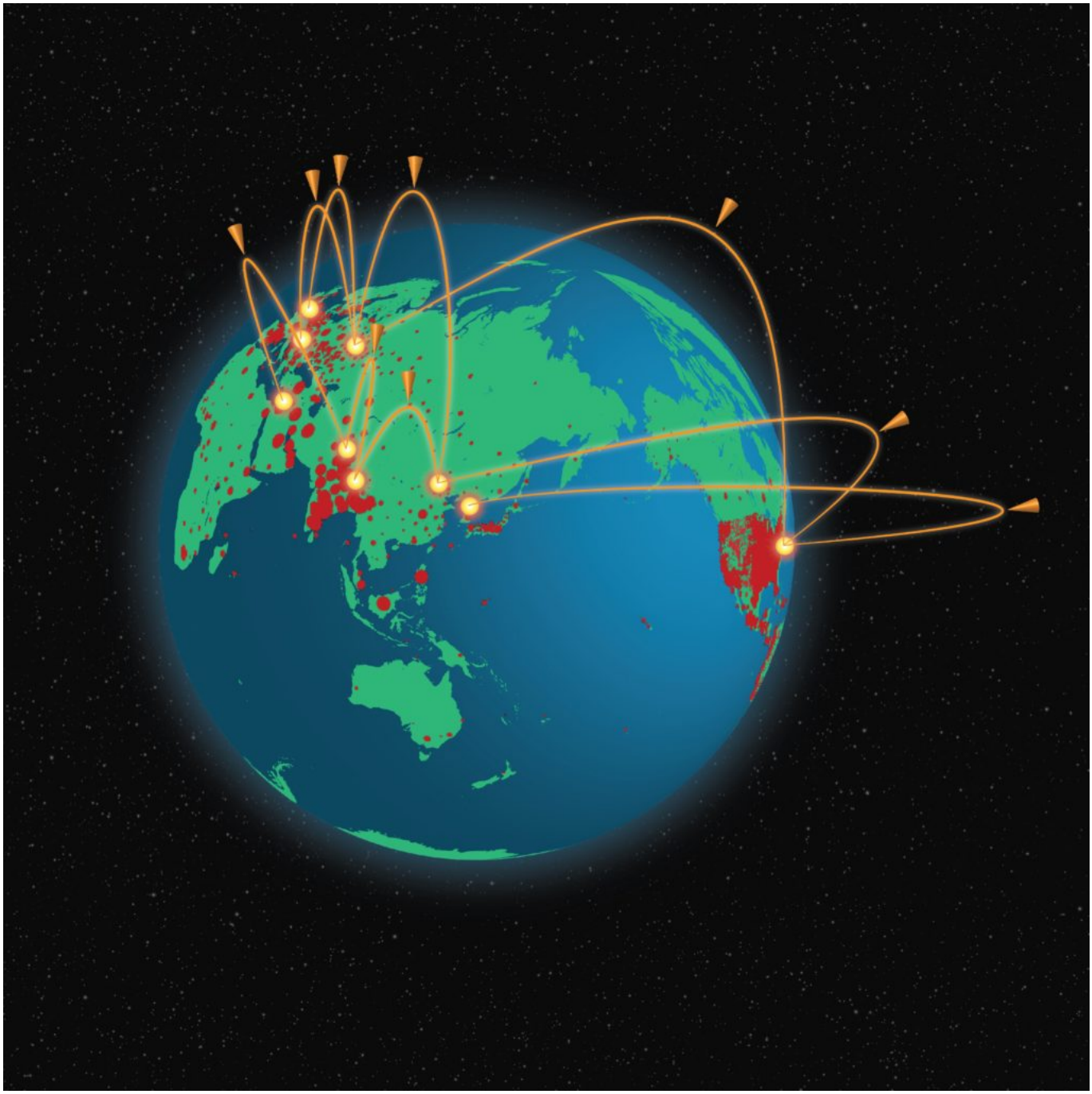
AN ALTERNATIVE TO NUCLEAR DEADLOCK AND STALLED DIPLOMACY – PROPOSALS, PATHWAYS, AND PROSPECTS FOR THE NORTHEAST ASIA NUCLEAR WEAPON FREE ZONE



Recommended Citation

Michael Hamel-Green, "AN ALTERNATIVE TO NUCLEAR DEADLOCK AND STALLED DIPLOMACY – PROPOSALS, PATHWAYS, AND PROSPECTS FOR THE NORTHEAST ASIA NUCLEAR WEAPON FREE ZONE", NAPSNet Special Reports, October 19, 2020, https://nautilus.org/napsnet/napsnet-special-reports/an-alternative-to-nuclear-deadlock-and-stalled-diplomacy-proposals-pthways-and-prospects-for-the-northeast-asia-nuclear-weapon-free-zone/

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OCTOBER 20, 2020

I. INTRODUCTION

In this essay, Michael Hamel-Green proposes that an alternative to continuing nuclear escalation, and the increasing threat of a nuclear catastrophe, does exist in the shape of a phased establishment of a regional Northeast Asian Nuclear Weapon Free Zone (NWFZ) negotiated in tandem with a regional comprehensive security agreement.

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

This essay is a working paper prepared for *The 75th Anniversary Nagasaki Nuclear-Pandemic Nexus Scenario Project*, October 31-November 1, and November 14-15, 2020, co-sponsored by Research Center for Nuclear Weapons Abolition, Nagasaki University (RECNA), the Nautilus Institute, Asia Pacific Leadership Network for Nuclear Non-proliferation and Disarmament.

Acknowledgments: The author would like to acknowledge the invaluable comments, suggestions and corrections of Professor Hiromichi Umebayashi and Ambassador Thomas Graham in their reviews of an earlier draft of this paper, and to Professor Peter Hayes for his guidance on the scope and issues to be examined in the paper.

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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 MICHAEL HAMEL-GREEN

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Abstract

The current nuclear deadlock with North Korea remains unresolved as the initially promising 2018-2019 three-way diplomacy between the DPRK, US and ROK stalls. More widely in Northeast Asia,

nuclear confrontation between China and the US is mounting, with increased deployment of nuclear-weapon-capable forces in and around the region, including land and sea-based missiles, missile defence systems, and deployment of non-strategic nuclear weapons on mobile platforms. The paper proposes that an alternative to continuing nuclear escalation, and the increasing threat of a nuclear catastrophe, does exist in the shape of a phased establishment of a regional Northeast Asian Nuclear Weapon Free Zone (NWFZ) negotiated in tandem with a regional comprehensive security agreement. The comprehensive security agreement would involve a final peace settlement of the Korean War, establishment of a regional security forum, economic and energy assistance to the DPRK, and legally binding security guarantees for the NWFZ from the US, China, and Russia. The paper discusses the precedents of successful NWFZ establishment in other regions, and the history of past proposals for such a zone in Northeast Asia. It examines the special NWFZ features that would be required in this region, including the need for rigorous verification of the dismantlement of existing nuclear weapons and facilities in the DPRK, a Korean War peace settlement, a flexible NWFZ entry into force mechanism that gives time for DPRK to assess the security guarantee benefits of the NWFZ zone, and provisions for preventing forward deployment of non-strategic nuclear weapons within the region. The paper concludes by presenting NEANWFZ proposals emerging from a recent Northeast Asian workshop of regional experts, and identifying potential pathways, advocates, and prospects for its successful negotiation in the current global context.

Introduction

Amidst the coronavirus pandemic that has left peoples and leaders reeling across the world the continuing dilemma of nuclear confrontation in Northeast Asia has received little recent attention. Yet, as this paper discusses, the threats posed by the current confrontation, especially on the Korean Peninsula but also in the regional military confrontation between the US and China, are extreme indeed, and could potentially escalate into a catastrophic nuclear conflict.

The paper will go on to propose that a solution does exist at a regional level to reduce the threat of nuclear weapons. Not perfect. Not universal. But a transitional ‘quarantining’ strategy that can be taken by any group in the exercise of their own sovereign rights. That is for states to take the initiative to close their borders to the entry, stationing and acquisition of nuclear weapons; and to collectively prevent assistance to any other state possessing, deploying, or threatening to use nuclear weapons. If you like, to establish quarantine systems on their borders and territories designed to prevent the presence of nuclear weapons, to lessen the risk of themselves becoming targets in any nuclear exchange, and to secure security guarantees from nuclear-armed states and the UN Security Council.

This regional quarantining against nuclear threats is through the establishment of a legally binding and international verified nuclear-weapon-free zone (NWFZ) under processes, conditions and arrangements developed through UN disarmament forums, and recognised through the UN General Assembly and the Nuclear Non-Proliferation Treaty.

There are already five such multi-nation nuclear weapon-free zones in populated regions (Latin America, South Pacific, Southeast Asia, Africa and Central Asia), two single nation zones (Mongolia, New Zealand), and other spaces internationally recognised as such zones (Antarctica, Outer Space, Seabed). Some 110 UN Member States belong to NWFZs. All have so far been relatively successfully in preventing both nuclear weapon acquisition by zone states and nuclear weapon stationing by external powers; and all the multi-nation NWFZs in populated regions have secured, or are in the (often lengthy) process of securing[1], the relevant negative security guarantees against the use or threat of use of nuclear weapons from the five NPT-recognized nuclear-armed states (US, UK, France, China, Russia).

Mexican diplomat, Alfonso Garcia Robles, the principal architect (along with the UN's William Epstein) of the first nuclear-weapon-free zone in a populated region (the 1967 Latin American Tlatelolco Treaty) argued in 1974 that "Because of the reluctance of the nuclear Powers to adopt effective disarmament measures" non-nuclear states should "resort to procedures similar to those which apply in the case of an epidemic: to seek gradually to broaden the zones of the world from which nuclear weapons are prohibited for all time so that the territories of the nuclear powers will constitute something like contaminated islands, subject to quarantine".[2] Robles' highlighting of a parallel between the spread of nuclear weapons and a deadly pandemic was percipient indeed, given such comparability as global impact, the invisible nature of deadly radiation, the economic impacts, and not least the humanitarian consequences of millions of death (even in the case of a limited nuclear exchange).

