Proceedings of the Inaugural British International Studies Association Global Nuclear Order Working Group Conference:

New Perspectives on Global Nuclear Order

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Information about the British International Studies Association (BISA)
Forward

The BISA Global Nuclear Order Working Group was founded in 2013 to provide a forum in which to bring together a diverse range of UK-based scholars, practitioners and professionals to discuss and debate all aspects of the nuclear world we inhabit, including different approaches to understanding that order; new thinking on key nuclear problems; learning from our nuclear past; and planning for our nuclear future. The group is genuinely interdisciplinary and welcomes contributors from academic and policy worlds.

This collection of short articles is based on longer papers given at the inaugural conference of the British International Studies’ Global Nuclear Order working group, held at the University of Leicester on 19 September 2013. The conference brought together a wide range of UK-based scholars, practitioners and professionals working at NGOs, and culminated with a keynote speech by former UK Secretary of Defence Lord Des Browne of Ladyton. The British International Studies Association and the University of Leicester kindly sponsored the event. The groups’ second annual conference is due to be held in September 2014.

Anyone interested in joining the group should contact the convenors:

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More information on the group can be found at:
http://bisaglobalnuclearorder.wordpress.com
Reflections on Nuclear Order

William Walker

The first, still most impressive book on international nuclear relations, edited by Bernard Brodie and published in 1946, bore the sub-title Atomic Power and World Order. Its authors recognized that the arrival of nuclear technology had radical consequences for military strategy and political order. Although the novelty of nuclear weapons has worn off, the ‘problem of order’ stemming from their existence remains as troubling today as it did nearly 70 years ago. It is certainly more complex.

In Hiroshima’s immediate aftermath, a persistent question was how far, if at all, the states system would have to be modified if humankind were to avoid the cataclysm of nuclear war. Some advocated its replacement by a unitary system overseen by world government, ending the competition that drove organized warfare. Others proposed that, without altering the states system’s fundaments, nuclear technology and materials should be placed under a special form of global governance, putting them beyond the reach of individual states. Still others, including Brodie, maintained that global solutions were neither required nor desirable. Indeed, rather than remove nuclear weapons from the scene, they provided states – particularly the United States, of course - with a uniquely effective instrument of deterrence and power play that could be used to ‘contain’ enemies and prevent a repetition of the great wars just experienced.

The order that emerged a couple of decades later was an amalgam of these proposals. The great powers would practise nuclear deterrence and offer their allies its protection, retaining freedoms and granting themselves legal rights to develop and deploy the nuclear forces as they saw fit – rights confirmed by the Nuclear Non-Proliferation Treaty (NPT) of 1970. In contrast, the majority of states would desist from acquiring nuclear weapons, their renunciations formalized by membership of this same Treaty, and would


3 The Acheson-Lilienthal Report of April 1946 provided the most detailed examination of this idea. Bernard Baruch’s controversial reworking of the Report was presented to the UN in June 1946. The lesser-known Gromyko Plan of the same month (the USSR’s response) was in some ways the most interesting proposal, not least because it provided the outline of a draft treaty banning nuclear weapons.
4 Brodie wrote in 1946 that the ‘passionate and exclusive [his italics] preoccupation of some scientists and laymen with proposals for “world government” and the like – in which the arguments are posed on an “or else” basis that permits no question of feasibility – argues a profound conviction that the safeguards to security formerly provided by military might are no longer of any use.’ He disagrees with them.
submit their nuclear activities to extensive international scrutiny. The ‘managed systems’ of deterrence and abstinence that I have described elsewhere developed their own characters and processes within this architecture. They had to be connected, however, so that an overarching order could be established that entrenched cooperation and conferred legitimacy on non-proliferation norms, rules and processes amidst so much inequality. Hence the NPT’s bargains, security assurances, the joint regulation of nuclear trade, and the routine public assertions – reflecting the NPT’s Article VI – that complete nuclear disarmament must remain the ultimate, unalterable objective.

This order gained substance in two periods in particular, stretching roughly from the early 1960s to the mid-1970s and the late 1980s to the mid-1990s. The second period’s remarkable achievements, following the Cold War’s end, included sweeping arms reductions, management of the USSR’s collapse, Iraq’s nuclear disarmament overseen by the UN Security Council, the NPT’s expansion and lifetime extension, reform of the IAEA safeguards system, and negotiation at long last of a comprehensive ban on explosive testing.

Together, these developments brought some optimism that the number and significance of nuclear weapons could be permanently reduced, further proliferation could be avoided, and nuclear activities of all kinds could be subjected to an increasingly pervasive restraint leading, eventually, to the weapons’ elimination.

Today, twenty years later, little of this optimism remains. Rather than dissolving, the system(s) of deterrence – the plural may now be appropriate – is being re-energized by the nuclear build-ups of China and three recently armed states (India, Pakistan and North Korea), by modernisation programmes embarked upon by the established nuclear weapon states, by regional instabilities, and by what increasingly looks like a return to great power rivalry. Confidence in, and the coherence of, the system of abstinence has been injured by these developments, the stresses caused by India, Pakistan and North Korea’s positions outside the NPT, and Iran’s exposure of the Treaty’s and its safeguards system’s shortcomings. On top of this, the cooperative tissue linking the two systems has been torn by the sometimes aggressive pursuit of counter-proliferation and its bracketing with counter-terrorism, the obstruction of multilateral treaty processes, and increasing cynicism about the nuclear weapon states’ declared commitment to arms control and disarmament.

It is therefore not surprising that groups of states, NGOs and individuals have been demanding progress on nuclear disarmament, insisting that it alone can arrest the order’s

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5 The NPT’s membership rules (in Article IX.3) bar entry to states that did not conduct explosive nuclear test before January 1967. States that did not meet this criterion could only accede to it as non-nuclear weapon states.

decay and a slide to catastrophe (now also involving nuclear terrorism in the imagination), that only nuclear abolition is consistent with today’s humanitarian norms and laws, and that it is high time that the nuclear weapon states honoured their Article VI commitments. Some of the loudest voices have come from within the nuclear weapon states themselves, notably the US and UK. There is little sign, however, that the governments and agencies that oversee nuclear weapon programmes, in those countries as in others, are heeding their calls. Moreover, this is a movement driven mainly by institutional actors and the cognoscenti, without the energetic popular support that would worry political and military elites.

If nuclear abolition were acknowledged to be unattainable, a logical response would be to revise the NPT, without discarding the goal of eventual disarmament. Order and survival require a strong regulatory framework that is well adapted to the contemporary political and security environment. Such revision might entail removing the NPT’s loopholes, updating its norms and rules (through reference to the CTBT and Additional Protocol, for instance), adding commitments on negative security assurances, clarifying the responsibilities of nuclear weapon states, and altering membership rules so that some at least of those outside the legal tent were brought into it. In my experience, however, the slightest mention of this option provokes dismay and incredulity – dismay because it implies pragmatic resignation to the continuance of nuclear deterrence, and incredulity because success in negotiation followed by universal ratification is beyond imagination. The presumption that the NPT is ‘unamendable’ holds fast. It should be recalled, nonetheless, that its negotiation of a new treaty would today be focusing attention if the 1995 NPT Extension Conference had given it a finite lifetime.

This leaves ‘muddling through’ as today’s favourite approach in the face of so many obstacles to institutional growth and innovation. Hang on to what you have (the NPT, START etc). Keep trying to overcome obstacles to thwarted projects (the CTBT’s universal ratification, FMCT’s negotiation, creation of a WMD-free zone in the Middle East, North Korean disarmament etc). Seek solutions where particular problems arise (inadequate protection of nuclear sites etc), and avoid making matters worse. Be patient as more propitious times may lie ahead, and a little improvement here or there is better than no

7 It should be recalled, however, that negotiation of a replacement treaty would today be high on the international agenda if the 1995 NPT Extension Conference had given it a finite lifetime (25 years being the most likely duration, causing it to lapse in 2020). It seems unlikely that sufficiently large numbers of Treaty members would willingly concede to the necessary adjustment of Article X.2, granting the Treaty a further lifetime or lifetimes, without having other parts of the Treaty amended.

8 An eloquent if reluctant defence of muddling through is provided by Pierre Hassner, ‘Who killed nuclear enlightenment?’, *International Affairs*, 83:3, May 2007, pp. 455-467.
improvement. This can all seem very sensible. However, better times may not lie ahead, and cautious incrementalism may simply create room for a faster disintegration. We should worry that the time may be approaching when talk of ‘a nuclear order’ no longer seems appropriate. Some might say that it has already arrived.

From long experience of international nuclear affairs, I have learned to mistrust expectations, including my own. It is indeed possible that the future may turn out better than anticipated. Despite many setbacks, the NPT and its safeguards system remain surprisingly resilient, and – most important – the longstanding restraint on the use of nuclear weapons has not been breached, despite obvious dangers that it will be in South Asia and elsewhere. It is just possible that the interim agreement with Iran will become a turning point, beginning the removal of a toxic issue from international nuclear politics, diminishing fears of rampant proliferation in the Middle East, and improving the political climate ahead of the 2015 NPT Review Conference. Such developments can provide opportunity for restoring institutional momentum.

Come what may, it is time for a new generation of scholars and practitioners to bring fresh energy and ideas to the study of nuclear politics and strategy, in the UK as elsewhere. That must include scholars and practitioners in Asia, and above all in China. For the international nuclear order’s future evolution surely depends uppermost on relations between China, India and Pakistan, and China, Japan and the Koreas, and China, Russia and the US. China is becoming the hub, whether the Chinese government likes it or not. Can it become a serious force for restraint and promoter of institutional growth, and would this be welcomed by the US and other governments? Can circumstances be imagined in which China would join the US, Russia and India, among others, in a concert of powers guiding a next stage in the order’s cooperative development? Might the discussion process established recently among the five NPT weapon states lead in this direction, despite its slight achievement to date. Can ways be found of overcoming the many asymmetries that hamper arms control in today’s multipolar environment?

