

# Deterrence to – and Through – “Zero”: Challenges of Disarmament and Proliferation

by

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There is a temptation, when dealing with issues of nuclear disarmament, to approach everything through the prism of Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) – which is often said to require nuclear disarmament on the part of the five nuclear weapons states (NWS, a.k.a. the N-5) recognized by that Treaty. Since it has been a particular interest of mine, however, both in office and subsequently,<sup>1</sup> to disabuse people of such convenient and widely-held, but in fact mistaken, readings of Article VI,<sup>2</sup> I will resist that temptation today.

Instead, I will try here to practice what I have preached elsewhere,<sup>3</sup> putting sterile and unhelpful legal debates aside and addressing the

important question of nuclear disarmament with an eye to its own *policy* merits. After all, no one should take disarmament too seriously if the best thing that can be said on its behalf is that it is arguably required under a certain strained reading of Article VI. Instead, discussions about nuclear disarmament will contribute to its advancement, or at least to the enlightenment of public discourse on the subject, to the extent that disarmament can be approached from the perspective of whether its achievement makes good policy sense to national decision-makers in the real world.

In such matters, staking out some antinuclear moral high ground is not enough, and the policy details matter, a lot. I recently<sup>4</sup> scolded the disarmament community for not caring enough about such practical details, quoting Cold War nuclear strategist Herman Kahn that “[i]t is the hallmark of the amateur and the dilettante that he has almost no interest in how to get to his particular utopia.”<sup>5</sup> Those who take the question of disarmament seriously need to care about such things.

## I. *Future Worlds: Details Matter*

Let me say at the outset that I think a world free of nuclear weapons would indeed be in the United States’ interest. In that regard, at least, I am no opponent of nuclear disarmament, and I support it as a genuine U.S. policy goal. Lest you think that I’m saying more than I actually am, however, I should point out that that’s *not* the same thing as saying that just *any* world free

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<sup>1</sup> See, e.g., “Debating Disarmament: Interpreting Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons,” *Nonproliferation Review*, vol.14, no.3 (November 2007), at 402; “The 2010 NPT Review Cycle So Far: A View from the United States of America,” available at <http://www.state.gov/t/isn/rls/rm/98382.htm>, remarks at Wilton Park, UK (December 20, 2007).

<sup>2</sup> Unfortunately, so generally unquestioned is this conventional wisdom that Article VI confusions extend beyond the ranks of disarmament activists and opportunistic diplomats looking to score rhetorical points in nonproliferation fora and the media, reaching on occasion even those who are in other respects quite penetrating and thoughtful observers of, and participants in, nonproliferation debates. See, e.g., Etel Solingen, *Nuclear Logics: Contrasting Paths in East Asia and the Middle East* (Princeton: Princeton University Press, 2007), at 31, 39, 272, & 299 (asserting without examination that N-5 are in violation of Article VI of NPT).

<sup>3</sup> See “Nuclear Disarmament and the ‘Legalization’ of Policy Discourse in the NPT Regime,” [http://cns.miis.edu/cns/activity/071129\\_nprbriefing/index.htm](http://cns.miis.edu/cns/activity/071129_nprbriefing/index.htm), remarks to conference sponsored by the *Nonproliferation Review* (November 29, 2007); “Christopher A. Ford Responds,” *Nonproliferation Review*, vol.15, no.3 (October 2008), at 418 (replying to reader comments on November 2007 article, *supra*).

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<sup>4</sup> Christopher A. Ford, “A New Paradigm: Shattering Obsolete Thinking on Arms Control and Nonproliferation,” *Arms Control Today* (November 2008), at 12, 16.

<sup>5</sup> Herman Kahn, *On Thermonuclear War* (Princeton: Princeton University Press, 1960), at 7.

of nuclear weapons would be in our interest, or that such a world would necessarily be in the interest of international peace and security more broadly. Details matter, and as I suggested to a conference in Japan last year, disarmament's proponents have yet to make a compelling *moral* case that getting rid of nuclear weapons is a *per se* good.<sup>6</sup>

In my view, disarmament's advocates still need to show that *no* world *with* nuclear weapons would be preferable – in terms of global stability and international peace and security – to *any* world without them. My own suspicion is that this *cannot* be demonstrated, and therefore that while *some* hypothetical future worlds without nuclear weapons would be greatly preferable to our own, *some* would not be.

One foreign diplomat of my acquaintance has joked to me that we must be careful lest we “make the world safe again for large-scale conventional war,” and he has a point. We should remember that nuclear weapons helped *conclude* the bloodiest and most globe-convulsing conflict in human history, and it is not obvious that history would thank us for trading the world of 2009 for a world more reminiscent of 1914 or 1939. I hope, of course, that such a trade-off would not have to be made, and indeed it might not. The point remains, however, that responsible present-day decision-makers need to have more confidence about precisely where nuclear disarmament would take them than can be provided merely by the tautological observation that it would be a world free of nuclear weapons.

We need to remember that despite its almost totemic significance to many proponents, disarmament is *not* itself the goal: rather, the common objective should be a safer, more secure, and more livable world. Not every imaginable scenario without nuclear weapons would be an improvement from this perspective, so if disarmament is to proceed, we need to be confident that we are on the road to creating one of the *good* scenarios. If such confidence is not possible, on the other hand, we may need to be content with a sub-optimal, “best available”

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<sup>6</sup> “In Praise of Complexity: Some Thoughts on Disarmament Ethics in the Real World,” <http://www.state.gov/t/isn/rls/rm/92725.htm>, remarks to 19th Annual United Nations Conference on Disarmament Issues, Sapporo, Japan (August 27, 2007).

world in which there remain at least *some* weapons in *somebody's* hands.

## II. *A Survey of the Landscape*

So is disarmament realistically possible? And is it “saleable” to today's weapons-possessors in the way that it would need to be if “zero” were ever to be achieved?<sup>7</sup> Frankly, I'm not sure. The safest and most accurate answer is clearly: “Not yet, at least.”

### (1) *The United States*

Among the possessor states, nuclear disarmament is perhaps easiest to contemplate from the United States' perspective, for in both absolute and relative terms, we would give up the least in terms of concrete military advantage, or in any kind of more intangible geopolitical status, by eliminating nuclear weapons. Unless

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<sup>7</sup> In this paper, I will generally use “zero” in quotation marks. I do this for two reasons. First, it may be possible to imagine circumstances in which nuclear weapons possessors would reach a state of *functional* zero notwithstanding their possession of a few weapons (*e.g.*, in the presence of a robust defensive regime capable of defeating small-scale attacks). The game-theoretical barriers to reaching such a functional zero would presumably be no less challenging as reaching “true” zero in the absence of defenses, for at that functional zero one's nuclear weapons would seem to have lost their ability to deter. This would make the task of reaching functional zero more interesting, under such conditions, than reaching the final elimination of the last weapons; getting to true zero from functional zero would presumably not be conceptually difficult.

(It is conceivable, I suppose, that the world might achieve some kind of sustainable strategic balance in which today's possessor states did *not* rest at “true” zero, but in which widespread defenses had robbed the remaining small numbers of nuclear weapons of their threatening character as between these possessors. Such a scenario might actually have something to recommend it, insofar as the continued existence of very small arsenals would provide some deterrent effect against the pursuit of nuclear weapons by *new* states, especially those lacking defensive capabilities. Moreover, a regime of *functional* disarmament at levels *above* “true zero” would be one that did not require an essentially perfect verification regime – arguably making such a regime a much more realistic goal than what is demanded by the disarmament community today. This idea deserves a deeper examination than I can offer herein, however.)

Second, as the possibility of “countervailing reconstitution” (see below) suggests, it may be possible to employ *non*-possession of nuclear weapons (coupled with the maintenance of a “responsive” weapons production infrastructure) to produce a sort of “nuclear” deterrence all its own. For these reasons, while “true zero” might have great symbolic significance, its actual strategic-competitive salience may require some qualification depending upon the circumstances. Consequently, I have opted for the use herein of quotation marks when referring to “zero.”

we become weak and complacent in a foolish tumble away from international engagement as a kind of controversy- and risk-averse “post-Bush backlash,” the United States will continue to have plenty of *non*-nuclear military power upon which to rely when we feel our security and our global interests – or the broader interests of international peace and security – require muscularity.

It presumably means *something* that U.S. officials have been willing years to recommit themselves to the eventual achievement of nuclear disarmament, and have begun talking candidly about these issues.<sup>8</sup> It seems safe to say that if the Bush Administration – which has already been accelerating the pace of U.S. nuclear weapons dismantlement<sup>9</sup> – has proven willing to engage in serious and detailed discussions about nuclear disarmament, perhaps the ground is not so sterile after all.

By way of indirectly corroborating evidence, the U.S. military, certainly does not *itself* seem overly attached to its nuclear deterrent missions. If anything, as suggested by a couple of sloppy and embarrassing incidents – the mistaken loading of actual nuclear weapons aboard a B-52 training flight in 2007 and the inadvertent shipment to Taiwan of nuclear weapons-related fuse components in 2006<sup>10</sup> – the U.S. defense establishment seems almost worryingly *disinterested* in its nuclear weapons responsibilities. My own impression is that

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<sup>8</sup> See Josh White, “In Error, B-52 Flew Over U.S. With Nuclear-Armed Missiles,” *Washington Post* (September 6, 2007), at A10, available at <http://www.washingtonpost.com/wp-dyn/content/article/2007/09/05/AR2007090500762.html>; Josh White, “Nuclear Parts Sent to Taiwan in Error,” *Washington Post* (March 26, 2007), at A01, available at <http://www.washingtonpost.com/wp-dyn/content/article/2008/03/25/AR2008032501309.html>.

<sup>9</sup> See, e.g., “Disarmament: Nuclear Disarmament Progress and Challenges in the Post-Cold War World,” remarks by U.S. Special Representative for Nuclear Nonproliferation Christopher Ford to the Second Session of the Preparatory Committee for the 2010 Review Conference of the Treaty on the Non-Proliferation of Nuclear Weapons, Palais des Nations, Geneva (April 30, 2008), available at <http://geneva.usmission.gov/CD/updates/0430USstatementNPT.html>.

