Asian Journal of Peacebuilding Vol. 2 No. 1 (2014): 1-15 **Research Article**

Proliferation Down Under: Turning Australia's Atoms for Peace into Weapons for War

Mick Broderick

The history of Australia's attempts to acquire a nuclear deterrent capacity transpired both within and outside the spirit of the international Atoms for Peace program. While this article reprises a range of scholarship to provide a historical overview, it provides for the first time a level of detail not previously disclosed concerning the mechanisms, costs, and approaches of successive Australian governments in their estimations of obtaining an indigenous nuclear capacity. One such revelation concerns Australia's "back-door" acquisition option by hosting Peaceful Nuclear Explosions, ostensibly for civil engineering purposes, and their provision of pre-assembled thermonuclear technologies and devices. During the international and bilateral negotiations for the Nuclear Non-Proliferation Treaty, Australia was deeply concerned that the draft Treaty would limit or deny this option.

Keywords Australia, nuclear, deterrence, proliferation, cold war, Atoms for Peace

Introduction

This article concerns the history of Australia's planning for, and negotiating to acquire, a nuclear deterrent, both within and outside the spirit of the international Atoms for Peace program. While the article reprises a range of recent but extant scholarship, the historical overview presented here provides, for the first time, a level of detail not previously disclosed as to the mechanisms, costs and approaches of successive Australian governments in their estimations of obtaining this indigenous capacity, especially through Peaceful Nuclear Explosions (PNEs).

This is still an arcane history, as Richard Broinowski observes:

> [F]or more than three decades Australian politicians and military, scientific and cabinet officials conducted a campaign to persuade the government of the day to acquire or develop nuclear weapons. The fact is that Australia has the resources and technology to develop its own nuclear weapons (Broinowski 2006, 1).

ISSN 2288-2693 Print, ISSN 2288-2707 Online

Australia's Post-war Ambitions

Throughout the Second World War, Australia made a modest contribution to the Manhattan Project as a member of the British dominion enterprise, principally through the delivery of small amounts (via a federal monopoly) of Australian uranium and the provision of scientific staff expertise. Chief amongst that personnel was physicist Mark Oliphant, who became Australia's unofficial scientific ambassador-at-large in the immediate post-war period. Oliphant was implored by the Labor government to return to Australia to help establish the Australian National University in Canberra and to create and head the School of Nuclear Physics, and he was resourced to build a cyclotron (Cawte 1992, 14).

Post-war industrial development was considered vital by the Labor government of the day. To secure a modern, industrial base for manufacturing that would diversify the local GDP was crucial. In the mid-1940s Australia's wealth depended almost entirely on the production, consumption, and export of wheat and wool. What little industrial base did exist at the outbreak of war was quickly co-opted for military and defense purposes. In the early Cold War era, Australia's traditional xenophobic fear of Asian invasion morphed into communist contagion. The recent war-time experience of the British Empire ignoring domestic security needs (as in Churchill's infamous "Brisbane" line of defense, which expediently sacrificed one-third of Australia to Japanese invasion) set the postwar Labor government on a series of nation-building infrastructure schemes to modernize the nation. One such venture was the Snowy River hydroelectric scheme that cost hundreds of millions of Australian pounds and took over a decade to complete (Reynolds 2000, 142).

Another strategic development exercise came with the agreement to host a long-range missile test facility in the central Australian desert, in partnership with the British (Morton 1989). The August 1945 atomic attacks on Hiroshima and Nagasaki were widely celebrated in Australia, and viewed as a means of swiftly ending the war. Politicians and defense planners quickly sought to engage with the idea of atomic defense, long before the Soviet Union acquired its own capability four years later, in 1949 (Reynolds 2000, 214). The frightening, though inevitable, technological conjunction of Second World War V-weapon ballistic missiles with atomic warheads required secure spaces under British or Commonwealth control that could perfect rocket, drone, and jet delivery systems and experimental explosive ordnance (Morton 1989).

After initially considering a number of remote sites in the United Kingdom and Canada, Britain became a Nuclear Power in late 1952, detonating its first experimental 20-kiloton device in the Monte Bello islands off Australia's northwest coast. The Australian Prime Minister, Robert Menzies, without consulting his Cabinet, then gave approval for a permanent atomic staging

ground adjacent to the existing Woomera rocket range. Initial tests were conducted at Emu Junction for the 1953 series and then at Maralinga from 1955-63 (Commonwealth of Australia, 1985).

