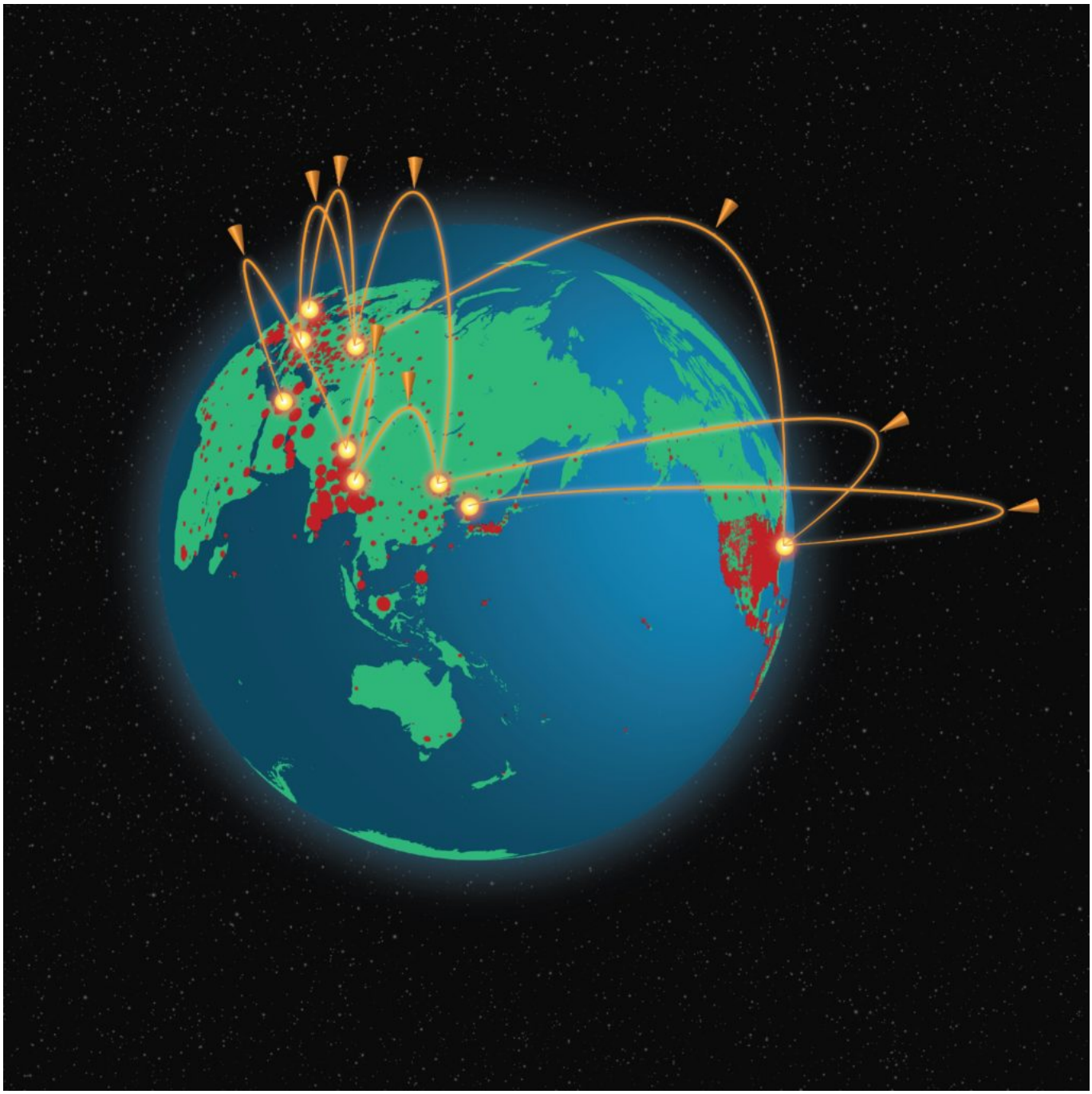
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HOPE BECOMES LAW: THE TREATY ON THE PROHIBITION OF NUCLEAR WEAPONS IN THE ASIA PACIFIC REGION



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RICHARD TANTER

DECEMBER 12, 2020

I. INTRODUCTION

In this essay, Richard Tanter suggests that an extensive regional dialogue on the legitimacy and utility of nuclear weapons is needed to institutionalize and make effective The Treaty on the Prohibition of Nuclear Weapons.

The essay may be downloaded in PDF format **here**

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Banner image: Sophia Mauro for Nautilus Institute. This graphic shows the pandemic distribution from COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU) on September 25, 2020; and the nuclear threat relationships between nuclear armed states.

II. NAPSNET SPECIAL REPORT BY RICHARD TANTER

HOPE BECOMES LAW: THE TREATY ON THE PROHIBITION OF NUCLEAR WEAPONS IN THE ASIA PACIFIC REGION

DECEMBER 12, 2020

Summary

The Treaty on the Prohibition of Nuclear Weapons will enter into force in January 2021, but has a long way to go towards institutionalisation and its intended impact on the dominant presumption of legitimacy and utility of nuclear weapons. Dialogue on the treaty on the treaty in the Asia-Pacific region faces a suite of issues regarding movement of the treaty towards institutionalisation as a regime. The effectiveness of regional dialogues will be affected by the following:

- the TPNW as rebellion against global nuclear hegemony;
- decisions regarding proposals of basing dialogue about the TPNW on a claimed primacy of the Non-Proliferation Treaty;
- debates about the path forward: stigmatisation vs. devaluing and delegitimating nuclear weapons;
- the critical counterfactual: Can we imagine a Threshold Nuclear Disarming State?
- debates on Nuclear Supporting States and Extended Nuclear Deterrence;
- obstacles to treaty compliance posed by globally distributed systems of nuclear command, control, and communication;
- a universal human interest in having in place by the time a Threshold Nuclear Disarming State appears a comprehensive verification regime which will be 'fit for purpose' in the circumstances that will prevail at that point; and the importance of the inclusion of Pacific island states in dialogue about the TPNW.

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Introduction

For three quarters of a century, might was treated as right as the number of nuclear-armed states in the Asia-Pacific region increased from one to now seven.[1] Four of these Nuclear Possessing States are bound by the Nuclear Non Proliferation Treaty and evolving international laws that define the (il)legality of nuclear weapons and their use, and three are non-NPT states but still otherwise subject to international law—especially the Laws of Armed Conflict and the ambiguous ruling by the International Court of Justice in 1996.

The number of states that entered into nuclear umbrella contracts with the United States ("nuclear extended deterrence") varied, but at its peak during the Vietnam War, included regional states party to the SEATO treaty (that is, New Zealand, Australia, the Philippines, Thailand and Pakistan), South Korea, Japan, Taiwan, and by implication albeit not explicitly at that time, Australia and New Zealand. These states were implicated via stationing of forward-deployed nuclear weapons on land or in transit, or by hosting nuclear command, control, and communications and early warning facilities, in preparation and planning for nuclear war and were thereby implicated under international law as also accountable for nuclear threats and use.

The Asia Pacific states not party to this system of nuclear threat known to Strategic Air Command as 'Rest of World' or just ROW were simply assumed to have no agency and no rights or prerogative to exert jurisdiction over the conduct of nuclear war, and were bullied or cajoled to become members of the NPT except for the three standouts—India, Pakistan, and North Korea.

Now the non-nuclear rest of the world, especially clearly in the Asia-Pacific region, has stood up and declared enough. For the 'rest of the world' hope has become law—irrespective of what the nuclear-armed states do or say. The Treaty on the Prohibition of Nuclear Weapons will enter into force for its states parties on 22 January 2021 after the requisite fifty out of 84 signatories completed ratification on October 16th. The end came in a rush – sixteen ratifications amid the pandemic this year, including Malaysia, Tuvalu, Jamaica, Nauru and Honduras since September 30th.[2] These ratifications leading to Entry into Force were despite – or possibly, in part, because of – a last minute cease and desist demarche from the United States urging governments that had already either signed or ratified the treaty to withdraw their support.

The U.S. letter to signatories of the TPNW, reported on 22 October, stated that the treaty 'turns back the clock on verification and disarmament and is dangerous':

'Although we recognize your sovereign right to ratify or accede to the Treaty on the Prohibition of Nuclear Weapons (TPNW), we believe that you have made a strategic error and should withdraw your instrument of ratification or accession.'[3]

It is hard to imagine a more clear expression of the dilapidation of the U.S. hegemonic capacity to lead by the creation of nuclear consensus, or even, to coercively counteract even small countries in the rebellion from below against the US-led global nuclear order that the TPNW represents.

The rupture of U.S. nuclear hegemony accelerated by President Donald Trump's reign of chaos has energized two competing and opposing trends: on the one hand, the nuclear abolition movement, epitomized by the TPNW and the awarding of the Nobel Peace Prize in 2017 to the International Campaign Against Nuclear Weapons (ICAN) which originated in Australia; and on the other, the precise reverse movement, with leading policy-makers of major Non-Nuclear Weapons States publicly re-considering the desirability of developing nuclear weapons themselves – vide Japan, South Korea, Germany and Australia – all U.S. allies. The consequences of these contrary trends are of great significance for the countries of South East Asia and the Pacific, which make up the core

membership of two neighbouring Nuclear Weapon Free Zones.[4]

To be sure, there is no guarantee that the treaty will achieve its aim of impelling a move from prohibition to elimination. Indeed, as we shall see below, the nuclear-armed and umbrella states (hereafter Nuclear Possessing States and Nuclear Supporting States[5]) in this region contest the notion that the treaty is a valid and universally applicable international law, not least because a fundamental principle of international law is that states most affected by international laws must concur in the creation of that law for it to be binding.[6] The nuclear-armed and umbrella states in the Asia-Pacific region clearly intend to ignore or quash it. And, of course, the entry into force of a treaty with global intent with as yet only a quarter of the world's countries as states parties[7] has a long way to go before it reaches either of its three primary goals: to become binding international law on a larger number of states to the point where it impinges in practice on the behaviour of nuclear umbrella countries that are not states parties; to induce one or more of those countries to accede to the treaty; or, more distantly, to contribute to shifting at least one of the Nuclear Possessing Countries to towards the status of Nuclear threshold Disarming State (of which more below).

Yet, for first time since nuclear weapons were first used in war 75 years ago, there is an unambiguous prohibition in international law on their use and possession that will come into force – and most likely for a majority of states in the world – and in the Asia-Pacific. It is now reasonable to expect that most of the remaining 34 current signatories will ratify, and that more will join them in time, bolstering the institutionalisation of the treaty regime. There are a number of instances of international regimes with limited full accession, but even so have carried considerable normative influence beyond the formal membership of the treaty regimes concerned. At a minimum, all governments supporting the right to possess or rely on the use of nuclear weapons for their defence polices will now face potential discursive challenges to previously unchallenged legitimacy on that matter.

If the final, still distant objective of the TPNW is to move from prohibition of nuclear weapons to their elimination, then the key proximate goals are the full institutionalisation of the treaty regime together with its universalisation. Governmental and civil society TPNW supporters in the region intend to continue campaigning to realize these near-term goals which will entail engaging in dialogue with opponents and sceptics of the treaty in the six nuclear-armed and umbrella states. Thus, much as these nuclear-dependent states may want to ignore the TPNW, they will be forced to respond to it at home and in regional and global fora, with inevitable impacts on political foundations of nuclear strategy that bear close examination.

One starting point of such dialogues will be regionally-based dialogue in the Asia-Pacific region.[8] The 'Asia-Pacific' is a famously flexible, not to say slippery, term, its content, like any other classification system, shifting according to purpose. This paper takes a frame of the non-nuclear states of East Asia, Southeast Asia, and the Pacific island states, including Australia and New Zealand. These regions correspond to the non-nuclear states that make up two well-established Nuclear Weapon Free Zones (the South Pacific NWFZ and the Southeast Asian NWFZ) and those that make up a proposed third (a Northeast Asian NWFZ).[9] (See Table 1.) South Asia is an important and separate "nuclear" region that links China, India, and Pakistan to the Northeast Asian nuclear threat system, and in turn to the global nuclear threat system involving the United States and Europe. Important as the region is in terms of the risk of nuclear war, this paper will not address how the TPNW will enter into the nuclear discourse and evolution of nuclear commitments in South Asia.

Both the Southeast Asian and Pacific islands regions show the pattern of sharp division within the regions between a small number of Nuclear Supporting States and a large number of ban treaty

supporters. The three major U.S. nuclear allies have opposed the treaty, sometimes vociferously. None of the three principal U.S.-allied Nuclear Supporting States – Australia (a member of the South Pacific NWFZ), Japan, and the Republic of Korea – attended the treaty negotiations, and all three have subsequently reaffirmed their commitments to reliance on U.S. nuclear deterrence and opposed the TPNW.[10]

Non-nuclear states overwhelmingly supported the adoption of the treaty text in 2017. Nine of the 13 ASEAN states have signed, with only one, Singapore showing explicit doubt at any stage.[11]

None of the three principal U.S. allies and Nuclear Supporting States – Australia (a member of the South Pacific NWFZ), Japan, and the Republic of Korea – attended the treaty negotiations, and all three have subsequently reaffirmed their commitments to reliance on U.S. nuclear deterrence and opposed the TPNW. On the contrary, the member states of the Association of Southeast Asian States (ASEAN) have in general show strong support for the treaty, and several large states took a leading part in the treaty text negotiations. All thirteen ASEAN member states participated in the UN General Assembly negotiations leading to the adoption of the text of the TPNW in July 2017, with all but one voting for its adoption. Nine ASEAN members states have signed the treaty, of which four have ratified to date, including Malaysia, Thailand and Vietnam. All Pacific island members of the South Pacific Nuclear Weapon Free Zone supported the adoption of the treaty text, and seven (including New Zealand) have signed or acceded to the treaty.

It may be thought that none of this matters in regional diplomacy, but that may well not be the case. The three Nuclear Supporting Countries are almost wholly isolated from their regional neighbours in Southeast Asia and the Pacific islands. This division from neighbours is especially important for Australia and Japan, which have both sought closer relationships with Southeast Asia, and which both have spoken of the need for closer relationships with Pacific island states in the face of increasing strategic competition for regional dominance from China.