Such a concert is not easily imagined at the moment. Unfortunately, it may take a severe shock to bring about the reinvigoration of arms control and disarmament that so many people and governments crave.

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Nuclear Disarmament in International Relations: a Failure of a Discipline

Dan Plesch

“The rational relationship that existed from the beginning of history to 1945 between force as a means and the ends of foreign policy does not apply to nuclear weapons … But we continue in large measure to think and act as though 1945 did not mark one of the great watersheds of history where a new age began, as distinct from the age that preceded it as the modern age has been from the Middle Ages or the Middle Ages have been from Antiquity.” Hans Morgenthau, typically portrayed as a defining theorist of IR and quintessential classical realist, wrote this in his 1969 book *A New Foreign Policy for the United States*. He goes on to observe that US and Soviet engagement in arms control and disarmament and in the UN itself was in part a response to this reality. Nevertheless, the pervasive view in IR claims that nuclear weapons had helped keep the bipolar world of post-World War II at peace. Advocates of the Long Peace have been blind to the Peaceful Nineteenth Century between 1815 and 1914, when for the first such period since the Dark Ages, there was no general European war. Deterrence became the norm for debate about nuclear weapons. Nevertheless US and Soviet leaders, and the consensual view of the international community at the UN; and leading critics within the states with nuclear weapons, took an opposite view. Namely, that nuclear weapons had to be abolished and conventional weapons controlled - for security not moral reasons.

A key development occurred in 1955, when the Einstein-Russell Manifesto was published. Its eleven signatories concluded that, “In view of the fact that in any future world war nuclear weapons will certainly be employed, and that such weapons threaten the continued existence of mankind, we urge the governments of the world to realize, and to acknowledge publicly, that their purpose cannot be furthered by a world war, and we urge them, consequently, to find peaceful means for the settlement of all matters of dispute between them.” I describe this perspective shared by Einstein and Morgenthau as an ultra-realistic

1 David Franco contributed important research assistance to this project.


perspective, or to name a theory over its first
great proponent 'Einstein Realism'. A defining
priority for Einstein Realists is disarmament,
and in particular nuclear disarmament as a
process by which society can adjust itself to
nuclear weapons. How then has IR discussed
nuclear disarmament? Has it risen to
Morgenthau’s challenge? Has it responded to
Einstein’s warning? A case study of the journal
Millennium begins to provide an answer.

Millennium was selected a subject of
study for number of reasons. It is highly
regarded in IR. It has a large number of articles
and book reviews compared to other journals.
It has an editorial board of students that rotates
each year tending to make it less prone to
editorial stasis and more open to a variety of
ideas. Its theoretical perspective is generally
critical and constructivist in nature tending to
make it more open to ideas critical of
established Western orthodoxy. The analysis is
a fundamental examination of discourse
systems of signification through looking for a
key term: disarmament and its related and
contested counterpart, arms control. At the
outset I assumed that there would be a binary
opposition between perhaps deterrence and
disarmament or a systemic battleground over
meaning in which arms control suppressed
disarmament. However, what the evidence
presents is a hegemonically or self-imposed
silence within Millennium on the subject of
disarmament. From 1971 to 2010, out of some
[4000] total articles and book reviews a total of
twenty-five included the word 'arms control' in
the title, with fourteen including the word
'disarmament' (hence, thirty nine in total).

The near vacuum on disarmament
within the Millennium space indicates not a
failure of a journal but a failure of the discipline
in which it sits. For the yearly ebbs and flows
of Millennium ensure a regular and frequent
influx of what is new in the wider ocean of IR.
Millennium is normally associated within IR
with critical and constructivist approaches
seeking to develop more useful and
sophisticated analyse than those associated with
the forms of realism and liberalism. Thus it
occupies intellectual area where one might find
intellectual space for voices that are in harmony
with the view of the international community at
the UN but at variance with the dominant view
with the major powers. A normative rationale
can be found in the critique of the
securitization theory of the Copenhagen School
that argue that it creates what it is supposed to
reduce.

Better it seems to hope it will go away
by ignoring it. My colleague, David Franco
engaged Millennium’s editorial board in
discussion on disarmament and in reply to a
question of what criteria Millennium applies
when choosing which issues have preference
over others for publication, Millennium’s
editorial board answer was “Millennium does
focus on critical themes of IR - so we’d be
intrinsically more likely to accept an article on
gender than on disarmament, for instance”. A
curious answer when one considers the
contribution of the feminist theorist Carol
Cohn’s 1985 work ‘Sex and Death in the Rational World of Defense Intellectuals’ and many subsequent contributions.5

The disarmament silence in Millennium lets down those concerned with the issue who might reasonably expect to find intellectual sustenance there. Further, by excluding disarmament debates so that they can be presumed not to exist at all, fail in a responsibility to address what is important. Morgenthau and Einstein’s views leads to a rather fuller critique of Millennium in that as a journal it might be expected to engage with the “psychologically painful and politically risky”, to in short pick up this challenge as constructivists and critical theorists.

The absence of these insights of Morgenthau’s from IR debates and those that cite him as a theoretical inspiration raises further questions. Why is it that his presumed realism of Politics and Power is preferred in citations of his work, and even in revisionist analysis such as that of Jeffers there is little attention to this insight? Is it that his later analysis has been found wanting? Or is it too risky for academics to use it professionally in a politically policed discipline. Is this a heresy that the ‘nuclear priesthood’ described by Butler cannot permit? And, what is worse, it is a heresy from one who is a presumed prophet of the priesthood – the heresy of St Paul. To combine scientific and religious analogies, it is as if the Catholic Church cited Galileo in support of its view of astronomy on the basis of Galileo’s statements before he first picked up a telescope, or the remarks of Copernicus before he began his scientific work. The implications of this analysis are indeed serious for any academic who intends their work in IR to be of public value. The charge levelled, I think accurately, by Morgenthau, is that it is not useful to shy away from the most difficult. For IR scholars not to make disarmament and a culture of peace central to the discipline is comparable to theoretical physicists abandoning quantum theory in favour of the study of fluxes.

How then might IR move towards meeting the challenge of disarmament as a part of the social transformation envisaged by Einstein realists? On the wider context, my work “America, Hitler and UN” and the follow-on project with Professor Thomas Weiss on “Wartime History for the Future” – argues that the empirical evidence suggests the decisive contribution during WW2 of Liberal Institutionalism as a Realist necessity in war termination and peace building; rather than, as is usual, that the UN is a Liberal - moral accessory that can be discarded as needed. If that agenda of WW2 revisionism may provide a deep and broad theoretical and normative approach, it is disarmament that addresses the technology. With the support of General Secretary of the UN in Geneva, Ambassador

5 See (http://genderandsecurity.umb.edu/Carol%20Cohn%20Sex%20and%20Death%20in%20the%20World%20of%20Rational%20Defense%20Intellectuals.pdf)
Tokajev and a committee of experts, our student and alumni led research policy group at SOAS has developed a new approach to meet the UN and Non-Aligned Movement requirement for general and complete disarmament to fulfil a key part of the Einstein realist agenda. A starting point is to use best practice for the future. In the area of WMD, the UN Security Council-mandated inspection system imposed on Iraq is a tried, tested and successful mechanism that states could voluntarily adhere to. As such it can fulfil the nuclear dimension of article VI of the NPT-drawing on the experience of the INF and START treaties and the various supplier regimes.

The NPT and other UN decisions also encompasses General and Complete Disarmament. Here too best practice has a great deal to offer. Broadly, the provisions of confidence and security building measures (CSBMs) being developed in the OAS and MERCOSUR have wide applicability, as does the potential of satellite and drone imagery. While land and air exercises and forces covered by the Vienna accords could be developed to encompass both space-launch and naval forces. With the provisions on transparency developed in the Arms Trade Treaty making a significant contribution. While at the lower end of technology there would be an enhanced Programme Of Action on Small Arms and Light Weapons. Taken together these ideas form a concept, a Strategic Concept for the Removal of Arms and Proliferation – or SCRAP. It is in transformative normative efforts of this sort that IR can contribute to the founding and still central mission of IR since 1919 – the prevention of global war, rather than in the hope that fitting nuclear weapons into traditional pre-atomic models is a source of security.

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http://www.soas.ac.uk/staff/staff31644.php

^{6} See www.SCRAPWEAPONS.COM
The Humanitarian Initiative on Disarmament and the 2015 NPT Review Process

Jenny Nielsen

Since the 2010 NPT Review Conference the ‘humanitarian initiative’ addressing the disarmament pillar of the NPT is gaining strength and momentum within the non-proliferation regime, including within the NPT review process. The ‘humanitarian initiative’ is supported by states whom are deeply concerned by the consequences of use of nuclear weapons and who wish to highlight and address the catastrophic humanitarian consequences of nuclear weapons. Stressing the ‘unacceptable humanitarian consequences caused by the immense, uncontrollable destructive capability and indiscriminate nature of these weapons’, the states supporting and engaging in this initiative are re-focusing attention for progress towards the goal of nuclear disarmament on this dimension. The initiative aims to refocus the urgency of renewed attention on disarmament on the basis of the catastrophic and indiscriminate effects of a nuclear weapon detonation, whether by accident, miscalculation or design, which cannot be adequately addressed. In doing so, the initiative stresses the immediate and long-term implications for ‘the environment, socio-economic development, economies and health of future generations’. Instead of focusing on military security issues and calculations, which dominate strategic deterrence assessments, the initiative highlights the consequences of detonation on human security issues including, food, water and resource security.