As a former New Zealand Prime Minister, David Lange, noted in an Oxford Union debate on his country's nuclear-free policy, "There is simply only one thing more terrifying than nuclear weapons pointed in your direction and that is nuclear weapons pointed in your enemy's direction. The outcome of their use would be the same in either case, and that is the annihilation of you and all of us. That is a defence which is no defence".[3]

What is a NWFZ?

The UN General Assembly, in Resolution 3472B (1975) has defined a NWFZ as:

"…any zone recognized as such by the General Assembly of the United Nations, which any group of States, in the free exercises of their sovereignty, has established by virtue of a treaty or convention whereby: (a) The statute of total absence of nuclear weapons, to which the zone shall be subject, including the procedure for the delimitation of the zone, is defined; (b) An international system of verification and control is established to guarantee compliance with the obligations deriving from that statute."[4]

Resolution 3472B also carefully defined the obligations of nuclear-weapon States towards NWFZs, including the need to respect all treaty provisions relating to the absence of nuclear weapons within such zones, to refrain from any acts that would violate such treaties, and, most importantly, "To refrain from using or threatening to use nuclear weapons against the States included in the zone".[5] The non-use or threat of use undertakings are usually referred to as negative security guarantees, and embodied in legally binding protocols attached to the treaties.

The UN Disarmament Commission provided guidelines in April 1999 on the establishment of such zones, specifying inter alia: the need to establish them on freely arrived arrangements by regional states; to be an initiative from within the region; to involve consultation with nuclear-weapon states on protocols requiring them to provide "legally binding commitments to the status of the zone and not to use or threaten to use nuclear weapons against States parties to the (NWFZ) treaty"; and to permit peaceful uses of nuclear energy.[6] In a recent statement on such zones, UN Secretary-General Antonio Guterres emphasized "First and foremost, nuclear-weapon-free zones put a permanent end to the possibility of nuclear conflict in a given region… At the same time, these zones can provide additional assurance to the global community of the peaceful nuclear intentions of the countries in these regions".[7]

Key aspects of the NWFZ concept including seeking to constrain both horizontal proliferation and stationing of nuclear weapons within a particular geographic region, including not only land but also sea and air spaces within that territory. Horizontal proliferation may be thought of as the acquisition of nuclear weapons by states within the zone. Vertical proliferation is an increase in nuclear weapons of existing nuclear-armed states (NAS). Increases in the nuclear arsenals of existing NAS

may additionally be associated with their stationing or deployment of nuclear weapons outside their own homeland territories, particularly in the case of tactical nuclear weapons, short or medium range missiles, and gravity bombs.

The first NWFZ to be established in a populated region, the 1967 Latin American Tlatelolco Treaty, illustrates the NWFZ role in the case of both vertical and horizontal proliferation.[8] The initial impetus was the 1962 Cuban Missile Crisis, which arose when the former Soviet Union stationed nuclear-armed missiles in Cuba and an alarmed US Kennedy Administration established a naval blockade around the island and forced Soviet nuclear-armed submarines to surface. However, the same zone also served to constrain potential horizontal proliferation between the two largest South American states, Argentina and Brazil. The Tlatelolco Treaty now has universal membership within the zone, including Cuba, and enjoys binding negative security guarantees from all five NPT-recognized nuclear weapon states. It is widely regarded as a model for other zones, not only in having insulated the region from becoming the site of future nuclear conflict between external nuclear powers, and having defused a potential source of regional proliferation, but also in its establishment of a permanent body to oversee the denuclearization of the zone, OPANAL (Agency for the Prohibition of Nuclear Weapons in Latin America and the Caribbean), and in it being complemented by a bilateral verification and monitoring agency, ABACC (Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials) between Argentina and Brazil.

Another key feature of NWFZs is that, unlike the central non-proliferation and disarmament instruments, they can be tailored to meet the specific conditions and needs within a particular region. In the case of zones where either horizontal proliferation, or stationing by nuclear-armed states, has already taken place, there can be specific provisions to prevent such activities occurring again.

In the case of the second NWFZ to be established, the 1985 South Pacific Nuclear Free (Rarotonga) Treaty (SPNFZ), the zone not only included the core requirements as set out in the UN definition and guidelines but also includes specific provisions against nuclear weapons testing and radioactive waste dumping in view of the 321 nuclear tests variously conducted by the US, UK, and France in the Pacific over some six decades with tragic health consequences for indigenous peoples across the region.[9] The Rarotonga Treaty was noteworthy in that its Protocol 3 has successfully secured nuclear weapon state legally binding commitments against nuclear testing even in the extensive international waters encompassed by the zone. In the case of the 1996 African Pelindaba Treaty NWFZ, the provisions took particular account of the previous apartheid-era South African nuclear weapons program to ensure dismantlement of the relevant facilities.[10] In Central Asia, the 2006 Central Asia NWFZ took special account of the previous Soviet use of the region for nuclear testing and facilities in a provision calling for the environmental rehabilitation of territories contaminated by the previous nuclear activities, and was also more rigorous than other zones in requiring the International Atomic Energy Agency (IAEA) Additional Protocol Safeguards.[11]

A final key aspect of internationally recognized NWFZs is their binding requirement of internationally IAEA supervised verification and safeguards, together with compliance mechanisms involving either regional bodies and/or the United Nations.

As recognized in the UN guidelines, the NPT Article VI, and in the preambles of existing zone treaties, NWFZs play a key pathway role between regional arms control to prevent or reverse proliferation, and wider nuclear disarmament goals and strategies. They are by definition geographically limited in their reach, therefore only partial measures. However, the more zones that are established, the greater the restrictions on nuclear deployment by the existing nuclear weapon states, and consequent reduction of risks of particular regions becoming ‘triggers” for nuclear conflagrations, whether as a result of conflicts between external nuclear-armed states or as a result

of nuclear proliferation and confrontation amongst states within a particular region.

The 1962 Cuban Missile Crisis was a prime example of how a Cold war rivalry between the US and Soviet Union led to a potential nuclear conflagration that would have been unwanted and cataclysmic for the Latin America region itself and the whole world. As a partial measure, NWFZs can and do play a crucial role in preventing or prohibiting nuclear deployment within particular regions and thereby constraining the geographic boundaries in which nuclear-armed-states can deploy their deadly nuclear forces. This role is particularly important in seeking to avoid possibilities of actual or miscalculated escalation of a regional conflict or crisis involving overseas-deployed nuclear forces. Nuclear-armed states with overseas-deployed nuclear forces may contemplate nuclear-war-fighting or battlefield use of nuclear weapons, or be involved in accidental firing of such weapons, on the questionable assumption that such use would not escalate into broader nuclear conflict.

Further, if leaders in nuclear-armed states assume that they can utilize such weapons in regions outside their own territory, they may conceivably sacrifice populations in those regions in order to pursue their own perceived "strategic" or "national security" interests, notwithstanding the nuclear umbrella extended nuclear deterrence rationale that is assumed to protect the umbrella states. A recent example was the July 2017 statement by Lindsey Graham, one of the most senior US Republican Senators and a close ally of President Trump, in which he stated publicly (after North Korea conducted two international continental ballistic missile tests in July 2017): "There is a military option: to destroy North Korea's nuclear program and North Korea itself. If there's going to be a war to stop [Kim Jong Un], it will be over there. If thousands die, they're going to die over there. They're not going to die over here".[12]

Presumably, in pursuing any military option to "destroy…North Korea itself" that might involve the use of nuclear weapons by either side, the US would take the time (minutes, days, weeks, months?) to consult with affected allies under nuclear "umbrella" arrangements or understandings, particularly South Korea and Japan, both with large centres of population well within range of North Korean missiles, and would also assess the wider potential consequences of any nuclear weapon use. Senator Graham's statement was explicit in complacently assuming that the casualties would be in the "thousands" rather than the hundreds of thousands, or the millions; and in implying that, in any case, the consequent deaths would not be "over here" (i.e. within the United States itself) but rather over there (i.e. in a distant land). It also ignored the potential for escalation with nuclear-armed China, which has a bilateral defence alliance relationship with North Korea and was clearly very ready to come to North Korea's support during the original Korean War.

Senator Graham's statement illustrates the risk that in the case of regions outside their own territories the leaderships in nuclear-armed states may well contemplate the use of tactical or strategic nuclear weapons in the belief that the risks will only be experienced by the external regional states rather than by their own populations. While nuclear umbrella extended nuclear deterrence arrangements may appear to offer reassurance against nuclear attack, they assume that the only risk to be "deterred" is a rational decision by an adversary to mount a nuclear attack. However, the extended deterrence logic fails to take account of the need to avoid and prevent a plethora of risks that have very little to do with rational decision-making, including: uncontrollable nuclear escalation; computer error; erroneous radar data; cyber attacks from both state and non-state actors; imperatives to strike first when both sides are pursuing pre-emptive or first strike strategies; uncertainties about whether a nuclear weapon state's provision of extended nuclear deterrence would actually be delivered in an situation where the nuclear state had to weigh up risking one of its own major cities to defend an ally's city; and nuclear conflict escalation to a wider conflagration resulting in long term climate disruption, crop yield reduction and associated famines

across the world.

NWFZs, with their binding security guarantees and removal of potential nuclear targets, clearly offer an important security alternative for regional groups to prevent their regions becoming sites of human incineration in confrontations between nuclear-armed states. At the same time, through cooperation between NWFZs, such zones can serve as stepping-stones towards wider nuclear disarmament, and complement and reinforce central non-proliferation and disarmament instruments and strategies.

Why a NWFZ in Northeast Asia is an Urgent Issue

Northeast Asia is a region where NWFZ arrangements are particularly relevant and urgent in the light of the horizontal proliferation that has already occurred with North Korea's testing and acquisition of nuclear weapons and their means of delivery, vertical proliferation in the form of current deployment of nuclear-weapon-related forces and infrastructure on the part of the US and China, a history of threats of using nuclear weapons, and the 2017 exchanges of nuclear use threats between the Trump Administration and the DPRK.