Despite previous assurances by Whitehall, Australian personnel were, by and large, denied access to sensitive nuclear technologies as a result of the 1946 U.S. McMahon Act and the wartime Quebec agreement on atomic secrecy. Hence, most local participants became scientific observers, service laborers, and military adjuncts. Nevertheless, unofficially, the British did attempt to include Australian staff in as much technical development as security restrictions would allow. These gestures did little to assuage the feeling of betrayal within some circles. The expected *quid pro quo* seemed too little and too late, and had to be argued for repeatedly throughout the 1950s and 1960s.

As Jim Walsh's excellent 1997 exposé of Australia's "surprise nuclear ambitions" reveals, there were two distinct periods in Australian domestic nuclear deterrence history: the attempted procurement phase (1956-63) and the indigenous capability phase (1964-72). Writing in *Nonproliferation Review* two years before the Gorton Cabinet minutes were declassified under the 30-year rule, Walsh reveals that during the first phase, unlike the NATO dual-key arrangement, "Australia's intent was to acquire weapons that would be under purely national control" (Walsh 1997, 2). During this "procurement phase" the Government of Australia embarked on discussions with the United Kingdom and the United States regarding (1) the purchase of tactical weapons, (2) obtaining nuclear capable delivery systems, and (3) proposals for access on demand to nuclear weapons. All came to naught, however, despite tacit approval from the British to consider access under the first and third options, and commitments from both the United Kingdom and the United States for the second option via purchases of aircraft or missile delivery systems. From the Australian perspective an implicit *obligation* of such military spending would be the link to nuclear capability and the potential access to deliverable tactical weapons (Broinowski 2006, 2).

At the very time Britain was exploding a range of atomic devices on Australian soil, the local military was negotiating buying British bombs outright in the low-kiloton range. Despite a joint Defence Committee recommendation being pushed at Menzies to purchase UK weapons—with senior military-to-military liaison endorsing the proposal—the political leaders in both countries stalled. British Prime Minister Harold Macmillan met Menzies twice in 1958 and discussed the proposed purchase, but Macmillan warned that the U.S.-UK agreement and the revised McMahon Act likely prohibited such transfers. However, Macmillan was happy for the joint Air Chiefs to continue working on plans, and even on a possible pricing scheme. According to Walsh, "[T]he only thing more surprising than Australia's interest in nuclear weapons was Britain's willingness to provide them. ...[K]ey ministries in London supported the transfer of nuclear weapons" (Walsh 1997, 5).

Yet up to 1960, these negotiations remained blocked by concerns over U.S. attitudes to treaty agreements or negotiations (Broinowski 2006). Due to domestic austerity measures, Macmillan scrapped the "preferred" nuclear bomber and missile system that the Australians had sought, and abandoned other major nuclear and missile technology programs being tested in Australia, deciding to join America in a limited independent deterrent role, and leaving the Maralinga test site for Nevada and the Pacific (Morton 1989).

In 1961, when the United Kingdom asked Australia to establish listening posts for atomic testing, an aggrieved Menzies saw an opportunity for righteous indignation. He insisted on a weapons-on-demand arrangement in return for signing the Nuclear Test-Ban Treaty (NTBT)—specifically, "the right to draw on the UK nuclear weapons stockpile" if major countries in the Pacific or Indian ocean areas "acquired nuclear capability," or failing that, the "obligation to allow Australia the right of access to United Kingdom nuclear weapon 'know how'." The Cabinet approved Menzies' position and the Australian Prime Minister wrote to Macmillan pressing for the "practical arrangement [necessitating] the supply of ready-made weapons" or "full manufacturing data for the production of operational weapons" (Walsh 1997, 8). The same letter was to be sent to U.S. Secretary of State Dean Rusk. However, when the Soviets returned to testing after the three-year moratorium, it looked unlikely that the NTBT would proceed, and the Australian Cabinet felt it unwise to push their demand given the resumption and rapid flurry of superpower atmospheric testing.

But other pathways remained in play. A top secret July 1965 Australian Departmental Minute, entitled "Introduction of Nuclear Power to Australia," refers to the "proposed International Atomic Energy Safeguards scheme (which emerged from the Eisenhower 'Atoms for Peace' proposal)" in relation to an Australian Atomic Energy Commission proposal to install a nuclear reactor in South Australia. The IAEA inspection scheme is described as "something Australia can scarcely do anything but accept," but was seen as troubling in its impact on the nation's "future options" for nuclear weapons development. Such concerns remained throughout the protracted debate that followed over the Non-Proliferation Treaty ("Introduction of Nuclear Power to Australia" 1965).