<sup>10</sup> See, e.g., *Achieving and Sustaining Nuclear Weapons Elimination*, paper in preparation for 2007 NPT Preparatory Committee (PrepCom) meeting (March 17, 2007), available at <http://www.state.gov/t/isn/rls/other/81943.htm>; *Facilitating Disarmament*, paper in preparation for 2007 NPT PrepCom (March 17, 2007), available at <http://www.state.gov/t/isn/rls/other/81949.htm>.

nuclear weapons are to some extent quietly considered passé in U.S. military circles, and to be a drain of resources and attention from *important* missions such as long-range precision strike, “non-kinetic” attack, “network-centric” warfare, real-time intelligence/operations coordination, military space issues, and *defending* against nuclear weapons attacks that employ ballistic missiles. As James Wirtz concluded in an insightful recent examination of the declining salience of nuclear weapons in U.S. military policy,

“[t]hose involved in the U.S. nuclear weapons program today are clearly engaged in a tertiary defense program. [Former U.S. Strategic Air Command leader and famous nuclear weapons enthusiast General] Curtis LeMay is rolling in his grave.”<sup>11</sup>

In fact, given that even the UK and France have continued efforts to modernize their nuclear forces – for instance, the British decision to build a new generation of Trident nuclear submarines<sup>12</sup> and the continuing French deployment of its own new generation of missile-armed submarines<sup>13</sup> – the United States is apparently today the only country among the N-5 that is *not* modernizing its nuclear arsenal in some fashion. The only effort that the U.S. Government would currently like to pursue in this regard is its “reliable replacement warhead” (RRW) effort, which *doesn’t* involve modernizing delivery systems and is in fact designed to further a goal that ought to be *embraced* by the disarmament community, rather than spurned – namely, reducing the likelihood of the United States feeling that it needs to resume underground nuclear testing. And even RRW has yet to receive the funding it needs from the U.S. Congress, albeit not necessarily

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<sup>11</sup> James J. Wirtz, “United States Nuclear Policy at a Crossroads,” in *Long Shadow: Nuclear Weapons and Security in 21<sup>st</sup> Century Asia* (Muthiah Alagappa, ed.) (Stanford, California: Stanford University Press, 2008), at 111, 114.

<sup>12</sup> See, e.g., UK Secretary of State for Defence and Secretary of State for Foreign and Commonwealth Affairs, *The Future of the United Kingdom’s Nuclear Deterrent* (December 2006), available at [http://www.acronym.org.uk/docs/0612/DefenceWhitePaper2006\\_Cm6994.pdf](http://www.acronym.org.uk/docs/0612/DefenceWhitePaper2006_Cm6994.pdf).

<sup>13</sup> See, e.g., Molly Moore, “Sarkozy Announces Cuts in Nuclear Arsenal,” *Washington Post* (March 22, 2008), at A08, available at <http://www.washingtonpost.com/wp-dyn/content/article/2008/03/21/AR2008032102979.html>.

because the legislature actually favors a resumption of testing.

On the whole, therefore, I tend to think that the issue of nuclear disarmament is a real one for the United States, and that “zero” would not be entirely out of the question. To be sure, not *every* post-nuclear-weapons world would likely be felt to be in U.S. interests, but *some* surely would. If one such scenario could be made reasonably likely, Washington might be willing to go along with “zero” – or even help lead the way there.

As I see it, the biggest obstacle for the United States is *not* the question of whether or not U.S. officials might find it *desirable* to achieve a world free of nuclear weapons. Being able, at least in principle, to answer that question in the affirmative, the real question for American policymakers may in fact be whether such a goal is *feasible* enough to justify the expenditure of scarce resources – high-level attention, bureaucratic and diplomatic elbow grease, and funding – in its pursuit, in an environment in which so many different pressing national and global issues compete for priority. (That, of course, is another reason why friends of disarmament should support close engagement with skeptics in exploring the difficult details. Nuclear disarmament will likely win ever greater support and commitment from the hyperpower to the degree that it can be shown to be realistically *possible*, and not simply a utopian pipe dream to which one pays public diplomacy lip service.)

Nevertheless, even such an American willingness might be only a mixed blessing for the disarmers. To some extent, in fact, it is the United States’ ability to continue as a military superpower *without* nuclear weapons that may make a nuclear weapons-free world anathema to some other nuclear possessor states (or would-be proliferators), which may to some extent prize nuclear weapons precisely for their asymmetric impact against a powerful conventionally-armed opponent.<sup>14</sup> There would thus seem to exist a

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<sup>14</sup> See, e.g., Muthiah Alagappa, “Nuclear Weapons and National Security,” in *The Long Shadow*, *supra*, at 479-81 (noting role of nuclear weapons as deterrent against stronger powers). Such logic, after all, underlay NATO’s assiduous maintenance of nuclear weapons for many years. Faced with a considerable Soviet numerical advantage in terms of conventional forces deployed in Europe, the Western Allies long feared that they had no alternative but to retain the option of using nuclear weapons in the event of a Third

confounding tension here: what would make the most powerful and important nuclear weapons state willing to consider disarmament may make *other* nuclear players less so, and perhaps vice versa.<sup>15</sup> It is not clear how disarmament advocates expect to manage this tension. At any rate, if the Americans *were* to become enthusiastic advocates, it might be interesting to watch some of nuclear disarmament’s erstwhile advocates scramble to develop politically-defensible rationalizations for suddenly demurring.

## (2) *The United Kingdom*

The United Kingdom is an interesting case. At present, the UK seems reasonably serious about moving toward disarmament, and one can hardly contest that London has less obvious a need for a strategic deterrent today than when NATO and the Soviet bloc faced off with bared teeth across the Fulda Gap. Nor do the British seem as concerned with the symbolic currency of nuclear weapons possession, as a supposed barometer of national prestige and status, as their colleagues across the English Channel. Accordingly, British officials have been more willing to explore the question in practical terms than most of their N-5 colleagues, supporting advanced laboratory work with disarmament verification explicitly in mind, and calling for lab-to-lab contacts among the N-5 in order to explore such matters. Perhaps “zero” is in fact saleable for the UK.

To the outside observer, however, it remains an open question what precise role British domestic politics may have played in recent UK overtures about nuclear disarmament, and what this might mean. The British Labour government in late 2006 and early 2007 went through a politically difficult decision to build a

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World War: relying solely upon conventional forces would be to concede defeat in the Central European theater.

<sup>15</sup> It is presumably the case that the wholesale *general* disarmament of U.S. conventional military forces would make countries such as North Korea and Iran less fixated upon developing nuclear weapons capabilities, for there would thereafter be little need to deter the United States. Quite apart from its likely effect in prompting hitherto non-nuclear U.S. allies to consider nuclear weapons for their *own* security in the absence of a meaningful superpower alliance, however – and perhaps its broader destabilizing effect from the perspective of the last-resort compliance enforcement muscle the United States has long provided the international community – such conventional disarmament would presumably make American *nuclear* disarmament vastly harder to “sell” in Washington.

new generation of Trident ballistic missile submarines – a move which cost the Blair government much support among its more pacifist “Old Labour” ranks in Parliament, and which only passed with strong support from the Conservative Party.<sup>16</sup>

The government began stepping up disarmament-related public diplomacy outreach in mid-2007, with two former Campaign for Nuclear Disarmament (CND) members and unilateral nuclear disarmament supporters, then-Foreign Secretary Margaret Beckett and Defence Secretary Des Browne, leading the charge by announcing new British laboratory-based initiatives to study some aspects of how it might be possible eventually to verify the abolition of nuclear weapons.<sup>17</sup> It seems likely that these two officials, in particular, were engaged in some kind of public intra-Labour Party penance for their authorship of the UK’s *White Paper* on the Trident decision, as part of an effort to bring Labour’s parliamentary ranks back into line behind Gordon Brown’s newly-arriving (and in fact unelected) government. If London’s motives were indeed thus so symbolic and party-specific, however, it is not clear the degree to which London’s newfound disarmament enthusiasm would translate into actually supporting “zero” – or whether there is any chance of such policies carrying over to a potential future Conservative government. Certainly for now, the Trident decision itself suggests that Britain intends to maintain a nuclear deterrent force for quite some time, whatever it may feel about the eventual desirability and/or prospects for nuclear weapons abolition.

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<sup>16</sup> See, e.g., BBC News, “Trident plan wins Commons support” (March 15, 2007), available at [http://news.bbc.co.uk/2/hi/uk\\_news/politics/6448173.stm](http://news.bbc.co.uk/2/hi/uk_news/politics/6448173.stm); BBC News, “Trident vote: Labour rebels” (March 14, 2007) (listing 95 Labour MPs who opposed), available at [http://news.bbc.co.uk/2/hi/uk\\_news/politics/6452315.stm](http://news.bbc.co.uk/2/hi/uk_news/politics/6452315.stm).

<sup>17</sup> See UK Secretary of State for Foreign and Commonwealth Affairs Margaret Beckett, “A World Free of Nuclear Weapons?” remarks to the Carnegie International Nonproliferation Conference (June 25, 2007), available at <http://www.carnegieendowment.org/events/index.cfm?fa=eventDetail&id=1004>; UK Secretary of Defence Des Browne, “Laying the Foundations for Multilateral Disarmament,” remarks to the Conference on Disarmament in Geneva (February 5, 2008), available at [http://www.wagingpeace.org/articles/2008/02/06\\_browne\\_m\\_utililateral\\_foundation.php](http://www.wagingpeace.org/articles/2008/02/06_browne_m_utililateral_foundation.php).

### (3) France

French President Sarkozy has recently revealed additional French nuclear weapons reductions and called for a ban on the production of fissile materials for nuclear weapons,<sup>18</sup> while even before his tenure French officials had begun somewhat to raise their diplomatic profile on disarmament issues.<sup>19</sup> Nevertheless, it is not clear what this means, and the less charitable observer might still think Paris is simply playing an awkward and grumpy game of public diplomacy “catch up,” now that the British and Americans at least *talk* about disarmament with such openness. How central are nuclear forces to France’s modern self-image and perceived status and role in the world? It is hard to say, but while the old Gaullist requirement for independent nuclear forces sufficient to permit a sort of strategic triangulation between the two nuclear superpowers would seem to have far less relevance in today’s world than during the Cold War, Sarkozy continues to emphasize the importance to French security of the *force de frappe*.<sup>20</sup>

Conceivably, disarmament could someday be saleable for France – though I’m somewhat skeptical. Paris certainly seems to approach the issue far more warily than London. (In one 2005 publication distributed to foreign diplomats, for instance, Paris carefully refrained actually from committing itself to nuclear disarmament except in the context of achieving the broader – and even *less* likely – goal of establishing a “treaty on general and complete disarmament under strict international control.”<sup>21</sup>) It must also be

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<sup>18</sup> See John Lichfield, “President launches submarine but wants nuclear ban,” *The Independent* (March 22, 2008), available at <http://www.independent.co.uk/news/world/europe/sarkozy-launches-submarine--but-wants-nuclear-ban-799313.html>.

<sup>19</sup> See, e.g., Ministère de la Défense, Secrétariat Général de la Défense Nationale, and Ministère des Affaires Étrangères, *Lutte contra la prolifération, maîtrise des armements, et désarmement: L’action de la France* (Paris, 2005), at 62-71.

<sup>20</sup> See, e.g., Lichfield, *supra*.

<sup>21</sup> *Lutte contra la prolifération, supra*, at 62-63. This 2005 document describes French actions as being “in accordance with the goals of the NPT in terms of nuclear disarmament and of general and complete disarmament, goals which it has adopted as its own ...” *Id.* This is a notable contrast, for instance, to recent UK pronouncements. See, e.g., Foreign & Commonwealth Office, *Disarmament: The UK’s Disarmament Record*, fact sheet prepared for the 2007 NPT Preparatory Committee (undated) (“The UK is committed to working towards a safer world free from nuclear weapons and we stand by our unequivocal undertaking to accomplish their total elimination.”).

said that Russia's newfound regional bellicosity and penchant for *revanchiste* chest-beating will surely make discussion of nuclear disarmament more difficult for the European members of the N-5.<sup>22</sup> Even under the most optimistic of assumptions, however, France's continued commitment to a new generation of ballistic missile submarines – a move antecedent but analogous to the British Trident decision in 2007 – suggests that *if* nuclear disarmament is ever to be saleable in Paris, this will not occur for some time.