Growing Momentum of ‘Initiative’

Since the 2010 NPT Review Conference, the humanitarian initiative on nuclear disarmament has gained a broad range of state support and/or engagement in relevant activities, including: NPT NNWS (across various regions/NPT groupings); four NPT NATO member states; and two non-NPT nuclear weapons states (via participation in the 2013 Oslo conference). The 2010 NPT Review Conference Final Document affirmed its states parties’ consensus on the “deep concern at the catastrophic humanitarian consequences of any use of nuclear weapons”. At the 2012 NPT PrepCom, a statement echoing the humanitarian dimension of nuclear disarmament, led by Switzerland, gained the support of 16 states. The 2012 UNGA 67th Session First Committee statement, also led by Switzerland, gained the support of 35 states. On 4-5 March 2013, the Norwegian Ministry of Foreign Affairs, hosted an international conference in Oslo on the humanitarian impact of nuclear weapons, at which 128 states participated, including two non-NPT states (India and Pakistan). At the 2013 NPT PrepCom, a statement, led by South Africa,
gained support from 80 states parties to the NPT. Most recently, at the 2013 UNGA 68th Session First Committee, a statement, led by New Zealand was supported by 125 states of the UNGA. The 2013 First Committee statement co-sponsored by 125 UN states, stressed that ‘the only way to guarantee that nuclear weapons will never be used again is through their total elimination. All states share the responsibility to prevent the use of nuclear weapons, to prevent their vertical and horizontal proliferation & to achieve nuclear disarmament, including through fulfilling the objectives of the NPT and achieving its universality.’

The March 2013 Oslo Conference was fact-based discussion at the Conference on the Humanitarian Impact of Nuclear Weapons, attended by 128 states, ICRC, UN humanitarian organizations and members of civil society. Its stated aim was to ‘deepen collective understanding of consequences’ and concluded that ‘no state or international body could address the immediate humanitarian emergency caused by a nuclear weapon detonation or provide adequate assistance to victims’. The 5 NPT nuclear weapons states, the P5, boycotted the Oslo conference. As indicated by UK FCO e-mails, disclosed via a FOI request by an NGO, the P5 consulted amongst each other and took a collective decision not to participate in the Oslo conference. The stated rationale by the P5 for not participating was concern that the conference ‘will divert discussion away from practical steps to create conditions for further nuclear reductions’ (i.e. the step-by-step P5 process). Furthermore, the P5 explained they already ‘understand the consequences’ of nuclear detonation.

Beyond the P5 declaratory statement, one could argue that the dismissive approach to the humanitarian initiative (as well as the Open-Ended Working Group), but the Oslo conference in particular, is that the P5 are concerned that the initiative will gain further momentum and is the start of process to ban on nuclear weapons. The P5 want to manage the direction and focus of the discourse on disarmament within the P5 process. The dismissive discourse by the P5 in regards to the humanitarian initiative is already having lamentable implications for the NPT review process as such a dismissive approach detrimentally affects ‘atmospherics’ in an already delicate multilateral diplomatic process. The P5 cartel/bloc behaviour and solidarity exhibited and evidenced in respect to their collective decision not to participate in the Oslo conference and their dismissive posture towards the initiative is lamentable and unconstructive to setting a positive tone for multilateral diplomacy. It particularly leads to criticism by some already frustrated NNWS of the NPT review process and adds fuel to arguments promoted by civil society.
**Nuanced support for the ‘humanitarian initiative’: two tracks**

Nuanced and distinct support exists within the ‘humanitarian initiative’. The goals or ends of those distinctly nuanced supporters are at this time very different. The support base for the initiative could be described as two tracks or camps of support. One track of the support base aims at raising awareness of consequences, and wish to promote the reduction of salience of nuclear weapons in security doctrines. This includes those NATO states that are supporting the initiative. These “salience-reduction promoters” argue that the initiative does not undermine existing multilateral or bilateral disarmament mechanisms. The second track of supporters are comprised of some NPT non-nuclear weapons states (and civil society) who reaffirm their abhorrence of nuclear weapons and whose ultimate aim is to delegitimize nuclear weapons on par with CBW & other weapons deemed to be unacceptable. This track of supporters comprise those states (and civil society groups) who see the humanitarian initiative as the pathway to delegitimizing nuclear weapons with an end-state of a ban on nuclear weapons.

Although some civil society groups may be already be branding the humanitarian initiative as a defacto paradigm shift of the social construct on nuclear weapons policy and specifically nuclear deterrence, the extent to which this has replaced the dominant paradigm on how states view nuclear weapons remains very much divided. Four NATO states: Iceland, Denmark, Luxembourg and Norway, co-sponsored statement at 2013 NPT PrepCom; although Japan & Australia did not support 2013 PrepCom statement reportedly due to their sensitivities about extended nuclear deterrence arrangements. The extent to which NATO and nuclear umbrella states can reconcile their support for the 'humanitarian initiative' with their continued dependency on extended nuclear deterrence is an interesting aspect to assess. Are these postures fundamentally compatible?

**Benefits for the non-proliferation and disarmament regime**

Given the cross-regional and cross-grouping support for the humanitarian initiative within both the NPT review process and the broader non-proliferation and disarmament regime, the initiative can induce positive benefits for the regime. As evidenced by India and Pakistan’s participation in the March 2013 Oslo conference, such conferences, separate from the NPT review process, can include engagement of non-NPT states on issues and dialogue relating to nuclear weapons in the broader non-proliferation and disarmament regime. Given the deadlock at the Conference on Disarmament (CD) in Geneva, such processes as external conferences of the humanitarian initiative, hosted by the Norwegian and Mexican governments, can circumvent the current stalemate at CD and facilitate dialogue on these salient issues. The humanitarian initiative is not a competing
process or diversion from the existing disarmament (multilateral P5 process) and arms control (bilateral US-Russia strategic reduction process). The humanitarian initiative can co-exist as a layered approach to complement progress on the disarmament pillar of the NPT and the broader regime. Similar to the multi-layered approach to the non-proliferation pillar and its aims, which include the Nuclear Security Summit process, Proliferation Security Initiative and UNSCR 1540, UN sanctions amongst other unilateral efforts, the regime’s disarmament goal can similarly be complemented by a layered approach of complementary efforts. One clear benefit from the initiative and the dimensions it highlights is the ‘unwrapping’ of the strategic construct and discourse that surrounds deterrence policy and doctrines on the nuclear weapons security discourse. Such unpicking of language may deconstruct the social construct surrounding nuclear weapons policy and may lead to a more honest dialogue on these weapons and their catastrophic power. The reaffirmations of abhorrence and concern with the catastrophic consequences of nuclear use are similarly a positive benefit as commitments to disarmament and non-proliferation. These formal declarations and affirmations by states parties in the NPT review process and in the UN General Assembly can serve as confidence-building measures. Although it could be argued that such declaratory statements are similar to the Iranian fatwa against the development of nuclear weapons, formal statements in multilateral diplomatic fora could indeed serve to build confidence in the intent of states in regards to their views on nuclear weapons.

**Future support for the initiative?**

The Mexican government is hosting the follow-up international conference on humanitarian consequences on nuclear weapons, scheduled for 13-14 February 2014. Whether any of the nuclear weapons states will participate in the Nayarit conference is yet to be determined. Similarly, what NPT states parties formally support and co-sponsored the ‘humanitarian initiative’ statement at the 2014 NPT PrepCom, and the 2014 69th Session of the UNGA First Committee remains unknown. Analysts and regime watchers will be keen to follow how this initiative will develop and potentially have implications for the 2015 NPT Review Conference. This will largely depend on the direction and focus that the initiative will evolve into.

**Conclusion**

The initiative has been described as a ‘train the P5 are not on-board’. To take this analogy further, this ‘train’ could be described to be a train currently comprised of two carriages. Those carriages include the two broad yet distinctly nuanced tracks of supporters of the initiative. If this initiative is not carefully managed, the carriages will separate and this dividing train will lose a significant set of passengers. If the humanitarian initiative is to sustain its broad base of support, particularly
those more ‘moderate’ supporters, including NATO members and those states under extended nuclear deterrence arrangements, and continued momentum, careful management of the initiative is required prevent its 'de-railing'. One could argue that by failing to engage the initiative, the P5, the NWS, are missing an opportunity to engage, influence and gently steer the initiative in a direction or pace they may feel most comfortable with. The P5 could readily engage the humanitarian impact discussions by sharing and showcase insight on emergency and disaster response preparedness and capacity.

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Rising Powers and Nuclear Proliferation: Could IBSA Challenge the Global Nuclear Order?

Marco Vieira & Benjamin Zala

The Global Nuclear Order

The degree of optimism on nuclear weapons issues sparked by US President Obama’s landmark speech in Prague in 2009 and the signing of a new US-Russia Strategic Arms Reduction Treaty in 2010 has declined. A growing number of analysts, and indeed NPT participants, agree that the regime is in crisis, the latest sign of which was the dramatic Egyptian walkout in May 2013 of the preparatory negotiations for the 2015 NPT Review Conference. The core of the crisis is not new. It relates to the unequal distribution of power between non-nuclear weapons states (NNWS) and nuclear weapons states (NWS). This asymmetric relationship was intended to be offset by a firm, yet still unfulfilled, commitment to eventual nuclear disarmament by the latter group (Foot and Walter 2011).