Throughout the 1960s Australia was consistently identified by the CIA in National Intelligence Estimates as worthy of remaining on the U.S. "proliferation watch" (U.S. National Intelligence Estimate 1966). U.S. Intelligence Board documents estimated "a modest program" for producing nuclear weapons "would not be prohibitive for most countries with an adequate technological base," projecting costs to be initially between US$500 and 600 million for a program of 20 plutonium fission weapons annually (20 kiloton yield each), then dropping to US$75-100 million from there onwards. Countries with "natural uranium reactors," whether for research or power generation, were capable of producing the required plutonium for weapons. Australia was identified as having "possible

incentives to acquire nuclear weapons during the next 10 years," with the CIA estimating it would take "more than 8 years" for Australia to produce and test its first device (U.S. National Intelligence Estimate 1966, 2-3).

But how close was this evaluation to reality? A suite of secret Australian government studies of domestic nuclear competencies commenced in 1967. These were partly prompted by the Chinese detonation of its first atomic weapon (October 1964) and its rapid advancement towards thermonuclear prowess (June 1967), as well as by more serious attempts by the United Nations to halt proliferation with a new treaty (Kaufman 2011). Amongst the multiple top secret reports designated "AUSTEO" (Australian Eyes Only), confident but contradictory pronouncements were made, although each position has been seemingly adopted by successive federal administrations right up to today. The observations and recommendations of these documents can be summarized as follows:

1. Australia has the necessary technical skills and resources to develop its own nuclear weapons program, from rudimentary plutonium fission weapons to thermonuclear devices.
2. It would take approximately 7-10 years and A$117 million to achieve a modest arsenal of 30 nominal yield weapons in the 2 to 20-kiloton range at a cost of A$13 million per annum (Australian Atomic Energy Commission 1968a). These would range from "small" demolition devices to Hiroshima-sized atomic bombs.
3. A domestic nuclear energy reactor program would be required, with advocates noting that much of the technology and industry was indistinguishable and complementary across civilian and military nuclear applications. A$80 million was estimated as the cost of construction and operation of a 500MW reactor using natural uranium. Tenders and construction commenced in the late 1960s at Jervis Bay, south of Sydney.
4. Given Australia's geographical location, its isolation and experience with the British atomic tests in the 1950s and 1960s, and the 1967 Operation Blowdown detonation (U.S.-UK-AUS), Australia was well equipped to test the weapon/s domestically, either above ground or underground (Australian Screen Online 1963). This would cost A$50 million.[1]
5. Defense planning had already purchased advanced weapons delivery systems, such as the American F-111 jet fighter, that could readily be modified to carry nuclear bombs, with tacit approval from U.S. suppliers. ("Notes on Discussion with Director…" 1967). Earlier British nuclear-capable V-bombers were under consideration, alongside nuclear-capable surface-to-air missiles such as the U.S. Nike and British Bloodhound.
6. Consideration of the restrictive safeguards and inspections regime suggested by the Non-Proliferation Treaty meant Australia would need to rapidly assess whether it would forego the nuclear option in both the medium (10 years) and long term (25 years). While the Joint Planning Committee felt that in the next 10 years it "was not necessary for Australia to acquire a nuclear weapons capability either independently or with the assistance of Allies," a 10-year period was deemed too

short for *decisively* locking into the NPT, and it recommended that the Australian government needed to "keep the question of a requirement under review."[2] This is still the position of the Government of Australia into the 21st century.

7. Security agreements (ANZUS) and assurances by superpowers of protection and cooperation under such a treaty would "not stop all proliferation" or "ensure total disarmament" (Australian Atomic Energy Commission 1968b; Tanter 2009, 19).
8. One interpretation of the then-draft NPT was that it would prevent experimentation for peaceful purposes; e.g. using nuclear explosives for engineering and mining (Plowshare), as well as propulsion systems. Australian Cabinet Secretary C.L. Hewitt noted for Prime Minister Gorton that any NPT must allow Australia to "be free to pursue peaceful nuclear development with the result that, if we do so, we will reduce the lead time for nuclear weapons production to approximately three years" (Hewitt 1968, 3).
9. Australia was/is disproportionately vulnerable to nuclear attack due to its centralized/urbanized population residing in a few major cities (90% in 7 capital cities), so any regional proliferating atomic aggressor, spurred on by Australian nuclear acquisition, could inflict enormous damage with only a few strikes (Department of Defence 1968).
10. Military rationales for a domestic nuclear capability in relation to existing and foreseeable regional threats (China and Indonesia) were downplayed: "[T]here is no Australian requirement for a nuclear capability against China, while we can rely on the United States. Any Indonesian aggression is likely to be of a type (e.g. subversion or insurgency) for which nuclear weapons could not be used and for which they would not deter" (Department of Defence 1968).