In the case of the 2017 nuclear threats, President Trump warned on August 8th, in response to DPRK criticism of the US, that "North Korea best not make any more threats to the United States…They will be met with fire and fury like the world has never seen"; and, in a subsequent September 19th address to the UN General Assembly, that the US would "totally destroy North Korea" if the US were forced to defend itself.[13] The day after the US "fire and fury" threat, General Kim Rak Gyom, the North Korean Commander of the Korean People's Army (KPA) Strategic Force, issued a statement that it was "seriously examining the plan for an enveloping strike at Guam through simultaneous fire of four Hwasong-12 intermediate-range strategic ballistic rockets…to signal a crucial warning to the U.S.".[14] North Korea went on to conduct a series of August and September 2017 long-range missile tests designed to show that its missiles could now reach as far as Japan, Guam and even the continental US; and on September 3rd 2017 carried out a test of what it claimed was a thermonuclear bomb, with a yield of over 100 kilotons. and threatened to conduct a hydrogen bomb test in or over the Pacific.[15]

The Trump Administration reciprocated by ordering flights of both non-nuclear and nuclear-capable strategic bombers near North Korea's coast; and, for the first time in a decade, deployed three of its carrier-strike groups to the Pacific.[16] The Trump Administration's Defense Secretary at the time, General James Mattis, was working within a context in which the current US strategic plans included a pre-emptive attack against North Korean under OPLAN 5027 involving the use of up to 80 nuclear weapons.[17] Mattis has recently stated that "only the President could authorize the use of nuclear weapons" but believed any decision to do so would be on his recommendation.[18] He noted further that he had asked himself at the time "What do you do if you've got to do it? You're going to incinerate a couple million people. No person has the right to kill a million people as far as I'm concerned, yet that's what I have to confront".[19] He recalled that during this crisis, "I had to consider ever day this [nuclear strike] could happen. This was not a theoretical concern". [20] As Bob Woodward concluded in his summary of the crisis based on direct interviews with Trump and Mattis: "The American people had little idea that July through September of 2017 had been so dangerous".[21] Compared to Americans, many Koreans, Japanese and others in the region probably had somewhat greater awareness of the dangers of the crisis as the ones most likely to be amongst the millions who would die or suffer injury. Even more disturbing in these post-crisis reflections by one of the key Trump Administration nuclear decision-makers is that Mattis made quite clear that, despite his misgivings, he would have been prepared to carry out a presidential order to use nuclear weapons: "I was focused completely on how to prevent this [a nuclear conflict] or stop it as quickly as possible. Recognizing that the worst possible situation might dictate the use of nuclear weapons,

with all that means in terms - not just that war, but the way it would change the shape of the world. That now nuclear weapons can be used again".[22] The 2017 July to September North Korean nuclear crisis was far from being a storm in an Asian teacup but rather a narrowly averted regional and global catastrophe.

The 2017 exchange of nuclear threats prompted global alarm and the imposition of new UN Security Council sanctions on North Korea. Fortunately, in no small part due to the intercession of the new South Korean President, Moon Jae-in, the crisis was lessened through direct talks with North Korea. These culminated in a series of leader summits and declarations between Moon Jae-in and Kim Jong Un and between President Trump and Kim Jong Un.[23]

These summits produced a number of in-principle agreements on key aspects of denuclearization and normalization of relations. However, there was little further progress during 2020. In this impasse, the continuing development and reach of North Korean nuclear weapon systems, and the US deployment of nuclear and conventional forces in the region targeted on both North Korea and China, create an ever present and escalating threat of nuclear conflict, whether deliberate, miscalculated or accidental (due to the shortness of response times for incoming missiles and uncertainty about whether dual capable missiles are nuclear-armed or not).

Considering first the nuclear weapon deployment and capabilities of North Korea, it is now estimated that North Korea possesses some 30-40 nuclear warheads as at January 2020. In terms of potential delivery systems, it has successfully tested a range of short, medium and long-range missiles, including: the Hwasong-7 (Nodong), Hawasong-9 (Scud-ER), and Bukkeukjseong-2 missiles with a range of around 1,000km; the Hwasong-10 and Hwasong-12 missiles with a range of over 3,000km; the Hwasong-13 missile with a range of over 5,000km; the Hwasong-14, Hwasong-15 with ranges from 6,700km to 13,000km; the Taepodong-2 space launch vehicle with a range of 12,000km; and the Bukkeukseong-3 submarine launched missile first tested in October 2019.[24] While the various missile systems have potential nuclear capability, there is some uncertainty as to whether North Korea has actually developed small enough warheads to be used on them, although the Hwasong-7 is believed to be the type that is most likely to be chosen.

A recent interim UN report submitted to the 15-member UN Security Council North Korean Sanctions Committee has assessed that North Korea has "probably developed miniaturised nuclear devices to fit into the warheads of its ballistic missiles", that its processing of highly enriched uranium is continuing, and that it is continuing to produce nuclear weapons.[25] A US intelligence assessment in 2017 also concluded that North Korea has developed nuclear weapons small enough to fit inside missiles. Defence analysts, however, have questioned whether North Korea as yet possesses the necessary guidance and warhead activation capabilities for relevant missile delivery systems.[26]

In the absence of any agreements with North Korea on either denuclearization arrangements, or a freeze on current nuclear weapon acquisition and development programs, it is reasonable to assume that the DPRK will continue to increase its nuclear warhead stockpile and ability to deploy nuclear warheads on missiles with expanding range (even extending to Guam and the US mainland). In terms of potential casualties if even a single DPRK nuclear weapon of 250 kilotons were to be detonated over Seoul or Tokyo, one scenario has estimated over 700,000 deaths and 2.4 million other casualties from the initial impacts, not taking into account any aftermath effects.[27] In terms of aftermath effects, a scientific study of the likely impact of the explosion of some 100 relatively small 15kt nuclear bombs in the adjoining region of South Asia, suggests that such explosions would create massive global ozone layer losses, associated reductions in food crops and create a global nuclear famine lasting for up to two decades.[28]

The United States for its part has created an encircling ring of nuclear-weapon-related bases, infrastructure, and mobile platforms within range of both North Korean and Chinese territory and coastlines; and continues to test long-range missiles fired from Vandenberg Base in California to the Kwajalein Atoll test site in the mid-Pacific. As at 2020, it maintains air and naval bases relevant to nuclear weapon capabilities in Japan, South Korea, Guam, Hawaii, and Australia, as well as: nuclear-weapon-related electronic C3I bases in Australia; THAAD (Terminal High Altitude Area Defense) missile defence radar installations at Seongju in South Korea, Wake Island (in Micronesia), Guam, and Hawaii; and two missile tracking radar bases at Shariki and Kyogamisaki in Japan.

The US stockpile of nuclear warheads is currently around 3,800, of which 1,750 are deployed, including air launched cruise missiles and gravity bombs at US bomber bases. Nuclear-capable delivery systems include not only B-52H Stratofortress and B-2A Spirit bombers but also SLBM and SSBN nuclear powered submarines armed with Trident II ballistic missiles, and fighter aircraft armed with tactical lower yield nuclear bombs.[29] Delivery platforms relevant to Northeast Asia include strategic bombers based at Guam, fighter planes equipped with nuclear-armed air launched cruise missiles and tactical nuclear bombs, and submarines in Pacific waters equipped with ICBMs.[30]

A recent development is that from late 2019 the US Navy has begun deploying a new low-yield warhead on D5 missiles, the W76-2 8kt bomb on SSBNs.[31] As Kile and Kristensen note: “According to US military officials, the W76-2 has also been deployed in the Pacific Ocean and it is believed that at least two of the SSBNs on patrol in each of these oceans will normally carry one or two D5 missiles, each with one W76-2”.[32] There is also the possibility that under the Trump Administration’s 2020 Nuclear Posture Review, dual capable aircraft equipped with tactical nuclear bombs may potentially be deployed in Northeast Asia.

The US, also, of course, has its land-based ICBMs and strategic bombers that are capable of delivering nuclear weapons to targets across the globe. It also conducts regular exercises with South Korea forces on and in the surrounding waters of the Korean Peninsula, sometimes involving nuclear-capable aircraft, although some of these annual exercises were suspended or scaled down in the context of the recent 2018-2020 US-ROK-DPRK negotiations.

The US has also instituted a program of military patrols in the South China Sea, even on occasion sailing within the twelve-mile limits of disputed Chinese-claimed or artificially-constructed islands. The patrols are justified on the grounds of preserving freedom of navigation rights, although China has not sought to deny or prevent such South China Sea rights beyond the islands’ 12-mile limits.

China, against whom the US nuclear encirclement is primarily oriented, has steadily increased its nuclear weapon stockpile over the past five years. As of January 2020, it now has an armoury of some 320 nuclear warheads, an increase of 60 since 2015.[33] Of these, 240 are deployed for delivery on land and sea-based ballistic missiles, and to nuclear-capable aircraft. It has currently deployed 90 ICBMs in both land silos and on road-based launchers, with ranges of up to 12,000km, and some with MIRVed (multiple independently targetable re-entry) warheads. It has deployed four nuclear powered submarines, each of which can carry up to 12 sea-launched ballistic missiles with ranges of up to 7000km and warheads of 200-300kt.[34] It has 20 nuclear capable H-6K bombers that can deliver one bomb each, as well as potential plans for an air-launched nuclear armed cruise missile. China has also begun from 2018 deploying a new dual-capable DF-26 intermediate range ballistic missile with a range of up to 4000km that can reach targets across the whole western Pacific, including Guam.[35] It is also developing a new long-range strategic bomber with a range of 6,500km and comparable to the US B-2 bomber.

The above pattern of nuclear confrontation between the US and its regional allies on the one hand,

and China and North Korea on the other, has a number of disturbing implications for an increased risk of nuclear war in Northeast Asia.

It is clear that all sides are being drawn into increased reliance on nuclear weapons, including regional states, such as South Korea and Japan, who have alliances and defence agreements with the US and are hosting various bases and installations that are part of the US forward nuclear war fighting deployments in the region. The US, Japan, and other US allies have, of course, argued the necessity of these deployments on the basis of either direct deterrence against either North Korea or China, or extended nuclear deterrence in relation to a more limited North Korean nuclear attack on either South Korea or Japan.