A reluctance to live up to their Article VI obligations on the part of the NWS has slowly but surely eroded the regime of a sense of widespread legitimacy. Not only have the NWS appeared reluctant to begin serious disarmament discussions since the end of the Cold War (it was ironically during the Cold War the US-Soviet summit in Reykjavik in 1986 that the most ambitious disarmament discussions took place) but the period has arguably witnessed a consolidation of their nuclear arsenals. While the United States and Russia may have taken large numbers of strategic weapons out of their stockpiles through the 1990s, this was a reduction from the enormous numbers of the Cold War arms race. These reductions still left these two states with tens of thousands of warheads and others such as the UK and China made moves to upgrade and modernise their own stockpiles. The picture seemed to change following President Obama’s landmark speech in Prague in 2009 in which he promised his administration would “take concrete steps towards a world without nuclear weapons” and “reduce the role of nuclear weapons in our national security strategy, and urge others to do the same” (White House 2009). However the only real step taken since has been the signing of a new Strategic Arms Reduction Treaty with Russia, which while widely viewed as a positive step, still leaves both states with far more nuclear weapons than the other NWS and therefore still a long way of serious global disarmament negotiations.

Given the inequality inherent in the global nuclear order, two potential challenges stand out as possible. One is the challenge of proliferation, the other the challenge of disarmament. The proliferation challenge would occur if rising powers such as Brazil and
South Africa would feel that their status in international society was being sufficiently constrained by their lack of nuclear weapons and moved to withdraw from the treaty and to re-start their former programmes. The disarmament challenge would be more focused on these states using their growing influence across a range of issue areas to seriously increase the pressure on the NWS to live up to their Article VI obligation, perhaps linked with a credible threat of abandoning the treaty in the absence of concrete steps from the NWS over the short-medium term. While the Egyptian walkout from the 2013 preparatory negotiations was generally underreported outside of specialist sources, a similar move from Brazil or South Africa at an NPT review conference would be hugely symbolic and would receive widespread attention. A common IBSA position on the need for greater assertiveness amongst the NNWS, even with India’s position outside of the NPT, could act as a catalyst for a wider NAM pushback against the continued reluctance of the NWS to seriously act on their article VI obligations. The role of states such as Brazil in arguing against the need for all states to sign the Additional Protocol of the NPT that raises the bar on safeguards against proliferation without the NWS first making significant progress on disbarment is a potential early sign of the potential of this kind of IBSA leadership.

**Rising Challengers: BRICS or IBSA?**

While rising powers are nothing new in the history of international society, the particular focus on groupings of rising powers in the current power transition is somewhat unique. The acronyms of BRICS, BASIC, IBSA and others dominate both the public discourse (Goldman Sachs 2003; Penderis 2011) and academic literature (Sotero and Armijo 2007; Narlikar 2010; Vieira 2013). While the vast majority of analysis focuses on the BRICS, it is our contention that if the current power transition is to produce a serious challenge to the established nuclear order it is more likely to come from IBSA than from the BRICS. Both Russia and China are firmly established as gatekeepers (along with the United States, France and the UK) of the nuclear order based around the NPT. Both have nothing to gain from a weakening of the non-proliferation norm or from increased pressure on the issue of nuclear disarmament. It is however the IBSA states who have reason to present a challenge to a nuclear order in which they play an unequal role that contrasts with their growing status as rising powers. Such a challenge can come in two forms. One is from India, Brazil and South Africa separately as rising powers looking to assert themselves in a western-dominated order of which the non-proliferation regime is a central component. The other is as a unified bloc with a common IBSA position on nuclear weapons issues.

The proliferation-based challenge discussed above would occur on an individual
basis. While the reasons why states do or do not proliferate are complex and the subject of much debate (Sagan 19976/7; Jo and Gartzke 2007; Kroenig 2009), one potentially strong driver is the role of nuclear weapons possession as a symbol of status. This is not to say that all states that proliferate are attempting to project great power status (it is doubtful that this is the main motivating factor for North Korea for example) but when, for example, the five permanent members of the UN Security Council happen to also be the five designated NWS under the NPT, it is difficult to avoid the symbolism of great power status being associated with nuclear possession. The link between global status and the possession of nuclear weapons has been regularly reinforced in public statements such as a letter published in *The Telegraph* in 2013 by seven former British defence secretaries linking the UK’s nuclear arsenal directly to its ability to “remain a leading global power” (Robertson et al. 2013). It is for this reason that many are openly discussing the fact that rising powers are likely to re-think their nuclear choices as their structural position in the international hierarchy changes (Kupchan 2012: 185). Nuclear weapons provide an avenue for recognition that few other material capabilities provide. This has been a recurring theme in the politics of India’s nuclear weapons programme and there is little reason to think that a similar attraction will not be at least part of the equation for both Brazil and South Africa in the years to come.

As for IBSA as a bloc representing a unified front against the established nuclear order, the precedent exists in a number of areas. For example, within the NPT, the two IBSA states who are signatories to the treaty have worked in groupings such as the New Agenda Coalition and Non-Aligned Movement (NAM) both of which have maintained pressure on the NWS to disarm. In other areas such as climate change negotiations, the IBSA states have joined with China (in what is referred to as BASIC) from 2009 onwards to ensure South-South solidarity across the four states in eleventh hour negotiations (see Bukovansky et al. 2012: 149). The appeal of a united IBSA challenge to the nuclear order for the three states involved is the leverage found in solidarity. As Amrita Narlikar has put it, one of the big challenges for rising powers is getting the balance right between being a “tall poppy” and a “doormat”; “Tall poppies are likely to get their heads cut off, and doormats are likely to get trodden over” (2010: 161). An agreed IBSA position on the global nuclear order, even if it contains a degree of diversity (eg. Brazil and South Africa remaining NPT signatories for now and India staying outside) in practice, could help the three states avoid either extreme. An IBSA push-back against the nuclear order on the basis of its double standards and inequality would mitigate any one of the three states taking too much ‘heat’ from those with the most to lose from such a challenge.

The main hurdle to a common trilateral position on nuclear weapons is the different
position of India from Brazil and South Africa on the NPT and the fact that the overwhelming focus of attention of previous IBSA meetings has been on issues of development not security. However IBSA summit statements have routinely declared their “commitment to the goal of the complete elimination of all nuclear weapons within a specified timeframe, in a comprehensive, universal, non-discriminatory, verifiable and irreversible manner” (IBSA 2011). As the trilateral diplomacy of IBSA continues and grows in intensity, it is not inconceivable that, not unlike the leaders of NAM during the Cold War, IBSA could become a focal point for the growing resentment against the winners of the global nuclear order. Such a move would cement IBSA’s position as the premier vehicle for Southern solidarity and strength. It could also be used as a mechanism for other regional powers such as Turkey and Indonesia to bandwagon with as they too seek to avoid the fate of ‘tall poppies.’

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Responsibility to Participate? China and Multilateral Arms Control in the Global Nuclear Order

Nicola Horsburgh

Initially an outsider and marginal to global nuclear politics, since joining the Non-Proliferation Treaty (NPT) in 1992 and the Comprehensive Test Ban Treaty (CTBT) in 1996, China has become a valued member of the global nuclear order. Later, in 2004, China joined the Nuclear Suppliers Group, then, from 2004 to 2008, hosted the Six Party Talks, and since 2006, is an active participant in the P5 consultative meetings, the latter laying the groundwork for greater cooperation among the five nuclear weapons states (NWS). On the surface, then, China’s level of commitment to global nuclear order has significantly increased in the 1990s and 2000s. However, China is still criticised by the international community, especially the United States, for not doing enough, and remains tainted by suspected misdemeanours in its nuclear past, most notably nuclear cooperation with Pakistan in the 1980s and 1990s. China also remains cautious about growing pressure for multilateral arms control (MAC), particularly since the new Strategic Arms Reduction Treaty (known as New START) agreement was signed between Russia and the United States in 2012. To date, arms control has largely been a bilateral affair between the United States and former USSR, resulting in treaties like START and the Strategic Arms Limitation Talks (SALT). MAC is seen by many as a step towards realising a nuclear weapons free world (NWFW), a goal outlined by US President Obama in his Prague speech in 2006. This short paper outlines Chinese thinking on MAC, both past and present, and ends with some short-term steps China could potentially take towards MAC.

China and Global Nuclear Order

Before laying-out Chinese positions on MAC, a brief overview of China and global nuclear order is useful. Understanding where China sees its place in nuclear history and its role in global nuclear order offers important insight into the extent to which China feels it ought to participate in MAC today.

Three aspects of China and its relationship with global nuclear order should be noted. First, China greeted the atomic age in the mid to late 1940s in a fundamentally different way to the United States and Soviet Union. For China, unlike the superpowers, nuclear weapons represented ‘paper tigers’: political symbols used to intimidate rather than win wars. In essence, nuclear weapons did not amount to a transformation in military affairs. Archival evidence and Chinese press reports of the time demonstrate that China did not credit the end of the Second World War in the Pacific to the tragic atomic bombings of Hiroshima.
China was also distinctly opposed to the process of creating nuclear order in the 1960s and 1970s, a process led by the United States and the Soviet Union. For China, efforts to create order amounted to an imperialist ‘nuclear monopoly’ freezing the status quo in favour of the superpowers. In essence, a ‘nuclear revolution’ did not quite occur in China, and Beijing stood against superpower initiatives to create an order to govern these weapons.

Second, an important u-turn in China’s nuclear thinking has occurred. Whereas China was once opposed to a number of institutions that underpinned nuclear order, from the late 1980s and through the 1990s, China began to participate in institutions like the NPT and CTBT. This has continued into the 2000s, with China currently taking the lead in developing a P5 glossary of nuclear terms for the NWS. So, where it was once an outsider, by the 1990s and 2000s, China has become a valued member of global nuclear order.