This intense series of studies and contingency plans remains relevant today. Indeed, one of the little understood triggers for the dismissal of the Whitlam government in 1975 was the Labor agenda to undertake costly uranium enrichment after nationalizing Australia's mines (Reynolds 2008). In the mid-1980s, Foreign Affairs Minister Bill Hayden recommended that the Hawke government pursue an independent deterrent. In the mid-1990s Prime Minister John Howard called for a robust review of nuclear policy and pushed for nuclear energy and domestic uranium enrichment facilities (Reynolds 2008). Most recently—before the Obama Administration's re-engagement with Southeast Asia and the ANZUS alliance, but cognizant of China's rise and North Korea's nuclear capacity—Australian defense analysts suggested that revisiting the nuclear option would be prudent (Heinrichs 2008; Lyon 2009; Tanter 2009). Assurances of a guaranteed nuclear response by our allies have often been sought but have been definitively deflected. The author will return to these points at the conclusion.

Beating Plowshares into Swords

Given the limitations of space, this article concentrates on one theme and

project that, somewhat surprisingly, has not been previously canvassed by other historians and analysts (such as Cawte, Reynolds, Walsh, and Hyams). It is an option with a demonstrable link between Eisenhower's Atoms For Peace and Australia's surreptitious desire to acquire nuclear weapons and related technological expertise.

From the very beginning of the atomic age, the industrial promise of "energy too cheap to meter" was matched with a utopian era of medical advancements and nuclear engineering feats of biblical dimensions. Deserts would be converted, if not into oases, then from barren places into highly productive agricultural land. Nuclear explosions could also remove geographical impediments on a scale and speed unmatched by conventional explosives. Dams and harbors could be blasted into place to capture seasonal runoff in arid areas and to enable mega-ship bulk carriers access to remote ports. Detonations could fracture ore bodies, and stimulate gas and oil production (Marcuse 2000). In terms of domestic need and PNE potential, Australia ticked all of these boxes (Kaufman 2011).

As a showcase of the International Atoms for Peace program (beyond the generation of electricity) Project Plowshare was embraced by the U.S. Atomic Energy Commission (AEC). From 1957 a range of nuclear tests, frequently under the direction of Edward Teller, was designed to test the idea of the industrial application of nuclear explosions. The spin was there at the beginning, too. Concerned over the international perception of Soviet technological advances with Sputnik, the head of the U.S. Information Agency, Arthur Larson, suggested finding a remote coastline in the United States and building a harbor by exploding a nuclear device, while inviting the media to observe it (Kaufman 2011, 24). The Plowshare planners soon found a location. Alaska was deemed suitable and designs commenced for a multi-megaton series of blasts, designated Project Chariot, to gouge out a harbor using "clean" thermonuclear PNEs (O'Neill 1995).

But within only a few years, with vocal critics both outside and within the AEC objecting on environmental grounds, Chariot was shelved (Findlay 1990). The final nail in the coffin came when it was clear that the economic basis for the harbor did not hold water. Nevertheless, international conferences spawned from the UN's AFP initiative continued to draw interest on PNE proposals and Australian scientists were frequent participants (U.S. Department of Energy 2000).

Beginning in 1961-62 a series of meetings was held at senior departmental level to assess the potential of PNEs for Australia in construction, water storage, and mining, and reciprocal scientific visits were arranged. Australian Prime Minister Robert Menzies was convinced of their potential by none other than the preeminent Australian physicist, Mark Oliphant. In May 1963, the Cabinet sent a letter informing AEC chairman Glen Seaborg of Australia's national interest in pursuing Plowshare opportunities. Later that year a core group from the AAEC was invited to visit, and it worked alongside the Plowshare team in America

(Wilson, Pender, and Carter 1964). Throughout this period Australian state governments began to lobby their federal counterparts to assist with their own nuclear AFP/PNE projects. They uniformly had the support of the pro-nuclear weapons advocate and chair of the AAEC, Sir Philip Baxter (Reynolds 2000, 145). In the 1950s and 1960s, atomic power stations were seriously considered for mining operations in Queensland and South Australia, as was the possibility of the Snowy Mountain hydro scheme in the Australian Capital Territory turning nuclear. All came to naught.

Undeterred by these failures, the parochial West Australian premier, David Brant, became more determined and championed the use of atomic technologies for the remote northwestern part of the state, which was rich in mineral resources that were only then beginning to be exploited (Kirsch 2005, 191). The need to store water and open ports in isolated areas for shipping vast quantities of iron ore to international markets excited the premier and his Minister for Industrial Development, Charles Court (Kaufman 2011, 171). Brant sought the approval of Menzies at the very time the federal government was negotiating the Limited Test Ban Treaty (LTBT). U.S. assurances were sought and provided, with the advice that the Johnson Administration was so enthusiastic that the Americans offered to provide and emplace the thermonuclear devices—for free—as a demonstration of the viability of PNEs and their potential export market (Kaufman 2011, 178).