Unfortunately, however, there are a number of assumptions in this traditional deterrence rationale that would mean that the current reliance on nuclear weapons is more likely to increase rather reduce the chances of a catastrophic nuclear conflagration.

To begin with, it seems unnecessary for the purpose of deterrence for there to be forward deployment of short or medium range nuclear weapon systems when all three of these nuclear-armed states (US, China and North Korea) now possess long-range capabilities sufficient for deterrence purposes. The increasing deployment of short and medium range missiles suggests nuclear-war-fighting intentions, including first strike capabilities, and may well be expected to increase adversary motivation to engage in pre-emptive strikes. Such weapons, at lower levels in military chains of command, may also be prone to unauthorized launches from forces based in the field.

Secondly, as already noted, the deterrence logic assumes that the adversary is responding rationally. However, in cases of poor communication between adversaries, there may simply be responses based on misinterpretation or misinformation concerning adversary intentions, and there is certainly ample scope for this in Northeast Asia given existing issues in communication, language issues, and rapidly diminishing reaction times for checking on data before responding.

Thirdly, the deterrence rationale ignores the many ways in which a nuclear war can start (and has nearly started on a number of occasions in the past) through sheer accident[36]). The THAADS (Terminal High Altitude Area Defense) radars that the US has installed in South Korea and Guam to detect North Korea and Chinese missiles not only have the purported purpose of being able to detect and intercept incoming missiles but also the purpose of triangulating (in conjunction with other missile defence systems) target data in real time to launch a potential first strike nuclear attack, something that is most certainly of great concern to China itself, which is now, with Russian assistance, rapidly putting in place its own early warning systems.[37] The problem here, as has already happened on occasion with US and Russian radars, is the difficulty of distinguishing between radar detection of false rather than actual missile attacks, coupled with the extremely short times (in minutes) for launching one's own nuclear weapons before they are destroyed: "Use them or lose them". Both Russian and US nuclear missiles are on hair-trigger alerts, with US land-based missiles able to be launch within 5 minutes of a presidential decision, and Russian missiles able to be launched within seconds.[38] Such short reaction times put the whole fate of millions of people at the mercy of extremely brief real-time decisions subject to computer or sensor detection errors, cyber-attacks, and insufficient time for considered decision-making.

Another problem of deployment of such missile 'defence' systems is that they serve to intensify a regional nuclear arms race, with targeted adversaries fearing a first strike embarking on rapid expansion of nuclear warhead production, missile MIRVing (equipping with multiple independently targetable re-entry vehicles), and deployment across a range of platforms, including on submarines at sea.[39] This pattern is certainly evident in the case of China and North Korea in their current

moves to expand their nuclear warhead stockpiles and create new delivery systems less vulnerable to pre-emptive strikes. In the case of North Korea there will also be every financial motivation to export some of its warheads to other countries or non-state actors to offset the economic dilemmas caused by the current sanctions against it.

Yet another new source of accidental nuclear war will stem from the deployment of North Korea and US missiles that are dual capable, and if launched at or over another country's territory, are assumed to be nuclear armed, thereby precipitating a nuclear counter attack. And still another possibility of inadvertent nuclear war is the increasing possibility of cyber attacks on nuclear weapon facilities, whether by adversary states or by non-state actors, leading to counterattacks on supposed authors of the attack.

Finally, not least, there is the possibility of escalation from a conventional military conflict into the use of nuclear weapons, something that is ever present in regions with existing and historical sources of conflict. In the case of the Korean Peninsula, there is the ever-present fear of invasion due to the failure to reach a permanent peace settlement of the Korean War. In the case of North Korea, there is the particular traumatic historical experience of having almost every town and village throughout North Korea obliterated by US bombing during the Korean War.[40] Given such heightened regional tensions, any conflict in which there is a fear that one's own country might be invaded could spark escalation, including potential "across the bow" warning nuclear attacks on one or more adversary cities.

The present impasse in direct negotiations between North Korea and the US, following the failure of the February 27-28, 2019 Hanoi Summit between Kim Jong Un and President Trump, has now once more reduced expectations of an early diplomatic resolution of regional nuclear threats, and increased the risk of renewed reliance on nuclear weapon deployment and nuclear threats by the adversaries.

At the same time, the Covid-19 global pandemic that spread across the world in early 2020 and continues unabated at time of writing can also be assumed to increase reliance on nuclear weapons as the pandemic reveals the vulnerability of conventional forces to such pandemics, particularly conventional forces based on the Korean Peninsula. US forces based in South Korea have already been seriously affected by rising Covid-19 infection cases amongst forces based at Camps Humphreys, Carroll, Henry, Walker, Casey and at Osan Air Base; and the US and South Korea cancelled joint military exercises scheduled for March 2020 due to the risk of infection. At the same time, there are domestic pressures to use national conventional forces for domestic tasks in bringing the pandemic under control. As Wilfred Wan has noted in a recent analysis of the impact of the Covid-19 Pandemic on nuclear risks, Western military leaders are continuing to prioritize nuclear deterrence operations despite evidence of confirmed cases of infection at almost every nuclear base in the US and consequential increased risk that maintenance tasks essential to ensuring safety of nuclear weapons systems are not adequately carried out.[41]

Critical Issues in Tailoring a NWFZ for Northeast Asia

NWFZs require a core set of prohibited nuclear weapon activities, including bans on the development or acquisition of nuclear weapons by zone states as well as the stationing of nuclear weapons within the zone by external nuclear-armed states. At the same time, they enable zones to be tailored to the specific conditions within a particular region, including the nature and history of past nuclear activities in the region, and the security needs and interests of regional states.

Northeast Asia has its own conditions that make the tailoring of a NWFZ particularly crucial if such a zone is to be effective and ensure regional security throughout all stages of its establishment and

implementation.

Firstly, regional proliferation has already occurred with North Korea having withdrawn from the NPT, conducted six nuclear tests, including one thermonuclear test, estimated to possess some 30-40 nuclear warheads, and a developing capacity for short, medium and long-range missile and submarine delivery systems. The stakes associated with this proliferation are high indeed, including the potential for nuclear strikes through pre-emption, miscalculation or sheer accident. North Korean proliferation also increases incentives for other regional states to acquire nuclear weapons, especially South Korea and Japan, where some military and ideological 'hawks' are already calling for such acquisition, particularly given doubts as to whether an "America First" Administration would really deliver on purported extended deterrence obligations if it became a choice between coming to the aid of Seoul or Tokyo or the risk of a nuclear attack on a US city.

Given such proliferation, any NEANWFZ would obviously need to include rigorous and internationally verified provisions for the dismantlement of existing nuclear weapon and nuclear-weapon-related production facilities on the Korean Peninsula. There are precedents in previous zones where proliferation has already occurred, such as the African Pelindaba NWFZ, for provisions covering such verification and dismantlement. However, it might well be the case in the context of previous breakdowns in denuclearization agreements on the Korean Peninsula, that a NEANWFZ would need to include a subsidiary verification and monitoring regional denuclearization monitoring agency similar to the complementary role of ABACC in relation to the Latin American Tlatelolco NWFZ. It would also need to follow the example of the Central Asian NWFZ in requiring the imposition of IAEA Additional Protocol safeguards involving more stringent inspection provisions that the standard IAEA safeguards.

Northeast Asia has not only experienced horizontal proliferation but also overseas nuclear stationing in the form of US deployment of nuclear weapons and mobile nuclear-capable or nuclear-armed forces within the region, including during regular major exercises. From 1957 until late 1991, the US stationed tactical nuclear weapons at its bases in South Korea, and there have been recent calls from some voices within South Korea for such weapons to be repositioned there. China and Russia have also been conducting joint major exercises in or close to the region involving nuclear capable platforms, no doubt seeking to counter US military expansion in the region. Since 2012, China and Russia have conducted major exercises in the East China Sea, the Sea of Japan, and the South China Sea, In such a context, it will be important that any NEANWFZ include protocols that would legally bind nuclear-weapon-states not to introduce nuclear weapons into the region either on land or in designated sea areas within the zone, whether on land territory, territorial waters, and potentially the Exclusive Economic Zones (EEZs). Although it has yet to secure NWS agreement to the protocol, the 1995 Southeast Asian Bangkok NWFZ is seeking in its protocol to gain agreement that its EEZs should not be used for the launch of nuclear weapons, whether directed within or beyond the zone.

Given the division of Korea into North and South, the failure to conclude a Korean War peace settlement, continued fears of invasion on both sides of the 38th Parallel (especially on the part of North Korea), and the absence of a permanent regional forum or organization to negotiate regional security issues, a NEANWFZ would need include legally-binding security guarantees and arrangements from the five NPT-recognized nuclear-armed-states against nuclear attack or threat of attack. These guarantees would need to go beyond those provided to the existing five other NWFZs to ensure their credibility, perhaps involving proscription of any military exercises within the zone region that involve nuclear-capable platforms. In the absence of a regional forum for security issues, a NEANWFZ would also need to establish a permanent regional body (comparable to OPANAL in the case of the Latin American Tlatelolco Treaty) to oversee the zone arrangements and monitor compliance, including through inspections on demand, and with powers to refer compliance issues

to the UN Security Council.

Further, the special obligations of nuclear-armed states allied to regional states, such as the US in relation to South Korea and Japan, and China and Russia in relation to North Korea, to respect the provisions of a NEANWFZ would need to be incorporated into a legally binding protocol for the NWS to sign and ratify.

There is also a special problem in this region in that both North and South Korea claim sovereignty over the whole of the Peninsula, so accession to the treaty in each of their cases might need to include a similar caveat to that of signatories to the Antarctic Treaty in which Article IV specifies that "Nothing contained in the present treaty shall be interpreted as: (a) renunciation by any Contracting Party of previously asserted rights or of claims to territorial sovereignty in Antarctic".[42] Of course, in the event of future reunification, this problem would be overcome, and the possibility of this could also be acknowledged in the treaty.