Dialogue in the region faces a suite of issues and problems regarding movement of the treaty towards institutionalisation as a regime. All of these issues have regional dimensions. The effectiveness of regional dialogues about the TPNW will be affected by the following:

- the nuclear ban treaty as rebellion against global nuclear hegemony;
- decisions regarding proposals of basing dialogue about the TPNW on a claimed primacy of the Non-Proliferation Treaty;
- debates about the path forward: stigmatisation vs. devaluing and delegitimating nuclear weapons;
- the critical counterfactual: Can we imagine a Threshold Nuclear Disarming State?
- the regional obstacles to treaty compliance posed by globally distributed systems of nuclear command, control, communication and intelligence;
- a universal human interest in having in place by the time a threshold nuclear disarming state appears on the horizon a comprehensive verification regime which will be ‘fit for purpose’ in the circumstances that will prevail at that point – and beyond;
- and the importance of the inclusion of Pacific island states in regional dialogue about the TPNW.

The Treaty as Rebellion Against Global Nuclear Hegemony

As noted in section 1, for the past half century, the dominant framework for discussion of nuclear disarmament has been the division of the parties to the 1968 nuclear Non-Proliferation Treaty into two groups recognized under the NPT: Nuclear Weapons States (NWSs) and Non-Nuclear Weapons

States (NNWSs). This NPT division of the world's states has long been seen as unsatisfactory, beginning with the refusal in the 1960s by India in particular, then without nuclear weapons, to join the treaty on the grounds that the NWS/NNWS division amounted to an illegitimate regime of global nuclear apartheid. The exit of North Korea from the treaty, and the refusal of subsequently nuclear-armed India, Pakistan and Israel to join the treaty have deeply compromised the treaty's putative distinction on the basis of 'recognized' nuclear weapons possession. It is a mark of the hegemonic power of the NPT's framework that its terms of that distinction have acquired an assumed legitimacy and discursive efficacy well beyond the treaty.[12]

Following the entry of the TPNW into force it is more useful to frame global discussions about nuclear weapons in terms of the division of the world into three main groupings:

- the Nuclear Possessing States (NPSs), made up of the five Nuclear Weapons States 'recognised' under the NPT plus the other four nuclear-armed states;
- the currently thirty-plus Nuclear Supporting States (NSSs) composed mainly of those asserting the legitimacy of reliance on U.S. extended nuclear deterrence; and
- the Largest group, the Nuclear Ban Treaty States (NBTS).

Whatever the disdainful disregard of the 'entirely unserious'[13] ban treaty by the Nuclear Possessing States and the Nuclear Supporting States, the ban treaty will establish a United Nations-auspiced legal regime based on the presumption of the fundamental illegitimacy and prohibition of development, testing, production, stockpiling, stationing, transfer, use and threat of use of nuclear weapons, and also assistance and encouragement to such prohibited activities.

Nick Ritchie and Kjølv Egeland summarised the rationale behind the concentration on the treaty's capacity to reshape the frameworks of nuclear weapons discourse:

> 'From a theoretical perspective, the purpose of these discursive shifts was to transform the subjectivities of core actors, which is a central feature of productive power. While the non-nuclear-armed states would be redefined from passive or "subaltern" bystanders to active stakeholders in humanitarian diplomacy, the nuclear-armed states (especially the NPT NWSs) would be recast from "responsible nuclear sovereign" entitled to practice nuclear deterrence to irresponsible possessors of uncivilised weapons of mass destruction.'[14]

The coming expanded nuclear policy debate is about the establishment of norms and practices derived from the treaty, and resistance to such processes.[15] As put it trenchantly and elegantly,

> 'The supporters of the ban are aiming to replace the NPT's distinction between nuclear haves and have-nots with a distinction between nuclear civilizers and barbarians.'[16]

The U.S. demarche to TPNW signatory states was extraordinary in its cavalier attitude to good faith in international law by encouraging signatory states to ignore Article 17 of the treaty permitting withdrawal only on the condition a state party

> 'decides that extraordinary events related to the subject matter of the Treaty have jeopardized the supreme interests of its country'.

But the U.S. letter was also revealing in its repetition of U.S. government-issued talking points repeated over the past four years and echoed loyally by Nuclear Supporting States such as Australia.[17] A sample of such claims, most of which have been refuted effectively, would include:

- ‘The TPNW undermines the Non-Proliferation Treaty.’
- ‘The TPNW has weaker nuclear safeguards than the Non Proliferation Treaty.’
- ‘The TPNW disregards the need for verification of disarmament by Nuclear Weapons States.’
- ‘The TPNW is incompatible with alliance by Non-Nuclear Weapons State countries with Nuclear Weapons States.’
- ‘The day after the TPNW comes into force, there will be just as many nuclear weapons as there are now.’
- ‘No state possessing nuclear weapons has signed the treaty – or is ever likely to do so.’
- ‘The TPNW and its supporters are creating divisions in the global arms control and disarmament community.’
- ‘The TPNW undermines democratic open societies which are committed to transparency about nuclear disarmament, and protects autocratic and authoritarian states that are secretive and repressive.’
- ‘Many states that voted to adopt the text of the TPNW in 2017 now have signers’ remorse: it will never come into force.’

All of these criticisms were aired during the 2017 UN General Assembly negotiations over the text of the TPNW – which, in regional terms, was supported by all but one of the ASEAN states and almost all Pacific island states. Further, almost all have either been disproved by the TPNW’s short history to date (little signer’s remorse on display; the precondition for Entry into Force has arrived); shown to be wilful misrepresentation (how many countries have countries has the NPT disarmed?; the treaty clearly does not limit alliances with Nuclear Possessing States, just specifically nuclear alliances); or shown to be simply self-serving (all Nuclear Possessing States are secretive and repressive when it comes to their nuclear weapons – just ask Mordechai Vanunu). There are indeed several valid concerns, along with continued misunderstandings, about some aspects of the treaty, which are discussed below, but most of the list above are now a matter of unwarranted repetition of debunked claims.

In this year of pandemic, the number of countries that have ratified the treaty under such conditions is striking: Belize, Botswana, Fiji, Honduras, Ireland, Jamaica, Lesotho, Malaysia, Namibia, Nauru, Nigeria, Niue, Paraguay, Saint Kitts and Nevis, and Tuvalu. That these countries, some of which are relatively small and almost all of which face economic and climatic difficulties, should have taken on the burden of ratification under the added weight of the pandemic suggests a measure of determination on the part of the less powerful of the world’s governments to move the ban treaty into law. Together with the near universal signing of the treaty by the countries of the Association of Southeast Asian nations and of the Pacific Island Forum, this pattern suggests there is fertile ground for proactive dialogue in the Asia-Pacific, in the first instance between government and civil society organisations from the Nuclear Ban Treaty Supporting States and Nuclear Supporting States.

Two Key Choices on the Pathway to TPNW Universalization

With the entry of the TPNW into force both proponents and opponents of the treaty enter into a new strategic setting. There are issues of concern to both sides about how to proceed, and some of them are potentially difficult. Two of those issues concern the starting points for ongoing dialogue each side commonly proposes, both of which require serious thought before the longterm framework for dialogue is firmly set.

One issue how to discuss the relationship between the NPT and TPNW: whether the basis of negotiations should be the primacy of the nuclear Non-Proliferation Treaty as the foundation of global regulation of nuclear weapons. Seeing the NPT as 'the cornerstone of the global non-proliferation regime' and therefore as the starting point for any dialogue on nuclear disarmament leads some critics of the TPNW into difficulty. To be clear, I believe an assessment of the NPT regime will conclude that for purposes of nuclear disarmament the Non-Proliferation Treaty is effectively a dead letter. A simple ecumenical approach will not be productive for dialogue. But this is a matter on which reasonable people may differ, and positions on this issue may also shape-shift and differ in subtle but important ways depending on their stance, opening at least the possibility of some common ground on which to pressure the nuclear-armed and umbrella states to disarm and reduce nuclear war risk during the disarmament process rather than the current trend of nuclear armament and modernization, and increased risk of nuclear war.

The second issue involves a concern with the common framing by proponents of the TPNW of the treaty's primary process as stigmatising the states possessing nuclear weapons and their supporting states. clearly, nuclear weapons will continue to give rise to feelings of disgust and revulsion amongst vast numbers of people, TPNW proponents will face a hard choice as they engage with those committed to retaining nuclear weapons between continuing to focus primarily on stigmatizing the admittedly pathological psychosocial aspects of nuclear weapons theory and practice, versus concentrating on universalising of the nuclear ban treaty less emotive but no less explicit strategies of devaluing and delegitimating nuclear weapons.

The rest of this section examines the contested terrain on the key issues that TPNW and nuclear weapons advocates will fight to retain the political high ground in each country in the region, although the degree to which each of these issues is salient in a given polity with their unique geopolitical circumstances, location in the world system, and geostrategic experience and related key historical lessons derived from their histories, will vary. In presenting these arguments, I will inflect the analysis with my own views on which position is valid and sound taking into account the fundamental goals of realizing human security and constructing a peaceful world that is sustainable; but wherever one falls on each of these arguments—and readers are welcome to substitute their own value judgements and views--I suggest that these issues will define the agenda of the debate in the region on the TPNW versus the nuclear status quo.

(a) The NPT is not a starting point for dialogue

Many critics of the TPNW argue that discussion and dialogue about the TPNW should be framed on the basis of the primacy of the nuclear Non-Proliferation Treaty as the foundation of global regulation of nuclear weapons.[18] Insistence on the primacy of the NPT as starting point is often accompanied by support for a range of arms control, nuclear security, and non-proliferation measures. Like the NPT, these other measures are based on an explicit or implicit of presumption of legitimacy of nuclear weapons. In fact, it will be important to distinguish between the insistence on the primacy of the NPT and support for other arms control and nuclear security measures.

There are three fatal flaws to the primacy of the NPT argument.

There can be little objection to dialogues with supporters of the NPT as such, but given the almost moribund state of NPT discussions in recent years, it would first be appropriate to cast a sceptical eye over the prospects of anything productive emerging from the postponed 2020 NPT Review Conference, now due to convene in April of next year. There was little evidence of that before its postponement. The past two decades of NPT RevCons have featured many promises, but shown little or no actual progress or achievement – and certainly none on nuclear disarmament as required of the Nuclear Weapons States and their supporters by the NPT's wholly ignored Article 6. The NPT is

not dead, but there is little likelihood of substantial reform, even just in the form of making good on the promises of RevCons past. No governments in the Asia-Pacific, (and certainly not the government of Australia, the regional country most supportive of and hardwired into U.S. nuclear planning), have shown any serious and sustained commitment to the root and branch proactive policy renewal process that would be need to make good on the very limited commitments of RevCons past, let alone the level of globally coordinated effort needed to revivify the NPT.[19]

Secondly, leaving aside the severe limitations of the NPT's deriving from the NPT's recognition of five 'approved' Nuclear Possessing States, there is no indication of a viable route for the four non-NPT Nuclear Possessing States to enter the NPT regime.

Lastly, and most fundamentally in relation to the TPNW, over the more than fifty years of the treaty's existence the five Nuclear Possessing States 'recognized' under that treaty have shown no serious willingness to meet their disarmament obligations under Article 6. Half a century is enough: that route is most unlikely to open.

Of course, action to support nuclear non-proliferation, nuclear weapons security, and arms control are almost always commendable and helpful, but it must be remembered that such initiatives are distinct from nuclear disarmament, and do not function as a substitute for it.

And the situation on nuclear arms regulation is more serious than many critics of the TPNW recognize. Nuclear arms control is now virtually an endangered species. As Alexey Arbatov put it in a recent review of the 'the disintegration of arms control',

> 'The world's ability to muddle through the next phase of international tensions without a major crisis, and to prevent such a crisis from escalating to nuclear Armageddon, is in doubt.'[20]

Every Nuclear Possessing State is committed to 'modernization' of their nuclear arsenal, and the Nuclear Supporting States of the Asia-Pacific, are not only not demurring, but in the case of the regional major allies of the US, are tightening their alliance links, nuclear and otherwise.

Contemporary mainstream reformist policy approaches to nuclear weapons based on the NPT and fading memories of a Golden Age of Arms Control are anaemic, and their likelihood of near-term major success implausible. To then set the framework of necessary dialogue as one between supporters of the NPT and supporters of the TPNW seems constraining rather than productive, and to not assist discussion of more serious problems facing the universalization and efficacious institutionalisation of the TPNW.

(b) Devaluing and delegitimating nuclear weapons vs stigmatization

For many proponents of the nuclear ban treaty its immediate utility as international law would be its norm-forming capability, especially a capacity to stigmatize the use and possession of nuclear weapons. Egeland's quotation above epitomizes the positive version of that thought of the necessity and utility of stigmatisation as a key campaigning resource.

Although disgust and revulsion from the use or prospect of use of nuclear weapons are entirely understandable and likely be increasingly unavoidable, and it is hard to deny the role of such revulsion impelling people towards action on nuclear weapons.[21] However, there are reasons to be concerned about a strategy for universalisation of the TPNW based primarily on an uncritical heightening of stigmatisation of nuclear weapons in international society. It may be wise to avoid a strategy primary based on the trope of stigmatisation and its practice for two reasons.

Firstly, stigmatization is not a simple matter of 'socialising' a passive transgressive state into a

preferred norm, as at least two leading researchers on stigmatisation emphasize. The stigmatization strategy draws on work over a number of years pointing to revulsion with nuclear weapons as a motivation for opposing their possession and more particularly their use in war. Nina Tannenbaum's work on the origins and dynamics of the taboo on the use of nuclear weapons has emphasized the role of the stigma attached to nuclear weapons as a key support for a nuclear taboo, and conversely as an impetus to United States government officials to overcome restraints on U.S. nuclear weapons use deriving from that stigma.[22]

Basing her work on stigma in international society on Erving Goffman's classic 1965 book *Stigma: Notes on the Management of Spoiled Identity*, Rebecca Adler-Nissen also emphasizes the normality of stigma in international society, which, she argues is

> 'in part constructed through the stigmatization of "transgressive" and norm-violating states and their ways of coping with stigma.'