More importantly for the AEC and U.S. administration, a positive extra-territorial PNE experience, following the Chariot debacle, could serve as a proof of the concept to the Panamanian government in regard to U.S. AEC plans for a massive new canal dug by hundreds of nukes. Also, for the domestic U.S. audience, a successful West Australian nuclear excavation would bolster plans for using PNEs on the trans-American interstate highway scheme.

By the mid-1960s, opposition from the Soviets to Plowshare—chiefly over the fallout from explosions crossing international borders, something the LTBT prohibited—began to ease, as the Russians commenced tentative cooperation with the United States while initiating their own PNE program (Marcuse 2000). In this context Australia's remote location was seen as a major benefit and less of an impediment for the international migration of fallout, so the Americans anticipated little objection from the USSR.

Secretly Baxter and the AAEC welcomed the opportunity of PNEs to provide on-the-ground thermonuclear devices as proxy weapons (Australian Atomic Energy Commission 1968b). Australian scientists working with the Plowshare project could effectively bypass the nuclear technology-transfer hurdles faced by previous Australian governments and international policymakers. In a submission to the Cabinet, Baxter alerted the government to a "complete hole" in the treaty interpretation, allowing countries to develop nuclear explosions seemingly outside of the agreement, which was something the AAEC chair demanded (*Australian* 1969).

American diplomatic cables from the era repeatedly advised that the Australian government's sticking points concerning the NPT often involved interpretation by the U.S. (and to a lesser degree by Soviet as well as by some non-nuclear parties) of peaceful explosives and other peaceful technology transfers. In one cable, after meeting with an increasingly nationalist Australian Prime Minister, John Gorton, U.S. Secretary of State Dean Rusk fulminated:

> I ran into a full battery of objections relating to the [NPT]. He [Gorton] sounded almost like de Gaulle in saying that Australia could not rely upon the United States for nuclear weapons under ANZUS in the event of nuclear blackmail or an attack on Australia. ... One of the things which is getting in the way is objections coming out of the Australian Atomic Energy Commission and the Defence Departments on all sorts of picayune problems. ... I am thinking of inhibitions on the development of nuclear energy for peaceful purposes (Rusk 1968, 1).

Rusk called for a crack team, ideally headed by Seaborg, to visit Australia and iron out the technical issues of the treaty, and to head off the "existing bickering within the Australian government" on the issue "in order to clear away that underbrush" rather than to "take on the major political issue of whether Australia should give up the nuclear option" (Rusk 1968, 3).

During the late 1960s, as Australia deferred and prevaricated over signing the NPT, the rise of potential PNE projects Down Under flourished. In 1967-68, with commercial industry support, a nuclear excavated harbor in West Australia at Cape Preston was enthusiastically proposed. When that development failed to materialize, and the partners backed away, a second near identical project at Cape Keraudren was suggested by different commercial partners in 1969. The latter was endorsed by the Western Australia government, Prime Minister John Gorton, and by Glen Seaborg, who lobbied newly installed U.S. President Richard Nixon and won approval to advance the plans within eight days of Nixon assuming office. This vindication of Plowshare by Nixon also came despite the fact that Australia had still not signed the NPT, which had previously hindered earlier negotiations. Now it seemed no longer an impediment to "progress." Given these moves Baxter quickly established a Plowshare office at the Australian AEC. Next, the Gorton government publicly announced it was time for Australia to "enter the atomic age." PNEs and the construction of a natural uranium reactor were firmly on the national agenda, as the prime minister sought a mandate from the Australian people in the lead-up to the next election for his ambitious and costly national nuclear (though undeclared weapons) development program (*Australian* 1969).

So why didn't Australia ultimately "go nuclear" via the Atoms for Peace pathway? Irrespective of this brief window of opportunity, from 1968-72, to both commence a plutonium producing power reactor and acquire thermonuclear PNEs on Australian soil, political circumstances overtook the nuclear momentum. As a key protagonist in a deeply divided government, Gorton faced

an internal no-confidence motion and leadership challenge. The resultant party poll was even, and Gorton used his casting vote to resign, incredibly removing himself from office. The new Prime Minister, Billy McMahon, was a fiscal conservative with no appetite for PNEs and he swiftly set about axing the reactor program (Cawte 1992, 131-132). The domestic nuclear deterrent and Plowshare option stagnated, then withered and atrophied.

Oddly, there were other attempts to revive PNEs in Australia, championed by the Project Chariot enthusiast and former Lawrence Livermore lab director Dr. Edward Teller. Teller visited Australia a number of times, pushing for nuclear energy and PNEs to be used in commercial operations by his maverick friend and Australia's then-wealthiest man, mining magnate Lang Hancock (Broderick 2003). Space doesn't permit expansion on these near-miss wacky schemes, but one from the early 1970s involved detonating a thermonuclear PNE under a large seam of asbestos to fracture the iron ore body below. Any materials venting from underground would be doubly toxic—from asbestos and radioactivity, both being carcinogenic and chronic disease producing.

