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Nuclear disarmament and its limits

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Prime Minister Rudd has recently announced a new international commission on nuclear non-proliferation and disarmament to be headed by former foreign affairs minister, Gareth Evans. In making the announcement—during a speech at Kyoto University on 9 June 2008—Rudd observed that the commission would

- 're-examine the Canberra Commission and Tokyo Forum reports to see how far we have come, how much work remains and develop a possible plan of action for the future', and
- 'report to a major international conference of experts in late 2009.'

The context for the commission's work that the prime minister sketched out was one where the Nuclear Non-Proliferation Treaty (NPT) is 'under great pressure', and where 'in the past decade, the world has not paid adequate attention to nuclear weapons.'

This *Policy Analysis* explores the broad issue of nuclear weapons and their role in the international security environment. It is a complicated issue, and has been for over sixty years. Within the space of a month in the second half of 1945, the United States successfully tested the world's first nuclear weapon (on 16 July) and subsequently dropped two nuclear weapons on Hiroshima and Nagasaki (6 and 9 August respectively) to bring to an end the Second World War. That chain of events, Colin Gray once observed, told the whole world the only secret worth knowing in the nuclear age: that nuclear weapons can be built and they do work.

The events also outlined in stark form the central puzzle of nuclear strategy: how can such destructive weapons make a positive contribution to international security? Don't such weapons make a nonsense of the supposed relationship between means and ends in warfare? This central puzzle was complicated by a secondary puzzle: the puzzle of proliferation. How could nuclear weapons make a positive contribution to international security if the weapons themselves were to spread into many hands?

The answer to the central puzzle, of course, lay in the doctrine of deterrence. That doctrine essentially said that threats to use nuclear weapons had to replace actual use. And so unfolded a complex and esoteric set of interlocking nuclear strategies during the Cold War years: strategies to minimise the prospect of great-power nuclear conflict, strategies to set ceilings on conventional war, and strategies to 'extend' US nuclear deterrence to others, so that fewer potential proliferators would feel the need to create their own indigenous nuclear arsenals.

Our experience of nuclear deterrence in its fully articulated, operationalised form, is somewhat limited—to an arcane model of global security where coercive power is concentrated in the hands of two large, risk-averse states. Under that model, nuclear weapons have been used primarily in a 'gravitational' sense rather than in a 'direct' sense, enhancing global stability by their mere presence. That fact goes to the heart of an oft-heard argument about the 'utility' of nuclear weapons. Some say nuclear weapons—thankfully—were 'never used' in the Cold War, and that it was an economic competition that finally determined the outcome. That's wrong: nuclear weapons were 'used' every day of the Cold War, to lower the possibility of great-power conflict and so allow other forms of superpower competition to become more important.

A second nuclear age

Nuclear weapons still today underpin the great powers' relationships with each other. And they are still 'used' to underline those powers' vital interests in the global and regional orders. But the addendum to the 'central puzzle', the issue of proliferation, has become much more worrying. In recent decades, the nuclear world has been increasingly characterised by what some analysts call 'the second nuclear age.' It is an age which differs from the first in several important ways. Paul Bracken, for example, in an article for *Orbis* in 2003, noted that the defining feature of the second nuclear age was 'the spread of atomic weapons to countries for reasons having nothing to do with the first nuclear age, the Soviet-American rivalry of the Cold War.'[1]

Dating the onset of the second nuclear age from India's nuclear test in 1974, Bracken identified six features which distinguished the second nuclear age from the first:

1. an n-player game, which vastly complicated the simple, bilateral relationship of the first nuclear age
2. the increasing tendency for nuclear weapons to become symbols of state power, legitimacy and status
3. the fact that second-age 'players' came to nuclear weapons against a backdrop of existing nuclear-armed powers
4. a set of 'Asian roots', that showed nuclear weapons were moving away from the icily-rational world of the Western enlightenment

5. the emergence of some nuclear players who were simply poorer than their predecessors, but willing to let their people eat grass in order to proliferate
6. and a series of 'second-mover advantages' that simplified the route to nuclear weaponry.

It is far from clear where the second nuclear age might be taking us. So far, countries have proliferated at the rate of one or two per decade, allowing the international community a comfortable digestion time as the nuclear club has expanded. Some countries have begun programs and abandoned them, for a variety of reasons. But more recently, analysts have argued that we may be approaching a nuclear 'tipping point', when countries will proliferate in much greater numbers.[2] Strategic tensions are so fraught in some regions, like the Middle East and Northeast Asia, that a single new entrant to the nuclear club there might well provoke a much more substantial breakout from the current non-proliferation regime. In that view of the future, a 'proliferation epidemic' occurs, and many countries acquire nuclear weapons in a relatively short period of time.