Adler-Nissen cautions against the widespread misunderstanding that sees international society founded solely on common values and norms. Stigma plays a more complex role than is often acknowledged in some constructivist accounts of states passively absorbing norms through simple processes of 'internalization'. States and relations between them (and within the wider salient category of global social relations). States reacting to stigma or experiencing it are active agents.

Most importantly, Adler-Nissen argues, the potency of stigma can be diminished or avoided through positive action by the stigmatised, especially when they hold the means and power to reframe negative discourses to their advantage:

> 'Stigmatized states may strategically cope with their stigma, and may, in some cases, challenge and even transform a dominant moral discourse.' [23]

Historically one important and salient example in the Asia-Pacific has been the ability of the United States to slough off the historical stigma of the first use of nuclear weapons through censorship of the human consequences in Japan and construction of a counter-narrative of the necessity for nuclear first use to 'end the war' in the Pacific, contested though that highly effective account may be from the margins of power.[24]

A second reason for caution is that stigmatisation, even when it is not simply a discursive tool of the powerful against the weak or out-groups, almost always involves at least potential or incipient dehumanisation and violence. In contemporary international society President Trump is an adept from whom other authoritarian world leaders have learned, and who himself has learned from them. All nuclear deterrence policy must presume and robustly prepare for the use of nuclear weapons in war. In practice nuclear deterrence will always involve what we call, when in the hands of governments we dislike, the intent to use weapons of mass destruction, and which should more properly be regarded in all cases as actions on a genocidal scale. Such deterrence discourses, to be politically successful, necessarily start from psychosocial processes of dehumanisation of the adversary - those in Judith Butler's useful reminder, whose lives are 'not grievable'.[25]

Rather than founding the path towards the universalization of the nuclear ban treaty on unreflective and possibly counter-productive strategies of stigmatizing nuclear weapons, the safer and more richly generative alternative, as a number of researchers have argued, is to pursue strategies of devaluing nuclear weapons in defence strategies and delegitimating the possession and use of nuclear weapons. These two latter strategies are distinct in concept and requirement, and while not opposed, lead to the need for quite different suites of dialogue partners.

De-valuing nuclear weapons involves dialogue and debate with security community practitioners who support nuclear possession for deterrence and war-fighting, to explore and identify

- the limits of the military utility of nuclear weapons;
- the counter-productive consequences of their use; and to
- develop alternative – and sustainable – non-nuclear security doctrines and practices.

On the other hand, de-legitimating nuclear weapons involves engaging in strategic, political, legal, and moral discourses involving nuclear weapons to challenge and then vitiate claims of legitimacy for the use, possession, preparation for use, and assistance for and inducement to use nuclear weapons. In Nick Ritchie's words, delegitimation involves

> 'exposing the divergence of nuclear weapons practices and values from justifiable rules, consent, legal precedent, and the principle of equality.'[26]

A starting point is to recognize that virtually all existing international law on nuclear weapons prior to the TPNW explicitly or implicitly legitimises the right of certain countries to possess and use nuclear weapons, regardless of the opinions – and the likely fate – of the majority of the world's countries. Once the claim of the fundamental illegitimacy of nuclear weapons is posed systematically, the discussion of why that state of barely registered *méconnaissance* in the face of an inherently genocidal existential situation should be tolerated can be discussed openly.[27] Ritchie suggests delegitimation practices will involve

> 'withdrawal of popular consent, changing the legal validity of the possession and use of nuclear weapons, and demonstrating that current nuclear practices and power relations do not reflect justifiable rules based on shared beliefs prevalent in society – in our case global society.'[28]

Both approaches – devaluing nuclear weapons and delegitimating nuclear weapons – can and should involve both state and civil society agents, at global, regional, and national levels, and will involve construction of new transnational epistemic and moral communities.[29] Challenges to both the military utility of nuclear weapons and to the presumptive right of both Nuclear Possessing States and their dependent Nuclear Supporting States to risk nuclear next use are – in appropriately diplomatic phrasing – useful frames for regional dialogue between regional TPNW supporting states and Nuclear Supporting States.

The NPT, as 'the foundation of nuclear restraint' in existing international law aimed at regulating nuclear weapons, has in fact been the most enduring discursive legitimation for the ongoing possession and use of nuclear weapons, and even then is silent on the four non-NPT Nuclear Possessing States, and likely to remain so.[30]

Can We Imagine a Threshold Nuclear Disarming State?

A common theme of criticism of the TPNW is that the Nuclear Possessing States took no part in the TPNW negotiations, and that there is no likelihood of any such state joining the treaty.[31]

Let us assume, for the purposes of argument, that the current tide of nuclear proliferation is arrested in its present situation of nine Nuclear Possessing States. Is it absurd to expect any state that possesses nuclear weapons would willingly enter into a process of giving them up? The historical record, to some extent, answers 'No, it is not absurd', pointing at least to the South

African case and to the case of Ukraine. But these two cases are undoubtedly somewhat 'special cases' – apartheid South Africa in the brink of collapse ensuring its successor majority regime did not possess nuclear weapons, and Ukraine independent from the former Soviet Union rejecting continued possession of its inherited but not fully controllable nuclear arsenal in favour of an explicit non-nuclear status in return for security guarantees. Furthermore, for the sake of clarifying the argument let us leave aside the fading hopes that North Korea will one day be persuaded to trade its nuclear weapons for guarantees of regime survival, security, and financial reward.[32]

The critical question is whether there is any reason think any major Nuclear Possessing State would voluntarily relinquish its nuclear weapons by seeking to accede to the TPNW? All thinking through of question of this kind (both con as well as pro) involves a consideration of counter-factuals – the essential but forbidden fruit of social inquiry as Richard Ned Lebow called them.

The United Kingdom is a difficult but plausible candidate. Britain is always distinctive amongst the Nuclear Possessing States insofar as it is highly dependent on the United States for its nuclear weapon system. So extensive is this dependence on the U.S. that the UK is best understood as a client nuclear state of the United States.[33]

At the beginning of the 21st century, Malcolm Chalmers and William Walker set out an argument to the effect that a successful Scottish independence project would quite possibly render the continuation of the United Kingdom's submarine-based nuclear capacity impractical, mainly for reasons of geography.[34] The UK's nuclear deterrent force of submarines is based at Faslane in Scotland near Glasgow, with a large nuclear munitions facility at nearby Coulport, and the ascendant Scottish National Party is committed to closing both bases. Practical options for alternative basing in what would be the remains of the UK (rUK) are highly constrained by geography and political considerations.[35] It may well be that the government would have to consider the option of basing its UK nuclear deterrence force in the United States at Kings Bay, Georgia.[36]

Since Chalmers and Walker opened discussion of the possible impact of Scottish independence two decades ago the structural coherence of the United Kingdom has been considerably undermined, and the probability of Scottish independence heightened, not least by the combined consequences of Brexit and the pandemic, to say nothing of the fiscal distress of the UK government. Moreover, in the intervening years the UK held a surprisingly wide-ranging public debate on the modernization of its nuclear weapons capacity through the renewal of the Trident missile submarine force. A range of views were represented, including acknowledgement by defence specialists of difficulties that will be caused by the great cost of Trident renewal for the UK's capacity to participate in global conventional operations in future US-led multilateral intervention coalitions.

Coming to power abruptly in July 2016 in the immediate aftermath of the Brexit referendum Prime Minister Theresa May terminated the Trident renewal debate immediately and authorised the nuclear renewal program. That now seems a long time ago, and it is useful to consider what would have happened if that debate about the renewal of Trident was taking place in the UK under the current circumstances. Much has happened since then to exacerbate strains on Britain's identity as a sovereign nuclear power, along with the fiscal and domestic political capability to maintain a claim to such a role. The still developing Covid-19 pandemic, and in particular the accompanying perceived functional shrinking of the UK government into 'the government of England' on the core matter of health, clearly strengthens the likelihood of another Scottish independence referendum, with a strong chance of electoral success. Given the compounding pressures of the present conjuncture on the United Kingdom structurally, fiscally, and in terms of identity it is reasonable to suggest that there would be a much greater weight leaning in the direction of a negative decision on Trident renewal.

None of this narrative of future possibility is certain. Whether in the event of a successful referendum a post-independence Scotland would make good on SNP's commitment to close the Scottish nuclear bases is obviously uncertain, as would be the reaction of the rump UK/English government to such moves. And even more uncertain would be the response of other governments, including the other NATO nuclear powers of the United States and France. Nuclear establishments, especially so closely tied to maintenance of post-imperial status, do not give way without a great conflict.[37]

However, the claim, commonly heard in mocking terms from opponents of the TPNW, that it is impossible to seriously imagine any Nuclear Possessing State of consequence moving to the status of a Threshold Nuclear Disarming State is simply unsupportable. It may well not happen, but the frequent denial of a realistic possibility reflects a worrying element of compulsive insistence on the untested immutability of the global nuclear order. The TPNW as a politico-legal project of regime formation is rooted in the possibility of such a plausible, though by no means certain, future development, and provides the foundations of a legal and institutional pathway to the realisation of such a shift in the global order.

As a result, confirmation of the plausibility of a counter-factual that imagines a significant Nuclear Possessing State considering nuclear disarmament renders the question of verification of national disarmament programs more urgent than those who cannot imagine such a possibility will recognize.

Walker's views rest on the understanding that not only are the elements of support for nuclear possession in any given state complex (and probably overdetermined), but that the nine Nuclear Possessing States are quite distinct from each other than is suggested by the Nuclear Weapon States label. Drawing together a set of possible contributing elements in a Nuclear Possessing States, Walker suggested an important research approach to the question of threshold nuclear disarming states:

> 'It would be interesting to mount a research project to compare the "distances" of the nuclear-armed states from the disarmament threshold, as assessed in terms of capabilities, strategies, regulation, identity fixation and institutional entrenchment, among other things.'[38]

These are not simply matters for disinterested researchers. If the TPNW is to have any utility it must be based on a well-founded assessment of the future historical possibility of its primary assumption: that there will be a Threshold Nuclear Disarming State, as a prelude to making it more likely.

The appearance of a Threshold Nuclear Disarming State anywhere on the planet will in itself have a profound political impact, even with the likely uncertainty of whether it would then proceed over the threshold. The UK's nuclear relationship to the Asia-Pacific is now essentially nil, although the strategic implications of its history of nuclear testing in Australia and Kiribati and the Marshall islands continues. Yet even so, the appearance of a Threshold Nuclear Disarming State even from distant Europe would mark a seismic shift in a region dominated from the dawn of the nuclear age by Nuclear Possessing States brazenly and energetically abjuring law as a form of nuclear regulation.

Nuclear Supporting States and Extended Nuclear Deterrence

Most currently Nuclear Supporting Countries are allies of the United States, and almost all of these have declaratory defence policies explicitly reliant on U.S. extended nuclear deterrence.[39] Reliance by each of these countries on policies of extended nuclear deterrence would violate the

TPNW prohibition on encouragement or inducement to use or threat of use of nuclear weapons in Article 1(e) of the treaty:

> 'Assist, encourage or induce, in any way, anyone to engage in any activity prohibited to a State Party under this Treaty'.

A government seeking to accede to the TPNW would need to abandon the policy of reliance in U.S. extended nuclear deterrence, and provide convincing evidence to a TPNW Conference of the Parties of repudiation of any non-public agreements or policy arrangements with the United States to the same effect.

Clearly, in the case of Asia-Pacific allies currently relying on U.S. extended nuclear deterrence for aspects of their defence – Australia, Japan, South Korea, and, defacto, Taiwan – repudiation of nuclear deterrence would involve a great change in their strategic outlook, which would be very difficult to imagine politically, and if it did occur, would involve considerable changes in defence and foreign policy. But conceptually, it is a comparatively straightforward matter.[40]

Without pretending that such a policy would be politically straightforward to establish for any of these countries, this brief exploration suggests that once an Australian government was committed to such a position, there might be relatively few obstacles to simply replacing the END policy with one of full self-reliance – unless the U.S. created such obstacles. In practice removal of reliance on extended nuclear deterrence by an Australian government would be politically very difficult but more straightforward than for the other three allies in East Asia. All would need to exit from any intergovernmental military or other defence coordination bodies or institutions with the United States concerning the use or planning for use of U.S. nuclear weapons. Exiting from nuclear institutional linkages would include any secondment or embedding of defence personnel in United States nuclear-related military, bureaucratic or intelligence agency positions. This move would, in theory, be somewhat easier in the Australian case because U.S. extended nuclear deterrence arrangements with Australia are much more nebulous, not to say uncertain, than in the East Asian cases.[41] Not only are those countries closer to nuclear threat than Australia, but Japan and South Korea have well developed bilateral nuclear policy coordination bureaucratic and military structures akin to the NATO Planning Group, which Australia does not. [42]

For campaigners for the universalization of the ban treaty these Nuclear Supporting Countries with declaratory policies of reliance on extended nuclear deterrence are probably the primary targets of the next phase of their work. Experience with the United States response to the New Zealand repudiation of reliance on extended nuclear deterrence culminating in the passage of the *New Zealand Nuclear Free Zone, Disarmament, and Arms Control Act (1987)* suggests that the U.S. would be likely to take a similar political approach to any of these countries following New Zealand and joining the TPNW. In order to limit 'contagion' the U.S. would seek to claim that such an act would be a violation of what was called in the New Zealand case – incorrectly – the 'global indivisibility of extended nuclear deterrence'.

One other issue closely related to calls for U.S. allies which are Nuclear Supporting States to abandon extended nuclear deterrence in order to join the TPNW has been raised on a number of occasions. The matter was recently raised on the occasion of the TPNW reaching the ratification requirement for entry into force, echoing earlier comments by the U.S. government and by critics of the TPNW.