A particular feature of the Northeast Asian region, one that it shares with the Middle East, is the historical and continuing high levels of distrust between countries within the region, and in their relations with external NWS. This is, of course, most evident in the relations between North Korea, South Korea and Japan, between North Korea and the US, and between Japan and both China and Russia. There are also continuing issues between South Korea and Japan, including: a failure to adequately address the historical legacy associated with Japanese Second World War occupation of Korea; compensation issues; abduction issues; human rights issues of residents-in-Japan; and economic competition issues. The historical and ongoing levels of distrust will require any NEANWFZ to be designed and implemented in a carefully phased way that progressively allows trust and confidence to grow while maintaining their respective security needs, perhaps through special provisions on entry into force and through mechanisms of economic cooperation and support.

It is noteworthy that several of the existing NWFZs that have been successfully established in other region have offered precedents for such phased introduction of NWFZs. The pioneering Latin American Tlatelolco NWFZ, for example, was negotiated at a time of intense nuclear rivalry between military regimes in Argentina and Brazil, both with the capability of developing nuclear weapons. However, the 1976 Tlatelolco Treaty had an innovative Article 28 (29 in the later amended treaty) entry-into-force mechanism that allowed signatories to waive the requirement for entry into force for their own territories until they were sufficiently confident of their security needs to be ready to do so. As a result the Treaty came into force within the whole zone boundaries in a gradual way over three decades, with several states, including Argentina, not bringing the treaty into force until the early 1990s, and Cuba not until 2002. As Latin American regional analyst, John Redick has observed: "The Tlatelolco negotiating process…had a subtle but important impact on Argentine-Brazilian relations in the nuclear policy area. For the first time, two suspicious rivals discussed fully and frankly the most sensitive issues of nuclear policy and reached common positions…The coordination of nuclear policy by Argentina and Brazil relative to the NPT and during the Tlatelolco negotiations was a first substantive step in a lengthy nuclear confidence-building process."[43] There is a particular relevance here for Northeast Asia in suggesting that NWFZ arrangements can serve a normative role in nuclear non-proliferation and disarmament over an extended period of time rather than needing to be an all-at-once fix for everything at the very outset. Given that several states in the region, including South Korea, Japan and Mongolia do not already possess nuclear weapons, it becomes feasible to establish a NWFZ as a normative framework with legally binding security non-use or threat of use guarantees to which North Korea might be encouraged to sign up to but not necessarily bring into force until it was ready to do so based on a reassessment of the perceived nuclear threats and the incentives to be provided by legally binding security assurances under Treaty protocols and wider comprehensive regional security initiatives.

One further issue for a NWFZ designed and tailored for the Northeast Asian region is the question of what states and territories might be designated as part of the zone. The two Koreas and Japan would obviously be the most important to seek to include, particularly in view of the North Korean proliferation that has already occurred and the technical capacity of both South Korea and Japan to rapidly develop nuclear weapons if they chose to do so, with Japan already possessing a large stockpile of plutonium that could potentially be weaponized.

Beyond these three states, Mongolia, although not sharing a border with North Korea, is a close regional neighbour that is already internationally recognized as a single state NWFZ and could potentially be included in the zone.[44]

Also, in close proximity to Japan, Taiwan is a potential member, also possessing the technical capacity for nuclear weapon capacity, but of course facing the obstacles posed by Chinese sovereignty claims.

Further afield still is the island of Guam, part of the Northern Marianas island territory of the United States and the site of a major US military airbase with nuclear-capable forces able to threaten or actual launch nuclear strikes against targets across Northeast Asia. The distance from Guam to Pyongyang (3,402km) is only 1469 km more than the distance from Cuba to Washington DC (1933km), yet at the time of the 1962 Cuban Missile Crisis such a degree of proximity was of sufficient concern for the US to demand that the Soviet Union withdraw its nuclear missiles from Cuba even at the risk of triggering a global conflagration. Currently, there is concern over North Korea's newly acquired potential to reach Guam with nuclear-armed missiles, but equally, from the North Korean perspective, there is a perceived nuclear threat posed by US nuclear forces on Guam. A Northeast Asian NWFZ might therefore seek to include Guam within the zone to prevent any nuclear weapon stationing or presence on the island, but still, of course, permitting conventional US military deployment on the island. There is most certainly precedent for this in other established NWFZs. In the case of the Latin America Tlatelolco NWFZ Treaty, the US has under Protocol 1 unreservedly accepted the inclusion of such US territories as Puerto Rico and the Virgin Islands, with the former including the US Army Base of Fort Buchanan.[45] No doubt the US would be concerned to argue that its nuclear forces on Guam are necessary for nuclear deterrence against China but of course this would not in any way lessen the deterrence provided by US SLBN and land-based ICBMs that are most certainly already targeting both China and Russia, while relinquishing nuclear-related strike forces on Guam may lessen both Chinese and North Korea concerns about US preparations for nuclear-war-fighting and pre-emption strikes. There could also be a possible quid pro quo with China on the possibility of including Taiwan in a regional NEAMWFZ to reassure China that Taiwan too does not become a site for launching or assisting in the launch of nuclear strikes.

In drawing the boundaries of a NEANWFZ, there is also the issue of whether to include EEZs and international waters within the proposed zone. Given the presence of mobile platforms in the waters of the region, including submarines and naval craft of major nuclear states (US, China and Russia), it would seem important from the viewpoint of all the regional states to include provisions against any deployment, testing or use of any nuclear weapons and nuclear capable delivery systems within at the least the EEZs of zone states, but perhaps also extending into international waters to meet up with the boundaries of the Southeast Asian NWFZ zone and the Equator boundary of the South Pacific NFZ, thereby encompassing parts of the Sea of Japan, Yellow Sea, East China Sea, and northeast Pacific international waters. The Southeast Asian Bangkok Treaty's Protocol has certainly provided a precedent for seeking to establish NWFZ restrictions in EEZs[46]; while the South Pacific NWFZ's Protocol 3 (ratified by four out five NWS and signed but not yet ratified by the US) has successfully secured binding NWS guarantees to respect its nuclear test ban across a wide expanse of not only EEZs but also international waters that extend from the Latin American Zone to the east,

the Equator to the north, and the Antarctic Treaty zone to the south.[47]

Proposed NEANWFZs

There has been a long history of proposals to establish a NWFZ on the Korean Peninsula or within the wider Northeast region. These have been variously advanced by governments, epistemic communities concerned with nuclear and security issues, political parties within regional states, and civil society disarmament groups. Such proposals date from as early as the first decade after the 1950-53 Korean War, and have continued until the present.

A very early proposal was that advanced in 1959 by the Soviet Union in the context of wider denuclearization zone proposals, including Poland's Rapacki proposal for a Central European NWFZ. Nikita Krushchev proposed a NWFZ for the whole Asia Pacific region, including the Korean Peninsula.[48] As in the case of the Rapacki proposal, the idea was rejected by Western powers on the grounds that the communist states had numerically superior conventional forces and that nuclear weapons were needed to counter such forces. China, also proposed an Asia Pacific NWFZ in the late 1950s. This also was rejected at the time by the Western powers, and a few years later, in 1964, China was itself to develop nuclear weapons, no doubt mindful of both this rejection of the NWFZ idea, and the explicit nuclear threats made against it by the US during the Korean War, which went to the extent of contingency planning for actual nuclear use if China did not agree to the Korean Armistice, and US stationing of nuclear weapons in South Korea from as early as 1957. So began the Asia Pacific nuclear weapons proliferation spiral, from US nuclear threats and deployment in the 1950s, to Chinese nuclear acquisition in 1964, to India and Pakistan acquiring the bomb in 1998, and then North Korea in 2006. At each stage in this spiral, each nuclear armed state justified its acquisition in terms of "deterrence" but the actual resulting spread of nuclear weapons has created greater and greater nuclear threats faced across the region, an outcome that would have been obviated if the regional states had seriously pursued and reached agreement on the Asia Pacific NWFZ proposed during the 1950s, something which was to be successfully achieved a few years later in another region, Latin America in the form of the 1964-67 Tlatelolco Treaty negotiations.

Oddly enough, and perhaps partly inspired by the success of the 1967 Latin American Tlatelolco Treaty in preventing Soviet nuclear weapon stationing in America's own back door, it was to be a US Government body, the Arms Control and Disarmament Agency (ACDA) that commissioned a study from the Institute for Defense Analyses, that recommended the US Government consider a Korean NWFZ as part of a wider set of confidence-building measures for inter-Korean and Four Party (US, USSR, China and Japan) talks. The study argued:

"The ROK should…be encouraged to introduce the question of nuclear weapons into the dialogue with the North, as part of the discussion of the US military presence. The question of a possible Korean agreement to ban the introduction of nuclear weapons into Korea has particularly interesting ramifications. There are no nuclear weapons in North Korea, nor does it appear likely that either the Soviet Union or China has plans to introduce such weapons there…[deletion - classified material]…Denuclearization might be for Pyongyang a particularly meaningful achievement, short of complete military withdrawal, for which the North might make appropriate concessions in other areas. A denuclearization agreement between the two Koreas in a suitably balanced package could provide a format for great-power endorsement through appropriate protocols."[49]

The study went on to note that China "might be particularly interested in an NFZ agreement pertaining to Korea", and that the "diplomatic groundwork for the agreement could be laid in bilateral US-Chinese talks, with each country undertaking to persuade its Korean ally".[50] The study argued: "The precedent of the Treaty of Tlatelolco, which established a Latin American

nuclear-free zone, is important. The Treaty provides for appropriate verification, including IAEA safeguards". In its specific recommendations, it identified as one of an inventory of 73 confidence-building measures "Restrictions on the deployment or utilization of nuclear weapons, i.e. nuclear-free-zone (NFZ) or no-first-use (NFU) agreements".[51] The ACDA study further argued that the diplomatic groundwork "could be laid in bilateral US-Chinese talks, with each country undertaking to persuade its Korean ally". It presciently concluded by warning that "failure to take additional tense-reducing initiatives in Korea could lead to a deterioration of North-South relations that would involve far greater dangers'.[52]

Unfortunately, for whatever reasons, the US Nixon Administration, despite its 1971-72 diplomatic opening to China, did not grasp the nuclear nettle and go on to pursue the Korean NWFZ proposal recommended by its own ACDA experts. A path not taken in the past, a regional and global nuclear nightmare today.