Even if such a tipping point does not arise, the second nuclear age has eroded the traditional doctrine of deterrence. Nuclear rivalries have lost the neat symmetrical look of the Cold War years. Failures of deterrence are typically far less acceptable when the contest is between a pigmy and a giant—between the US and North Korea, for example—because the two states play such different global roles. Washington can never have with Pyongyang the nuclear relationship that it has with Moscow. Suffering massive destruction (or even just substantial damage) at the hands of North Korea would not be acceptable to the US even if North Korea were turned into a parking lot in return. Moreover, traditional deterrence relied upon secure, well-managed nuclear arsenals, highly responsive to political control. No nuclear arsenals are currently 'loose', but the second-age proliferators do tend to have fewer resources to devote to the command and control issues.

Rethinking the nuclear problem

As the concept of deterrence has lost ground, nuclear strategists have increasingly started to talk about the effects they hope to induce amongst both their adversaries (caution) and their friends (reassurance), rather than in the balder terms of deterring and non-deterring. And in recent decades we have seen much greater interest, primarily in the US but not solely there, in strategies to 'support' deterrence: counter-proliferation strategies, ballistic missile defences, and a more usable, conventionally-armed part of the strategic triad.

Such concerns have driven a prominent group of US elder statesmen, George Shultz, William Perry, Henry Kissinger and Sam Nunn—in an oft-cited op-ed for the *Wall Street Journal* in January 2007—to urge a renewal

of the classic NPT compact, whereby states not already possessing nuclear weapons agree to forego them and states possessing them agree to divest themselves of those weapons over time.[3] They see that renewal as central to achieving 'a solid consensus for reversing reliance on nuclear weapons globally as a vital contribution to preventing their proliferation into potentially dangerous hands, and ultimately ending them as a threat to the world.'

They have outlined a set of steps that would

- change the posture of deployed Cold War weapons to increase warning time and reduce the danger of accidental or unauthorised use
- cut overall numbers of nuclear weapons and eliminate classes of weapons now made obsolete by geopolitical changes
- bring into force the Comprehensive Nuclear Test Ban Treaty
- ensure that both nuclear weapons and fissile materials were protected by the highest possible standards of security
- enhance control over uranium enrichment
- halt production of fissile materials for weapons, and
- resolve the regional confrontations and conflicts that give rise to new nuclear powers.

Disarmament?

Such steps would, of course, lower weapons numbers and exert tighter controls on proliferation. But they would be only way-stations to the much harder question of how to achieve a world free of nuclear weapons. Even for Shultz et al., nuclear disarmament looks like an 'ultimate' goal. Genuine nuclear disarmament faces three formidable hurdles:
• getting to zero (because we honestly don't know how many nuclear weapons there are in world now, making verification a challenging hurdle)
• staying at zero (because in severe strategic crises, the pressures to rearm would be intense, and policy makers would worry that the rates of reconstruction for nuclear arsenals might not be the same across key global and regional balances), and
• designing a stable strategic order which relied only upon non-nuclear weapons.

Each of those hurdles poses a set of difficulties not easily overcome. The marginal utility of each nuclear weapon actually increases as the number of such weapons decreases, for the simple reason that even tiny nuclear arsenals become more strategically important in a world where others have none. Our only historical examples of direct use—by the US against Japan—occurred in just that context. So getting to zero will be hard. Staying at zero will also be hard, for many of the same reasons. Repeated crossing and re-crossing of the bridge between the nuclear and non-nuclear worlds would be a hazardous enterprise for international security.

The last hurdle to disarmament, designing a stable non-nuclear global order, is also a complex task. Politically, nuclear weapons have become enshrined at the core of the current order: every member of the P5 has nuclear weapons, and the NPT recognises those countries as legitimate nuclear weapon states. Strategically, nuclear weapons have come to represent a 'last resort' capability which even the great powers will be most reluctant to abandon.

Of course, part of the NPT bargain (Article 6) is that the existing nuclear weapons states will eventually disarm. If we posit briefly the world in which nuclear disarmament might be possible, it would have to be a world where the principal demands that we currently place on nuclear weapons could be achieved by non-nuclear means. It would also have to be a world where the incentives to reconstitute nuclear weapons were low. That would require a world where international tensions and conflicts were much diminished, where a 'breakout' would typically trigger only a return to former stable nuclear balances, where a range of effective defences would make any 'breakout' capability hard to use, and where the international community possessed both the instruments and the will to 'punish' transgressors.