Matthew Harries of the International Institute of Strategic Studies summarised the issue in 2017 as one of the unfairness and folly of using democratic means to achieve nuclear disarmament in democratic states, while authoritarian Russia is immune to any comparable domestic pressures:

> ‘The problem is that, when one moves past abstract principles to what the ban will actually do in practice, the target of the treaty is clear: intentionally or not, it is an attack on the nuclear-armed democracies—the United States, in particular—and their allies to the near-exclusive benefit of Russia and China… If I were a Russian policymaker, I would be enthusiastically cheering on the ban movement in private, while maintaining an appropriately scornful tone in public.’

Harries is correct that one of the targets of ban treaty supporters is the reliance of U.S. allies on assurances of extended nuclear deterrence, both in Europe and Asia. Here Harries is following the argument put forward forcefully by the United States ‘Non-Paper’ of October 2016 on ‘Defense Implications of Potential United Nations General Assembly Nuclear Weapons Ban Treaty’, sent to all NATO member countries, urging them to boycott the treaty negotiations.[43] Like Harries, the Non-Paper correctly identifies the implications of a treaty as envisaged by its main proponents as being deeply inimical to the what the U.S. has at times called ‘the global indivisibility of extended nuclear deterrence’. George Percovich recently updated the argument as Russia ‘continues to add to its nuclear arsenal and repertoire of coercion and interference in the internal affairs of NATO countries.’:

> ‘Thus, the Hippocratic question is whether and how champions of the TPNW could avoid the harm of rewarding Russian intransigence and penalizing NATO states’ adherence to democratic norms of free association and lobbying.’

The essential arguments are that peace and the security of democracies in Europe depends on the viability of U.S. extended nuclear deterrence, which the ban will erode, and that the effects of the coming treaty regime will be imbalanced because it will do nothing to eliminate Russian (and, by implication, Chinese) nuclear weapons, while undermining the delicate nuclear policy consensus achieved by the democratic states. Such a claim assumes that the stigmatizing effects the treaty proponents intend the treaty to generate have no follow-on effects on such countries or their strategic environment.

The ‘Hippocratic’ line of attack - ‘first, do no harm’ – has a fundamental moral problem in so far as it necessarily defends the right of use of nuclear weapons for defence: nuclear deterrence policy must presume a willingness to use nuclear weapons in war if it is to function effectively. This charge is a rerun of 1980s arguments about the impossibility of what was then analysed in terms of a requirement for multilateral disarmament over unilateral disarmament. Moreover, it brings a distinctly American perspective to NATO and its nuclear operations.

Percovich adumbrates the basic argument by applying it not only to U.S. extended nuclear deterrence as such in Europe, but specifically to its most dangerous component – the ‘nuclear-sharing’ arrangements that has 150 U.S. B-61 nuclear weapons prepositioned on airbases of Belgium, Germany, Italy, Netherlands and Turkey. This blunt defence of nuclear-sharing is surprising, since in earlier work Percovich showed a more constructive analytical approach to the question of how countries with END policies should go about assessing their desirability.[44] Percovich helpfully suggested three questions, somewhat different from his more recent approach:

- What are the actual threats to Australia against which extended nuclear deterrence is invoked?
- What are the probabilities attached to such threats?
- Where threats are deemed to be actionable with nuclear response, what alternative responses or means of addressing the issue exist or could be generated?

Here Percovich provided a useful example of the strategy of constructing dialogue around devaluing

the utility nuclear weapons, by making explicit and measurable the validity of claims by Nuclear Supporting States as to the utility or otherwise of nuclear weapons.

Each of these arguments apply to the NATO non-nuclear states as a whole regarding END, as well as to the five nuclear-sharing states. The 'Hippocratic' question also applies to the Asian Nuclear Supporting States – Japan, South Korea and Australia – with regard to China. A more useful approach would be to start with Percovich's 2009 questions, separate out the evident folly of the nuclear-sharing arrangements, and locate the fundamental question of the desirability of NATO as a US-led nuclear alliance in the broader questions of reconsideration of Europe's autonomous foreign and defence policy requirements and capacities.

But, to return the earlier comments on extended nuclear deterrence and the TPNW, even if the politics of such a conceptually straightforward shift of policy away from reliance on extended nuclear deterrence in Nuclear Supporting States seeking to accede to the TPNW are very difficult, they become much more difficult still when a second element in the prohibitions of Article 1(e) of the TPNW is considered.

Globally Distributed NC3I: Obstacles to Compliance With the Prohibition on Assistance

A small number of Nuclear Supporting Countries in the Asia-Pacific seeking to accede to the TPNW face another and very significant obstacle to compliance with Article 1(e) of the treaty. This obstacle is the prohibition of 'assistance' to any of the prohibited nuclear weapons activities, and the implications in the TPNW for compliance of command, control, communications and intelligence (NC3I) systems that are critical enabling elements for nuclear attack planning and operations. These systems are typically global in character, both in terms of distribution around the world (and in space), and in the sense of network space.

Paul Bracken recently summarized the global geographic sense of the current NC3I situation as follows:

> 'Nine countries now possess nuclear weapons. Five more countries (Germany, the Netherlands, Belgium, Italy, Turkey) have U.S. nuclear weapons positioned on their territory. Other nations are so critically involved with U.S. nuclear operations through warning, intelligence, and missile defense that for all practical purposes they are part of the U.S. NC3 system (Japan, the ROK, Australia, Taiwan). This gives at least eighteen countries in total involved in nuclear or closely related NC3. Globally, no less than thirty six states are directly or indirectly involved in the projection of nuclear threat against other states (namely, the U.S. and its NATO and Pacific allies, plus the other eight nuclear armed states, all dependent in one way or another on nuclear command and control systems).'[45]

Four of these U.S. allies lie within the Asia-Pacific, all Nuclear Supporting Countries, all of which have defence policies openly reliant on U.S. extended nuclear deterrence, and all, as Bracken puts it, 'part of the U.S. NC3 system'. Much less often discussed than in the need to repudiate extended nuclear deterrence, the manner in which all four major U.S. Asia-Pacific allies host elements of the U.S. NC3 system on their territory contradicts the prohibition in Article 1(e) on 'assistance'.[46]

The issue of NC3 systems and the TPNW can only be addressed productively on a foundation of substantial research on systems such as those Bracken refers to, mainly, though not solely, concerning United States systems, with an understanding of the technological and political integration of the nationally hosted nuclear-related elements into the U.S.-constructed global assemblages.

Briefly, to take one regional example, Australia hosts several intelligence and military facilities that contribute to the United States nuclear operations capability as elements of the U.S. global nuclear command, control, communications and intelligence (NC3I) structures. These are juridically 'joint' Australian-U.S. facilities operated, according to the Australian government, with the full knowledge and concurrence of the Australian government.[47]

In May 2018 a senior Australian official testified to a parliamentary committee that joining the TPNW would be against Australia's national interests, principally because of potential damage to its alliance with the United States. This potential for damage, he argued, was in large part precisely because of the nuclear-related elements of 'joint' Australia-U.S. intelligence and military facilities in Australia. The Australian government's view is that the alliance is made up of

> 'many separate interlocking structures, understandings, agreements and joint activities and facilities ... [that are] incompatible with the treaty',

It is, the official averred,

> 'impossible, not practical, for Australia to restrict roles under the alliance to non-nuclear missions.'[48]

Little further elaboration was provided on that or subsequent occasions.

In fact, such matters have rarely been explained to the Australian public in the six decades during which the most important of these facilities have been in existence. On the face of it, the official's explanation was an extraordinary admission of an apparently willingly accepted integration of Australia into preparations for nuclear war and nuclear war-fighting, long hidden from the Australian public.[49]

While this situation of claimed contradiction between Australia's alliance obligations and the requirements of possible future compliance with the TPNW may appear to be of parochial Australian concern, the implications for the countries surrounding it are no less significant, and rarely discussed in regional dialogues. Prima facie, Australia could not be compliant with the treaty unless it either closed the facilities with NC3I linkages in toto or verifiably removed the nuclear-related elements of the bases.

However, the actual situation of the most important example identified both by the government and by its critics, the Joint Defence Facility Pine Gap near Alice Springs in Central Australia, shows that the government's blanket rejection of the TPNW because 'it's impossible, not practical' to comply with Article 1(e) should be put under scrutiny.

In broad terms, Pine Gap is one of the largest U.S. intelligence facilities outside the United States, with three main functions. It serves firstly as a command, control, and data downlink ground station to U.S. signals intelligence satellites in geosynchronous orbits above the equator, collecting, monitoring, and downlinking for processing and analysis all manner of electronic emissions within its satellites' 'footprints' covering most of the earth's surface from the mid-Pacific to eastern Africa. Secondly, it carries out the reverse mode of signals collection, with ground antennas at Pine Gap intercepting, monitoring and analysing downlinks from foreign communications satellites in geosynchronous orbit.[50] Thirdly, it hosts a somewhat separate Relay Ground Station which downlinks data from another set of U.S. satellites in geosynchronous orbit carrying large infrared telescopes that detect the heat bloom of the launch of ballistic missiles, and in order to provide both early warning of missile attack and to assist in US, Japanese and South Korean missile defence targeting. [51]

Pine Gap's nuclear connections are multiple, but the most important and immediate way in which hosting the facility would impede Australian compliance with the TPNW involves the Relay Ground Station and its linkage to a number of large and powerful Overhead Persistent Infrared (OPIR) satellites.[52] The key salient fact for the TPNW is that the same infrared satellites that provide the U.S. with early warning of missile attack, and which are critical to U.S. and Japanese missile defence, also in time of war provide U.S. strategic nuclear planners with intelligence as to which adversary missiles silos have launched their missiles and are consequently empty, and those which have not, and are consequently candidate U.S. targets. The data downlinked from the OPIR satellites is passed automatically through the Relay Ground System to the Mission Control Station in Colorado in near real time to feed targeting plans of a U.S. second nuclear strike.

To comply with the TPNW's prohibition on assistance to nuclear weapons activities, an Australian government would have to undertake one of three possible approaches to the Relay Ground Station at Pine Gap. Pragmatically, the politically critical question for Australia in each case, after seven decades of alliance deeply embedded into Australian political culture, is how treaty compliance could be achieved without leading the U.S. to terminate the ANZUS mutual security treaty. All three would be examples of what former Australian Prime Minister Malcolm Fraser proposed as a judicious partial disentangling of Australia from elements of the United States alliance as an alternative to unquestioning acceptance of a specious automatic identity of Australian and United States strategic interests.[53]

One approach would be to give notice to the United States requiring the closure of the entire base – i.e. both the two signals intelligence surveillance systems as well as the Relay Ground Station. The approach of simply requiring the closure of the base as a whole would have the virtue of comprehensiveness, but would also be very politically difficult to imagine, even in a counterfactual thought experiment of this kind. Leaving aside arguments about the utility to Australia of access to the space-based and ground-based signals intelligence systems at the base, the U.S. response would undoubtedly be drastic, and would threaten the continuation of the alliance itself – which in Australian political culture would be deemed suicidal for mainstream political parties.

In a second, 'reformist' approach, the Australian government would have to request, and the United States to accept, verifiable binding legal, organisational and technical limits on specific categories of the operations of the Relay Ground Station. This second approach would involve distinguishing 'defensive' functions of the OPIR system – primarily early warning of missile attack – from unarguably nuclear war-fighting RGS links – primarily support for U.S. retaliatory nuclear missile strikes.[54] For technical reasons to do with the automatic character of the RGS and remote control of its operations from the U.S. (rather than at Pine Gap itself), the level of required verification of operational separation by an Australian government would, be almost impossible to achieve, to say nothing of the political obstacles.[55]

However, there is a third alternative, a more promising 'reformist' approach to bringing the Relay Ground Station into compliance with the requirements of the ban treaty. This third approach is based on existing redundant communications links the U.S. has built into its global OPIR system of satellites and ground stations to guard against destruction of ground facilities like Pine Gap in war. The existence of communications redundancy indicates a strategically viable and politically not wholly impossible pathway to compliance with the TPNW without necessarily disrupting its alliance with the United States.[56]

Under this proposal an Australian government could give reasonable notice to the United States requiring the closure of the Relay Ground Station and the removal of its systems from Pine Gap. The remaining larger part of the base and its principal signals intelligence functions would be left unaffected.[57] In this situation, if the Australian government gave the United States appropriate

notice – say five years – the Relay Ground Station could be closed without significant detriment to the performance of the OPIR systems or to genuine U.S. national security interests – although there would obviously be considerable political turbulence.

This sketch above outlining the strategic, technical and political aspects of the choices facing an Australian government seeking to comply with the assistance prohibitions of the TPNW has two aims.

Firstly, a close examination of the Relay Ground Station's technical aspects and military roles suggests that while all of three pathways would be politically fraught, the third pathway shows that the Australian government's blanket claim that it would be 'impossible, not practical for Australia to restrict roles under the alliance to non-nuclear missions' can be refuted in the most egregious example of Australian assistance to prohibited nuclear activities. Of course, this proposal to close only the RGS leaves questions about nuclear-related aspects of other parts of Pine Gap's operations to be scrutinised, but by demonstrating a plausibly viable pathway in the most important case indicates a line of political and policy strategy against unexamined claims of 'impossibility'.

And secondly, as Bracken's survey of U.S. NC3 activities suggests, these globally-distributed facilities pose obstacles to compliance with the prohibition on assistance to nuclear missions for major U.S. allies in the Asia-Pacific more broadly, as well as in Europe.

The relevance of hosting NC3 elements is an unavoidable issue for the TPNW regime and its supporters to consider, not just in several countries in this region, but in many other U.S. allied states.

A Verification Regime 'Fit for Purpose'

The most common criticism of the TPNW has concerned verification.[58] One important line of criticism regards the TPNW as a step backwards from the achievement of reforms of safeguards policy in the NPT. In particular these critics emphasize the absence in the TPNW of a binding requirement on states parties to tighten safeguards on nuclear facilities by requiring accession to the International Atomic Energy Agency's (IAEA) Additional Protocol, rather than just requiring adherence to the longstanding but less stringent IAEA Comprehensive Safeguards Agreement.

Supporters of the ban treaty argue that in fact only a small group of TPNW signatories to date have not acceded to the Additional Protocol. Almost all are small states with very limited or no nuclear energy facilities, for whom the issue is irrelevant in practical terms. However, as the Australian safeguards specialist John Carlson has emphasized, there are at present three important exceptions to the claim the Additional Protocol issue does not matter for the TPNW: Brazil, Argentina, and Egypt.