North Korea itself was to propose a NWFZ during the 1980s. In 1980, the North Korean President, Kim Il Song proposed a Korean NWFZ in which "the testing, stockpiles, and use of nuclear weapons must be prohibited"; and then in 1981, the North Korean Government voiced support for a non-nuclear and peace zone in Northeast Asia as called for in a joint declaration by the Japanese Socialist Party and the Korean Workers' Party. The declaration, *inter alia*, called for the establishment of a NWFZ covering the Korean Peninsula, Japan and surrounding waters, with bans on the development, testing, production, possession, transport, import or use of nuclear and biochemical weapons within the region"[53]

Also during the 1980s, Mikhael Gorbachev made a major speech in Vladivostok in May 1985 in which he proposed an "All Asian Conference" to discuss a range of regional Asia Pacific arms control initiatives, including NWFZs on the Korean Peninsula and in Southeast Asia and provision of negative security assurances from the major nuclear powers to the non-nuclear states of the region.[54] As in the case of the earlier proposals, the United States and the Western nuclear powers rejected these proposals on the basis of a relatively greater disadvantage for US military deployment, and a more general resistance to NWFZ-establishment as a threat to the US military freedom of movement and deployment, particularly sea-based transit—then already a sensitive issue for the United States due to the New Zealand government's move to prohibit US nuclear-armed ship visits at this time and the rise of the Nuclear Freeze movement against new forward-deployed intermediate range missiles in Europe.

In the early 1990s, following the end of the Cold War, there were some very promising Korean NWFZ developments. The US withdrew its tactical and theatre nuclear weapons from Korea from late 1991 to early 1992. During the same period, North Korea advanced a July 1991 proposal at the Conference on Disarmament in Geneva to establish a Korean NWFZ and sought joint North and South Korean negotiations on the legal and practical aspects of establishing such a zone, with a joint declaration on this to be agreed by the end of 1992.[55] South Korea responded very positively, with President Roh Tae Woo declaring in December 1991 that South Korea was free of nuclear weapons and indicating a new willingness to enter into negotiations with the North on the concept. The negotiations took place in the same month, and the outcome was the December 31 1991 agreement on a draft *Joint Declaration on the Denuclearization of the Korean Peninsula*. The *Joint Declaration* was signed by the parties on January 20th 1992 and came into force on February 20th 1992.[56]

The *Joint Declaration* emerged at a particularly propitious time following the end of the Cold War in 1989. There were greatly improved relations and exchanges between North and South from October 1991. Having removed its nuclear weapons deployed in South Korea, the US decided to engage more directly with North Korea. During the same period, North Korea agreed to sign up to IAEA nuclear safeguards (following an earlier 1985 decision to join the NPT.

The *Joint Declaration* included some but not all of the core elements of other NWFZs, including prohibitions on the testing, manufacture, production, receiving, possession, storing, deployment or use of nuclear weapons, and set up a verification mechanism in the form of a South-North joint nuclear control commission that "shall conduct inspections of the objects selected by the other side and agreed upon between the two sides, in accordance with procedures and methods to be determined by [the commission]".[57] In one respect, it went significantly further than any other zones, before or since, in that it also banned the possession of "nuclear reprocessing and uranium enrichment facilities".[58]

The significance of the Declaration was that it held the promise of preventing nuclear proliferation in both North and South Korea, while simultaneously preventing further stationing of nuclear weapons anywhere on the Peninsula. The threat of nuclear proliferation was relevant on both sides of the 38th Parallel. The South Korean Park Government had instituted a secret nuclear weapons program during the period 1969-75, only terminating it after the United States threatened to withdraw from its bilateral security arrangements[59]; and since then successive South Korean governments continued to support nuclear-weapon-related research activities until they were terminated decisively in 2005.[60] North Korea, for its part, motivated by its sense of nuclear encirclement, its *Juche* (self-reliance) ideology, and its militarized social system maintained in a high state of war readiness since the end of the 1950-53 Korean War, had even earlier shown signs of moving towards acquiring a nuclear weapon capability, with its establishment of the Yongbyon nuclear research complex in the late 1950s, its delayed signing the NPT (1985), and its initial reluctance to accept IAEA safeguards. These indicators were followed rapidly by continuing evidence that the DPRK's non-nuclear commitments were questionable, even as the *Joint Declaration* was signed.

Unfortunately, the brief moment of inter-Korean denuclearization consensus evidenced in the 1992 *Joint Declaration* did not last. The Declaration was never successfully implemented. This was because of weaknesses in the Declaration itself, bad faith on the part of both Koreas, and subsequent US attitudes towards it.

One weakness in the *Joint Declaration* was the fact that it did not develop a fully-fledged NWFZ treaty structure under which there would not only be verification provisions but also compliance mechanisms. Another weakness was the absence of protocol mechanisms for locking nuclear weapon states into nuclear non-use or threat of use guarantees as part of the zone arrangements. The latter was crucial in terms of reassuring North Korea about its participation in the zone.

After the failure of the *Agreed Framework*, the proliferation crisis worsened, with North Korea expelling IAEA inspectors in 2002, and then in 2003 becoming the first country to withdraw from the NPT.[61] The further response of the US Bush Administration was to institute the Six-Party Talks process, involving the two Koreas, Japan, Russia, China and the US, with China as the Chair.[62] The first round of Six-Party Talks was held in August 2003. As the talks continued fitfully, North Korea conducted its first underground nuclear test on October 9th 2006 in the form of a half-kiloton plutonium-based bomb, provoking worldwide alarm and condemnation.

An apparent breakthrough was achieved at the Six-Party Talks on February 13 2007 (following an earlier 19 September 2005 agreement on Principles aimed at "verifiable denuclearization of the Korean Peninsula in a peaceful manner"). The new 2007 agreement committed the parties to an Action Plan for "early denuclearisation of the Korean Peninsula" and a series of concrete actions that would be taken within 60 days, including a shut-down of North Korea's Yongbyon nuclear facility to be monitored by the IAEA, discussion of a list of all North Korea's nuclear programs, including plutonium holdings; bilateral US-DPRK talks to resolve bilateral issues, with the United States beginning the process of removing the designation of the DPRK as a state-sponsor of terrorism and

termination of its trade sanctions against DPRK; bilateral Japan-DPRK talks aimed at normalizing relations and settling unresolved matters from past conflicts; and economic, energy, and humanitarian assistance to the DPRK, including an initial shipment of 50,000 tons of heavy fuel oil.[63] The agreement also involved the setting up of working groups in such areas as: (1) denuclearisation of the Korean Peninsula; (2) normalization of DPRK-US relations; (3) normalization of DPRK-Japan relations; (4) Economy and Energy Cooperation; and (5) a Northeast Asia Peace and Security Mechanism.

This agreement, like its predecessor, also began to encounter serious difficulties. This was despite what appeared to be major progress by May 2008. According to a US State Department assessment at this time, North Korea had provided 18,000 pages of documentation relating to its nuclear programs; carried out 8 out of 11 agreed disablement activities at its three core facilities; and was continuing with work on the remaining three, including the shutting down of the Yongbyon nuclear facility in July 2007.[64] But disputes occurred over delays in US unfreezing North Korean assets and US-Japanese-ROK insistence on intrusive verification of North Korea's declaration of its plutonium-related programs.[65] North Korea denied that it had reached agreement on any inspection arrangements other than at its Yongbyon declared sites.[66]

In late 2008 and early 2009, the agreement unravelled further as North Korea reacted to the perceived US reneging on previous agreements and US-Japanese-South Korea threats to suspend shipments of energy aid. The North Korean response took the forms of reprocessing fuel from the Yongbyon reactor; testing a ballistic Taepodong-2 missile in the guise of a satellite launch; and then conducting a second underground nuclear weapon test on May 25 2009.[67] Defeat had once again been snatched from the jaws of victory.

Following the failure of the Six-Party Talks, there was little substantive progress at a governmental level on denuclearization initiatives until the short-lived "Leap Day" February 29th 2012 agreement in which the DPRK agreed to return to Six-Party Talks and the US undertook to cease hostilities and provide food assistance. The Leap Day agreement foundered two weeks later when the DPRK conducted an ostensible weather satellite launch utilizing intermediate range ballistic missile vehicles and the US responded by halting its food aid program. The stalemate in denuclearization negotiations with the DPRK continued into 2016, the last year of the US Obama Administration.

It was during 2017, the first year of the new US Trump Administration, that the globally unnerving 2017 exchange of nuclear threats between the North Korea and the US Trump Administration took place. Fortunately, amidst global expressions of alarm, the adversaries stepped back from the brink and entered into negotiations. These culminated in the 2018-2019 series of summit meetings between Kim Jong Un and South Korean President Moon Jai-inn (April 2018, May 2018 , September 2018), and between Kim Jong Un and President Trump (June 2018 in Singapore, February 2019 in Hanoi).

The June 2018 Summit was particularly important for its signing of a Joint Declaration agreeing to "establish new US-DPRK relations," "build a lasting and stable peace regime on the Korean peninsula" and a joint commitment to "work toward complete denuclearization on the Korean peninsula", with Trump committed to providing security guarantees for North Korea.

Unfortunately, the further 2019 Hanoi Summit collapsed, primarily over the issue of continued US/UN imposition of full sanctions in the face of North Korea efforts to secure a partial reduction of sanctions as a basis for progress. The June 2018 Joint Declaration, however, remains a significant expression of how close the sides were able to come in agreeing on some of the main principles and elements that could provide a basis for establishing a NWFZ on the Korean Peninsula.

Detailed Proposals for NEANWFZs

In addition to the various proposals advanced at governmental levels or through governmental agencies and negotiations, there has been much work on, and advocacy for, NEANWFZ proposals advanced through epistemic communities of experts and academics, political parties within the region, and civil society disarmament bodies.