#### (4) *China*

China is an even more interesting and ambiguous case. Consistent with the powerful strain in its political culture that regards virtue as being closely related and causally connected to power<sup>23</sup> – a tendency most obvious in the famous “Mandate of Heaven” concept that is said to have underpinned the claimed legitimacy of Imperial dynasties for many centuries – China has been keen to present itself as a paragon of virtue in the international arena, even (or perhaps especially) when its actual conduct has been

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<sup>22</sup> Possession of an independent nuclear capability made some sense for them during the Cold War, when deterring Russian aggression seemed to make it advisable not to depend entirely upon America's potential willingness to sacrifice New York in response to moves against Bonn or Amsterdam. Possession of such a deterrent arguably makes less sense today, but Russia's recent temper tantrums and eagerness to restore at least the *aura* of its threatening Cold War stature surely bode ill for European nuclear disarmament.

In this context, moreover, disarmers should be somewhat cautious about calling for the removal of the very few remaining U.S. non-strategic nuclear weapons (NSNW) based in Europe. Especially if the Russian bear continues its recent ostentatious and opportunistic growling, further nuclear “decoupling” of the United States from its European allies might make British and French disarmament *harder* to sell, not easier – though of course one would *still* have to figure out what to do with the American weapons. Nothing about this is simple. (On the other hand, since Russia seems entirely unwilling to reconsider its continuing prioritization of “tactical” nuclear weapons, the question of a reciprocal NSNW deal would seem unlikely to arise. Since the remaining American weapons in Europe would seem to serve little if any military purpose from Washington's perspective, however – they being instead principally retained for more political purposes of trans-Atlantic “coupling” and NATO cohesion – the new Obama Administration might consider unilateral U.S. reductions, though this would likely come at some cost to alliance relationships with those European governments that hitherto have insisted upon the maintenance of these American weapons on the continent.)

<sup>23</sup> For a more detailed discussion, *see, e.g.*, Christopher A. Ford, “The Past as Prism: China and the Shock of Plural Sovereignty,” *Joint Forces Quarterly*, no.47 (4<sup>th</sup> Quarter 2007), at 14, 16-17.

crudely self-aggrandizing.<sup>24</sup> At any rate, Beijing is very attached to its self-image and self-proclaimed role as the only “real” champion of disarmament among the N-5; it has long claimed to support complete nuclear disarmament, and stridently propounded what it says is a policy of “no first use.” Despite this, however, China is working hard to modernize its nuclear forces, and – while the others have in recent years been making dramatic reductions – China is apparently the only member of the N-5 actually to be *building up* its nuclear forces.<sup>25</sup>

From a disarmament perspective, despite China's dubious role as the only N-5 country to be *increasing* the size of its arsenal – a status which may help explain its opposition to the commencement of negotiations on a Fissile Material Cutoff Treaty (FMCT) at the Conference on Disarmament in Geneva – it is presumably a good sign, at least, that Beijing does not appear to desire a full-scale nuclear arms race with anyone. Chinese policy seems to be limited to using disarmament rhetoric in diplomatic fora to try to induce the Americans and Russians to reduce their arsenals further, while at the same time slowly and quietly building up Beijing's own arsenal.

Just how *far* Beijing intends to build up its weapons stockpile is an open question. Some have argued that China follows a strategy of “minimum deterrence” that seems to calibrate its arsenal to some calculation of what is needed to

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<sup>24</sup> This approach is obviously deeply cynical, but it there is probably more at work here than just hypocrisy. Chinese political culture has prized an ideal of virtue-derived political authority since the time of Confucius. *See id.* To some extent, Chinese leaders probably *need* to believe in their own virtuousness; especially in the face of their inability to justify continued power in democratic terms, such pretensions to virtue are necessary if they are to maintain their political legitimacy.

<sup>25</sup> *See, e.g.*, Chu Shulong and Rong Yu, “China: Dynamic Minimum Deterrence,” in *The Long Shadow*, *supra*, at 161, 172.

Without getting into the details of China's space policy, it bears mention that the same sort of moralistic disarmament posturing, on preventing an “arms race in outer space,” is used there as well, notwithstanding China's recent development (and rather sloppy and irresponsible testing) of space-attack capabilities. *See, e.g.*, Mark Kauffman & Dafna Linzer, “China Criticized for Anti-Satellite Missile Test,” *Washington Post* (January 19, 2007), at A01, available at [http://www.washingtonpost.com/wp-dyn/content/article/2007/01/18/AR2007011801029\\_pf.html](http://www.washingtonpost.com/wp-dyn/content/article/2007/01/18/AR2007011801029_pf.html); Joseph Kahn, “China Confirms Test of Anti-Satellite Weapon,” *New York Times* (January 23, 2007), available at <http://www.nytimes.com/2007/01/23/world/asia/23cnd-china.html?hp&ex=1169614800&en>.

deter attack against China by the United States, Russia, or some other power (India?).<sup>26</sup> Just what “minimum” means, however, is opaque, and China currently seems to feel that more is better – though Beijing seems happy enough with a relatively slow rate of growth, coupled with determined efforts to modernize and increase delivery system survivability through the use of mobile land-based missiles and ballistic missile submarines. U.S. intelligence analyses have estimated that China’s missile force will increase several-fold within the next decade, and will include a sizeable intercontinental force deployed primarily against the United States.<sup>27</sup>

Read in conjunction with China’s longstanding push for nuclear disarmament to reduce *other countries’* nuclear arsenals, one might suspect that Beijing’s real goal is to achieve at least parity with the nuclear superpowers *without* provoking an arms race: building quietly and steadily upward toward the reduced armament levels down to which international disarmament pressures are hoped to push Washington and Moscow. Interestingly, Chinese officials have essentially said as much, at least privately. As one senior diplomat indicated to me when I asked him about this in my previous job, China isn’t interested in talking about slowing its own strategic development, much less disarming, until *at least* the point at which it has reached parity with the United States – and he made no warranties even then.

In reality, therefore, Chinese strategic policymakers do not seem to care *too* much about nuclear disarmament, except inasmuch as propounding such disarmament is useful, at present, in furthering China’s return to the position of geopolitical status that the ancient Middle Kingdom feels is its birthright. For China, advocacy of nuclear disarmament seems to have merely an instrumental value: it is a tool of China’s rise vis-à-vis the other Great Powers, rather than for developing a safer and more secure international environment. Don’t hold your breath for “zero” anytime soon.

##### (5) *Russia*

The most problematic case among the N-5, I would think, is Russia. Here we see two

problems, each of which compounds the other. First, while the Russian arsenal has indeed been significantly reduced since the end of the Cold War, Russia has *increased* its reliance upon nuclear weapons, both in military doctrinal terms and in terms of geopolitical status-posturing. With a still notably dysfunctional conventional military machine that even today – despite an influx of petrodollars, at least prior to the recent decline in oil prices – seems to have a remarkably hard time even against weak adversaries such as Georgia, Russia seems to have decided that it needs nuclear weapons more than ever in order to be reckoned a first-rate power. In Vladimir Putin’s words, “increasing combat readiness of our strategic nuclear forces is one of our biggest tasks.”<sup>28</sup>

Worse still, this dynamic has increasingly overlapped with the Putin regime’s efforts to bolster its political legitimacy, as the country’s fledgling democratic institutions and press freedoms have been systematically undermined, by turning to a swaggering nationalist self-assertion and bellicose evocation of old imperial or Soviet privileges in what Moscow terms its “near abroad.” Nor has the Kremlin been above reviving and milking semi-paranoiac Soviet-era allegations of threatening foreign “encirclement.”<sup>29</sup>

Russia may not be increasing the size of its arsenal, but it is modernizing its nuclear forces as rapidly as it can, and appears to feel it *needs* them more than ever. According to a statement in the year 2000 by the general who headed the Security Council of Russia, for example, it had been concluded – “scientifically forecast,” no less – by officials in Moscow that Russia would be helpless in the face of a presumed NATO attack *unless* it employed nuclear weapons.<sup>30</sup> The prospects for a nuclear “zero” as far as the present government is concerned, therefore, would seem to be almost “zero” indeed.

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<sup>28</sup> Quoted by Yury Fedorov, “Russia: ‘New’ Inconsistent Nuclear Thinking and Policy,” in *The Long Shadow*, *supra*, at 135, 135.

<sup>29</sup> Such worries can sometimes seem remarkably surreal. Official documents indicate, for instance, that Russian planners apparently fear a large scale naval landing operations in the Far East, including offensive moves against Russia by air, space, sea, and land components. Fedorov, *supra*, at 144.

<sup>30</sup> *Id.* at 144 (quoting interview with Colonel-General Victor Yesin).

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<sup>26</sup> See Chu and Bong, *supra*, at 167-71.

<sup>27</sup> See Chu and Rong, *supra*, at 174.

(6) *The Others*

Worryingly, from the perspective of nuclear disarmament, the *non-N-5* weapons possessors seem – if anything – to be even less interested than their NPT-recognized counterparts in the abolition of nuclear weapons. As a recent study led by Muthiah Alagappa, for instance, suggests that nuclear weapons are felt to retain profound security relevance, *particularly* as “foundational insurance in situations of conventional military imbalance” and as “bedrock ‘weapons of the weak’” for states with “existential security concerns” – *i.e.*, presumably *not* the N-5. Nuclear weapons will, this examination concluded, “continue to be relevant [in global affairs] in the foreseeable future.”<sup>31</sup>

(a) *North Korea*

So far, I have only addressed the N-5, but one can’t forget that there are *other* nuclear weapons possessors in the world. For its part, North Korea seems rather more keen on getting rewards for having declared itself willing to disarm than on actually *doing* so, and it continues to refuse accountability for anything other than the plutonium reprocessing effort at Yongbyon it admitted years ago. It apparently remains unwilling to declare and verifiably eliminate its actual nuclear weapons, likely uranium conversion facilities, uranium enrichment effort, and shockingly recent proliferation assistance to countries such as Syria.<sup>32</sup> To be sure, Pyongyang did finally reach some kind of agreement with U.S. negotiators in October 2008 on a verification agreement. It is not clear, however, how much this agreement – if in fact it is implemented – will do to ensure a full resolution of the North Korean problem. North Korea apparently still has declared nothing regarding its uranium or weaponization program, or its assistance to Syria, and the new agreement

<sup>31</sup> *The Long Shadow*, *supra*, from the introduction by Alagappa, at 11 & 23.

<sup>32</sup> See, e.g., Greg Miller & Paul Richter, “U.S. offers evidence of North Korea-Syria nuclear plant,” *Los Angeles Times* (April 25, 2008), available at <http://articles.latimes.com/2008/apr/25/world/fg-ussyria25>; Robin Wright, “N. Koreans Taped at Syrian Reactor,” *Washington Post* (April 24, 2008), at A21, available at <http://www.washingtonpost.com/wp-dyn/content/article/2008/04/23/AR2008042302906.html>; David Sanger & Mark Mazetti, “Israel Struck Syrian Nuclear Project, Analysts Say,” *New York Times* (October 14, 2007), available at <http://www.nytimes.com/2007/10/14/washington/14weapons.html?pagewanted=print>.

provides only for inspections at undeclared sites “based on mutual consent.”<sup>33</sup> Having earlier brought the issue of uranium enrichment to the world’s attention, American officials now seem willing to put off even *trying* to address these issues until later.<sup>34</sup>

<sup>33</sup> “U.S., NK Agree on Draft Verification Plan,” *Arms Control Today* (November 2008), at 27, 28.