Brazil is a signatory to the ban treaty, and while Argentina and Egypt have not signed to date, all three countries were active participants in the negotiations in the UN General Assembly leading to the adoption of the treaty text in 2017. All three countries have expressed interest in nuclear weapons in the past – Brazil and Argentina seriously. Some analysts are currently concerned about Brazil's nuclear-powered submarine program as a stalking horse for a weapons program.

After the fall of the military dictatorships in Brazil and Argentina the two countries formed the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC), which has intrusive bilateral verification features somewhat comparable to the Additional Protocol. The IAEA itself is a party to ABACC. Egypt has said it will sign the Additional Protocol if Israel does, a somewhat disingenuous explanation given that the accession of Israel to any NPT verification

agreement is a most unlikely event in the foreseeable future. These three cases undoubtedly remain important to monitor very closely.[59]

However, there are two further problems with most verification attacks on the TPNW. One is that they often disregard or misconstrue the verification architecture of the TPNW and the framework character of the treaty. The other, on the contrary, is that they may have too limited a sense of the verification challenges posed by the treaty, both in relation to treatment of Nuclear Possessing States wishing to join the treaty, and most importantly in the wide-ranging comprehensive verification requirements over the necessary *longue durée* to ensure global confidence that successful covert reconstruction of a nuclear weapons capacity by a treaty breakout state will be detected in a timely manner.

The verification architecture of the TPNW is properly understood as a design for

> 'an adaptive and flexible process to address future challenges, progressively expand its scope and over time include more member States, ultimately leading to the elimination of nuclear weapons'.[60]

By design, the treaty has deferred precise detail of how claims by nuclear disarming states are to be assessed for future consideration by the regular Conferences of the Parties (CoPs) specified in the treaty. The importance of designation of the treaty's appropriate 'competent international authority or authorities' to develop 'verified, time-bound and irreversible elimination of nuclear weapon programs' for disarmament verification was not ignored by the treaty's formulators. The two pathways outlined in Article 4 of the treaty (*Eliminate weapons and then join*, and *Join and then eliminate*) will require complex, and quite likely different, kinds of verification regimes. At whatever point such thresholds appear on the horizon it will be strongly and evidently in the interests of the Conference of the Parties to have already dealt substantially, if not fully, with those issues.

Obviously, under the heading of the institutionalization of the TPNW, there will be hard questions about how a 'competent authority' will actually be designed, developed, built and paid for. In the meantime, as Tamara Patton and her colleagues have argued, it is highly desirable for the treaty's Conference of the Parties to set up some kind of preparatory scientific advisory body as soon as is practicable – as was done effectively in the rather simpler case of the Comprehensive Test Ban Treaty in anticipation of its still delayed Entry into Force.[61]

Most critics have focussed on the verification of adherence to the TPNW requirements within the nuclear-fuel cycle, and in particular, look at accounting for fissile material in terms of both possession and production of the kind that the IAEA CSA and Additional Protocol are designed to address. Clearly these remain important, and it will be desirable to continue to press for universal adherence to the Additional Protocol or a functional equivalent such as ABACC or, less satisfactorily, through NWFZ provisions. But even so, on fissile material accounting alone, after the experience of the past 'surprises' of Iraq *et al*, no one should pretend that the current 'gold standard' is the end of the story. There will be new surprises in the future, and the TPNW architecture allows for addressing those situations.

The other side of the coin is that an abolition treaty regime will involve multilateral verification capacities considerably more wide-ranging in their concerns, more precise and accurate in their assessments, and much more demanding in their robustness than anything to date. These will need to endure effectively over centuries rather than years or decades.

What will be required in the way of ban treaty verification capability to persuade virtually all countries on earth that a nuclear prohibition regime will be sufficiently reliable and robust to detect,

in 100% of cases, that no country is secretly preparing to reconstitute a nuclear weapon? What kind of verification issues will have to be faced at the point of a threshold nuclear disarmer seeking to join the treaty?

Some of the useful accounts to date of these issues include the work of Scheffran, and of Patton and her colleagues, both drawing on a major 2017 Carnegie Endowment for International Peace study titled *Toward a Nuclear Firewall: Bridging the NPT's Three Pillars*. Patton and her colleagues argue that not only will fissile material accounting requirements be more stringent than at present, but that the treaty's requirement for 'verified, time-bound and irreversible elimination of nuclear weapon programs' will involve surveillance of much more than the nuclear-fuel cycle. This expansion of domains of verifications required under the TPNW will involve, both groups argue, developing 'a comprehensive set of nuclear weapon program indicators', which will address at least four general domains:

- fuel-cycle and reactor operations;
- nuclear weapons research and development and weaponization;
- weapons delivery and systems (payload) integration; and
- [62]

This list of broad but compelling set of requirements touches on matters that are today overwhelmingly the domain of national unilateral verification capabilities, most prominently involving surveillance of the third and fourth of the broad categories listed above - weapons delivery, and militarisation (itself a much larger and more difficult category to define satisfactorily). These matters are today mainly discussed within the domain of verification of arms control agreements.

Patton and her colleagues point out that to date, verification of different elements in contemporary nuclear weapons assemblages have mostly been dealt with through the NPT and IAEA safeguards, while others been addressed through bodies such as the Missile Trade Control Regime and the Nuclear Suppliers Group. The Comprehensive Test Ban Treaty Organization's (CTBTO) International Monitoring System (IMS) has been constructed to detect nuclear detonations. Yet these exemplars do not fully embrace all aspects of necessary verification capacities for the TPNW.

The CTBTO's International Monitoring System is a multilateral – and indeed global – UN-auspiced verification capability developed to a high level of technical standard in the absence of the CTBT itself entering into force. One important aspect of the IMS is that is a multilateral system based on the coordination and integration of 89 national monitoring systems – benefitting from access to seismic, hydroacoustic, infrasound and radionuclide detection of nuclear detonation in 337 facilities worldwide.[63] It is a genuinely multilateral body with a high level of technical achievement.

However it should be recalled that the IMS is based on the merger of civil/scientific networks of seismic monitoring of earthquakes with long classified national networks of seismic and radiological detection of nuclear detonations, pioneered and dominated for much of the Cold War by the United States, which remains the world leader in classified nuclear detonation technology and analysis.

For the U.S., its current nuclear detonation detection capabilities (including the NUDET sensors on its Global Positioning System satellites and the legacy Defense Support Program infrared satellites) are considered a part of its suite of National Technical Means of Verification. These are based on much broader intelligence capacities which may also provide assurance to the U.S. it has the capacity to verify compliance with particular types of control agreements. These capacities are not separately constructed for verification purposes. Moreover, those intelligence capacities are closely

held, and their functions rarely shared, even with close allies. They are essentially unilateral capacities, remaining under U.S. government and military control.

In the early 1990s the Japanese National Defence Academy analyst Ushioda Setsuko went to the conceptual heart of the matter facing the TPNW:

> 'Verification is today largely unilateral and non-cooperative. Each state makes its own evaluations; it reacts to any breach of an agreement to which it is a party on the basis of its own interests. As a result, in the absence of a collective process, verification appears to be not a guarantee that the agreement will be implemented but a guarantee of the individual security of the parties.'[64]

The situation Ushioda was describing remains the situation today, and opens a further set of issues to be addressed concerning the institutional capacity for verification of the TPNW: how – if at all – are what are currently National Technical Means of Verification to be brought into the service of a global collective security project such as the TPNW? At present only a very small number of countries have any serious capacity to come close to multi-domain global nuclear and space surveillance, and most countries in the world would have little reason to be confident their interests would be pursued with impartiality and diligence by a multilateral verification structure dominated by the major nuclear powers.

In the context of the Treaty on the Prohibition of Nuclear Weapons, the demand for an abolition treaty regime will not be just for genuinely global multilateral verification capacities fit for purpose, but must endure effectively over periods much longer than any currently existing verification regime.

Unilateral national surveillance facilities such as Pine Gap, and the global surveillance systems of which they are an integrated part, are potentially, depending on precise requirements, exactly relevant to address such a situation, and yet seem to be the antithesis of what is required for cooperative security. Unlikely as it may seem, it is worth asking under what institutional, legal, and security conditions could currently unilateral verification capabilities be brought into a regime of collective security? More distantly, is it possible to consider genuinely global multilateral verification institutions on the scale necessary for certainty of the continuing absence of covert nuclear weapon reconstitution?

To take the now relatively straightforward example of space-based earth observation technology, there were proposals at the height of the Cold War, originally from France, for the United Nations to develop an International Satellite Monitoring Agency (ISMA), resulting in a UN expert study, focusing on space-based imaging.[65] While those proposal died under the disdainful gorgon stare of the Cold War nuclear superpowers, it has returned in a number of different forms in the past two decades.[66] In some respects, the idea of an ISMA-like body with a dedicated space-based earth observation capacity has been rendered at least partially redundant by advances in commercial space-based imaging potentially widely accessible. However, in the case of either real-time thermal signature detecting of missile launches and detonations, electronic intelligence surveillance or space security verification issues there has been no such commercially-available development at the necessary level.[67]

With the current pace of nuclear weapon horizontal and vertical proliferation, long range ballistic and cruise missile and hypersonic missile proliferation, and the nuclear dimensions of the competitive militarization of space, serious assertion of collective rights to verification assurance capacities is necessary, and must engage closely and imaginatively on an informed basis with unilateral national technical means of verification as one starting point.

Lest anyone leap to the conclusion I am arguing for the retention of the Pine Gaps of the world for such purposes, the answer is definitely not. But I am asking whether there are ways in which particular, partial functions of such a facility can be utilized for collective, multilateral verification purposes beyond arms control into the realm of nuclear abolition. It is hard to imagine, but then so was the idea of a nuclear ban treaty. But what has to be understood is that there has probably never been a political project in human history of such complexity and consequence as a functioning and enduring nuclear abolition verification regime. It has to be commenced somewhere.

The Discursive Consequences of Erasing the Actual Pacific From the Asia-Pacific

The design and frame of dialogue processes often has considerable effects on outcomes. Regional dialogue presumes agreement on what constitutes the region under discussion. In some respects, the geographical frame is nothing to argue about, but some approaches may turn out to be less – or more – productive, depending on the aim of the dialogue in question. The Asia-Pacific is an inherently expansive label that can be stretched or constrained in many different ways. ASEAN is an interesting element because as a Southeast Asian it has sought to move beyond internal considerations to engender linkages with East Asian and Pacific states more broadly in its security and economic dialogue partnerships.

However, in practice, discussion of dialogue in 'the Asia-Pacific' often omits reference to or participation by the Pacific island states that have been so supportive of the ban treaty. Most are small countries, and perhaps not significant players in the power politics version of the framing of the Asia-Pacific. That is true of many of the 84 signatories to the TPNW, but the failings of that perspective were undoubtedly part of the motivation for the UN General Assembly vote of 122-1 in July 2017 to adopt the text of the treaty. The Pacific Island Forum may not have the clout of ASEAN Regional Forum or the East Asian Summit, but it is an effective multilateral organisation in which small states often combine to pressure its larger member states, especially Australia, over both nuclear and climate issues.

Elision or erasure of the Pacific island states from the dialogue framework would be regrettable. Inclusion of the Pacific island states in dialogue together with the states East Asian Nuclear Supporting States and the largely pro-TPNW states of ASEAN would be beneficial for two practical reasons.

Firstly, the Pacific island states are mostly small countries where civil society networks have been and remain particularly strong both within and between states – a valuable charact eristic for constructing dialogue networks.

Secondly, Pacific Island support for the treaty largely derives from the not-so-distant direct experience of nuclear testing and nuclear colonialism in the region.[68] The ASEAN experience and situation is thus quite different from that of most of the Pacific island states. Three Nuclear Possessing States have tested their nuclear weapons in the Pacific islands – the United States, the United Kingdom, and France. All three did so in Pacific colonial territories – Bikini and Enewetak in the Marshall Islands, and (US); Christmas Island (now Kiribati; UK and US), as well three locations in Australia (U.K.): and the atolls of Moruroa and Fangataufa in French Polynesia. In the Pacific Islands, self-determination in the face of ongoing colonial possessions and nuclear issues are understandably closely linked. Recognition of these interlinked issues would be beneficial for dialogue with the larger and more powerful states.

Two of the key legal and political innovations in the TPNW are the positive provisions set out in Article 6 to provide for assistance to nuclear test survivors and for remediation of the environmental effects of nuclear weapons use or testing in member states. No other element of international law

relating to nuclear weapons so directly addresses these matters - certainly not the NPT. Given the longterm persisting strength of opinion in Pacific island countries about the enduring human and environmental consequences of nuclear testing by external imperial powers within the living memory of many citizens of the Pacific islands, these positive provisions would seem to provide a promising and fruitful concrete topic for the regional government-civil society discussions.[69] Such initiatives would be particularly useful in bridging the tendency of major states in 'the Asia-Pacific' to overlook most of the eighteen island countries in the actual Pacific.

Themes for Regional Dialogue on the TPNW

What then, are the most productive and urgent themes for discussions in Asia-Pacific dialogue on the TPNW? There is a considerable range of possibilities. Two contributors to this workshop who acknowledge the significance of the emergence of the ban treaty present important agendas going beyond what has become business-as-usual in contemporary commentary.

Allan Behm concludes his savage demolition of the underwhelming approach to nuclear disarmament by Australian governments, inflected downwards by the pandemic:

'At this point, the prospects of advance and sustained progress may look bleak. That is precisely why collective action is needed. For the NNWS, there are three issues that need early resurrection:

- the proposed cut-off of the production of fissionable material;
- the proclamation of a 'no first use' by the NWS and the other states possessing nuclear weapons; and
- the further strengthening of the IAEA safeguards and inspections regime, and their application to the NWS.