A Farewell to Arms?

There are still significant insights to be gleaned from the little understood, and certainly not widely acknowledged, history of Australian nuclear weapons acquisition. Whether stationed locally, a joint-key agreement, a security guarantee ensuring an allied nuclear response, PNE access via the legacy of Atoms for Peace, or a domestically manufactured bomb, atomic weapons were never far removed from Australian military planning. Successive stalled initiatives and prime ministerial frustrations at allied ambivalence fuelled the debates around an "independent" Australian deterrent. Cabinet Secretary Hewitt's briefing for Prime Minister Gorton on Australia's potential signing the Non-Proliferation Treaty remains as stark (and as relevant) today as it did in 1968:

> As the Americans are so anxious for our support of, and participation in, the Nuclear Treaty, it would seem to me that, as a bare minimum, we are entitled to know their point of view about their nuclear protection of Australia under the ANZUS Treaty in the event of a nuclear threat to Australia. … China will not be a signatory. Will the Americans come to our aid, under ANZUS, with nuclear weapons in the event of a threat to Australia by Chinese nuclear weaponry? This year; next year; in twenty-four years from now? Will they??? (Hewitt 1968)

The declassified NPT negotiation documents demonstrate how close Australia came to moving beyond a blueprint towards a program for nuclear competency, whether that meant sitting at the threshold with turn-of-the-screw technology, or indigenous design, manufacture, testing and deployment—the options were

all understood and still remain in place today, despite some analysts suggesting otherwise. A dissenting view, for example, comes from Paul Dibb, a former senior Australian Defence bureaucrat and Director of the Defence Intelligence Organisation. He claims that the 2009 Australian Defence White Paper contains "a clumsy allusion to an Australian nuclear weapon option [which] is simply unnecessary as it has no prospect of becoming policy under any Australian government" (Dibb 2009, 36). However, over the decades multiple writers have detailed Australian wariness over allied support, irrespective of security treaties and promises by heads of state. Successive Australian governments believed such formal instruments would mean little if the strategic chips fell outside of the security partner's national interests.

As Broinowski maintains, historically, the enduring question has been: will the United States "approve or disapprove of Australia developing its own nuclear force?"

> There had been mixed signals. In 1963, Defence Secretary Robert McNamara had told the Minister for External Affairs Garfield Barwick in Washington that it would be natural for Australia to develop nuclear weapons if China did. In 1968, Secretary of State Dean Rusk told Cabinet in Canberra that the United States supported Australia "advancing to a point just short of final manufacture" (Broinowski 2006, 4).

John Gorton was not the only prime minister to question the will and commitment of our nuclear allies in coming to Australia's aid in a regional conflict. Before him Menzies reluctantly came to this view, as did Harold Holt, then Gough Whitlam and every prime minister since. Ironically, when Prime Minister Howard unilaterally invoked the ANZUS treaty immediately after 9/11 (coincidentally, Howard was about a kilometer from the Pentagon on that day; so for him, the event was palpable), he embarked on a reconsideration of nuclear technologies and domestic processing. He even embraced the sale of uranium to India (with the Bush Administration's blessing), despite India's non-signatory NTP status—something the recent Gillard government pursued and formalized. Now the Obama doctrine has seemingly responded to the challenge of the Asian Century, reengaging militarily in the region, including the semi-permanent, forward deployment of Marines based in Darwin (Northern Australia).[3] China and North Korea are regularly identified as potential aggressors, as is an ICBM-capable Iran. As Raoul Heinrichs warned in his 2008 article "Australia's Nuclear Dilemma: Dependence, Deterrence or Denial?" published in *Security Challenges*:

> As the strategic balance of the region changes, and as nuclear weapons and ballistic missile forces threaten to proliferate within Australia's strategic environment, new questions arise about the suitability of Australia's strategic approach ... to preserve a credible nuclear strategy in the uncertain decades ahead (Heinrichs 2008, 55).

For proliferation analysts and Cold War historians, a key lesson from the Australian experience might be that nuclear hedging (potentially by any nation) does not *prima facie* imply a route towards the deterrent option. Yet, a determined nation (like Australia) will maneuver to maintain this potential as a long-term consideration while nuclear powers steadfastly preserve their deterrent defense capabilities. Ironically, under the weapons-grade, fissile material production opportunities of international programs, such as Atoms for Peace, and the dual-use subterfuge of PNEs, Australia could have acquired a plutonium manufacturing reactor or a suite of *pret a porter*, back-door thermonuclear devices (with the added benefit of minimal, "clean" fallout), despite being a signatory to multiple prohibitory treaties, up to and including the 1985 South Pacific Nuclear Free Zone Treaty (SPNFZ) and the 1996 Comprehensive Test Ban Treaty (CTBT), ostensibly limiting the use and spread of nuclear weapons (Yusuf 2009, 55).