<sup>34</sup> *Id.* at 28 (quoting Principal Deputy Assistant Secretary of State Patti McNerney that “the largest program that we are all aware of it’s the plutonium program, so it makes sense to start there.”).

American accusations about a covert uranium program had been a major stumbling block since U.S. officials confronted their North Korean counterparts in 2002 with information indicating the existence of such an effort. In 2007, however – in a development intriguingly coincident with U.S. negotiators’ discovering that Pyongyang’s refusal to discuss uranium could imperil the success of their February 2007 agreement with North Korea on implementing denuclearization – U.S. officials apparently began suggesting to the press that they weren’t so confident that such a uranium program existed after all. See, e.g., Carol Giacomo, “N. Korean uranium enrichment program faces as issue,” *Reuters* (February 10, 2007), available at <http://www.alertnet.org/thenews/newsdesk/N09302593.htm>; David Sanger & William J. Broad, “U.S. Had Doubts on North Korea Uranium Drive,” *New York Times* (March 1, 2007), available at [http://www.nytimes.com/2007/03/01/washington/01korea.html?\\_r=1&adxnml=1&oref=slogin&adxnmlx=1226638772-P1PP3hw7PFwZpyJbDKLx0A](http://www.nytimes.com/2007/03/01/washington/01korea.html?_r=1&adxnml=1&oref=slogin&adxnmlx=1226638772-P1PP3hw7PFwZpyJbDKLx0A); Glen Kessler, “New Doubts on Uranium Effort by North Korea,” *Washington Post* (March 1, 2007), at A1, available at <http://www.washingtonpost.com/wp-dyn/content/article/2007/02/28/AR2007022801977.html>.

Despite the fortuitous discovery of such new doubts, however, even the information publicly available suggests that real reasons remain for concern – and for North Korean accountability. Even apart from the fact that North Korean First Vice Minister Kang Sok Ju in October 2002 apparently to then-Assistant Secretary of State for East Asian and Pacific Affairs James Kelly that North Korea had a uranium enrichment program, former Pakistani President Musharraf revealed that the A.Q. Khan proliferation network had provided North Korea with a number of gas centrifuges designed for uranium enrichment. Additionally, press reports have cited U.S. officials to the effect that evidence obtained in dismantling Libya’s WMD programs pointed toward North Korea as the source for Libya’s uranium hexafluoride. (If true, this would mean that North Korea has a uranium conversion facility for producing feedstock for centrifuge enrichment.) See generally U.S. Department of State, “Adherence to and Compliance With Arms Control, Nonproliferation, and Disarmament Agreements and Commitments” (August 2005), at 87-92, available at [www.state.gov/documents/organization/52113.pdf](http://www.state.gov/documents/organization/52113.pdf); Anthony Faiola, “N. Korea Declares Itself a Nuclear Power,” *Washington Post* (February 10, 2005), available at [www.washingtonpost.com/wp-dyn/articles/A12836-2005Feb10.html](http://www.washingtonpost.com/wp-dyn/articles/A12836-2005Feb10.html); “Khan ‘Gave N. Korea Centrifuges,’” *BBC News* (August 24, 2005), available at [http://news.bbc.co.uk/2/hi/south\\_asia/4180286.stm](http://news.bbc.co.uk/2/hi/south_asia/4180286.stm); “Pakistan and North Korea: Dangerous Counter-Trades,” *IJSS Strategic Comments*, Vol. 8, No. 9 (November 2002).

Perhaps indeed it will prove possible to address the neglected issues at some future date – or perhaps, as one U.S. official has suggested, the process of investigating the plutonium program will fortuitously reveal something useful about undeclared activities and/or facilities.<sup>35</sup> North Korea’s unwillingness to date to countenance anything remotely like what the international community should need in order to declare the outstanding questions successfully resolved, however – coupled with the fact that the self-absorbed dictatorship in Pyongyang has scarcely any other means besides nuclear-related saber-rattling to command the attention of and elicit reactions from the outside world, and the North’s success, in the past, in parlaying *non*-abandonments of its weapons programs into concrete benefits and *de facto* foreign commitments to the regime’s survival – give scant reason for optimism.

(b) *South Asia*

The Indian and Pakistani cases are interestingly complex. The nuclear balance in South Asia is a bilateral local standoff, but it is one complicated by India also having one eye turned toward an emerging strategic rivalry with China and growing dreams of Great Power status, while Pakistan seems to have one turned toward some vague notion of a special role as (for now) the Islamic world’s only nuclear weapons possessor. Weaning both sides of their nuclear weapons in the face of such concerns and role-ascriptions – *on top* of the “usual” sort of bilateral disarmament worries about continued rivalry, a lopsided overall military balance between the two parties, the verifiability of elimination, and the danger of future breakout and potential preemption – is likely to be extraordinarily difficult.

(c) *Israel*

Since Israel has long been attributed with what observers credit as a “robust” nuclear weapons capability,<sup>36</sup> one must also ask whether nuclear disarmament is at all saleable to the embattled Jewish State. Under present and

indeed foreseeable conditions, my guess would be that it isn’t. Resolving tiny Israel’s existential security dilemmas in a way that might make it feel secure enough in abandoning a nuclear insurance policy does not appear likely any time soon.

Nor is any such Israeli degree of comfort even imaginable if the international community remains unable to arrest Iran’s development of the capacity to produce nuclear weapons at will. Israel acted dramatically in 2007 against a secret Syrian nuclear reactor project apparently undertaken in connection with North Korea, but the involvement of Damascus in such clandestine proliferation activities – and Syria’s continuing refusal to clear up the many questions swirling around the issue – may also help ensure that Israel remains distinctly uninterested in “zero” for some time.

(7) *Emerging Threats*

As the Israeli case illustrates, no serious discussion of the prospects for disarmament can ignore the problem of proliferation. N-5 disarmament – or Israeli denuclearization, for that matter – will probably only ever be conceivable if the international community is able to provide *very* solid assurances against proliferation to countries such as Iran. What country, after all, could be persuaded to give up its last nuclear weapons if it could not be confident that new nuclear arsenals would not appear in other countries’ hands? Conceivably, the United States, with its dramatic preponderance of *non*-nuclear military power, might be able to get away with using conventional forces asymmetrically in order to meet or deter nuclear threats – at least for a while, at any rate, perhaps in order to buy time for the reconstitution of a U.S. nuclear deterrent. No other current possessors would probably have this option, however, so unless they were willing to entrust such asymmetric balancing pretty much entirely to the Americans, it is hard to see the prospect of further nuclear proliferation as doing anything other than crippling hopes for nuclear disarmament.<sup>37</sup> The international

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<sup>35</sup> *Id.* at 28 (quoting Assistant Secretary of State for Verification, Compliance, and Implementation Paula DeSutter that in the course of studying the facility at Yongbyon, “we [might] learn things about the uranium program by virtue of that”).

<sup>36</sup> See, e.g., Avner Cohen, “Israel: A *Sui Generis* Proliferator,” in *The Long Shadow*, *supra*, at 241.

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<sup>37</sup> One sometimes hears it said in arms control fora that the unwillingness of the N-5 to do more with regard to disarmament is contributing to proliferation – or at least that one reason why so many countries in the Non-Aligned Movement (NAM) seem unwilling to help *prevent* nuclear weapons proliferation is that the Five have not done more to eliminate their own stocks. To my eye, the former assertion

community's poor record of addressing proliferation challenges through peaceful and multilateral methods bodes ill for the prospects of achieving a nuclear "zero."

#### (8) *Verification*

I will not dwell too much here upon questions of disarmament verification. Suffice it to say that considerable obstacles still remain to being able say that the global elimination of nuclear weapons can be effectively verified. It is possible that verification is not achievable – or at least not to the demanding standards that would surely be required in order to induce today's possessor governments to dismantle their last warheads in confidence that no one would in the future be able confront *them* with the awful choice between capitulation and atomic annihilation presented to Japan in 1945.

##### (a) *Technical Challenges*

It is, for example, a rather difficult and demanding process to dismantle a nuclear weapon under modern safety and security requirements. Nevertheless, it is one well understood – and frequently practiced, at least in the United States, under the accelerated dismantlement program directed by President Bush. A tougher challenge would be actually verifying such dismantlement.

To be sure, there *are* concerted efforts underway to address these verification issues.

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is simply false, but the latter has a degree of truth to it, at least insofar as a startling number of governments *do* seem to be trying to play a kind of nuclear "chicken" with the N-5 governments. Pursuant to this rather risky game of extortion, such governments are, in effect, trying to scare the Five into disarmament by threatening that they will continue to drag their feet and undermine NPT compliance enforcement against Iran unless and until the Five do more.

To the extent that such a strategy is indeed being pursued, it is extraordinarily foolish, however, for condoning nuclear proliferation is the surest way to undercut the very goal of disarmament the strategy purports to serve. (So obviously counterproductive would be such a strategy, in fact, that one might wonder whether the NAM approach is really driven by concern for disarmament at all. One alternative possibility is that the ostensible focus upon N-5 disarmament is instead a politically correct, *post hoc* rationalization for the explicit or implicit decision that Iranian nonproliferation noncompliance either cannot or should not be stopped – or perhaps it is merely so blindly visceral a reaction against the injustice of a world of nuclear "haves" and "have nots" that those possessed by it simply cease to *care* how destructively such inequality ends up being redressed.)

The British government, for instance, announced in 2007 its commencement of new detailed studies of technical methods for verifying warhead elimination and chains of custody for sensitive fissile materials derived from weapons.<sup>38</sup> The UK has also called for expert-level discussions involving scientists from the N-5 countries' nuclear laboratories, in order to exchange perspectives and explore possible routes toward verifiable elimination.<sup>39</sup>

U.S. studies of warhead dismantlement transparency began at the end of the Cold War under President George H. W. Bush, with particularly intense work being done in the late 1990s in anticipation of a possible START III. The U.S. Department of Defense conducted Warhead Monitoring Technology Program (WMTP) exercises in 2001, for example, and U.S. experts have been doing some technological and operational development work on transparency measures since 2003, including WMTP demonstrations between 2002 and 2005. The United States even conducted a fissile material technology transparency demonstration for a delegation of Russian scientists, and since the late 1990s the U.S. national laboratories have been collaborating with their Russian counterparts on measures for verifiable warhead storage and transport tracking.

##### (i) *Verifying Dismantlement*

Nevertheless, I fear there is much to do before even the comparatively simple verification and chain of custody issues can be considered resolved. Any answer to the problem of attribute monitoring, for instance – that is, of demonstrating the presence of weapons-grade plutonium in a declared container of ex-weapons material, yet without revealing information about that material (*e.g.*, precise masses or isotopic ratios) which might be considered sensitive by

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<sup>38</sup> Beckett, *supra* ("Almost a decade ago, we asked the UK's Atomic Weapons Establishment to begin developing our expertise in methods and techniques to verify the reduction and elimination of nuclear weapons. ... Now we intend to build on this work, looking more deeply at several key stages in the verification process ....").

