore declare them 'no

⁶² European Atomic Energy Community, www.euratom.org

⁶³ Argentine-Brazil Agency for Accounting and Control of Nuclear Materials (ABAAC)-Agreement between the Republic of Argentina and the Federative Republic of Brazil; for the Exclusively Peaceful Use of Nuclear Energy, signed at Guadalajara, Mexico, 18 July 1991.

longer fit for purpose'. At the same time, it is much more difficult to point to obvious new paths which would correct existing deficiencies and push the global community towards nuclear disarmament and continued non-proliferation. The latter will be especially difficult if the world moves towards new regional security structures. Much depends on how many of, and how far, the trends identified in this paper will evolve. What is clear is that nuclear technology is no longer a dominant force propelling the world towards the apocalypse. Global nuclear war is not inevitable, but equally, the spread of nuclear-weapon knowledge and access to fissile materials means that more states and non-state actors will move towards a latent nuclear-weapon position. Increasingly, therefore, technological solutions to the nuclear non-proliferation puzzle will have to be replaced by political ones, backed up by robust verification measures.



“Let us remember that you are here not simply to avoid a nuclear nightmare, but to build a safer world for all. Many countries have shown great leadership – those that have abolished nuclear weapons, those that have established nuclear-weapon-free-zones, and those that have reduced arsenals. I challenge you to go further still.”

Ban Ki-moon, UN Secretary-General

Address to the 2010 Review Conference of the States Parties to the Treaty on the Non-Proliferation of Nuclear Weapons
3 May 2010

Since it came into force in 1970, the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) has been the cornerstone of the international nuclear non-proliferation regime. Reviewed every five years, this treaty addresses three main issue areas, or pillars: nuclear disarmament, nuclear non-proliferation and the promotion of peaceful uses of nuclear energy. Although the 2010 Review Conference was seen by many as a tactical success, and the NPT diplomatic atmosphere is now much more positive and promising than after the 2005 conference, there is a danger that history will eventually record that it merely postponed another “failure”. Many, for example, have argued that the substance of the 2010 action plan on disarmament offered little scope for progress beyond that agreed in 2000.

In this report, Professor John Simpson asks whether the machinery of the NPT and its associated instruments is capable of handling the challenges facing the international community in the run-up to the 2015 Review Conference. How will changes in the global context, such as the shift of economic power out of the Euro-Atlantic area and the regionalisation of security threats elsewhere, impact on that machinery? Does the diplomatic community have the political will and strategic vision to address the delicate and divisive question of whether the international structures created decades ago to handle both nuclear disarmament and non-proliferation are still ‘fit for purpose’? And, if not, what if anything might replace them?



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