It must be understood that the NWS are not special cases, but rather deviant cases that have failed to honour their obligations under the NPT.'[70]

Behm then suggests a five point program, one particularly oriented to the Asia-Pacific regional Nuclear Supporting States and their U.S. ally. To paraphrase abruptly, these countries, including Australia must

- reinvest in nuclear negotiating capacity;
- re-engage with like-minded countries;
- work to ensure New START is rekindled, with China involved;
- persuade the US that nuclear war is never in the interest of the U.S. or its allies; and
- listen to the voices of the ASEAN countries – 'the economic powerhouse of the 21st century'.

All of these items are salient and urgent to support. None of these agenda items is either in any way unimportant in themselves or inimical to the advancement of the TPNW. But all are founded on the continued legitimacy of nuclear weapons possession and use – however much that end state is understood to be a matter of existential danger. If the primary task is to devalue and delegitimate nuclear weapons, then these are tasks in parallel, not in place of, that goal.[71]

In the context of a review of nuclear command, control and communications Hayes argues that

> 'It is urgent, therefore, to commence dialogue within and between nuclear-armed states on the

> legal standards against which NC3 must be measured and transparency with regard to the achievement of minimum levels of NC3 performance.'

Since NC3(I) facilities are located in each of the Nuclear Supporting States in the region, Hayes' call for urgent reform spelled out in a clear and concise Global NC3 Code of Conduct is highly relevant to the region. As with Behm's agenda, progress toward these important concrete reforms of nuclear weapons operations practice would significantly reduce the likelihood of nuclear next use. Yet, such a code necessarily legitimates the possession, and use, of nuclear weapons, albeit with horror.

To distinguish the agendas of proponents of the TPNW to construct productive regional dialogues to advance the TPNW between supporters of the ban treaty and, on the one hand, Nuclear Supporting States, and on the other, Nuclear Possessing States the twin strategies of devaluing and delegitimating nuclear weapons must be added.

Deeply thoughtful 'reform' strategies intensely sensitive to the current nuclear dangers such as those put forward by Behm already point to some required strands of devaluing or questioning the military utility of nuclear weapons, such as persuading the U.S. that 'that nuclear war is never in the interests of the US or its allies'.

Given the historic commitment of governments in Southeast Asia and the Pacific to the goals of the nuclear weapon free zones, dialogue with Nuclear Supporting Countries on extension and deepening of the requirements of those zones will generate questions on both the value of nuclear weapons and their legitimacy.

To be just a little un-diplomatic, it might be interesting to see what reply an Australian government would give to a politely worded discussion starter from ASEAN signatories to the TPNW as to why Australia feels the need for defence based on extended nuclear deterrence. It might be felt at this point, that such a discussion should be unnecessary, for surely the felt need for nuclear defence would be a matter that the Australian government has spelled out with care and detail in official public documents as well as in closed door diplomatic settings?

In fact, such is not the case. Defence White Paper and similar references to the rationale for reliance on extended nuclear deterrence are a matter of sentences, not paragraphs, let alone serious explanation weighing all relevant aspects at an appropriate level of detail.

Since historically, the most long-running answer to that question in the past would have pointed to a putative nuclear threat from the leaders of ASEAN, such a dialogue could lead to a productive discussion about the costs and benefits on both sides of nuclear defence.

Similarly, the question of the circumstances under which an Australian government (or that of Japan or South Korea) believes the use of nuclear weapons to be appropriate would be a matter of interest to regional governments inclined to concern on the matter. And it is one that it might be thought an Australian government would have an answer of some detail and argumentative strength ready to hand.[72]

At present, it unlikely appears to be unlikely that there is such an argument in detail already prepared for such purposes. On the only occasion I know of where an Australian government official of any seniority has attempted to provide an answer to such a question the result has been deeply embarrassing.[73] In a fluster of 'ums' and 'errs' and frantic searching through talking points provided (to no avail), to the shock of the senatorial questioner, the answer proffered was, in full:

> 'Senator, as we all know, extended deterrence is something which comes to the fore in a

> situation of extreme emergency, of a sort that has been referred to in terms of self-defence.'

At a minimum, dialogue with neighbouring countries not reliant on nuclear defence would focus the mind of those reliant on nuclear defence as to exactly how Australia would expect nuclear weapons to be used, with the supplementary line of discussion as to under what circumstances would such an action be or military utility, compared with other approaches to defence under the nominated circumstances.

In the other direction, a dialogue between such sceptics neighbours might involve asking something like

> 'What leads Australia to believe it has the right to inflict the human and environmental and strategic consequences of that policy on neighbouring countries in the event Australia calls on the U.S. to make good on its promises?'

Fundamentally, the first use of the establishment of the TPNW regime is not specifically legal: the majority of ASEAN states being states parties to the TPNW will not have a legal effect on Australia unless Australia specifically invites that outcome. But the most important consequence is that Nuclear Supporting States will find themselves in the position of having to explain themselves on matters of what they had hitherto regarded as just 'obvious', not needing any justification beyond vague reference to unspecific threats and unquestioned utility and legitimacy of nuclear deterrence.

Regional dialogue about the utility and legitimacy of nuclear weapons could well, in Ritchie's phrasing lead to a demonstration within the dialogic process 'that current nuclear practices and power relations do not reflect justifiable rules based on shared beliefs prevalent in society', here in the regional dimension of global society, an exploration of accountability for nuclear weapons support.

Both sets of questions – questioning military utility and legitimacy – are relevant to Japan and South Korea, and could be productively explored in dialogue sets with Southeast Asian and Pacific islands partners. Both countries are increasingly concerned to foster closer ties with both Southeast Asia and the countries of the Pacific islands.

Given the importance to the countries of Southeast Asia and the Pacific islands of membership of their respective Nuclear Weapons Free Zones, dialogue between those countries and Mongolia and regional Nuclear Supporting Countries – Australia (a member of the SPNWFZ) , Japan, and South Korea – on the characteristics of NWFZs with their shared accepted intent to constrain nuclear weapons use could lead to an exploration of pathways for deepening and extending zone obligations and more explicitly addressing issues of both accountability for the activities prohibited under the TPNW, and responsibility for positive support for nuclear test survivors and remediation of nuclear test sacrifice zones.

Such a theme of discussion could have three particular common consequences amongst participants. Firstly, it may well lay the ground for understanding of shared experiences previously either not understood or not acknowledged. The example that comes most readily to mind is exactly the shared experience of use of nuclear weapons on their respective citizenries.[74]

Secondly, such discussion could advance discussion of the desirability of a Northeast Asian Nuclear Weapons Free Zone, and exploration of both particular models and possible pathways.[75] All NWFZ concepts implicitly advance awareness of differing understandings of accountability in relation to different aspects of nuclear weapons.

Thirdly, successful dialogue to progress understanding of the elements of nuclear constraint in both the TPNW and NWFZs may provide opportunities for supporters of the TPNW, Nuclear Supporting States, and Nuclear Possessing States to find common cause on new pathways to reverse the to date intractable North Korean commitment to nuclear weapons.

Certainly any element of common cause on matters of nuclear restraint between Nuclear Supporting Countries and proponents of the TPNW opens small fissures of possibility in the presumptive unity of END recipients and provider.

In Conclusion: The TPNW in Time of Pandemic and the Other Coming Plague: Massive Climate Disruption

Many have commented the social and political system stresses imposed by the pandemic, and the nexus between morbidity and mortality and the key characteristics of particular political and economic structures. Others have commented insightfully on the surprising number of ways in which the current pandemic has already exacerbated or multiplied existing dangers of dependence on nuclear weapons for defence. The significance of the TPNW to move from unquestioned acceptance of nuclear weapons to universal prohibition as a tool for ultimate elimination is heightened by such an awareness of the manifold impacts of global pandemic in the global social system.

I would just add to such discussion one further element: the now unavoidable impact of climate disruption and its globally differentially distributed consequences for all aspects of our society and political systems. In a way, the current pandemic is by comparison a reasonably low-level system stress test – which has not yielded reassuring results. Climate disruption of a known level is now built into future history for at least another quarter century, assuming that climate mitigation regimes then decelerate emissions, and adaptation is both effective and, on balance, positive.

Essentially we are still in a position where climate disruption in the rich and powerful countries of the world is not yet socially visible to the level we can expect in time. Of course, climate change is a matter of discussion, but nothing of the kind that will be reached when the richest parts of the world begin to experience the equivalents of three or more Hurricane Katrinas a year, with a generation of visceral fear in those populations of a kind more associated with the experience of ongoing war than with pandemic ameliorated by the prospect of vaccines.

Whatever the structure of regimes of mitigation and adaptation that emerge from the current relative stasis or at best slow burn on climate, there will be, by the time we reach that point defined by socially visible deep climate impacts in rich countries (to say nothing of The Rest), fear-driven policy, domestic and international. These developments will inevitably result in processes of blame, of displacement of accountability, and reciprocal dyads of resentment.

There has already been some examples of displacement of climate accountability from the richer carbon-indebted countries onto generally poorer tropical rainforest countries through the mechanism of paying such countries to not cut down their remaining tropical rainforest. Most examples have been something of a debacle for the understandable reason that in such countries rainforests are already a locus of competing interests – often violently so. As such there was an added burden on those socio-ecosystems of what was represented as ‘a failure to provide carbon services contracted for’, as has often been the complaint of rich countries that have entered such contracts. Indeed at one point it looked as if some of those countries were about to offer foreign aid in the form of assistance to police forest management.

This laboured example may be useful to point out that whatever the concern we may have about the strains on management of the existing global nuclear weapons regime in the stress test of the

pandemic, they are likely to be as nothing compared to the likely long-lived structures of conflicts and attributed 'accountability' when climate disruption progressed further.

This deeply concerning possibility constitutes, for me, the strongest argument for the urgency of work on nuclear weapons prohibition and elimination. If we enter that period of climate conflict without something close to nuclear elimination, then the current pandemic stress test will seem but be as nothing.

Table 1.

Non-nuclear weapons possessing East Asian, Southeast Asian, and Pacific Islands states: status regarding nuclear weapons

Participant	Nuclear weapons status	TPNW status	
		Signature	Ratification, Accession (a)
Australia	South Pacific NWFZ / Nuclear Supporting State		
Brunei Darussalam	Southeast Asian NWFZ	26 Sep 2018	
Cambodia	Southeast Asian NWFZ	9 Jan 2019	
Cook Islands	South Pacific NWFZ		4 Sep 2018 a
Federated States of Micronesia	South Pacific NWFZ*		
Fiji	South Pacific NWFZ	20 Sep 2017	7 Jul 2020
Indonesia	Southeast Asian NWFZ	20 Sep 2017	
Japan	Nuclear Supporting State		
Lao People's Democratic Republic	Southeast Asian NWFZ	21 Sep 2017	26 Sep 2019
Kiribati	South Pacific NWFZ		
Malaysia	Southeast Asian NWFZ	20 Sep 2017	30 Sep 2020
Marshall Islands	South Pacific NWFZ*		
Mongolia	Mongolian NWF status		
Myanmar	Southeast Asian NWFZ	26 Sep 2018	
Nauru	South Pacific NWFZ	22 Nov 2019	23 Oct 2020
New Zealand [1]	South Pacific NWFZ	20 Sep 2017	31 Jul 2018
Niue	South Pacific NWFZ		6 Aug 2020 a
Papua-New Guinea	South Pacific NWFZ		
Palau	South Pacific NWFZ*	20 Sep 2017	3 May 2018
Philippines	Southeast Asian NWFZ	20 Sep 2017	
Republic of Korea	Nuclear Supporting State		
Samoa	South Pacific NWFZ	20 Sep 2017	26 Sep 2018
Singapore	Southeast Asian NWFZ		
Solomon Islands	South Pacific NWFZ		
Thailand	Southeast Asian NWFZ	20 Sep 2017	20 Sep 2017
Timor-Leste		26 Sep 2018	
Tonga	South Pacific NWFZ		
Tuvalu	South Pacific NWFZ	20 Sep 2017	12 Oct 2020
Vanuatu	South Pacific NWFZ	20 Sep 2017	26 Sep 2018
Viet Nam	Southeast Asian NWFZ	22 Sep 2017	17 May 2018

III. ENDNOTES

[1] Seven of the current nine Nuclear Possessing States have a presence in the Asia-Pacific: only Israel and the United Kingdom have none. France has staked a claim to be an Indo-Pacific power on

the basis of its possessions in the two oceans. Although the military reality behind this grand, not to say, grandiose, claim may be disputed, the nuclear weapons-capable aircraft carrier *Charles de Gaulle* has been repeatedly deployed to the Indian Ocean. See for example, Frederic Grare, 'France, the Other Indo-Pacific Power', Carnegie Endowment for International Peace,' 21 October 2020.

[2] United Nations Treaty Collection, Status of Treaties, Chapter XXVI, 9: Treaty on the Prohibition of Nuclear Weapons; International Committee of the Red Cross, Advisory Service on International Humanitarian Law, '2017 Treaty on the Prohibition of Nuclear Weapons: Ratification Kit', 24 April 2018.

[3] Edith M. Lederer, 'US urges countries to withdraw from UN nuke ban treaty', *AP News*, 22 October 2020.

[4] Michael Hamel-Green, 'The implications of the 2017 UN Nuclear Prohibition Treaty for existing and proposed nuclear-weapon-free zones', *Global Change, Peace & Security*, Vol. 30, No. 2, (2018), pp. 209-232; and Nautilus Institute, *Northeast Asia Nuclear Weapon Free Zone Briefing Book*.

[5] The use of the terms Nuclear Possessing States and Nuclear Supporting States (NSSs) is intended to supersede the unhelpful consequences of relying on terms drawn from the NPT. Both supporters and opponents of the NPT include Non-Nuclear States. Similarly, the term Nuclear Supporting State refers to states accepting or defending the legitimacy of nuclear deterrence and reject the claims of the TPNW. In practice, most currently Nuclear Supporting States are U.S. allies and declared recipients of U.S. extended nuclear deterrence, and could therefore simply be referred to by the more common term of umbrella states. However there are other states which do not have a declaratory policy of reliance on END. Two examples of the latter may be Sweden and Switzerland, countries which are neutrals, do not accept defence by extended nuclear deterrence. Both voted for the adoption of the text of the TPNW, but have since drawn back somewhat. The situation with both is unclear at present. However it is possible that other countries may end up as non-umbrella Nuclear Supporting Countries. Since almost all Nuclear Supporting States discussed below currently rely on extended nuclear deterrence I will endeavour to identify uses of NSS which do not involve END.