Third, as a rising power, China has growing concerns over image and responsibility. In this vein, important figures in China’s nuclear community, such as PLA General Pan Zhenqiang note China has ‘important responsibilities in fostering a new nuclear world order’. In general, China locates its nuclear responsibility in the restraint and consistency it displays in nuclear strategy, namely an unbroken declaration of No First Use (NFU), de-alerted nuclear forces and a small nuclear arsenal – albeit undergoing slow-paced modernization to keep its forces credible, safe and secure. The second basis for its nuclear responsibility is institutional compliance, through membership of institutions like the NPT. However, China’s self-image, with a small arsenal of around 250 nuclear warheads, is as a ‘second-tier’ nuclear-armed state. As a second tier NWS, China ascribes to itself a lower level of responsibilities compared to the United States and Russia, which have vast nuclear arsenals. So, while China might be rising in international affairs, it also considers itself a smaller NWS with less obligations to go first on MAC and disarmament. This ambiguity, as a rising global power on the one hand, and as a restrained and smaller NWS on the other hand, has

1 For China, the Soviet Red Army concluded the war in the Pacific. This first section is based on work in Nicola Horsburgh, China and global nuclear order, from estrangement to active engagement (Oxford: Oxford University Press, 2014 forthcoming).
2 Arshad Mohammed, ‘China to lead talks on nuclear definitions’, Reuters, 29 June 2012.
4 China is also demonstrating responsibility in the area of nuclear security. See ‘Nuclear Security Summit kicks off in Washington Hu Jintao delivers an important speech’, Chinese Foreign Ministry Affairs, 14 April 2010.
5 These are estimates only, from relevant yearbooks on world nuclear forces provided respectively by SIPRI and the Bulletin of Atomic Scientists. The Chinese government does not offer an official number.
implications for perceived degrees of responsibility in the nuclear context.

**Historical concerns over arms control**

China’s views of arms control have undergone significant transformation. During the Cold War, China regarded arms control between the superpowers as evidence of a ‘nuclear collusion’ to constrain its nuclear weapons development. China thus criticized a number of arms control agreements negotiated between the United States and Soviet Union such as SALT and the Anti-Ballistic Missile (ABM) treaty.

China’s initial position on MAC emerged in the mid-1980s, amidst superpower discussions for the Intermediate Nuclear Forces (INF) Treaty. During the INF negotiations, the USSR called for the involvement of France, the United Kingdom and China. Driven by a fear of entanglement, China piggy-backed on a narrative put forward by France and the United Kingdom that as small NWS it was too early for their involvement, but that the United States and Soviet Union, with the largest nuclear arsenals, had to start disarming and reducing first. Throughout the remainder of the 1980s, China followed this narrative and was vague as to precise numbers the superpowers would have to reduce down for MAC to start. The size of the reduction initially oscillated from 50% to at least 1,000 warheads each.

**MAC and China today**

China’s position has not changed much since the INF discussions. Beijing continues to argue that the onus is on the larger NWS to take a lead on MAC and disarmament. The United States and Russia remain, as they did during the Cold War, the largest NWS, currently accounting for 96% of global nuclear forces. China now frames its position in terms of ‘special’ versus ‘primary’ responsibility, where the former belongs to the United States and Russia as the largest NWS to take a lead in the arms control and disarmament process. China also feels that it already demonstrates an extremely high level of responsibility through restraint (such as NFU, which none of the other NPT recognized NWS maintain) and that this restraint needs to be emulated by others.

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before MAC is possible. Indeed, China was particularly active in the 1990s in promoting an international NFU treaty, an effort that has so far not gained much international traction.

It is important to note that China might have other legitimate reservations about entering into arms control negotiations. First, not all NWS are in agreement on MAC. France, for instance, has expressed opposition to MAC as well as the goal of a NWFZ. Second, there is a high level of distrust in China-US relations, and this acts as an impediment to progress. Serious attempts by the United States to initiate a high-level military dialogue with the Chinese exclusively on nuclear weapons issues have so far failed. In addition, China might be hampered by a sense that the United States cannot keep its word on arms control treaties. Whether this is a fair appraisal of US arms control behaviour is debatable, but Chinese experts point to G.W. Bush’s abrogation of the ABM treaty in 2003, US disruption of the NPT process in the early to mid-2000s, and continued opposition in Congress to ratifying the CTBT.  

Third, the practicalities of arms control need to change before smaller NWS can join-in. Under current counting rules in the New START agreement, the focus is on active warheads, but as Li Bin has noted, China, with a de-alerted nuclear force, does not qualify for such agreements.  

Despite these difficulties, China has made a number of official statements in the late 2000s outlining what it sees as necessary conditions for MAC and a NWFW. The United Nations General Assembly is often the forum for such statements. In September 2009, at a special session on nuclear weapons, former Chinese President Hu Jintao outlined a ‘five-point nuclear proposal’. The proposal included: a need to ‘maintain global strategic stability and vigorously advance nuclear disarmament’; ‘abandon the nuclear deterrence policy based on first use’; ‘consolidate the nuclear non-proliferation regime’; ‘the right of all countries to the peaceful use of nuclear energy’; and lastly, develop ‘strong measures to enhance nuclear security’.  

Later, in October 2010, Chinese Counsellor Zhang Junan offered four conditions: ‘countries with the largest arsenals should continue to take the lead in making drastic reductions…including the conclusion for a convention on the complete prohibition of nuclear weapons’; abandon deterrence policy based on first use, adopt NFU and conclude an international NFU treaty; sign and ratify the CTBT, and begin negotiations towards an FMCT; and forgo

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10 China also takes stock from their experience of the Chemical Weapons Convention in 1993 –which it ratified without conditions, but the US added last minute changes to its ratification process.

11 Li Bin, ‘China’s potential to contribute to multilateral nuclear disarmament’, Arms Control Today, March 2011.

missile defence systems that undermine ‘global strategic balance and stability’.  

Chinese academic writings have focused on de-emphasising the value of nuclear weapons through negative security assurances, an international NFU treaty, de-alerting nuclear forces, withdrawing nuclear forces deployed abroad, and an end to production of new nuclear weapons.  

In these discussions, the continued value of extended nuclear deterrence in securing a NWFW is often questioned. The benefits and costs of MAC for China are also laid-out. On the one hand, MAC poses serious security challenges for a small NWS, exposing too much vulnerability and potentially damaging second-strike force capabilities. Experts also point to a negative ‘slippery slope’ effect, where arms control negotiations might lead to wider --unwanted--discussions of conventional weapons, space and missile defence. On the other hand, there might be positive gains, especially for image. However, the certainty of these benefits, beyond what China already receives from the P5 mechanism, are unclear.

Small steps towards MAC

While MAC might be to too tall an order at present, there are a number of steps China could consider to show ‘good faith’ in working towards that goal. First, China could continue to keep its nuclear forces off-alert, and simply formulise this with an official declaration. Second, China could officially declare a moratorium on fissile material production, something it does in practice at present without the official declaration. Third, China could ratify the CTBT it signed in 1996. If it cannot do this until India or the United States does so, it could, as noted by some, offer an official expression of intent to do so soon after. Fourth, as noted by Acton and Gerson, China could become an observer in bilateral US-Russia arms control talks, without the pressure to participate itself.

In conclusion, China actively participates in and is a valued member of global nuclear order. But this level of Chinese participation and inclusion is relatively recent. External expectations of Chinese participation in MAC might thus be somewhat inflated. China views itself as a responsible rising power and a ‘second tier’ NWS like France and the United States.

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13 Statement by Counsellors Zhang Junan of the Chinese Delegation on Nuclear Disarmament at the thematic debate at the first committee of the 67th session of the United Nations General Assembly, 18 October 2012.


Kingdom, with fewer nuclear responsibilities compared to the United States and Russia. As in the Cold War, China sees MAC as a problematic process for smaller NWS. China supports the overall goal of a NWFW, and MAC as a way towards that goal, but the United States and Russia need to lay substantially more ground-work before these processes can start. Seen in this light, for now it is premature to expect a fundamental change in the ordering of global nuclear politics and arms control.

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Mixed Messages: US Strategy, Counterforce Capabilities and the Prague Agenda

Jason Douglas

The release of the Obama administration’s Nuclear Weapon Employment Strategy in June 2013 reaffirmed America’s commitment to the counterforce mission, a targeting philosophy which places a premium on large numbers of nuclear weapons, sophisticated delivery vehicles and represents an overly aggressive nuclear strategy considering the current strategic environment. With expanding missile defence systems and growing advanced conventional weapons capabilities, the US, as it appears to other states, is pursuing strategic superiority and others are attempting to remedy the perceived imbalance. This paper argues that the current pattern in U.S. behaviour poses a threat to the Prague Agenda and that other, less menacing, alternatives ought to be considered.

Counterforce Capabilities

The growth in U.S. strategic capabilities appears to be based on a drive for supremacy over its strategic competitors. According to a 2003 RAND report:

What the planned force appears best suited to provide beyond the needs of traditional deterrence is a preemptive counterforce capability against Russia and China. Otherwise the numbers and the operating procedures simply do not add up.¹

There is a connection between missile defenses and offensive nuclear (and, increasingly, advanced conventional) forces, a strategic model first developed under the Bush administration, referred to as the ‘New Triad’.² This linkage was re-affirmed in the Preamble of the New START Treaty.³ The Counterproliferation Organizational Architecture (2002), for example, alluded to the fact that ‘[e]very NBC weapon (WMD) that is destroyed before it is used, is one less we must intercept, or absorb and mitigate.’⁴ Similar to offensive counterforce capabilities, missile defences are designed to intercept incoming warheads and effectively limit the damage an adversary can inflict in a crisis. Hence, they can be viewed as

² For a discussion of the Bush and Obama policies with regard to nuclear weapons, see Aiden Warren, Prevention, Pre-emption and the Nuclear Option: From Bush to Obama (London: Routledge Studies in U.S. Foreign Policy, 2011).
⁴ “Counterproliferation Organizational Architecture”, p. 6.
‘a type of counterforce.’ A distinction can be made, however, between what might be termed ‘defensive’ counterforce and ‘offensive’ counterforce capabilities. Offensive counterforce capabilities, like nuclear weapons and associated delivery vehicles, are regarded as pre-emptive, and, more controversially, preventive. They are planned to be used to attack military installations, missile silos and their supporting infrastructure before the weapons can be launched in order to limit the amount of damage they can inflict in a war scenario. Missile defences, on the other hand, are designed to destroy these capabilities after they have been launched, and, in which case, there is clear evidence of malign intent derived from missile type and its trajectory.