Taking proliferation seriously

So nuclear disarmament—if it can be done at all—is still some way off. Indeed, it may be further away now than it was in the mid-1990s when the Canberra Commisison set about its work. In the meantime, Australia's core efforts need to be devoted to managing the problem of nuclear weapons and, in particular, the problem of nuclear proliferation. As noted above, solving the central puzzle of nuclear weapons gets harder the more widely spread the weapons are. So what more, if anything, can we do to slow the rate of proliferation?

A proliferator needs three things:

- fissile material
- the level of engineering skill the US had in 1945
- and a strategic motive sufficiently compelling to leap the first two hurdles.

The first requirement is the most severe. Fissile materials do not exist in nature. They must be made, either by enriching uranium or by reprocessing the plutonium produced in irradiated reactor fuel. The second of the hurdles, the engineering one, is the easiest to surmount and, indeed, it gets easier each year. Building a nuclear weapon with enriched uranium is, in fact, substantially easier than building one with plutonium, for reasons that have to do with the simplicity of a 'gun' design, an option that plutonium doesn't allow. The third requirement—motive—varies in relation to each proliferator, but we know security concerns tend to be the main driver of nuclear

proliferation.[4] Given that we are at an historic moment in terms of sweeping geopolitical change, and strategic relativities are in flux at both the global and regional levels, motives for proliferation will probably still be in ample supply over coming decades.

Making proliferation more difficult means strengthening the barriers implicit in the requirements outlined above. And since the fissile materials barrier is already the most difficult one, we should be working to make it even higher and harder. Securing existing stocks of fissile materials in the world, ceasing new production of fissile materials, and severely limiting enrichment and reprocessing capabilities, must be central planks in any such effort. We might need to put aside the notion that all signatories of the NPT may legitimately develop all elements of the full nuclear fuel cycle. Uranium enrichment and plutonium reprocessing are the 'long poles' in the proliferation tent, which is why Iran's neighbours worry about the Iranian nuclear program now. Of course, designing and enforcing new limits on the NPT non-nuclear signatories, especially in a world where nuclear disarmament remains distant, will be—to put it mildly—a contentious and problematic exercise. But in a world absent such agreements, enforcement will still occur; it will just occur in more unilateral fashion as particular actors sense an infringement of vital national interests.

We should also be doing what we can to reinforce the third barrier: motives. Motives for proliferation we can at least partly address, as Shultz and his colleagues have suggested, by trying to ensure that potential proliferators' strategic concerns can be solved by a range of non-nuclear means. And we want to preserve as much as we can of the current broad international consensus—enshrined in the NPT—that further proliferation of nuclear weapons is not in anyone's interest. The international community has spent decades learning that nuclear weapons are not 'normal' weapons. They are special and dangerous, both to their possessors and to the broader community more generally.

Australia and the nuclear problem

Australia is in a delicate position. It is both a direct beneficiary of extended nuclear deterrence and a major uranium exporter. It has particular interests in both nuclear strategy and nuclear energy. Because nuclear weapons are an important constraint on major power war—the most destructive form of warfare in the Westphalian system—we should be cautious about getting rid of them. And we should accept that while full nuclear disarmament can be achieved, it can occur only in a world substantially different to the current one. It makes sense not to rely on nuclear weapons too much, but a stable global order will be relying on them for some considerable time to come.

But Australia also wants a world where nuclear weapons continue to be concentrated in relatively few hands, and where the nuclear weapons states

accept certain responsibilities about the role that such weapons play in security. In short, we want a world where nuclear weapons states treat such weapons as instruments of last resort, and where 'use' remains primarily gravitational rather than direct. That means the identity of the nuclear weapons states—both current and emerging—matters to us. Even in a world where non-proliferation measures are as strict as we can make them, some proliferation may still occur. Halting proliferation in cases that we might deem unacceptable will probably involve more than international commissions. It will probably involve weighty calculations of national interest.

Endnotes

1 Paul Bracken (2003) 'The structure of the second nuclear age', *Orbis*, 47, 3: 399-413
2 Mitchell Reiss (2004) 'The nuclear tipping point: prospects for a world of many nuclear weapons states', in Kurt Campbell, Robert Einhorn and Mitchell Reiss (eds.) *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices* (Washington, DC: Brookings)
3 George Shultz, William Perry, Henry Kissinger and Sam Nunn (2007) 'A world free of nuclear weapons', *The Wall Street Journal*, 4 January
4 Scott Sagan (1996-97) 'Why do states build nuclear weapons? Three models in search of a bomb', *International Security*, 21, 3: 54-86

About the Author

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