<sup>39</sup> Browne, *supra* ("As a next step, and following on from the AWE research [described by Beckett], the UK is willing to host a technical conference of [N-5] nuclear laboratories on the verification of nuclear disarmament .... We hope such a conference will enable the five recognised nuclear weapons states to reinforce a process of mutual confidence building: working together to solve some of these difficult technical issues.").

its owner – would need to strike a precarious balance: absolutely protecting sensitive host information yet presumably providing enough data for diverse international observers to feel confident that real nuclear weapons are being dismantled, and not just dummies, even dummies that contain nuclear material. To date, measures under examination by UK and U.S. laboratories have – to my knowledge, at least – focused principally upon the first step of assuring the presence of nuclear material.

Today’s various nuclear weapons possessors may each have different ideas of what constitutes sensitive information, and it still is far from certain at this point what the *rest* of the international community would consider data sufficient to give them confidence in the reality of claimed dismantlements and protect the process against sophisticated “spoofing” scenarios. For the dismantlement challenge to be overcome, however, nuclear weapons-possessors’ lowest common denominator of permissibly-disclosable materials information, as well as the level of protection of proliferation-sensitive information that must be demanded by the global nonproliferation community, would have to meet or exceed observers’ minimally-acceptable requirements for a credible verification data set.

If weapons-origin material were expected to be subject to disposition, moreover, this would have to be done in ways that preserve its owner government’s national security information and yet provide internationally-acceptable chain-of-custody and materials accountability certitude throughout. This could be tricky, particularly if the objective is to verify the disposition of material corresponding to a specific *number* of warheads.

Indeed, to the extent that per-warhead plutonium or uranium masses constitute sensitive information – which is certainly true for us in the United States – a verification system might face a paradox. To wit, it could verify that a certain quantity of material had been presented and disposed of, or it could perhaps somehow ascertain that a certain number of warheads’ worth of such material had been processed, but it would be very hard to do *both* of these things at the same time, because permitting observers to

derive mass-per-warhead numbers would compromise sensitive information.<sup>40</sup>

(ii) *Finding the Hidden*

Even if one could work out an acceptable way to handle the verification of dismantlement, however, moreover, one would naturally also have somehow to acquire confidence that what has been dismantled in fact amounted to the *entirety* of all states’ nuclear weapons arsenals – and that there was no fissile material hidden somewhere that could thereafter be secretly made into new weapons.

The ability of any imaginable verification regime to search for hidden nuclear warheads or material outside a country’s “declared stockpile” slated for elimination would likely be quite limited – both as a matter of technology (*e.g.*, the data-quality and access provided by sensors or other information resources, and the accuracy of materials accountancy) and with regard to procedural tools (*e.g.*, the intrusiveness of any inspection rights and the availability of personnel and resources with which to implement what authorities exist).

Even if one *could* find assembled weapons that a sophisticated cheater wished to hide – and with current technology and methods, the advantage would seem to lie profoundly with the violator in this respect – it would be hugely difficult to be confident in the absence of undeclared stocks of fissile material. Indeed, this would be the case in part because the nuclear weapons states *themselves* may be far from sure precisely how much nuclear material they have produced over the years. (See below.) As a result, just at the point when falling overall weapon totals would give even a tiny secret stockpile enormous strategic significance, and thus attractiveness, it would be difficult to be certain that the crucial final step in “zero-based”

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<sup>40</sup> In fact, one might be forgiven for wondering whether monitoring disassembly would really be worth the trouble, as such verification conceivably might not be necessary if one focused only upon controlling nuclear material in a way that steadily moved it out of some kind of “declared stockpile” into non-sensitive forms accountable by means of more ordinary nuclear safeguards methods. This would, paradoxically, involve the disarmament verification regime deliberately *refraining* from specific knowledge of warhead numbers – except at the end point, at which some kind of certified absence of any non-safeguarded material would necessarily imply that one’s warhead count had reached zero – but might be at least somewhat more workable.

disarmament had in fact been achieved and was being maintained.

It is worth noting here that there is a disturbing nexus between the issue of future disarmament verification and the pressing contemporary global security challenge of stopping the proliferation of enrichment and reprocessing technology (ENR). If ENR continues to spread, the corresponding proliferation of “latent” or “virtual” nuclear weapons programs – the so-called nuclear weapons “option” provided by fissile material production capability – would bode ill for the prospects of disarmament verification.

Availability of fissile material has hitherto been the primary “choke point” or “bottleneck” for a nuclear weapons program, and the most significant “pacing” element of a proliferator country’s progress. Widespread availability of ENR capabilities, however, would help change this, because for ENR-capable states, fissile material availability would no longer be such a challenge. This might force potential future disarmament *verifiers* to worry in unprecedented ways not just about monitoring nuclear activities, but also about how to detect the *non*-nuclear-materials-related aspects of nuclear weapons development in order to guard against “breakout” from a disarmament regime.

Such non-nuclear work is likely much harder to detect than fissile material activity, however, and may often be even *more* ambiguously “dual-use” in nature even when one finds it. (In fact, in some instances, the question of precisely what disarmament verifiers should be looking for in this regard could *itself* constitute sensitive information.) This is a conceptual nut that could prove very hard to crack, with respect both to how to provide verification confidence and to how to persuade countries to accept the sort of regime that might hope to accomplish this. To put it bluntly, the less successful the world is in controlling the spread of ENR, the more difficult it will be to verify a future disarmament regime.<sup>41</sup>

The situation would become even more complicated if any former nuclear weapons possessors retained portions of their production

infrastructure under a disarmament regime – as is quite possible if “countervailing reconstitution” (see below) is adopted as part of how a nuclear weapons-free world builds deterrent barriers to “breakout” from a disarmament regime. If a “zero-option” disarmament regime required the maintenance of some such reconstitution capability, verification would become more of a challenge, because the mere existence of a nuclear weapons production infrastructure would not be a *per se* violation for authorized possessor countries.

Instead, it would be necessary to verify that such an infrastructure were not actually being used actually to produce weapons. This might be tricky, particularly because in order for such a capability to serve its deterrent function, the possessor would need to keep its infrastructure in a state of relatively high level of physical and human capital preparedness – necessitating regular training and *de facto* preparation for production. Such readiness would be difficult to distinguish from *actual* preparation for production, especially when the maintenance of such a “turn-key” capability would likely present acute access challenges to inspectors, insofar as it is hard to imagine its possessor would be keen to reveal its details to outsiders – or that doing so would in fact be wise, from a nonproliferation standpoint, even if the possessor were agreeable.

### (iii) *Materials Accountability*

A word is also in order here about the challenge of monitoring and accounting for existing stocks of fissile material around the world – particularly, but by no means exclusively, in current weapons-possessing states. Among the many challenges of disarmament verification will be devising new and improved methods for nuclear materials accountability. It would surely be difficult to feel confident that all nuclear weapons had been eliminated and that no country was preparing for “breakout” from a disarmament regime unless quite a good, detailed understanding had been developed about the production history and current fissile material holdings of all countries with any production capability. Unfortunately, however, current methods probably do not provide the degree of surety that is probably necessary.

To offer but one example, in 2003, Japanese officials admitted that the “material

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<sup>41</sup> This difficulty, of course, has not stopped advocates of unrestricted ENR proliferation from propounding disarmament.

unaccounted-for” (MUF) totals for their pilot plutonium reprocessing plant ran to some 206 kilograms of weapons-usable plutonium over 15 years. (This was in addition to the 70 kilograms unaccounted for at a plutonium-based fuel fabrication plant.) The United Kingdom has also experienced such losses, with the Sellafield plant reporting a total of some 19 kilograms of MUF that same year.<sup>42</sup>

I do not mention this in order to single out Japan and the United Kingdom for opprobrium. That would be unfair, for their nuclear industries are state-of-the-art, and the United States certainly itself had a devil of a time accounting for plutonium at the now-dismantled Rocky Flats nuclear weapons “pit” manufacturing plant in Colorado. These anecdotes are important, however, because they illustrate the point that even for very sophisticated modern operators, it can be *very* hard to account for everything. Such verification work would probably nowhere be harder, moreover, than inside the nuclear weapons manufacturing industries of today’s weapons possessors. The N-5 countries, in particular, have been producing nuclear weapons for many years, the facilities employed were never designed to be subject to international safeguards, and their long years of operation under *previous* generations’ less demanding safety and accountability standards would vastly complicate efforts to ascertain production history and develop detailed materials accountancy. This is surely not simply an N-5 problem, however: to what degree other current weapons possessors could provide usefully detailed overall production data – and today account for all material ever produced – is anyone’s guess.

MUF, therefore, presents a huge challenge for verification in a disarmament regime. It is hard to imagine that the world would feel terribly secure about the elimination of all nuclear weapons if enough fissile material for perhaps *hundreds* of weapons remains forever unaccounted-for worldwide, and indeed MUF

figures continue to rise with every year’s operation of the global nuclear power industry. (This is also another reason why the spread of ENR technology is so dangerous to the cause of disarmament. As more countries get into the business of creating fissile material, even very small margins of error in materials accountancy will create ever-larger uncertainties about how many weapon-equivalents of material remain “out there” somewhere, lost to verification measures and thus theoretically available for “breakout” scenarios.)

If it is to achieve nuclear disarmament, the international community may thus have to develop and implement far better materials accountability standards, technologies, and methodologies than exist today, and it will have to persuade governments around the world to accept their doubtless considerable costs and intrusiveness. And it will have to get much more serious about the disarmament problems presented by the spread of ENR.

#### (iv) *An FMCT Analogy?*

A number of the challenges raised by verification in a potential disarmament regime – particularly one which opted to emphasize special nuclear material controls rather than warhead-specific accountability<sup>43</sup> – would be somewhat reminiscent of those that have arisen in debates over the Fissile Material Cutoff Treaty (FMCT). I have even heard some disarmament advocates argue that after the point of “zero” weapons had been reached, a total nuclear disarmament regime would be “just like an FMCT.” From a disarmament perspective, however, this ought to be worrisome, for the United States concluded in 2004 that no verification regime that could plausibly be imagined to arise out of FMCT negotiations would be able to provide for such a treaty’s effective verification.<sup>44</sup>

To be sure, a nuclear disarmament regime would not face precisely the same tasks that

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<sup>42</sup> For detailed discussions of the MUF problem, see *Falling Behind: International Scrutiny of the Peaceful Atom* (Henry Sokolski, ed.) (Carlisle, Pennsylvania: Strategic Studies Institute, 2008) at 24-32, 101-20, & 233-37; Henry Sokolski, “Rethinking Nuclear Terrorism,” presentation to the Round Table of the Hanns-Seidel Stiftung, “Islamic Terrorism and Means of Mass Destruction,” Wildbad/Kreuth, Germany (January 24-25, 2006), available at <http://www.npec-web.org/Presentations/article060201Rethinking%20Nuclear%20Terrorism.pdf>.

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<sup>43</sup> See the note 40, *supra*.