Carrying out a successful first strike is not an easy proposition and is complicated by a number of factors. As Jan Lodal has argued, the main challenge facing U.S. policymakers and military strategists is not striking a fixed, static target, but rather locating a target which has mobility and can be easily concealed. In order to bolster deterrence, U.S. competitors have made efforts to make their second-strike invulnerable (or at least less vulnerable) to a disarming first strike. Potential Russian and, indeed, Chinese, targets are now mobile making U.S. target planning a much more complicated affair. Russia has deployed the RS-24 mobile ICBM, as well as exploring options for circumventing U.S. missile defences, including a hypersonic, manoeuvrable warhead. Meanwhile, China has developed the DF-31 and DF-31A, a class of mobile, road-based ICBMs equipped with penetration aids to counter U.S. missile defence systems, though according to one Chinese strategist, manoeuvrable warheads are preferable to decoys due to advancements in U.S. technology which can distinguish between warheads and decoys. The mobility of these missiles ensures that, in the event of a crisis, they can be dispersed quickly and concealed, adding greatly to their survivability in the event of a nuclear attack. Advances in U.S. capabilities, specifically improvements in satellite imaging technology and Global Positioning Systems (GPS), as well as increasing accuracy in its offensive forces mean that, in the event of a crisis, conventional forces may be sufficient to destroy Russian and Chinese mobile missiles.

7 See Pavel Podvig, “Would Russia Build a new MIRVed ICBM?”, Russian strategic nuclear forces, <russianforces.org/blog/2010/12/would_russia_build_a_new_mirve.shtml>


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U.S. missile defence capabilities could then, theoretically, absorb the remainder.

**Alternatives**

What is the alternative to the current strategic situation? As the counterforce mission, and the role it demands of U.S. strategic capabilities, is the key determinant of nuclear and conventional force size and structure, it should be the subject of scrutiny. Whilst the Obama administration has eschewed countervalue/minimum deterrence as a viable policy option, it does so on the basis of flawed logic. It is worth noting that although the distinction between targeting philosophies is somewhat hazy, countervalue targeting is seen as more closely aligned to traditional notions of deterrence due to the fact that it is, in essence, a purely retaliatory concept.9 There is little, if any, strategic advantage to be gained from launching a nuclear attack on an enemy’s civilian population, other than to inflict terror and break the spirit and morale of the people. Such an attack would be ‘hyper-destructive but militarily pointless…’ 10 Therein lies its potential deterrent function. The very destructiveness of a countervalue strike will likely be intolerable to the national leadership, and the threat of punishment may be sufficient for it to back down in a crisis. Carrying out such a punishment attack would require a smaller quantity of nuclear weapons and there would be a much less pressing demand for accuracy. Conversely, a counterforce strategy places a premium on retaining large nuclear arsenals by both potential attacker and putative defender; the former to ensure that sufficient weapons are retained to launch as comprehensive a strike as possible on the range of targets, the latter to ensure that, in the event of a first strike by an opponent, there remains a sufficient number of weapons to be able to launch a counter-attack.11 In the event of a nuclear strike, however, particularly with modern, sophisticated nuclear weapons, it seems highly unlikely that the weapons will distinguish between targeting strategies. According to George Perkovich, ‘counterforce targeting with more than 1,000 nuclear weapons would cause millions of civilian casualties even if this is not the specific intention.’12 In any case, U.S. nuclear strategy

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11 While this paper concedes that a so-called ‘splendid first-strike’, that is, a first-strike which cleanly destroys all, or most, of an adversary’s strategic capabilities is highly improbable, what these forces provide the U.S. with is a technological and strategic edge sufficient to alert others to the undoubted advantage they afford the U.S..

has never differentiated between counterforce and countervalue targets and, historically, the US has targeted a combination of both target categories. As James Acton notes, current U.S. nuclear targeting is ‘far from purely counterforce’, and includes a variety of targets to hold at risk in the event of a crisis.\(^\text{13}\)

The application of nuclear deterrence as a defensive tool, and states’ continued reliance on it for their national defence, is often offered as a reason as to why further advances on the road to nuclear disarmament have, thus far, been relatively insubstantial. An equally pertinent reason is the method states choose to deter. Stability might be better reinforced through traditional notions of deterrence as opposed to damage limitation/offensive strategies. There are less provocative ways of deterring an adversary than U.S. policy as it currently stands. As Elbridge Colby and Abraham Denmark argue:

> Stability can emerge between the United States [, Russia] and China if each fields forces that are capable of surviving a first strike and if each is able to credibly demonstrate to the other…that its current and future capabilities are not capable of denying the other side a viable strategic deterrent. As a result, fear of pre-emption and the need to launch weapons early becomes irrelevant, either as irritants in crisis or as dangers in conflict. In this way, the benefits of deterrence can be retained, while minimizing the chances of nuclear escalation and avoiding a competition in the development of offensive and defensive strategic arms that would intensify uncertainties for both sides.\(^\text{14}\)

If deterrence is the sole—or even fundamental—role of a state’s nuclear arsenal, it should neither be excessively confrontational nor overtly threatening.\(^\text{15}\) As such, U.S. policy ‘must not unnecessarily frighten or provoke states such that they undertake measures that increase the possibility of nuclear use.’\(^\text{16}\) A less menacing strategic posture, whatever complexion that may take, is one with which the U.S. can realise its non-proliferation objectives while maintaining U.S. national security. One study has argued that in order to achieve both objectives, the U.S. must abandon


the counterforce mission and adopt a minimal deterrence posture, making nuclear retaliation in the event of nuclear attack the sole role of nuclear weapons.\textsuperscript{17} This would relegate nuclear weapons to playing a role in a ‘self-cancelling mission’ while allaying the fears of others concerning the possibility of a U.S. first-strike. While the Obama administration has already explicitly rejected this approach, it may provide the key to fulfilling the goals laid out in the Prague Agenda in years to come.

Conclusion

A U.S. counterforce nuclear strategy, expanding missile defense assets, as well as growing advanced conventional Prompt Global Strike (PGS) capabilities have alerted others to their potential strategic impact and have produced a level of instability.\textsuperscript{18} This trifecta of offensive and defensive capabilities appears to offer the U.S. an awesome and unparalleled counterforce capability which, combined, would almost certainly pose a grave threat to the military assets and command and control structures of its competitors, or at least convey such an impression to their respective leaderships.\textsuperscript{19} By augmenting its nuclear arsenal with complementary systems far surpassing those of its rivals, the U.S. runs the risk of upsetting strategic stability whilst gaining very little in strategic terms in the process.\textsuperscript{20} Taken together, US capabilities and the guidance which determines their use, run counter to the Prague Agenda and, if not properly remedied, will lead to long terms setbacks for America’s non-proliferation, and national security, objectives. It also risks undermining a key plank in Obama’s foreign policy: the pursuit of global zero. The Obama administration, as well as future administrations, will find it increasingly difficult—if not impossible—to continue to develop these capabilities while at the same time pursuing the Prague Agenda. As the U.S. continues to actively pursue strategic superiority it should not blind itself to the


potential—and real—consequences that such a policy is likely to entail.

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The Importance of Cooperation and Trust Building to the Creation of a Nuclear Weapons Free World

Tim Street

This paper examines what political conditions must be established and what obstacles overcome, in order for the 'official' nuclear weapon states (NWS) under the nuclear non-proliferation treaty (NPT): China; France; Russia; the UK and US to fulfill their nuclear disarmament obligations. The creation of a nuclear weapons free world will require NWS to institute far-reaching legal, political and practical measures in order to convince each other and the international community at large that they no longer possess nuclear weapons. Presently, however, a substantial gulf exists between the political status quo and the conditions that would make global nuclear disarmament possible.

Recent politics and international relations scholarship has stressed the importance of mutual co-operation and trust-building measures to bridge the gulf and reach a nuclear weapons free world. Those groups who most need to build trust - the nuclear weapon decision-making elites across NWS - highly value nuclear weapon systems and thus form the principal barrier to meaningful progress on nuclear disarmament. Conversely, global civil society has been the main driving force behind efforts to introduce democratic control over nuclear weapons and achieve their abolition. I therefore propose that while it is vital to the goal of a nuclear weapons free world that we increase our understanding of how co-operation and trust can be built and maintained between states, we must, alongside this, develop a democratic theory of nuclear disarmament (Benedict, 2008).

Defining nuclear disarmament

Before exploring the politics of nuclear disarmament, it is important to consider the term’s technical meaning. This paper follows the definition of nuclear disarmament as an ‘end state’ in which the process of disarming has been fully completed and there are no nuclear weapons (Anthony, 2011). According to researchers at VERTIC, there are potential scales of irreversibility here so that a considerably ‘higher’ level of disarmament would involve measures directed toward both a state’s warhead stockpile and its supporting nuclear warhead production complex (Cliff et
al, 2011). As Trevor Findlay (2003) points out, the verification and compliance regime for a nuclear weapons free world ‘will need to be more effective than any disarmament arrangement hitherto envisaged’. This is necessary to cope with fears of breakout, which is when a state is suddenly revealed to have a previously hidden nuclear arsenal, produced new weapons or sufficient weapons-usable fissile material (HEU or plutonium). Findlay notes that while meeting these requirements is a ‘tall order’, practical experience of disarmament and improving technologies mean that it is possible. Furthermore, he argues that the ‘good relationships’ between states that will facilitate the negotiation of a nuclear disarmament treaty will also permit the construction of an appropriate verification and compliance system.