What is both ridiculous and preposterous still is that no Australian government, while in power, has ever publicly acknowledged these events or the desire to keep that option permanently open.

Echoing Raoul Heinrichs, Richard Tanter's closing paragraphs to his 2009 Nautilus Institute paper "Rethinking Extended Nuclear Deterrence in the Defence of Australia," seem particularly germane:

> In contrast to the extended deterrence models in other regions, Australia's is marked by its lack of public presence, a lack of certainty about its standing and character in American eyes, its lack of a direct nuclear threat, and its resurgence at a time when nuclear abolition possibilities are being embraced by the leader [Obama] of the deterrence provider. ...What is necessary is that [these concerns] be addressed in such a way that minimally, a pathway to a non-nuclear alliance—or coalition—is visible, without at the same time provoking a resurgence of support for either an indigenous Australian nuclear weapons capacity, or unjustified greatly expanded defence spending. At root, Australians need to ask themselves whether their country needs to be, or should be, defended by nuclear weapons (Tanter 2009, 25).

Conclusion

This essay has shown how during the Cold War Australia pursued a range of options for acquiring a domestic nuclear deterrent. These options ranged from purchasing weapons from allies, to stationing allied nuclear arms, to manufacturing them locally or attaining thermonuclear PNE devices ostensibly for planetary engineering. It also demonstrates how ongoing Australian defense planning and strategic regional thinking remains informed by the potential for developing an indigenous nuclear option, however remote. Australia's history of surreptitious desire for the nuclear option, long denied by successive

administrations, continues to mask political immaturity and national insecurity at the expense of an informed Australian public polity.

Notes

1. Operation Blowdown was an Australian field test in which a 50-ton high explosive charge was detonated over a typical rain forest (similar to those in Southeast Asia) at the Iron Range Test Site, North Queensland. U.S. participation included the establishment of a blast line to obtain overpressure and dynamic pressure measurements, as well as the loan of instrumentation and photographic equipment. The experiment also included military trial projects that examined the blast effects in forests on items of military material, field fortifications, supply points, and foot and vehicle movement. See Kelso, Jack R., and C Jr. Clifford. 1964. *Operation Blowdown: Preliminary Report*. Washington, D.C.: Defense Atomic Support Agency.
2. The proposed NNPT timeline raised concerns for the Australian military especially over developing naval propulsion after 1960 and any sea-launched nuclear capability. See Yule and Woolner, *The Collins Class Submarine Story*, Cambridge University Press 2008; Reynolds, "The Astute Choice," *Security Challenges*, December 2013.
3. On the expanded role of the U.S. military in Australia, see Richard Tanter, "The US Military Presence in Australia: Asymmetrical Alliance Cooperation and its Alternatives," *The Asia-Pacific Journal* 11 (45/1) November 11, 2013.

References

Australian. 1969. "Gorton Orders A-power inquiry." February 7.

Australian Atomic Energy Commission. 1963. Annual Report. Coogee: Australian Atomic Energy Commission.

Australian Atomic Energy Commission. 1968a. "Costs of a Nuclear Explosives programme." Top Secret AUSTEO, February 22. Australian National Archives.

Australian Atomic Energy Commission. 1968b. "Nuclear Weapons Policy." Top Secret AUSTEO. Australian National Archives.

Australian Screen Online. 1963. "Operation Blowdown." Documentary film. http://aso.gov.au/titles/sponsored-films/operation-blowdown/ (accessed February 21, 2013).

Broderick, Mick. 2003. *Citizen Lang*. Documentary Screenplay. Perth: Screenwest.

Broinowski, Richard. 2006. "Australian Nuclear Weapons: The Story So Far." *Nautilus Policy Forum*, July 17. http://nautilus.org/apsnet/0623a-broinowski-html/ (accessed February 21, 2013).

Cawte, Alice. 1992. *Atomic Australia.* Sydney: University of New South Wales Press.

Commonwealth of Australia. 1985. *The Report of the Royal Commission into British Nuclear Tests in Australia,* vols 1-3. Canberra: Australian Government Printing Service.

Department of Defence. 1968. "An Independent Australian Nuclear Capability – Strategic Considerations." February 12. Minute Paper.