<sup>44</sup> These arguments have been outlined in *The United States and the Fissile Material Cutoff Treaty*, paper delivered at the Conference on “Preparing for 2010: Getting the Process Right,” Annecy, France (March 17, 2007), available at <http://www.state.gov/t/isn/rls/other/81950.htm>. This conclusion, of course, could be reversed by the new Obama Administration, but that would not in itself affect whether or not the Bush Administration’s contention is correct – which is a question that must be debated on its own merits.

would face an FMCT. It would presumably not, for instance, face the same need to divine the *purpose* for which some quantity of discovered material had been produced, if the production of that material could be shown to have occurred after a fissile production cutoff. Nor would a disarmament regime need to exclude from verification – or at least not for that reason, anyway – material produced prior to a cutoff date, as would an FMCT.

Nonetheless, some disarmament challenges would be not unlike those raised by an FMCT, including: how to manage verification with regard to material intended for “non-proscribed but sensitive” uses; detection of fissile material production at clandestine facilities; and adequate monitoring of declared production. Some challenges, moreover, would likely be notably worse, such as the challenge discussed above of handling materials accountancy and production history at existing fissile material production sites, especially in nuclear weapons-possessing states. (An FMCT, after all, would not have to provide assurances that no nuclear material *anywhere* is being used in a nuclear weapon.)

In my previous job, I heard some diplomats at the Conference on Disarmament agree privately that an FMCT is indeed not *really* verifiable, but argue nonetheless that under the circumstances, it would be “enough” simply to adopt *some* international verification measures. Even if this somewhat cynical approach were felt to be adequate for FMCT purposes, however, it is a “solution” that might be harder to defend as applied to total nuclear disarmament. After all, a successfully-negotiated FMCT would be born into a world in which nuclear weapons still exist in significant numbers. Producing material for more such weapons in violation of an FMCT would be dangerous, and could be destabilizing, especially if it occurs in an NPT non-nuclear-weapons state.

Sneaking such production by a half-baked FMCT verification scheme, however, would not necessarily radically change the global balance of power – at least not initially. The stakes would be vastly higher in a world of *no* nuclear weapons. It would be hard to imagine countries laying their future security on the line in favor of a “zero-option” disarmament regime that promised merely the sort of verification half-measures that some seem to find acceptable today with regard to an FMCT. Friends of

disarmament, therefore, have much work to do in devising better answers to these problems.

#### (b) *Political Challenges*

Quite apart from such “technical” challenges, one cannot forget that verification is essentially useless without compliance enforcement – an endeavor that has not hitherto been the international community’s strong suit, at least by means of multilateral diplomacy. As U.S. officials have been reminding the world in recent years,<sup>45</sup> Arms Control and Disarmament Agency (ACDA) Director Fred Ikle hit the nail on the head in his 1961 *Foreign Affairs* article when he drew attention to the challenge of: “After Detection, What?”

Verification, after all, is a means to an end: the correction of noncompliance and deterrence of future violations. Warning of problems must be timely – that is, it must be given early enough for such notice to give the international community some advantage in taking corrective action. (It would serve little purpose, for instance, for a verification regime to alert the world to one country’s “breakout” from a disarmament regime concurrently with that country’s actual use of nuclear weapons or overt employment of nuclear threats.) More importantly, the detection of a violation must be accompanied by consequences sufficient to correct the problem, or at the very least to ensure that others will not wish to follow the violator’s example. Without the meaningful prospect of effective compliance enforcement, a verification regime would be pointless. Its job must be to facilitate remedies for noncompliance, not merely to document for historians the collapse of the disarmament regime.

Accordingly, even if effective means could be found – as a matter, for instance, of sophisticated technology and clever methodologies – to find and verifiably eliminate all existing nuclear weapons, and to monitor relevant facilities and material stockpiles in such a way that cheating would be detected, actually getting to “zero” would require giving today’s possessor states confidence that any such

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<sup>45</sup> See e.g., “Compliance Assessment and Compliance Enforcement: The Challenge of Nuclear Noncompliance,” <http://www.state.gov/t/vci/rls/rm/57091.htm>, remarks by Principal Deputy Assistant Secretary of State Christopher Ford to the American Branch of the International Law Association, New York, New York (October 22, 2005).

detection would reliably result in effective compliance enforcement. This is yet another reason why the prospects for achieving disarmament may depend so critically upon whether or not the international community is able to meet the proliferation challenges presented by North Korea and Iran. If multilateral mechanisms cannot demonstrate a reliable track record in addressing proliferation threats,<sup>46</sup> who of today's possessors would dream of giving up their nuclear deterrents and entrusting their security to such means?

## II. After "Zero"

It is easy to spell out a long laundry list of the difficulties presented by trying to achieve a nuclear weapons-free world, and perhaps not too hard to make "zero" seem well-nigh impossible. Nevertheless, I do not want to be too much the pessimist, in part because I am not *certain* it cannot be done in a way that makes the world a better place – and if one doesn't take such a possibility seriously enough to explore it, even that possibility will always remain beyond our reach.

One should also remember that the world is a complex and unpredictable place capable of defying our expectations, sometimes in marvelous ways. Amidst the Cold War tensions of the early 1980s, for instance, who would have predicted that the dangerous bloc rivalry would end, and that massive reductions in the superpowers' nuclear arsenals would take place in just a few years' time? One should never rule out unpredicted, "game-changing" developments. "Black Swan" events are not always bad, after all, and Nassim Taleb is no doubt right that the prudent decision-maker should cultivate the conceptual and psychological agility needed to take advantage of the extraordinary and unforeseen.<sup>47</sup>

That said, however, mere *hope* is not a strategy. If it wants today's decision-makers to

take disarmament seriously, the disarmament community cannot simply, in effect, *rely* upon the fortuitous occurrence of some future transformation in global relationships that will miraculously make realistic and attractive what today seems utopian and unfeasible to the leaders whose choices matter most. To that end, friends of disarmament have their work cut out for them in answering the many challenges that skeptics can raise.

### (1) *Disarmament and Proliferation*

In that vein, the remaining sections of this paper will focus upon one aspect of the disarmament challenge that has received relatively little attention to date: the challenge not of *achieving* it but in fact of *sustaining* it. Disarmament, as I have previously observed, faces a significant challenge from the fundamental game-theoretical fact that reducing the number of nuclear weapons in the world, and ultimately bringing it to zero, would likely *increase* the strategic value of possessing a small, "entry-level" nuclear arsenal. Disarmament would, therefore, increase the apparently already dangerously powerful incentive to engage in nuclear weapons proliferation.<sup>48</sup>

In a Cold War world which contained scores of thousands of nuclear weapons divided between superpower blocs caught in an ongoing nuclear standoff, there might well have been felt to be only limited strategic value in possessing a mere handful of such devices. If anything, there might arguably have been some real *danger* in acquiring an "entry-level" arsenal, insofar as while such a small collection might give the possessor little in terms of relative nuclear clout vis-à-vis the massively-armed superpowers, it could greatly increase that country's risk being targeted in a general exchange between them. Such an over-armed and bipolar world is not ours today, however, and for that we should be thankful. (Who would wish a return to the days in which a species-imperiling nuclear holocaust seemed so very possible?) Nevertheless, with reduced overall numbers, the "marginal value" of even a small weapons stockpile has now increased.

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<sup>46</sup> For a general discussion of some of the general weaknesses of multilateral regimes, see Christopher A. Ford, "The Nonproliferation Bestiary: A Typology and Analysis of Nonproliferation Regimes," *New York University Journal of International Law and Politics*, vol.39, no.4 (Summer 2007), at 937, 952-69.

<sup>47</sup> See Nassim Nicholas Taleb, *The Black Swan: The Impact of the Highly Improbable* (New York: Random House, 2007).

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<sup>48</sup> "Disarmament and Non-Nuclear Stability in Tomorrow's World," remarks to Conference on Disarmament and Nonproliferation Issues in Nagasaki, Japan (August 31, 2007), *available at* <http://www.state.gov/t/isn/rls/rm/92733.htm>.

Far from having the N-5's failure completely to disarm be a contributor to nuclear weapons proliferation – as is sometimes alleged on the basis more of faith than of evidence<sup>49</sup> – game theory analysis thus might suggest that U.S. and Russian *reductions* may in fact have made proliferation more attractive.<sup>50</sup> At overall numbers close to “zero,” after all, even the most modest arsenal could make its possessor the nuclear weapons “peer” of the Great Powers. At

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<sup>49</sup> See, e.g., David Krieger & Devon Chaffee, “Facing the Failures of the Nuclear Nonproliferation Treaty Regime” (May 28, 2003), available at [http://www.transnational.org/SAJT/forum/meet/2003/Krieger\\_NNPTreaty.html](http://www.transnational.org/SAJT/forum/meet/2003/Krieger_NNPTreaty.html); Joseph Cirincione, “Strategic Collapse: The Failure of the bush Nuclear Doctrine,” *Arms Control Today* (November 2008), at 20, 24.

<sup>50</sup> This is perhaps one reason why the massive reductions in superpower nuclear arsenals since the early 1990s were accompanied not by a *lessening* of nuclear proliferation threats but by their *exacerbation* – e.g., with the arrival of North Korea, Pakistan, and India among the ranks of acknowledged nuclear weapons possessor states, the acceleration of weapons programs in Iran and Libya, the development of clandestine North Korean nuclear cooperation with Syria, and the continued activities (until its dismantlement) of the A.Q. Khan proliferation network. Were disarmament advocates correct that the existence of massive superpower arsenals is a driver for proliferation efforts by other countries, one would have expected the post Cold War era to see proliferation pressures decline. Their worsening intractability, however, suggests that N-5 disarmament might actually be making small-scale weapons possession *more* attractive.

Paradoxically, moreover, one recent study has suggested that the very success of the arms control community during the 1990s in negotiating the Comprehensive Test Ban Treaty (CTBT) and extending indefinitely the NPT may have *promoted* nuclear weapons proliferation – at least insofar as these moves “increased the incentives for certain countries to openly declare their nuclear weapons status and for others to accelerate acquisition and modernization of their nuclear arsenals.” *The Long Shadow*, *supra*, from the introduction by Alagappa, at 3 & 5.

As U.S. experience even with a non-binding and revocable “policy” moratorium suggests, CTBT may have also had some impact in preventing possessor states from exploring nuclear force postures that might be better adapted to post-Cold War circumstances, making it more difficult to reduce overall stockpile numbers to the extent that current arsenals attempt to make up in available quantity and yield for what they might lack in terms of tailored effectiveness against whatever targets current strategic planners have in mind. The disarmament community’s meta-objective of total disarmament can thus perhaps sometimes work at cross-purposes to its more immediate goal of arms reductions. (The same may be said of opposition to weapons infrastructure modernization of the sort pursued by the Bush Administration, and opposition to the “reliable replacement warhead,” both of which would make it easier for the United States further to reduce its weapons stockpile – not to mention to avoid any future need to resume nuclear testing in order to ensure reliability of the stockpile. See, e.g., Ford, “Disarmament: Nuclear Disarmament Progress and Challenges in the Post-Cold War World,” *supra*.)