Specific proposals include but are not confined to: Maeda (1966, Whiting (1972), Cunningham (1975), Halperin (1975), Hayes, Zarsky and Bello (1986), Endicott (1991, 1995, 1997, 2008), Shim (1991), Mack (1995), Kaneko (1995, 1996) Koo (1998), Xia (1999), Suzuki (2000), Umebayashi (1996, 2004, 2005) Peace Depot (2005) Hayes (2008), Asahi Shimbun (2009), Research Center for Nuclear Abolition (RECNA)(2015), and Halperin, Hayes, Pickering &Sigal (2018), and Tong Kim (2020).[68]

These contributions variously offer a number of innovative approaches to the processes, scope, boundaries and special requirements that would be important either in a Korean Peninsula or wider Northeast Asia NWFZ.

Some of the most developed proposals have been those put forward by Hiro Umebayashi, John Endicott, the Nautilus Foundation, and regional gatherings of Northeast Asian specialists and experts convened by the Nagasaki University Research Center for Nuclear Weapon Abolition and its associated regional Panel for Peace and Security of Northeast Asia (PSNA).

Umbeyashi, in association with Peace Depot, has developed a Model Northeast Asian NWFZ that would cover the two Koreas and Japan, with a supportive role for China, the United States and Russia. The Model Treaty incorporates core denuclearization provisions and negative security assurances but also goes further than other established NWFZs by explicitly asking that zone members discard their dependence on extended deterrence (the nuclear umbrella). As Umbeyashi notes, there was agreement at the NPT 2000 Review Conference that NPT parties would seek “a diminishing role for nuclear weapons in security policies”.[69]

John Endicott’s proposal, initially stimulated by the 1991 US decision to remove tactical nuclear weapons from Korea, led to a series of Track 2 discussions between academics and officials from both the region and other relevant countries. It focuses on the possibility of establishing a circular or elliptical limited nuclear weapon free zone taking in the two Koreas, Japan, and surrounding land territories of China and Russia, and sea areas within the zone. This would be an important reassurance and confidence building measure for all the countries within the zone, and demonstrate the commitment and good faith of the relevant nuclear weapon states whose support is needed for Korean denuclearization. As one aspect of a newly negotiated Korean NWFZ, an additional protocol could embody the main benefits of the LNWFZ by requiring the nuclear weapon states not to deploy tactical nuclear weapons on either sea or land within a specified circular or elliptical zone, even within their own land territories falling within the zone.

Besides the critical need for major powers like the US, China and Russia to facilitate negotiations for a Korean Nuclear Free Zone, there is also the question of what role Japan might play as a key country within the region; and, within the wider Asia Pacific region, what role Australia and the ASEAN group might play.

While the Japanese Government has yet to embrace or advocate for a NEANWFZ (despite its own experience of nuclear attacks and its important role in facilitating the establishment of a NWFZ in the neighbouring region of Central Asia), the Japan Socialist Party (JSP) (later succeeded by the Social Democratic Party of Japan) advocated strongly for the establishment of a NEANWFZ. In a

joint communiqué with North Korea in 1981, the JSP proposed the abolition of nuclear weapons in Northeast Asia, withdrawal of foreign troops, ending of military alliances with external countries, and establishment of a NWFZ on the Korean Peninsula and around the East China Sea. Its successor Social Democratic Party continued to advocate for the establishment of a NEANWFZ in 2014. Also, during the brief period of office of the Democratic Party of Japan in 2009-10, the government led by Yukio Hatoyama was a strong supporter of denuclearization globally and regionally, and expressed interest in the establishment of regional organizations that might address security issues.

One of Japan's national daily newspapers, *Asahi Shimbun*, has also strongly advocated in a 2009 editorial that Japan should move to establish a Northeast Asian Nuclear Weapon Free Zone: "One worthwhile idea would be a nuclear-free zone treaty for Northeast Asia. Japan and South Korea could take the initiative by signing such a treaty first and putting it into force. If the United States, China and Russia all ratify a protocol that bans them from launching nuclear attacks against Japan and South Korea, a non-nuclear umbrella would be raised for the region. North Korea should be able to join the treaty for protection under the non-nuclear umbrella after it abandons its nuclear program and returns to the NPT. This prospect would give North Korea a strong incentive to abandon its nuclear ambitions".[70]

Within Japanese civil society disarmament forums and networks, there has also been strong support for establishment of a NEANWFZ. The Japan Peace Committee. which convenes annual anti-nuclear forums, has called for the establishment of such a NWFZ. The Research Center for Nuclear Weapons Abolition at Nagasaki University and its associated regional panel of experts (PSNA) has organised a series of conferences and working papers specifically to research, and advocate for, a NEANWFZ; and Japan Peace Depot has been a major source of research and advocacy for a NEANWFZ, including monthly bulletins analysing diplomatic developments and issues associated with establishing such a zone[71].

While many of these Northeast Asian denuclearization proposals have focused either on the Korean Peninsula itself, on the creation of a NWFZ covering the whole Northeast Asian region,[72] or on a "limited" nuclear weapon free zone that would initially cover tactical nuclear weapons (potentially including not only Northeast Asian countries but also adjacent nuclear weapon state territories) as a confidence-building approach that could then progress to more extensive denuclearization[73], an alternative way forward was proposed by the Nautilus Institute in its 2010 concept paper, *Korea-Japan Nuclear Weapon Free Zone (KJNWFZ) Concept Paper.**[74]*** This proposed the initial establishment of a nuclear weapon free zone between Japan and South Korea, with North Korea encouraged to join at a later date. The paper notes that a KJNWFZ, in addition to meeting such core aspects of NWFZ arrangements as prohibiting possession, stationing or transporting of nuclear weapons, effective verification and compliance, clear boundaries, negative security guarantees, or use of the zone for firing against third parties, would need to address a number of issues specific to the Northeast Asia region. The latter would include: current arrangements and understandings on nuclear transit and nuclear extended deterrence; potential inclusion of a denuclearized North Korea at a later stage; and alliance relationships in the region, particular China's relationships to regional states, and the US bilateral relationships with South Korea, Japan and Taiwan; missile delivery systems and associated difficulties in distinguishing military from space-launch missiles; and issues associated with the nuclear fuel cycle, particularly enrichment and reprocessing. The KJNWFZ proposal envisaged immediate confidence-building benefits in finding ways through the impasse with North Korea; and longer-term security benefits in reducing or even preventing potential nuclear rivalry between Japan and the two Koreas.

In 2018, several experts, including Peter Hayes from Nautilus, Morton Halperin, Thomas Pickering, Leon Segal, and Philip Yun, proposed some specific ways forward for Korean denuclearization.[75]

They emphasized the critical importance of seeking a comprehensive security settlement. This would involve: replacing the Korean Armistice with a peace declaration or treaty; declaring non-hostility between the parties and normalizing relations; gradually relaxing sanctions; providing humanitarian, economic and energy assistance to North Korea; setting up a Six Party Northeast Asia Security Council (that the original but unsuccessful Six Party Talks might have sought to establish); and establishing a NWFZ "in which to re-establish DPRK's non-nuclear commitment in a legally binding manner that provides a framework to dismantle its nuclear facilities and weapons and to manage the nuclear threat in the region in a manner that treats all parties, including North Korea, on an equal basis."

Pathways to a NEANWFZ

A recent regional June 2019 workshop of 25 regional experts, convened by the Nagasaki University Research Center for Nuclear Weapons Abolition and the Sejong Institute in South Korea, explored in depth some key policy directions and pathways for regional denuclearization, including establishment of a NEANWFZ. The report of workshop recommendations presented a number of key conclusions for pathways towards denuclearization and NEANWFZ establishment, including some of the wider steps and confidence-building measures that would need to precede or accompany zone negotiation and establishment.[76]

A major recommendation of the experts was to conclude a final peace settlement of the Korean War as "a crucial first step towards establishing the conditions for trust, peace and denuclearization on the Korean Peninsula" and to negotiate a Treaty of Amity and Cooperation in Northeast Asia that would initially include the US, Japan, ROK and DPRK. A further recommended crucial step in enabling regional cooperation nuclear and other security issues was to establish a permanent Northeast Asian Regional Security Forum. This would "promote dialogue and negotiations on peace and denuclearization in the region", "advance and develop cooperative security approaches", and "Advance the establishment of a Northeast Asia NWFZ".

Based on the cooperative approaches envisaged in the Pyongyang Joint Declaration of September 2018 between North and South Korea, the experts' workshop recommended seeking changes in both ROK and DPRK conventional force postures that would reduce reliance on extended nuclear deterrence and facilitate negative nuclear security guarantees that would underpin a NEANWFZ. The experts highlighted the positive role of new ways to reduce military confrontation between North and South that were part of or could emerge from the September 2018 agreement, including ceasing live-fire drills, designating no-fly zones, consultations at the Inter-Korean Joint Military Committee on planned exercises and establishment of a West Sea Peace Zone, demilitarization of the Panmunjon Joint Security Area, and withdrawing guard posts within one km of the DMZ.

In terms of fostering further cooperation between North and South, additional ways forward identified in the expert's report were to: continue the summit meetings between the leaders, expand sovereign control of ROK military forces by transferring operational wartime control from the US to the ROK, and to replace the 1953 Armistice Agreement with an expanded arrangement that would involve not only the two Koreas, China and the US but also Russia, Japan and UN Command allies. In terms of fostering an early breakthrough in the current diplomatic impasse, the report strongly recommended moving toward gradual lifting of sanctions in return for calibrated denuclearization steps.

The experts noted a number of positive trends that could open a "window of opportunity" for securing regional peace and security on both the Korean Peninsula and wider Northeast Asian Region. Firstly, Kim Jong Un's focus on economic reconstruction and apparent view that the existing level of nuclear weapons capability is sufficient to deter US or other external attacks. Secondly, the

rise of the “progressive and pragmatic” leadership of President Moon Jae-In in South Korea and evident willingness to pursue diplomatic initiatives to address North South nuclear and other tensions. Thirdly, the willingness of President Trump to engage in direct talks with Kim Jong Un. And fourthly, the potentially positive role that China and Russia can and are playing in fostering a resolution of the issues.