Dibb, Paul. 2009. "Is the US Alliance of Declining Importance to Australia?" *Security*

Challenges 5 (2/Winter): 31-40.
Findlay, Trevor. 1990. *Nuclear Dynamite: The Peaceful Nuclear Explosions Fiasco*. Sydney: Brasseys.
Heinrichs, Raoul. 2008. "Australia's Nuclear Dilemma: Dependence, Deterrence or Denial?" *Security Challenges* 4 (1): 55-67.
Hewitt, C. L. 1968. Cabinet Minute to Prime Minister Gorton. "The Nuclear Treaty." Top Secret AUSTEO. Australian National Archives.
"Introduction of Nuclear Power to Australia." 1965. Australian Departmental Minute, July. Australian National Archives.
Lyon, Rod. 2009. *A Delicate Issue: Asia's Nuclear Future*. Canberra: Australian Strategic Policy Institute.
Kelso, Jack R., and C Jr. Clifford. 1964. *Operation Blowdown: Preliminary Report*. Washington, D.C.: Defense Atomic Support Agency.
Kirsch, Scott. 2005. *Proving Grounds: Project Plowshare and the Unrealized Dream of Nuclear Earthmoving*. Piscataway, NJ: Rutgers University Press.
Kaufman, Scott. 2011. *Project Plowshare: The Peaceful Use of Nuclear Explosives in Cold War America*. Ithaca, NY: Cornell University Press.
Marcuse, Gary. 2000. *Nuclear Dynamite*. Feature documentary. Toronto: CBC.
Morton, Peter. 1989. *Fire Across the Desert: Woomera and the Anglo-Australian Joint Project 1946-1980*. Canberra: Australian Govt. Pub Service.
"Notes on Discussion with Director, Defense Research & Engineering, Pentagon." 1967. Australian National Archives.
O'Neill, Dan. 1995. *The Firecracker Boys*. New York: St. Martin's Press.
Reynolds, Wayne. 2000. *Australia's Bid for the Atomic Bomb*. Melbourne: Melbourne University Press.
Reynolds, Wayne. 2008. "Australia's Quest to Enrich Uranium and the Whitlam Government's Loans Affair." *Australian Journal of Politics & History* 54 (4): 562-578.
Reynolds, Wayne. 2013. "The Astute Choice." *Security Challenges* 9 (4): 21-43.
Rusk, Dean. 1968. "U.S. Embassy Canberra cable 4842 to Department of State." Top Secret AUSTEO, April 6. Australian National Archives.
Tanter, Richard. 2009. "Rethinking Extended Nuclear Deterrence in the Defence of Australia." December 10. Berkeley: Nautilus Institute. http://www.globalcollab.org/Nautilus/australia/apsnet/reports/2009/tanter- deterrence.pdf (accessed February 20, 2013).
Tanter, Richard. 2013. "The US Military Presence in Australia: Asymmetrical Alliance Cooperation and its Alternatives." *The Asia-Pacific Journal* 11 (45/1). http://japanfocus.org/-Richard-Tanter/4025 (accessed March 1, 2014).
Top Secret AUSTEO. 1968. "Mounting of Field Trials with Nuclear Explosives." February 12. Australian National Archives.
U.S. Department of Energy. 2000. "Operation Plowshare." https://www.osti.gov/opennet/reports/plowshar.pdf (accessed February 26, 2013).
U.S. National Intelligence Estimate. 1966. "The Likelihood of Further Proliferation." NIE 4-66, January 20. http://digitalarchive.wilsoncenter.org/document/116887 (accessed February 24, 2013).
Walsh, Jim. 1997. "Surprise Down Under: The Secret History of Australia's Nuclear Ambitions." *Nonproliferation Review* 5: 1-20.

Wilson, A., Pender, E., and Carter E. 1964. "Peaceful Uses of Nuclear Explosives: An Evaluation, for Australian Purposes, of Proposed Civil Engineering and Mining Applications." Sydney: Australian Atomic Energy Commission.

Yule, Peter, and Derek Woolner. 2008. *The Collins Class Submarine Story: Steel, Spies and Spin*. Cambridge: Cambridge University Press.

Yusuf, Moeed. 2009. *Predicting Proliferation: The History of the Future of Nuclear Weapons.* Washington, D.C.: Brookings Institute.

Mick Broderick is Associate Dean of Research for the School of Arts, Murdoch University, and Deputy Director of the National Academy of Screen & Sound (NASS). He has been writing on, and producing, creative art concerning the cultural and mediated forms of nuclearism for nearly 30 years. Major publications include editions of *Nuclear Movies* (1988/91) and, as editor, *Hibakusha Cinema* (1996/99), *Interrogating Trauma* (2010/13), and *Trauma, Media, Art* (2011). E-mail: m.broderick@murdoch.edu.au