The importance of trust for nuclear disarmament

If ‘good relationships’ between states are a necessary condition both of the process leading to disarmament and the maintenance of a nuclear weapons free world, we should further investigate what these relationships might require. For Nicholas Wheeler (2009), the key issue here is for governments to base their security on mutual trust rather than mutual fear- as exemplified by the possession of nuclear weapons. The ultimate purpose of trust building between states is to promote integration and delegitimise the use of force, leading to the growth of a ‘security community’. For Wheeler, even if it were possible to reach zero in an atmosphere of fear and distrust, a non-nuclear world would be a far more dangerous place to live than our current one. This is because of the problem of ‘hedging’ whereby a state might secretly maintain or acquire the bomb, either out of fear that others were doing the same, or that they might do so in the future. Wheeler therefore argues that global nuclear disarmament can lead to a more secure world, but on the critical condition that ‘each step on the road to ‘global zero’ is conceived as a process of trust-building’.

Wheeler draws here on Aaron M. Hoffman’s (2002) definition of trust as an attitude involving a willingness to place the fate of one’s interests under the control of others. This willingness is based on a belief, for which there is some uncertainty, that potential trustees will avoid using their discretion to harm the interests of those trusting. Trust manifests itself in the form cooperation takes so that identifying trusting forms of cooperation requires indicators that are sensitive to its particular features.

In Building Trust (2006), Hoffman outlines how distrust may be overcome through protecting actors from the costs of opportunism by transforming the institutional environment in which they interact. Trusting relationships require strategies that guard rivals from one another at the international level and from opposition groups who object to trusting relations at the domestic level. Decision-makers can be shielded against the fear of betrayal and opportunism through the
provision of: i) ‘effective voice’ in group decisions, meaning reliable opportunities to participate in and influence collective choice over the long-term ii) ‘breathing space’, whereby counterparts help structure agreements in ways that protect leaders against their domestic political opponents. This also diminishes the prospect of leaders being removed from power, which could lead to a new regime that does not want to honour previous agreements.

In order to apply Hoffman’s theory of trusting relationships to the challenge of nuclear disarmament amongst NWS we need to understand several aspects of the global nuclear order. These include: 1) the international military and political dynamics between NWS, past and present; 2) the nature of nuclear weapons systems and the decision-making elites that produce and control them; 3) the history of efforts by global civil society to exert democratic control over nuclear weapons and achieve disarmament.

**International military and political dynamics between NWS**

The US and Russia will have to take the lead and co-operate to reduce the size, role and political-military significance of their arsenals if the project of global nuclear disarmament is to succeed. However, just looking at the rough parity between Russia and the US in terms of the numbers of nuclear weapons they possess distracts us from the significant disparity that exists in terms of their broader strategic power. Russia feels threatened by the US's far superior conventional military capabilities, which under the auspices of NATO, now reach close to its territory.

Elsewhere, Dmitri Trenin (2009) points out that Russia also feels vulnerable in this respect to a rising China, with which it shares a long border on its eastern flank. In order to balance against these perceived threats, Russia has come to heavily rely on maintaining a massive nuclear arsenal for deterrence purposes, while it slowly modernises its outdated armed forces. Indeed, it is this fundamental inequality which both largely explain Russia's heavy reliance on maintaining huge nuclear forces and which prevents any meaningful progress being made towards nuclear disarmament. Russian leaders so keenly feel this inequality because they retain a self-image of their nation as a global power with a right to significant influence in Europe, Asia and the Middle East. Russia's sense of isolation and vulnerability is a result of trying to maintain such ambitions with much-reduced and inadequate resources while seeing the US establish military superiority through incomparable defence spending in order to maintain its ‘global role’ as the ‘world's most powerful actor’ (US DoD, 2010).

To build co-operation and trust between the US and Russia on nuclear disarmament, US decision-makers will thus have to understand and develop empathy with the predicament of their Russian counterparts.
in order to reassure rather than threaten them. Meanwhile, the self-image Russian leaders have of their nation as a global power will have to be transformed in line with their reduced resources. Above all, both parties will eventually have to accept that all nuclear weapon systems are unnecessary and illegitimate in order to provide certainty over each other's intentions and meet their NPT disarmament obligations.

The process of bringing Russian and US nuclear forces down to low numbers on the road to elimination, would, according to Major General Pan Zhenqiang (2009), enable China to join in nuclear disarmament efforts if accompanied by a more benign security environment where China did not feel threatened militarily. Bruno Tertrais (2009) points out that in the event that China joined a US - Russia initiative to begin negotiations for a treaty to eliminate nuclear weapons 'it would be difficult for Paris to stay away'. London's participation would also be likely, principally because of its identification with Washington but also considering its stated support for negotiations on multilateral nuclear disarmament (FCO, 2009).

Nuclear weapons systems and decision-making elites

Nuclear weapons development across NWS generally implies high degrees of secrecy and a lack of accountability and transparency, so that decisions are taken by very small numbers of, often unelected, bureaucrats, experts and specialists. In the 1980s, researchers from Oxford Research Group found that the absence of an effective review process in western, democratic NWS of those shaping nuclear decisions, thus offered 'more similarities than differences' with the process of nuclear weapons decision-making in the then Soviet Union and China (McLean, 1986; Miall, 1987).

More recently, Daniel Deudney (2008), an American political scientist, has described how nuclear weapons have created 'nuclear monarchies' in all nuclear-armed states. Deudney identifies three related reasons for this development: the speed of nuclear use decisions; the concentration of nuclear use decision into the hands of one individual; and the inability of affected groups to have their interests represented at the moment of nuclear use. Overall, the actor-networks managing nuclear weapons have constructed systems that are very resilient to political pressure seeking to introduce democratic accountability and control over them, especially when this involves calls for disarmament.

Democracy and nuclear disarmament

The secrecy surrounding nuclear weapons systems has clearly acted as a brake on the level of public engagement in these matters. When the public is educated about the facts and figures of nuclear weapons, however, this can have a significant impact on their preferences.
For example, evidence from the UK suggests that while Trident is not a political priority for the British public, when people are informed about Trident’s costs and risks their opposition to it increases (Ritchie and Ingram, 2013).

Moreover, research conducted in several democracies, including in Europe, Japan and the US, has found that where anti-nuclear weapons public opinion, protest and civil society activism exists, it has exerted a strong influence on the degree and type of action taken by governments. Civil society action has been significantly responsible for increased cooperation on arms control (Knopf, 1998), the creation of nuclear weapons free zones and moves to ban nuclear testing (Wittner, 2009), the development of a taboo against the use of nuclear weapons (Tannenwald, 2008) and the decision by a number of states to exercise restraint and not seek to acquire the bomb (Rublee, 2009).

These findings complement Thomas Risse-Kappen’s study (1991) of the domestic sources of foreign policy in democracies, which investigated the influence of public opinion on the decision-making processes of the US, France, Japan and Germany, including on nuclear weapons issues. Risse-Kappen found that while variances in political institutions, policy networks, and societal structures accounted for different foreign policy outcomes, support by mass public opinion was essential for civil society to influence decision-making across these states, especially in the process of coalition-building among elite groups.

Concluding remarks

Some, justifiably, argue that today’s nuclear disarmament movement is considerably weaker than in its 1980s heyday and point out that while public opposition to nuclear weapons is widespread, it is relatively shallow (Wittner, 2010). However, the Cold War has long ended and there are significant opportunities for improvements in international security cooperation. Moreover, civil society groups and non-nuclear weapon states, frustrated at the failure of the NWS to fulfill their NPT commitments, are seeking to build fresh momentum for abolition. If the institutions necessary to build co-operation and trust on nuclear disarmament are to be constructed, policymakers in NWS sympathetic to the idea of a nuclear weapons free world will need to take advantage of these opportunities and make common cause with NNWS and global civil society. The alternative may be another century of fear, mistrust and uncertainty under the nuclear shadow.

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UK-France Cooperation on Nuclear Warhead Physics: a Pilot Project for Openness and Transparency?

Peter Burt

A major new bilateral treaty on defence and security co-operation between Britain and France was signed by Prime Minister David Cameron and President Nicolas Sarkozy at the UK – France summit which took place at Lancaster House, London, on 2 November 2010. The treaty was hailed as a significant step forward for defence relations between the two nations, not least because it paved the way for a ground-breaking new joint programme of information sharing and research into nuclear warhead physics.

Subordinate to the main defence and security co-operation treaty, the two leaders signed a fifty year treaty on joint radiographic / hydrodynamics facilities which outlined arrangements for constructing shared infrastructure necessary for undertaking research into a branch of nuclear warhead physics known as hydrodynamics and established a means for allowing the exchange of information within the topic area. The stated purpose of the hydrodynamics treaty is “to collaborate in the technology associated with nuclear stockpile stewardship in support of our respective independent nuclear deterrent capabilities, in full compliance with our international obligations, through unprecedented co-operation”. Research conducted under the auspices of the treaty “will assist both countries in maintaining the safety and reliability of their respective nuclear stockpiles and will improve expertise in countering nuclear terrorism”.