“zero” itself, the strategic value of “Weapon One” – the first weapon introduced into a disarmed world – would be enormous indeed. One might call this the “August 1945 problem”: the prospect of being the lone possessor of such weapons in an otherwise nuclear weapons-free world might seem very attractive indeed. Consequently, as nuclear weapons reductions continue and “zero” approaches, the very success of disarmament would likely make the *continuation* of disarmament progress ever more difficult: the more the world would achieve in disarming, the more tempting it would become to cheat.

Disarmament’s role in raising the strategic value (and therefore the attractiveness) of nuclear weapons presents a great challenge. The architects of a disarmed world must ensure that their regime *remains* at “zero” notwithstanding disarmament’s exacerbation of proliferation incentives: a nuclear weapons-free world needs to ensure it can deter attempts at “breakout” precisely at the point when disarmament itself has made proliferation maximally attractive. How such challenges could be met, however, has not been extensively studied, but it needs to be.

## (2) Possible Responses

For purposes of this discussion, I think it is important to assume – here merely for the sake of argument, though the proposition is hardly improbable – that deterring nuclear weapons “breakout” in a disarmed world would require more than simply trusting the U.N. Security Council (UNSC) or some analogous international body to “ride to the rescue” in the event of a breakout attempt. It would of course be marvelous if such a body could be relied upon to decide quickly upon an appropriate remedy and to act rapidly and decisively to return the violator to compliance and deter those who might otherwise follow in its footsteps. Conceivably, some such mechanism could be developed.

Given the so far unimpressive track record of multilateral approaches in dealing with Iran and North Korea, however, for disarmament advocates simply to *assume* the *deus ex machina* of a rapidly-functioning and effective multilateral compliance enforcement system is asking too much. As I have said elsewhere,

“a credible “zero-option” regime must be able to provide some assurances against breakout that do not presuppose both a swift and resolute international consensus against any suspected violator and an unwavering willingness to bear the burdens of decisive response.”<sup>51</sup>

Instead, realistic hopes for disarmament may require to developing a conception of deterrence in a nuclear weapons-free world that channels the natural and structural incentives of nation-state participants towards balancing behaviors that would serve to deprive would-be proliferators of some or all of the strategic gains they might otherwise hope to obtain from developing nuclear weapons.

Arguably, some such dynamics might be found in the maintenance of a radically asymmetrical distribution of *conventional* (i.e., non-nuclear) military power in the hands of one or more actors willing to play the role of systemic “enforcer.” To be sure, having non-nuclear power exist in such concentration, even for the noble purpose of maintaining the disarmament regime, would be controversial. For one, it would surely be viewed as an affront to egalitarian values – which is enough, in some diplomatic circles, to elicit opposition regardless of any substantive merit the idea might have. Such an approach would probably be politically unpopular even if the disarmament regime it underpinned were able to set some kind of limits upon the permissible uses to which this muscle could be put. Nevertheless, it is possible at least to imagine a disarmament regime relying heavily upon particular “trusted” actors’ conventional-warfighting asymmetries to help deter nuclear weapons “breakout” in the interest of international peace and security.

After all, in a sense, the world *already* does this. As tools of last resort, the international community can do little by way of defeating the most serious threats without relying upon the special combat strengths of no more than a handful of countries – principally those in NATO, and most of all the United States. (No one else has anything more than the most rudimentary capability to wage long-range expeditionary warfare.) It is apparently also

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<sup>51</sup> Ford, “Disarmament and Non-Nuclear Stability in Tomorrow’s World,” *supra*.

acknowledged by many governments, at least privately, that America’s preponderant power provides “public goods” for the international community.<sup>52</sup> So it is perhaps conceivable that enforcement in a disarmament regime – and therefore the deterrence of breakout – could be entrusted, as a last resort, to U.S. conventional military muscle.

### (3) *Countervailing Reconstitution*

Apart from (or perhaps in addition to) such a possibility of reliance upon asymmetrically-held and -wielded conventional might, friends of disarmament would do well to consider how a disarmed world might rely upon deterrence of a more decentralized sort to help meet the great challenge of *remaining* at “zero.” Are there any potential *nuclear*-related deterrent balancing effects that might be employed in order to help ensure stability in a nuclear weapons-free world?

There has been much concern raised in recent years about the danger of countries acquiring fissile material production capabilities that would give them a sort of “nuclear weapons option” – as sort of “virtual” nuclear weapons program. (Fissile material availability is generally considered the principal obstacle to, and “pacing element” for, nuclear weapons development.) Usually, the issue of “virtual” nuclear weapons programs is raised out of concern about the implications for global stability of having a growing number of countries possess the capability to begin weapons production essentially on demand.

Those concerns are very real, and underpinned the current U.S. Administration’s wise push to prevent the further spread of fissile material production capabilities.<sup>53</sup> Nevertheless, there is perhaps *one* way in which the existence of at least *some* “virtual” weapons programs might conceivably *help* the cause of disarmament. Specifically, a disarmament regime might be able, to some extent, to rely upon the availability of what I call “countervailing reconstitution”: (a) to help

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<sup>52</sup> See, e.g., the discussion of this point in Muthiah Alagappa, “Asia’s Security Environment: From Subordinate to Region Dominant System,” in *The Long Shadow*, *supra*, at 37, 55.

<sup>53</sup> Remarks by President Bush at the National Defense University (February 11, 2004), *available at* <http://www.whitehouse.gov/news/releases/2004/02/20040211-4.html>.

convince today's weapons-possessors that it is strategically *safe* for them to go to "zero"; and (b) to set up breakout-deterrent dynamics in a world free of nuclear weapons.

Though George Perkovich and James Acton, in their insightful recent survey of disarmament issues, have found a historical antecedent to the idea in the work of anti-nuclear activist Jonathan Schell,<sup>54</sup> in current debates, the notion of "countervailing reconstitution" (CR) grows out of what the Bush Administration has *already* been doing in part to facilitate further reductions in its nuclear stockpile.<sup>55</sup>

At present, the United States maintains some undisclosed number of nuclear warheads *more* than it feels it actually needs at present. It does this in part out of concerns about potential future changes in the strategic threat: should some new threat develop that leads American planners to feel they need to have more weapons on hand than are currently required, the U.S. surplus over current requirements could help meet that need (either in its entirety, or in buying some time in which additional weapons production could be restarted).

Under the Bush Administration, a program was begun to modernize the U.S. nuclear weapons complex, shrinking it but making it more "responsive" (*i.e.*, capable of swiftly resuming weapons production). Significantly, coupled with these improvements, the overall U.S. stockpile is being reduced – and U.S. officials have made clear that it is in part because of the improved "responsiveness" (quick production capacity) of the complex that such reductions are believed possible. The United States, in other words, is moving to some extent from a strategy of relying upon the maintenance of spare, non-deployed "weapons in being" to one that relies upon the capacity of the infrastructure to produce weapons rapidly in response to emerging future threats: productive *capacity* is starting to replace actual nuclear *weapons* as a way of providing a strategic "hedge" against emergent future threats.

The U.S. Government – and by way of full disclosure, I must admit that I am not an entirely

disinterested observer, having myself introduced the idea – has suggested that that CR dynamics might conceivably provide a realistic way to help achieve and maintain nuclear disarmament. To wit, the U.S. has suggested that the ability to produce nuclear weapons in response to a threat might be extended from its current role in facilitating *reductions* (at least in the United States) to a twofold future role in supporting full disarmament.

- First, CR might enable present-day weapons possessors to feel comfortable in going to "zero" because they would have some ability to restart production if someone *else* were discovered to be cheating. (Though "irreversibility" is a nearly talismanic goal of the disarmament community, it might thus actually be the case that *reversibility* provides a surer route to achieving and remaining at "zero.")
- Second, CR might help deter breakout from a disarmament regime – and thus help ensure its survival notwithstanding the greater proliferation incentives that disarmament would *itself* create – by putting would-be violators on notice that any violation would quickly be countered, and presumably more than offset, by the reconstitution of nuclear weapons stockpiles in one or more of today's possessor countries. In effect, the message CR would send to potential violators is: "It's not worth your while. If you try to build some, we'll jump back into the business and either flatly out-compete you or at least vitiate whatever advantage over us you may have hoped to gain by breakout."

To be sure, such potential reliance upon CR to help underpin deterrent-based stability in a nuclear weapons-free world would be very challenging. I remain intrigued by the idea, but it does raise some questions, including the following, some of which have also been sketched by Perkovich and Acton:<sup>56</sup>

- Who, for example, should be permitted a CR capability? The easiest answer might seem to be "not everyone," for even only a small risk of verification regime false-negatives could multiply into prohibitive dangers if *many* countries have the ability, in effect, to

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<sup>54</sup> George Perkovich & James Acton, *Abolishing Nuclear Weapons*, IISS Adelphi Paper (March 1, 2008), at 102.

<sup>55</sup> See Ford, "Disarmament and Non-Nuclear Stability in Tomorrow's World," *supra*.

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<sup>56</sup> Perkovich & Acton, *supra*, at 103-04.

produce nuclear weapons on demand. One might, therefore, try to permit only current weapons possessors this privilege – in part because doing so, and limiting this capability to the N-5 or to most of the current possessors, might have a considerable additional benefit if the availability of CR were necessary for them to agree to “zero” in the first place. Current non-possessors, however, might quarrel with such a *de facto* continuation of a world of nuclear weapons “haves” and “have-nots.” At any rate, the international community’s track record in controlling the spread of fissile material production capabilities is rather mixed, and the world would have to figure out how to keep “virtual” weapons programs from proliferating as well as the weapons themselves.

- Under what circumstances would a CR regime provide breakout-detering stability sufficient to make up for any potential costs that might be imposed by relying upon CR? To what extent, for instance, might CR reduce breakout instabilities in return for exacerbating crisis-stability insecurities (e.g., by creating incentives for CR-possessors, in times of tension, to steal a march upon their rivals by jumping more quickly back into weapons production). Evaluating and balancing these risks against each other could be very complicated – and would presumably be affected by how widely held CR capabilities are in such a regime, and by whom.
- Would it be possible to manage the verification challenges of policing against *real* reconstitution in an environment in which its precisely the *point* that the most capable potential reconstitutors retain the ability to resume production on very short notice? After all, some of the very activity that might be needed to preserve the physical and human capital for on-demand resumption of weapons production would itself probably *look* much like actual production. In any case, production lead times would be deliberately short, making timely notice of violations very difficult to achieve even if suitable monitoring techniques and methodologies could be found. CR presents interesting verification issues.

- Might the existence of CR capabilities create preemption incentives, either for aggressive clandestine violators who have acquired or re-acquired nuclear weapons, or for the possessors of *conventional* forces capable of holding CR assets at risk? What issues of survivability and defense might thus arise?
- With respect to getting current possessors to agree to “zero” in the first place, to what extent could CR help alleviate concerns about the potential emergence of future strategic threats that might lead planners to feel they again had a need for nuclear weapons? Do all current weapons-possessors in fact feel that nuclear weapons today fill strategic needs that are *capable* of being met by the availability of CR? Or are some such strategic requirements – e.g., deterring attack by sophisticated conventional forces that would presumably not be affected by a specifically nuclear disarmament regime – not easily addressable by the availability of countervailing nuclear weapons reconstitution?