[6] 'The consent of the states parties to the treaty in question is a vital factor, since states may (in the absence of a rule being also one of customary law) be bound only by their consent. Treaties are in this sense contracts between states and if they do not receive the consent of the various states, their provisions will not be binding upon them.' Malcolm M. Shaw, *International Law*, Cambridge University Press. Kindle Edition (2018), p. 690.

[7] "States parties" is a legal phrase used to denote states that are party to a treaty, whether the noun is singular or plural.

[8] I would like to acknowledge the stimulation provided by Professor Mely Caballero-Anthony, 'The Ban Treaty: Perspectives from Southeast Asia', *Asia-Pacific Leadership Network, Policy Brief No. 71*, September 29, 2020. Professor Caballero-Anthony's initiative on TPNW dialogue follows on from a fine history of advocacy of regional security initiatives and for expanding the agenda of what counts as 'security' well beyond the traditional confines of militarily-focussed state security in Southeast Asia. Her argument that there is fertile ground for dialogue in Southeast Asia is most welcome. From a somewhat distinct position, this paper takes up the challenge to build on the foundations of her initiative.

[9] The Mongolian Nuclear Weapon Free Status covers its own territory, and is recognized by the United Nations as conforming to the obligations of a single-state nuclear weapon-free zone under

United Nations General Assembly Resolution 3261 F of December 9, 1974. Nuclear Weapon Free Status of Mongolia, Nuclear Threat Initiative.

[10] Some ICAN sources classify Thailand as a United States ally in Southeast Asia, and accordingly reference its strong support for the treaty to contradict erroneous claims that adherence to the treaty is incompatible with alliance with a nuclear state. There is in fact no foundation for the claim that the treaty prohibits membership in an alliance with a nuclear state: what would be prohibited would be a specifically nuclear alliance in terms of Article 1(e) of the TPNW. In any case, use of the Thailand case as a paradigm of a U.S. ally for this purpose is in any case a weak case. The claim for 'U.S. ally' for Thailand status is based on the restricted Congressional formulation for section 644(q) of the Foreign Assistance Act of 1961 (22 U.S.C. 2403(q)). That category exists for the purpose of approving certain categories of Foreign Military Sales. The sense in which the NATO countries or Japan, South Korea or Australia are 'allies' of the U.S. is very much more substantial non both sides of the equation. Thailand and the Philippines do have defence agreements with the U.S., but they are of trivial significance for the U.S. by comparison. The fact that in the past both countries had much stronger defence relations with the U.S., including in the Philippines case, hosting nuclear weapons, is not relevant.

[11] Singapore, having taken an active part in the treaty negotiations, and apparently positively disposed, abstained from the vote. According to discussion with diplomatic and ICAN sources, it is not clear what lead to an apparently last minute change of voting intention, or final this position will turn out to be.

[12] In October 2016 ICAN spokesperson Tim Wright made this point in an eloquent critique of the United Kingdom's claim to responsible nuclear possession and adherence to the NPT while modernizing its nuclear strike force. The NPT, Wright argued rightly, 'is not a licence for five nations to retain nuclear weapons in perpetuity. It does not confer any legitimacy on their weapons.' Tim Wright, 'Do no harm: ban nuclear weapons now', International Campaign Against Nuclear Weapons. On nuclear hegemony, see Peter Hayes, 'Trump and the Interregnum of American Nuclear Hegemony, *Journal for Peace and Nuclear Disarmament*, Vol. 2, No. 1, pp. 219-237; and Nick Ritchie, 'Waiting for Kant: devaluing and delegitimizing nuclear weapons', International Affairs, Vol. 90, No. 3 (2014), pp. 601–623; and Nick Ritchie, 'A hegemonic nuclear order: Understanding the Ban Treaty and the power politics of nuclear weapons', *Contemporary Security Policy*, Vol. 40, No. 4, (2019), pp. 409-434.

[13] Briefing on Nuclear Ban Treaty by NSC Senior Director Christopher Ford, Carnegie Endowment for International Peace, 22 August 2017.

[14] Nick Ritchie & Kjølv Egeland, 'The diplomacy of resistance: power, hegemony and nuclear disarmament', *Global Change, Peace & Security*, vol. 30, no. 2 (2018), p. 132.

[15] Nick Ritchie & Kjølv Egeland, 'The diplomacy of resistance'.

[16] Kjølv Egeland, 'Banning the Bomb: Inconsequential Posturing or Meaningful Stigmatization?', *Global Governance*, Vol. 24, (2018), p. 18.

[17] See for example, the similarity of the September 2020 letter to NATO, United States Non-Paper: "Defense Impacts of Potential United Nations General Assembly Nuclear Weapons Ban Treaty"; Note by the Secretary,' AC/333-N(2016)0029 (INV), October 17, 2016, annex 2. f.

[18] Two of the strongest cases for the primacy of the NPT that I know of are by John Carlson and by Allan Behm. See John Carlson, 'The 2020 NPT Review Conference and the TPNW factor', in

Viatcheslav Kantor (ed.), *Arms Control: Burden of Change*, (International Luxembourg Forum on Preventing Nuclear Catastrophe, 2019), pp. 86-100; Carlson, 'Is the NPT Still Relevant? – How to Progress the NPT's Disarmament Provisions', *Journal for Peace and Nuclear Disarmament*, vol. 2, no. 1, (2019) pp. 97-113; and Allan Behm, 'Nuclear Non-Proliferation Treaty Review Conference: It's time to revive a struggling treaty', The Australia Institute, forthcoming; and Allan Behm, 'Extended Deterrence and Extended Nuclear Deterrence in a Pandemic World', NAPSNet Special Reports, 15 October 2020. It should be noted that both Carlson and Behm, both experienced in arms control, and disarmament issues within Australian government roles and beyond, indicate that the level of governmental commitment needed to impel the reforms of the NPT they urge as essential are very difficult to foresee under current circumstances. Behm: 'The problem is that the non-proliferation edifice is essentially a façade resting on a single corner, and that corner is crumbling. The question that faces the parties to the NPT is whether they want to strengthen the edifice – and the cornerstone – or whether they are prepared to see the NPT go the way of the New-START – desuetude. Either way, there is much at stake.' Extended Deterrence and Extended Nuclear Deterrence in a Pandemic World', p. 17.

[19] See John Carlson, 'Is the NPT Still Relevant?' and Allan Behm, 'Nuclear Non-Proliferation Treaty Review Conference'.

[20] Alexey Arbatov, 'Mad Momentum Redux? The Rise and Fall of Nuclear Arms Control', *Survival: Global Politics and Strategy*, 61, (3): 7-38, (June–July 2019) .

[21] And of course, it is important for supporters of the TPNW to recognize that many serious proponents of nuclear deterrence as a foundation of global security also feel the same disgust with the prospect of actual use of the weapons in war if deterrence fails. Self-righteousness can be an occupational hazard of peace campaigners.

[22] Nina Tannenwald, 'Stigmatizing the Bomb: Origins of the Nuclear Taboo', International Security, Vol. 29, No. 4 (Spring 2005), pp. 5–49; Nina Tannenbaum, 'How Strong Is the Nuclear Taboo Today?', *The Washington Quarterly*, Vol. 41, No. 3, (2018), pp. 89-109; and Nina Tannenbaum, 'The Great Unravelling: The Decline of the Nuclear Normative Order', in Nina Tannenwald and James M. Acton, *Meeting the Challenges of the New Nuclear Age*, (American Academy of Arts and Sciences, April 2018), pp. 6-31. But note also William Walker, 'The absence of a taboo on the possession of nuclear weapons', *Review of International Studies*, Vol. 36, (2010), pp. 865–876.

[23] Rebecca Adler-Nissen, 'Stigma Management in International Relations - Transgressive Identities, Norms, and Order in International Society', *International organization*, Vol. 68, (Winter 2014), pp. 143-176.

[24] A second relevant example is that of Israel's possession of nuclear weapons, a fact 'politely' not mentioned in public by the United States and its allies in a highly effective fig leaf deflection of stigma of Israel.

[25] Judith Butler, *Frames of war: when is life grievable?* Verso, 2009. Butler also reminds us of the 'media framing' of 'who is grievable' and who are to be the officialised targets of stigmatisation characterising public discourse the United States under the Trump administration. See also Judith Butler, *The Force of Nonviolence*, Penguin Random House, 2020.

[26] Nick Ritchie, 'Waiting for Kant', p. 56.

[27] Nick Ritchie, 'Waiting for Kant'; Nick Ritchie, 'A hegemonic nuclear order'; and Ken Berry,

Patricia Lewis, Benoit Pélopidas, Nikolai Sokov and Ward Wilson, *Delegitimizing nuclear weapons: examining the validity of nuclear deterrence,* (Monterey Institute of International Studies, 2010). Paradoxically, contrary to its title, Berry *et al* provides one of the best reviews devaluing the utility of nuclear weapons.

[28] Nick Ritchie, 'Waiting for Kant', p. 55.

[29] See in particular the work of Nick Ritchie.

[30] Anna Hood, 'Questioning International Nuclear Weapons Law as a Field of Resistance', in J. L. Black-Branch and D. Fleck (eds.), *Nuclear Non-Proliferation in International Law - Volume V - Legal Challenges for Nuclear Security and Deterrence*, (Springer, 2020), pp. 11-30; Nick Ritchie, 'A hegemonic nuclear order'; and Peter Hayes, 'Trump and the Interregnum of American Nuclear Hegemony'.

[31] For a recent example see George Percovich, 'Living with the Nuclear Prohibition Treaty: First, Do No Harm', Carnegie Endowment for International Peace, 12 November 2020.

[32] William Walker's point about the differences of each of the Nuclear Possessing States paths to that condition applies particularly to the DPRK. Not only has it a state that has 'suspended' its membership of the NPT, but it is also distinguished by three decades of U.S. and allied attempts to bring the DPRK to voluntarily relinquish its nuclear weapons. This remains the U.S. objective and guiding principle.

[33] The UK is dependent on the U.S. for the leased Trident II D5 missiles to be launched from on its submarines; the Anglicized W76-1 warhead and Mk4/4A re-entry vehicle designed at Los Alamos National Laboratory and manufactured at Pantex, the General Dynamics Fire Control System, and the MC4700 arming, fuzing, and firing system built at the Sandia National Laboratory (operated by Lockheed Martin). See Nick Ritchie, Attachment 1, 'US-UK Special Relationship', Written testimony to the House of Commons, Foreign Affairs Committee, *Sixth Report on Global Security: UK-US Relations*, 18 March 2010, https://publications.parliament.uk/pa/cm200910/cmselect/cmfaff/114/114we12.htm.

[34] Malcolm Chalmers and William Walker, 'The United Kingdom, Nuclear Weapons and the Scottish Question' *The Non-Proliferation Review*, 9, 1, Spring 2002, 1-15; William Walker, 'The UK, threshold status and responsible nuclear sovereignty', *International Affairs* 86: 2 (2010) 447–464; Hugh Chalmers and Malcolm Chalmers, 'Relocation, relocation, relocation', *RUSI Occasional Paper*, August 2014; and Ian Jack, 'Trident: the British question', *The Guardian*, 11 February 2016. See also William Walker, 'Trident's Replacement and the Survival of the United Kingdom', *Survival*, vol. 57, no. 5, (2015), pp. 7-28;

[35] The Scottish government has used the 'RUK' abbreviation to refer to a possible future 'rest of UK' country or its government. Jack uses the term 'rUK'. Chalmers and Chalmers reviewed alternative nuclear submarine homeport options in detail, arguing that the naval base at Devonport in southern England and Milford Sound in Wales would be the most likely candidates. Both would present the rUK government with considerable relocation difficulties to overcome.

[36] William Walker, 'Trident's Replacement' and the Survival of the United Kingdom', pp. 20, 25, and 28.

[37] William Walker, 'International reactions to the Scottish referendum', *International Affairs,* Vol. 90, No. 4, (2014); and Malcolm Chalmers and William Walker, 'The United Kingdom, Nuclear

Weapons and the Scottish Question'.

[38] Walker, 'The UK, threshold status and responsible nuclear sovereignty', p. 462.

[39] The standard list of recipients of U.S. extended nuclear deterrence consists of the 24 NATO allies that do not possess nuclear weapons (i.e. excluding France and the UK), together with Japan, Korea, Australia, and de facto, Taiwan. For an argument on the doubt that Australia is in fact an assured recipient of U.S. END, see Richard Tanter, '"Just in Case": Extended Nuclear Deterrence in the Defense of Australia', *Pacific Focus,* Vol. 26, No. 1 (April 2011).

[40] See also see also Monique Cormier and Anna Hood, 'Australia's Reliance on U.S. Extended Nuclear Deterrence under International Law', *Journal of International Law and International Relations*, Vol. 13, No. 2, (2017), pp. 3-47; and Monique Cormier, 'Running Out of (Legal) Excuses: Extended Nuclear Deterrence in the Era of the Prohibition Treaty', in Jonathan L. Black-Branch and Dieter Fleck (eds.), *Nuclear Non-Proliferation in International Law - Volume V*, (Springer, 2020).

[41] On the nebulous, not to say imaginary, characteristics of nature of Australian reliance on U.S. Extended nuclear deterrence, see Tanter, '"Just in Case"', and in particular, Allan Behm: 'Extended Deterrence and Extended Nuclear Deterrence in a Pandemic World', NAPSNet Special Reports, 15 October 2020: 'Extended nuclear deterrence theory has gradually morphed into a kind of deterrence theology – a belief system founded on a codified set of indemonstrable doctrines' (p. 20).

[42] See Christine Leah, *Australia and the Bomb*, Palgrave Macmillan, 2014; and Tanter, '"Just in Case"'.