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6 Statement by the Secretary of State for Defence (Dr Liam Fox): ‘Defence Treaties (France)’. Official Record, 2 November 2010 : Column 780.
Despite official claims that the hydrodynamics treaty will allow co-operation between the UK and France to take place in full compliance with international obligations, there are a number of apparent contradictions between the arrangements outlined in the treaty and earlier multilateral treaties aimed at controlling nuclear weapons. This paper explores these contradictions and outlines a potential transparency regime that could help clarify the purpose of research conducted under the hydrodynamics treaty and support on-going international non-proliferation initiatives.

Hydrodynamics treaty arrangements and the 'Teutates' programme

The UK - France hydrodynamics treaty allows for the exchange of information, including classified information, on the safety and security of nuclear weapons, stockpile certification, and counter-nuclear terrorism. In practice, this will take place through a programme of research into nuclear warhead hydrodynamics.

During hydrodynamic experiments warhead mock-ups and component materials are subjected to extremely high temperatures and pressures, created by the controlled use of explosive charges or enormously powerful X-rays, to mimic the processes which occur during a nuclear explosion. Under such conditions solid materials exhibit flow properties similar to those of liquids and gases, hence the name hydrodynamics for this area of science. Hydrodynamic experiments use powerful high speed flash X-ray machines to capture images recording changes in materials as the experiment proceeds, and the use of more than one X-ray machine in different alignments allows data to be captured in different dimensions. Experimental data can then be analysed using supercomputers to model how a nuclear warhead would behave during a real nuclear explosion.

Hydrodynamic experiments provide data on warhead performance and safety that was historically obtained from underground nuclear weapon tests. However, data from experiments is 'dual use' in nature and would also be valuable in the design of new warhead types.

As part of the co-operation arrangements under the 2010 hydrodynamics treaty, the UK and France have agreed to undertake a programme to jointly build and operate dedicated radiographic and hydrodynamics research facilities. This

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programme has been named 'Teutates'. Under the Teutates programme two separate research facilities will be built, one in France and one in the UK. A major new radiographic / hydrodynamic facility, known as EPURE (Experimentations de Physique Utilisant la Radiographie Éclair) is under construction at the Commissariat à l'énergie atomique - Direction des applications militaires (CEA-DAM) site at Valduc near Dijon in eastern France. The facility will allow hydrodynamic experiments to be undertaken on warhead materials and components, with separate areas for joint use and use by each nation alone. In the UK work on a Technology Development Centre (TDC) is under way at the Atomic Weapons Establishment at Aldermaston in Berkshire. The TDC will develop the necessary radiographic and diagnostic technology for use in the EPURE facility, and will operate as a shared facility between both nations. Participation in the Teutates programme has allowed the UK to cancel construction of its own 'Project Hydrus' hydrodynamics facility at the Atomic Weapons Establishment, with considerable cost savings. The TDC and the first phase of EPURE are scheduled to be commissioned in 2014. Further phases of development will take place at EPURE over the remainder of this decade and into the 2020s to construct a facility that will eventually be able to capture flash X-ray images over three axes of alignment.

Each country will keep full sovereignty over experimental results from the EPURE facility, with separate research areas to enable this, but the possibility of joint experiments and the sharing of experimental information is not precluded by the treaty.

Contradictions with disarmament obligations

The 2010 UK-France hydrodynamics treaty has drawn criticism from some quarters because of apparent contradictions it raises when compared with commitments which both nations have made in support of nuclear disarmament as signatories to multilateral arms control treaties.

Both the UK and France have signed

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and ratified the Treaty on the Non-Proliferation of Nuclear Weapons (Non-Proliferation Treaty – NPT) and the Comprehensive Nuclear-Test-Ban Treaty (CTBT). These treaties were intended as steps on a path towards eventual global nuclear disarmament, and it is reasonable to expect signatory states to comply with their spirit as well as their letter, and not take steps which might be seen to undermine them.\(^\text{13}\)

Article VI of the NPT obliges 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”\(^\text{14}\). How consistent is a fifty year treaty between two nuclear-armed states which is intended to enable nuclear weapon stockpiles to remain operational with a pledge to cease the nuclear arms race “at an early date”?

Perhaps more importantly, the Preamble to the CTBT, which sets out its purpose and aims, recognises the disarmament value of “constraining the development and qualitative improvement of nuclear weapons and ending the development of advanced types of nuclear weapons”\(^\text{15}\). The Final Document agreed by all Parties to the NPT Review Conference in 2010 - including France and the UK - reaffirms this principle and commits signatories to refrain from “nuclear weapon test explosions or any other nuclear explosions, the use of new nuclear weapons technologies and from any action that would defeat the object and purpose of the CTBT”\(^\text{16}\). As nuclear armed states developed stockpile stewardship programmes with the specific aim of obtaining experimental data which could no longer be obtained through underground nuclear weapon tests\(^\text{17}\), it is difficult to see how the Teutates programme outlined in the 2010 UK-France hydrodynamics treaty is consistent with the aims of the CTBT and subsequent commitments.

The UK government, if not the French, is aware of these contradictions. A

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\(^{13}\) A discussion on how the legitimacy of nuclear weapons programmes is lost by actions which are seen to undermine multilateral arms control agreements is beyond the scope of this paper, but readers who are interested in the topic are referred to Nick Ritchie: 'A Regime on the Edge? How Replacing Trident Undermines the Nuclear Non-Proliferation Treaty'. Bradford Disarmament Research Centre, November 2008. [http://www.brad.ac.uk/acad/bdrc/nuclear/trident/Regime_on_the_edge.pdf](http://www.brad.ac.uk/acad/bdrc/nuclear/trident/Regime_on_the_edge.pdf) Accessed 20 November 2013.


A joint facility with France would oblige us to counter accusations, including legal challenges, that it contravened our Nuclear Non-Proliferation Treaty obligations and/or international law. An approach to the UK Foreign and Commonwealth Office for a copy of any legal opinion on the compatibility of the UK-France hydrodynamics treaty with the NPT and the CTBT received the response that the department “does not possess any documents within scope of your request”, suggesting that the government has not taken formal advice on this issue.

**Measures to improve transparency**

Transparency is generally seen as an essential means of establishing legitimacy, and this applies as much in the nuclear weapons context as in any other arena. In order to help reassure sceptics about the legitimacy of the Teutates programme and its compliance with the UK and France’s formal disarmament obligations, the two countries will need to be more open and transparent about research which is to be undertaken through the programme and its purposes. At present there appear to be no plans to disclose information about experiments undertaken using EPURE – the principal research facility for the programme.

This is at odds with other initiatives involving the NPT-recognised nuclear armed states. The Action Plan agreed at the 2010 NPT Review Conference included a commitment for all Parties to the NPT to “apply the principles of irreversibility, verifiability, and transparency in relation to the implementation of their treaty obligations”.

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The five nuclear armed states recognised under the NPT have established a joint initiative on 'Confidence building towards nuclear disarmament and non-proliferation', and one of the areas under discussion through this process is transparency. France – which has been vocal on this issue – is leading an initiative on transparency and reporting on nuclear capabilities.

Although outputs from the P5 initiative on transparency are expected to relate mainly to warhead numbers and deployment, increased transparency on stockpile stewardship arrangements would also be valuable. The United States delegation has given presentations to P5 conferences on stockpile stewardship programmes at the Nevada National Security Area and about its 'Pollux' subcritical underground test. The USA has also published a certain amount of information on its stockpile stewardship programme, including ad hoc press releases on major experiments and a quarterly report giving outline details of stockpile stewardship experiments undertaken during the quarter.

The template used by the US National Nuclear Security Administration for reporting on stockpile stewardship experiments could be adapted by the UK and France to disclose baseline information on hydrodynamics research experiments conducted under the Teutates programme. Following the US model, a meaningful quarterly report for the Teutates programme could include the following information about experiments conducted in the EPURE facility:

- The number of experiments conducted.
- The number of experiments conducted using plutonium components.
- The number of experiments planned for next quarter.

For each experiment, the quarterly report should also disclose whether the experiment was a French, British, or joint experiment, and give a brief summary of its purpose.

Confidence in the integrity of the Teutates programme could be further increased by publishing an annual narrative report on the programme. This report should summarise key

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developments which have occurred during the year and provide information on:

- Future direction of research programmes and significant developments in research work.
- Costs, including annual expenditure at each facility and by each partner nation.
- Safety, including information on abnormal incidents which may have occurred.
- Environment, including information on radioactive wastes generated as a result of experiments and arrangements for managing such wastes.

Reports should be posted on the websites of the appropriate government agencies in each country (the UK Ministry of Defence and CEA-DAM in France) and should be published in both the French and English languages.

Such a reporting framework would represent very much the minimum level of information needed to monitor the Teutates programme effectively, but, compared with transparency standards elsewhere in the French and British nuclear weapons programmes, it represents a realistic standard of reporting which the two nations might reasonably be expected to comply with.

Reporting arrangements of this nature would have the advantage of being relatively simple and straightforward to implement at a minimal cost. They would move the UK and France closer to current best practice in the field as demonstrated by the USA. They would complement and support the initiative on transparency which is taking place as part of the 'P5 process', extending the openness and transparency agenda beyond areas such as warhead numbers and strategy doctrine and into the realm of research work. If successful, the concept could eventually be extended into other areas of stockpile stewardship research undertaken separately by the UK and France, such as high powered laser experiments.

A commitment to report regularly and openly on experiments conducted under the Teutates programme would give France in particular, as the nation leading on transparency within the 'P5 process' an opportunity to blaze a trail and show true leadership on this issue. More importantly, it would act as a valuable confidence building measure to help demonstrate that stockpile stewardship research is being conducted in good faith – and could also help create a climate that, in due course, encourages other nuclear-armed states to follow suit.
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