If CR did prove promising, moreover, further practical questions would arise about what it would actually *take* – in budgetary, programmatic, technological, and human capital terms – to develop, and to maintain over time, a *non-producing* but *production-ready* reconstitution capability. These issues need to be examined in more detail than they have been to date.

I do not want to suggest that “countervailing reconstitution” would necessarily be an anti-breakout panacea, nor that it is the only approach to the breakout challenge that friends of disarmament ought to be considering. (Also in the disarmers’ “tool kit,” for instance, should probably be ballistic missile defenses and other means of defending against nuclear weapons delivery. By making it harder successfully to *employ* nuclear weapons, such defenses would also contribute to deterring breakout by making it harder to realize strategic advantage from building a few devices.) Countervailing reconstitution is, however, one potential piece of the puzzle – a piece that no one serious about advancing the cause of disarmament should probably ignore. It deserves more study than it has gotten to date.

### III. Conclusion

The reader may by now have concluded that I oppose nuclear disarmament, for the challenges I have set forth are formidable. Moreover, the idea of countervailing reconstitution – which I have suggested as one way to help make disarmament less unrealistic – may not be without its own problems. Indeed, at best, CR could provide only a partial answer to *one* of the challenges facing disarmament (namely, that of deterring breakout), and it is unlikely to be received with particular favor by the disarmament community anyway. Moreover, though I have outlined many serious problems, I make no claim to have identified all of the difficulties that would have to be overcome in actually working the world down to a nuclear weapons “zero” and keeping it there. There are surely many more, among them matters technical, political, and game-theoretical.<sup>57</sup>

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<sup>57</sup> One interesting paradox and challenge may be presented by ballistic missile defense and other forms of protection against the delivery of nuclear weapons. Ultimately, it is likely that such defenses would have to play an important role in a disarmament regime. As I have described the situation elsewhere, defenses might

“powerfully contribute to stability in a zero-option world in two ways. First, by making it harder to deliver to a target any nuclear weapon that is developed in violation of a zero-weapons regime, defenses would reduce the anticipated strategic utility of such weapons, making “breakout” less attractive and therefore presumably less likely. Second, even if defenses could at some point be surmounted, the existence of relatively robust defensive networks around the world could, at the very least, buy *time* in which the international community could rally to develop or implement other means of responding to the threat. As we have seen with the world’s painfully slow responses to the ongoing threats posed by the Iranian and North Korean nuclear weapons programs, the international community does not always act decisively and swiftly. It could be valuable indeed to have a little more time before a violator could fully realize strategic benefits from zero-option ‘breakout.’”

Ford, “Disarmament and Non-Nuclear Stability in Tomorrow’s World,” *supra*.

Nevertheless, defenses might seem to present interesting challenges for *getting* to “zero” in the first place, because they would seem to create some incentive for existing weapons-possessors, to the extent that they can, to maintain nuclear delivery systems in sufficiently great numbers to overwhelm defensive capabilities. (As possessor states reduced their numbers, even modest defensive capabilities would at some point come to predominate in the offense/defense relationship. This would be a good thing *at* and *after* “zero,” but might tend to keep warhead numbers higher – or at least delivery system numbers, for it is perhaps conceivable that one might eke out deterrent effect from a sort of shell game, in which a small number of warheads

Let me emphasize, however, that merely to identify such challenges is not necessarily to oppose nuclear disarmament *per se*. As noted earlier, I do not. As I have said elsewhere, albeit borrowing phrasing from wiser writers, the true friend of disarmament cannot be merely its flatterer.<sup>58</sup> The cause of disarmament *needs* to have the difficulties it faces pointed out, however painful this might be. Without such honesty about the challenges, after all, it can hardly hope to overcome them. Both skeptics and advocates ought to be able to agree, therefore, that these various problems need to be better understood.

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were secretly distributed across a large, defense-overwhelming number of delivery systems, with the effect that a defender could not be sure of defeating an attack notwithstanding the known fact that it contained only a small number of warheads – *until* a final decision to move to “zero.”)

This stockpile-boosting effect is not necessarily a problem for pro-disarmament advocates of defensive systems, however – or at least not *more* of a problem than the inescapable challenge in *any* disarmament regime of ultimately getting possessors to “zero” at all. In effect, reliable defenses capable of defeating an attack by “X” number of delivery systems would merely shift the crucial decision point for a nuclear weapons possessor – changing the point of reaching a *functional* “zero” from that of having “no warheads” to that of having “X” warheads, or fewer – without making more difficult the basic decision of whether to get rid of nuclear weapons in the first place. (See, e.g., my discussion of “functional disarmament” in note 7, *supra*.) If anything, disarmers should perhaps take heart: as a matter, at least, of elementary mathematics, a possessor would necessarily dismantle down to reach “X” warheads sooner than it would reach an *actual zero* – the number “X,” after all, is greater than zero – and once one were below the number that could be stopped by opponents’ defenses, going the rest of the way to “true zero” would presumably be relatively unproblematic.

Defenses might provide the additional bonus of making it easier for possessor states to contemplate reaching both functional and *true zero* in the first place. It would presumably be easier to contemplate complete elimination if it were clear ahead of time – *i.e.*, by the development and deployment of effective defensive capabilities during the period *prior* to “zero” – that a state achieving disarmament regime breakout would not immediately gain strategic superiority, because attacks using only a very small, “entry-level” arsenal could not overcome existing defenses.

<sup>58</sup> Compare Ford, “Nuclear Disarmament and the ‘Legalization’ of Policy Discourse,” *supra* (discussing need for candor about challenges to disarmament), with Leo Strauss, *the Rebirth of Classical Political Rationalism* (Thomas L. Pangle, ed.) (Chicago: University of Chicago Press, 1989), at 6 (saying same of liberal democracy), and Plutarch, *How to Tell a Flatterer from a Friend* (Tullie, trans.) (Boston: Little, Brown & Co., 1878), at ¶ 23 (recounting remarks of Phocion to Antipater: “Sir, I cannot be both your friend and your flatterer – that is, your friend and not your friend at the same time.”), text available at [http://www.bostonleadershipbuilders.com/plutarch/moralia/how\\_to\\_tell\\_a\\_flatterer\\_from\\_a\\_friend.htm](http://www.bostonleadershipbuilders.com/plutarch/moralia/how_to_tell_a_flatterer_from_a_friend.htm).

Particularly given the daunting nature of the various challenges that face the nuclear disarmament project, however, intellectual honesty and basic prudence also compel the serious observer to consider what could or should be done if “zero” proves impossible. Considering *this*, in turn, probably requires admitting that the international community’s conceptual toolkit for dealing with the challenges of living in stable relationships of nuclear deterrence – a toolkit grounded in the comparatively simple game theory dynamics of two-party confrontations, and informed by the U.S.-Soviet experiences of the Cold War – is hopelessly inadequate for coping with the 21<sup>st</sup> Century world.

It is not merely that nuclear deterrence will have an increasing number of “players.” There are already notably more than two participants in contemporary nuclear geopolitics. The still greatly disproportionate size of the U.S. and Russian arsenals relative to those of all other participants, however, means that the *primary* deterrent dynamic in the modern world remains that between Washington and Moscow. Nevertheless, if and when disarmament succeeds in reducing these considerable numbers still further, something much more akin to a global parity among *all* nuclear weapons possessor-states will increasingly obtain. With this will come an increased salience for genuinely multi-player nuclear deterrent relationships, dynamics with which no one yet has much, if any, experience.

Reasoning based in, or informed by, game theory – including seminal contributions from the likes of Nobel Laureate Thomas Schelling and the Hudson Institute’s own founder, Herman Kahn – have powerfully and profoundly shaped strategic policy in the past, at least in the United States.<sup>59</sup> Such approaches, however, have yet to be updated adequately – or at all – in search of lessons for dealing with the advent of deterrent games played simultaneously along multiple axes. In a multi-player world, as Henry Sokolski recently put it,

“[k]eeping track of [‘]who is on first,[’]  
... will be far more difficult and  
tracking the possible alliance relations

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<sup>59</sup> See, e.g., Kahn, *supra*; Thomas C. Schelling, *Arms and Influence* (New Haven, Connecticut: Yale University Press, 1967).

between or against other nuclear or near-nuclear states will be vastly more difficult than it has been yet. This risks straining what diplomacy or military science might otherwise prevent well beyond the breaking point ....”<sup>60</sup>

Bipolar and generally symmetric models of deterrence will be terribly inadequate in the face of 21<sup>st</sup> Century challenges. To begin with, as Alagappa has noted, “asymmetry is now the defining condition and the basis for strategic thinking in nearly all nuclear weapons states.”<sup>61</sup> China, for instance, deters the United States by means of a much smaller nuclear force, while Israel deters potential adversaries with merely *implicit* nuclear weapons. At least until such point as the Americans and Russians go much further in disarming, and perhaps thereafter, nuclear deterrent dynamics in the coming years will remain ones characterized in important ways by relationships of asymmetry.

Nor can we afford to analyze tomorrow’s staggeringly complex multi-player problems through the lens merely of specifically “like on like” (nuclear-against-nuclear) deterrence. Already, in today’s world, the Americans hope to deter the use of weapons of mass destruction in large part by non-nuclear means, through the threat of Washington’s awe-inspiring conventional might. For its part, Japan deters China through the nuclear-flavored “extended deterrence” of its alliance relationship with the United States, without Tokyo actually possessing nuclear weapons at all (even implicit ones). Meanwhile, the nonproliferation experts are struggling to deal with the potential challenges to global stability that might arise from many new countries’ possession of the mere *option* of producing fissile material for use in nuclear explosive devices – that is, from a world of multi-player influence games involving “virtual” nuclear weapons.

Nor will 21<sup>st</sup>-Century realities let the disarmers off the hook. Supporting nuclear disarmament does not lessen the need to struggle with these issues, for even if such disarmament

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<sup>60</sup> Henry Sokolski, *The Next Arms Race*, Nonproliferation Policy Education Center Working Paper Series (November 11, 2008), at 10-11, available at <http://www.npec-web.org/FrameSet.asp?PageType=Single&PDFFile=20081111-Sokolski-NextArmsRace&PDFFolder=Essays>.

<sup>61</sup> *The Long Shadow*, *supra*, from the introduction by Alagappa, at 14.

is ultimately achieved, we still have to live in an asymmetrically nuclear-armed world *until* that point. Indeed, as our discussion of countervailing reconstitution has indicated, it would presumably also be necessary for a future nuclear disarmament regime somehow to construct a robustly asymmetric deterrent balance of “unlike against unlike” – one in which the temptation to acquire nuclear weapons through regime “breakout” is counterbalanced by the likelihood of effective responses that, initially at least, would *by definition* not be able to involve nuclear weapons.

Clearly, any serious conceptual paradigm for 21<sup>st</sup> Century strategic policy must learn to *embrace* asymmetry, somehow coming to grips with the implications of a world of overlapping, cross-cutting, reciprocally-influencing, and counterpoised asymmetries of capability along various dimensions. Such complexity, however, is something that nuclear strategists presently have little ability to describe, let alone successfully to model in useful ways. Whether or not one advocates or anticipates nuclear disarmament, therefore, a great deal of thinking still needs to be done.

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