[43] George Percovich, 'Living with the Nuclear Prohibition Treaty: First, Do No Harm', Carnegie Endowment for International Peace, 12 November 2020; *United States Non-Paper: "Defense Implications of Potential United Nations General Assembly Nuclear Weapons Ban Treaty",* Committee on Proliferation, NATO, 17 October 2016; and Matthew Harries, 'The Real Problem With a Nuclear Ban Treaty', Carnegie Endowment for International Peace, 15 March 2017.

[44] George Perkovich, 'Extended deterrence on the way to a nuclear-free world', Research Paper, International Commission on Nuclear Non-proliferation and Disarmament (May 2009); and his comments in 'Are the Requirements for Extended Deterrence Changing?' Panel discussion at the 2009 Carnegie International Nonproliferation Conference: The Nuclear Order – Build or Break (6 April 2009).

[45] This is of course, only a glimpse of Bracken's concerns in his response to a large set of papers at a Nautilus Institute workshop on NC3: 'NC3 in A Multipolar Nuclear World: Big Structures And Large Processes', NAPSNet Special Reports, May 14, 2019. See also Peter Hayes, Binoy Kampmark, Philip Reiner, Deborah Gordon, 'Synthesis Report–NC3 Systems and Strategic Stability: A Global Overview', NAPSNet Special Reports, 5 May 2019, and numerous studies published as Nautilus Institute Special Reports in 2019.

[46] I leave aside for the present the issues raised for compliance with Article 1(f).

[47] To avoid misunderstanding, in the Australian case, these facilities are today joint in a real sense to a large extent. In the paradigm case of the Joint Defence Facility Pine Gap in Central Australia discussed below, Australians make up half of the work force, are present at all levels and all sections of the base, and fill the positions of deputy chief and other senior positions along with Americans. This is quite different from the situation at Pine Gap's companion station in the UK, RAF Menwith Hill, which can only be regarded as nominally 'joint'. On the other hand if a facility in Australia was

built by the US, paid for by the US, and can only function as part of a U.S. globally distributed technologically system, then it is best regarded as U.S. facility to which Australia has greater or lesser degrees of access. See Desmond Ball, Bill Robinson, and Richard Tanter, *Australia's participation in the Pine Gap enterprise*, Nautilus Institute Special Report, 8 June 2016; and Richard Tanter, 'Tightly Bound: Australia's Alliance-Dependent Militarization', *Global Asia*, Spring 2018, Vol.13 No.1.

[48] Mr. Richard Sadleir, First Assistant Secretary, International Security Division, Department of Foreign Affairs and Dr John Kalish, Acting Director General, Australian Safeguards and Non-Proliferation Office. Extract from testimony to the Senate Foreign Affairs, Defence and Trade Legislation Committee, Parliament of Australia, Estimates Hearing, (31 May 2018), pp. 121-125.

[49] The most prominent Australian analyst of these Australian nuclear-related facilities, Desmond Ball, frequently described the way in which 'American installations in Australia have always been the subjects of continued lack of candour on the part of the United States and of extraordinary secrecy, evasion and deception on the part of Australian governments.' Desmond Ball, *A Suitable Piece of Real Estate: American Installations in Australia*, Hale & Iremonger, 1980, p. 10. This was a view Ball maintained until his death in 2016. See also Tanter, *The "Joint Facilities" revisited – Desmond Ball, democratic debate on security, and the human interest*, Special Report, Nautilus Institute for Security and Sustainability, 12 December 2012. For a unique exploration of the place of Pine Gap in Australia and its political culture, see Kieran Finnane, *Peace Crimes: Pine Gap, National Security and Dissent*, University of Queensland Press, 2020.

[50] Other activities at Pine Gap are of considerable importance to Southeast Asia, as shown clearly in the revelations by Edward Snowden that Australia's signals intelligence agency bugged the cell phones of the Indonesian president, his wife and other senior officials, and on other occasions intercepted the communications of Indonesian trade official negotiating with the United States, and offered the product to the US. Pine Gap, along with other Australian listening stations made this possible. See the discussion in

Richard Tanter, 'Indonesia, Australia and the Edward Snowden Legacy: Shifting asymmetries of power', *The Asia Pacific Journal*, Vol. 12, Issue 10, No. 3, 10 March 2014.

[51] See the research papers on Pine Gap by Desmond Ball, Bill Robinson and Richard Tanter collected as The Pine Gap Project. Ball and Tanter conducted a parallel research project on Japanese electronic intelligence and U.S. electronic intelligence in Japan. The books and papers in that project are collected as The Japan SIGINT Project. For one approach to some of the nuclear war implications of that research see Robert Ayson and Desmond Ball, 'Can a Sino-Japanese War Be Controlled?' *Survival: Global Politics and Strategy*, Vol. 56, No. 6, pp. 135-166, (2014). There is a separate question about the Harold E Holt Naval Communications Station at North West Cape which is a longstanding critical communication link to submerged U.S. submarines, historically including both strategic ballistic missile submarines and nuclear-armed attack submarines. The extent to which this remains the case on both counts is an ongoing research question.

[52] Pine Gap is currently linked to both legacy Defense Support Program satellites and Space-Based Infra Red System (SBIRS) infrared satellites.

[53] Malcolm Fraser, with Cain Roberts, *Dangerous Allies*, (Melbourne University Press, 2014); Malcolm Fraser, 'America: Australia's Dangerous Ally', *The National Interest*, 16 December 2014.

[54] For clarity for the present, let us leave aside arguments as to whether RGS support for U.S. and Japanese missile defence systems should be regarded as 'defensive' and not in inherently a matter of

prohibited nuclear assistance under the TPNW.

[55] These technical obstacles were recognised by defence officials at the time of Cabinet approval of the establishment of the RGS in 1997. See Richard Tanter, 'Hiding from the Light'; and Richard Tanter, 'An Australian pathway through Pine Gap to the nuclear ban treaty', *Pearls & Irritations*, 5 August 2019 [extended and footnoted version].

[56] All of Pine Gap's OPIR satellites have satellite-satellite crosslinks and communications links to U.S. relay satellites. These enable the crucial warning data to be transmitted from one to another and then downlinked to the Mission Control Station on U.S. soil without ever relying on the Pine Gap RGS. In addition, U.S. OPIR satellites themselves can and do downlink directly to dispersed mobile ground terminals in the US, as well as to U.S. combat commands in around the world, such as South Korea. The RGS at Pine Gap – which is highly vulnerable to attack - provides redundant backup to both the cross-links and the mobile stations systems but is not in itself essential to the OPIR system's survival. See Richard Tanter, 'An Australian pathway'.

[57] In addition to Pine Gap's Relay Ground Station the U.S. has constructed three redundant communication systems for its DSP and SBIRS infrared satellites to link to their Mission Control Stations, including satellite-to-satellite crosslinks; satellite links to relay satellites; and satellite links to mobile ground stations in U.S. theatre commands. See Richard Tanter, 'An Australian pathway'.

[58] The most consistent and articulate critic in this region has been the Australian safeguards specialist John Carlson. See, for example, John Carlson, 'Nuclear Weapon Prohibition Treaty: A Safeguards Debacle', *Trust & Verify*, (VERTIC), Issue 158, (Autumn 2018), pp. 1-6; and John Carlson, 'The 2020 NPT Review Conference and the TPNW factor', in Viatcheslav Kantor (ed.), *Arms Control: Burden of Change*, (International Luxembourg Forum on Preventing Nuclear Catastrophe, 2019), pp. 86-100.

[59] 'Status List', Conclusion of Additional Protocols Status as of 18 September 2020, International Atomic Energy Agency. On Brazil, Argentina and Egypt, see, for example Togzhan Kassenova, 'Brazil's Nuclear Kaleidoscope: An Evolving Identity', *Brief*, Carnegie Endowment for International Peace, March 2014; Renata H. Dalaqua. '"We will not make the bomb because we do not want to make the bomb": understanding the technopolitical regime that drives the Brazilian nuclear program', *The Nonproliferation Review*, Vo. 26, No. 3-4, (2019), pp. 231-249; Leonardo Bandarra, 'Brazilian nuclear policy under Bolsonaro: no nuclear weapons, but a nuclear submarine', *Bulletin of the Atomic Scientists*, 12 April 2019; and Nicholas J. Wheeler, 'Beyond Waltz's Nuclear World: More Trust May be Better', *International Relations*', Vol. 23, No. 3, pp. 428–445; and 'Egypt', Nuclear Threat Initiative.

[60] Jürgen Scheffran, 'Verification and security of transformation to a nuclear-weapon-free world: the framework of the Treaty on the Prohibition of Nuclear Weapons', *Global Change, Peace & Security*, Vol. 30, No. 2, (2018), pp. 144. Scheffran provides an excellent and detailed explication of the challenges facing the TPNW verification regime and directions for responses.

[61] Tamara Patton, Sébastien Philippe and Zia Mian, 'Fit for Purpose: An Evolutionary Strategy for the Implementation and Verification of the Treaty on the Prohibition of Nuclear Weapons', *Journal for Peace and Nuclear Disarmament*, Vol. 2, No. 2, (2019), pp. 387-409; Tamara Patton and Alexander Glaser, 'Nuclear Verification', Institute of Nuclear Materials, 58th Annual Meeting, July 2017; and Toby Dalton, Wyatt Hoffman, Ariel E. Levite, Li Bin, George Perkovich, and Tong Zhao, *Toward a Nuclear Firewall: Bridging the NPT's Three Pillars*, Carnegie Endowment for International Peace, March 2017, pp.13-21. For a recent review of other approaches to national and other multilateral disarmament verification centred on the NPT, see 'Means to Reinforce Research on

Nuclear Disarmament Verification: Report on a Series of Regional Conversations', *Verification Matters: VERTIC Research Reports*, Number 13, (November 2017).

[62] Toby Dalton *et al*, *Toward a Nuclear Firewall*; and Tamara Patton *et al*, 'Fit for Purpose'.

[63] Comprehensive Test Ban Treaty Organization, 'Overview of the verification regime', [accessed 16 November 2020']. See also Andreas Persbo, 'Compliance science: the CTBT's global verification system', *The Nonproliferation Review*, Vol. 23, No. 3-4 (2016), pp. 318-328.

[64] Setsuko Ushioda. *Satellite-Based Multilateral Arms Control Verification Schemes and International Law*. Dissertation, Institute of Air and Space Law, McGill University, Montreal. November 1992, pp. 303-304; Ushioda Setsuko, 'Possible Organizational Framework for a Multilateral Monitoring Organization', The Korean Journal of Air & Space Law and Policy, Vol. 6, (1994), pp. 345-65. See also the discussion of Ushioda and related issues in Richard Tanter, 'American Bases in Australia Revisited', in Brendan Taylor, Nicholas Farrelly and Sheryn Lee (eds.), *Insurgent Intellectual: Essays in honour of Professor Desmond Ball*, (ISEAS, December 2012), pp. 206-208, and at slightly greater length in Richard Tanter, *The "Joint Facilities" revisited*.

[65] Report of the Secretary-General, The Implications of Establishing an International Satellite Monitoring Agency, Department for Disarmament Affairs, United Nations, New York (1983).

[66] This paragraph is adapted from Richard Tanter, 'American Bases Revisited', pp. 206-207, and Tanter, *The "Joint Facilities" revisited*, pp. 45-49 . See Bhupendra Jasani. "International Satellite Monitoring Agency – Has the time come for its establishment?" Proceedings of Workshop on Safeguards Perspectives for a Future Nuclear Environment, Cernobbio Villa Erba, Italy, 14-16 October 2003; Trevor Findlay, *Compliance Chronicles* 1 (December 2005); Walter A. Dorn, *The Case for a United Nations Verification Agency: Disarmament Under Effective International Control*, Working Paper 26, Canadian Institute for International Peace and Security, (July 1990); and Office for Disarmament Affairs, *Verification in all its Aspects, including the role of the United Nations in the field of verification*, (New York: United Nations, 2008).

[67] For one discussion of possibilities on the latter see Walter A. Dorn, *Tools of the Trade? Monitoring and Surveillance Technologies in UN Peacekeeping*, Department of Peacekeeping Operations, United Nations, (September 2007).

[68] Nic Maclellan, 'Nuclear Testing and Racism in the Pacific Islands', in S. Ratuva (ed.), *The Palgrave Handbook of Ethnicity*, Springer Nature Singapore, 2019.

[69] Nic Maclellan, *Prohibiting Nuclear Weapons: A Pacific Islands Priority*, ICAN Australia, 2017; and Nic Maclellan, *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*, (ANU Press, 2017).

[70] Allan Behm: 'Extended Deterrence and Extended Nuclear Deterrence in a Pandemic World', p. 19.

[71] I suspect Behm would agree with me that the primary task, properly understood, is the avoidance of nuclear next use – for as long as can conceive of. We would differ as to the priority of allocation of scarce political and diplomatic resources (in government and civil society) to activities leading to that end. My own working assumption is that we will never know, without doubt, a priori what is the most productive route to a shared goal. Under that condition, the first rule is to ensure that work towards one pathway does not negate or obstruct or obscure the other.

[72] In the following examples I concentrate on Australia as the representative Nuclear supporting State. In the case of Japan, the only other country in the group I know well enough to risk a

comment on, I very much doubt that the situation is substantially different.

[73] See Senator Lisa Singh asking this question of Department of Assistant Secretary of Foreign Affairs and Defence Richard Sadleir in October 2017, 'Senate Estimates - Question regarding the appropriateness of using nuclear weapons', *YouTube*, 26 October 2017. The two minute video is well worth watching.

[74] This would include the experiences in Japan of the *hibakusha* of Hiroshima and Nagasaki; and in South Korea, the Korean hibakusha in those cities in 1945. In the Pacific islands, it would include the experience of the survivors (including often military veterans) of US, British, and French nuclear testing – which in the French case continued until as late as 1996. In Australia, twelve 'major tests' of fission weapons were carried out between 1952-1957, but the more numerous and more environmentally destructive 'minor tests' continued to 1963.

[75] See Michael Hamel-Green, 'The implications of the 2017 UN Nuclear Prohibition Treaty for existing and proposed nuclear-weapon-free zones'.

IV. NAUTILUS INVITES YOUR RESPONSE

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