While there is much uncertainty associated with the forthcoming US Presidential Election and the reluctance on the part of North Korea to engage in further negotiations until the outcome of the election is known, coupled with the change in Japan’s leadership following the retirement of Shinzo Abe, the urgency of finding a solution to the Korean nuclear dilemmas can be expected to continue to exercise US and Northeast Asian regional leaders. If there is a Biden Administration, there may still be continuing uncertainty if Republicans retain control of the Senate (as, indeed, was the case during the Obama Administration, with resulting severe constraints on pursuing arms control and disarmament initiatives).

Assuming there is a willingness on the part of the key players to re-engage on Northeast Asian nuclear issues following the US November election, the Sejong/RECNA workshop report proposed a “dual-track approach to establishing both a comprehensive security framework and a nuclear-weapon-free zone in Northeast Asia.

The report recommended a comprehensive regional security approach requiring the following six steps:

1. Termination of the state of war, with opening of the border between North and South and pull back of military forces from the DMZ area;
2. Creation of a permanent Northeast Asia Security Council, and negotiation of a Treaty of Amity and Cooperation in Northeast Asia, comparable to that of the 1976 Treaty of Amity and Cooperation in Southeast Asia[77];
3. Mutual declaration of no hostile intent, something of key concern for the DPRK and which would need to be covered in the Treaty of Amity;
4. Provisions of energy assistance to the DPRK, including nuclear power;
5. The gradual, phased, lifting of sanctions, with reservation of the right to re-impose sanctions in the event of violations of theTreaty of Amity;
6. Establishment of a NWFZ for the Northeast Asian region.

In relation to NWFZ, the experts’ policy recommendation was that it should be legally binding and contain the core UN-required provisions for international IAEA verification and the security guarantees not to use or threaten to use nuclear weapons against zone parties on the part of the NPT- recognized nuclear-armed states (US, Russia, China, France and UK).

The experts’ policy recommendations went more deeply into addressing some of the specific provisions that would be necessary to establish an effective and credible NWFZ tailored to the particular conditions and needs of Northeast Asia. These provisions would be:

- Verified dismantlement of the any nuclear weapons and related facilities within a time period of 18 months from treaty entry into force (consistent with similar provisions in the 2017 UN Treaty on the Prohibition of Nuclear Weapons (TPNW);
- Prohibition of conventional or other attacks on civilian nuclear facilities;

- Prohibition of nuclear-capable ballistic missiles;
- Establishment of a regional verification agency similar to the Argentina-Brazil ABACC agency;
- Multilateral control of enrichment facilities and fissile materials and stockpiles, including a control or ban on reprocessing of irradiated uranium and thorium;
- Full transparency on all past and present nuclear-weapon facilities and programs.

A particular diplomatic initiative suggested by the experts at the present juncture would be for the regional states (the two Koreas, Japan and Mongolia) to come together in a regional summit to discuss a regional roadmap for denuclearization, non-proliferation and reduction of nuclear risks in the Northeast region. Japan and South Korea might take the leading role in convening such a summit. Other confidence-building measures deemed likely to achieve denuclearization progress in the region were to adopt "a reciprocal approach rather than an all-or-nothing approach" in relation to concrete steps to be undertaken by both sides; study tours of other regions where NWFZs have been successfully established; Track 1.5 and Track 2 regional consultations on NWFZ options; negotiation of secure regional real-time military communication systems within and between adversaries; unilateral gestures to show commitment to cooperation; and further reconciliation measures as envisaged in the Panmunjom Declaration.

Champions for a NEANWFZ

The established five regional NWFZs have all involved champions at various levels, whether within governments, regional organizations, international bodies (especially the UN), political parties, or civil society groups. In the case of the Antarctic Treaty, US President Eisenhower and Ambassadors Herman Phleger and Paul Daniels were key advocates and leaders in creating the zone. In Latin America, it was the Mexican diplomat, Alfonso Garcia Robles and the UN's William Epstein, who were the foremost advocates, with strong support from then US Vice-President Hubert Humphrey. In the South Pacific, grassroots organizations opposed to Pacific nuclear testing were able to galvanize support amongst Labour parties in New Zealand and Australia and amongst several island governments, with the governments of Fiji, Vanuatu, Papua New Guinea and New Zealand key advocates, and New Zealand and Fiji securing support for the idea at the UN General Assembly. In the case of Southeast Asia, Indonesian Foreign Ministers Mochtar Kusuma-Atmadja and later Ali Alatas played pivotal roles in advocating for a NWFZ as a way of implementing ASEAN's 1971 Zone of Peace, Freedom and Neutrality (ZOPFAN) agreement. The African NWFZ went through a long period of gestation from its first proposal in the early 1962s to its negotiation in 1996, with Nigerian Ambassador Oluyemi Adeniji being credited as the driving force for the eventual negotiation of the treaty. The Central Asian NWFZ was first advocated by Mongolian President Punsalmaagin Ochirbatthe at the UN General Assembly in 1992, while the Usbekistan President Islam Karimov was the first to call for the five former Soviet Central Asian states to establish a NWFZ. The UN then played a crucial role in facilitating the negotiations of the zone through the efforts of Tsutomu Ishiguri, Director of the UN Regional Centre for Peace and Disarmament in Asia and the Pacific.[78]

Looking first at the governmental level, there have been several past government or government agency proposals for establishment of a Korean or wider Northeast Asian NWFZ, including, as discussed, the study commissioned by the US Government Arms Control and Disarmament Agency. Current regional governments have long been constrained by their bilateral military alliances with nuclear-armed states, offering (or assumed to be offering despite the uncertain calculus involved in an actual nuclear conflict) extended nuclear deterrence; and by premature assumptions about the irreversibility of the North Korean proliferation that has already occurred.

However, in the case of South Korea, it seems likely, given the principles evident in the 2018-2019

joint declarations with North Korea, that the ROK Moon Jae-In Administration could be open to pursuing either a Korean NWFZ arrangement or a wider such arrangement that might include Japan.

The Japanese Government, while continuing to express support for global nuclear disarmament, declined either to join the new 2017 Treaty on the Prohibition of Nuclear Weapons, or to actively promote a NWFZ in its own region, despite the crucial role it played in supporting a NWFZ in Central Asia. However, the former Japanese Foreign Minister, Fumio Kishida, did establish a Group of Eminent Persons for Substantive Advancement of Nuclear Disarmament to advise the Japanese Government on rebuilding trust between non-nuclear and nuclear-armed states and building bridges towards a nuclear-weapon-free world. While the Group has not specifically recommended a Northeast Asian NWFZ, it has issued a 2019 Kyoto Appeal statement, published by the Japanese Foreign Affairs Department, in which it spoke of the need for "all states to take measures to demonstrate how peace and security can be maintained with reduced reliance on, or without, nuclear weapons", and welcomed the November 2019 conference on a Middle East zone free of weapons of mass destruction convened under NPT auspices.[79] While the Eminent Persons Group has been focused on global nuclear issues associated with the upcoming NPT Review Conference (now postponed till 2021), it seems feasible and consistent with its brief, and own general recommendations, that it might act as an advocate for greater exploration of a NWFZ in Japan's own region.

At the civil society level, as already discussed, there have been a number of civil society disarmament groups and academic experts in regional security and non-proliferation currently advocating for establishment of a NEANWFZ, including most prominently Nagasaki University's RECNA, the regional Panel on Peace and Security of Northeast Asia (PSNA) involving experts from Japan, South Korea, Mongolia, Europe, US and Australia, specialists from South Korea's Sejong Institute, Japan's Peace Depot, the US and Australia-based Nautilus Foundation, and a number of individual security and disarmament specialists, including former security advisors to US Administrations, Leon Segal, Morton Halperin and Frank von Hippel.

Beyond these current champions of the NEANWFZ alternative, or variants thereof, there is now a greater potential for wider advocacy of such an alternative through a range of both regional and international networks concerned with disarmament and non-proliferation issues, including the Asia Pacific Leaders Network (APLN) and the European Leaders Network (ELN), the Japan Peace Committee's annual forums, the International Campaign to Abolish Nuclear Weapons (ICAN) networks (currently focused on seeking the last few ratifications to bring the 2017 Treaty to Prohibit Nuclear Weapons into force), and potential working papers or civil society submissions made as part of the upcoming 2021 NPT Review Conference.

Conclusion: The Global Context for Establishing a NEANWFZ

A move to establish a NWFZ in the Northeast Asian region would be an immensely important step in preventing and insulating one of the regions most at risk in the world of becoming a nuclear trigger and unleashing a nuclear catastrophe, whether through a deliberate nuclear strike, miscalculated pre-emptive use, or sheer accident through computer errors in nuclear weapon and related radar systems that give too little time to check and correct such errors.

As discussed above, Northeast Asia is riven with current tensions between North Korea, China and Russia to the north, and South Korea, Japan and the US to the south. Only a comprehensive settlement of the Korean War and the creation of security guarantees not to use or threaten to use nuclear weapons against any regional state will avert the growing horizontal and nuclear proliferation in the region, and the increasing probability of any use of nuclear weapons becoming a

longer term certainty. While there would undoubtedly be nervousness amongst some quarters within both South Korea and Japan about relinquishing reliance on extended nuclear deterrence as a result establishing a NWFZ, there remains the conventional deterrence afforded by the very formidable conventional forces of both countries and their US ally. In any case, any major violation of such a NWFZ would automatically release guarantor nuclear weapon states from their negative security assurances under the treaty, thereby enabling the extended nuclear deterrence arrangements to be re-activated.

Such a Northeast Asia NWFZ would serve to link up with the existing Southeast Asian NWFZ, the Mongolian NWFZ, and the South Pacific NWFZ to dramatically expand the reach of NWFZs across the world, and enable the Northeast Asian region to play a much bigger role in cooperating with other NWFZs at the UN and in other international forums to achieve the universally agreed goal of nuclear weapon elimination. It would also be a major inspiration for countries in the Middle East region, where nuclear weapon proliferation has already occurred in Israel and where there is now possible proliferation to other states in the region, including Iran and Saudi Arabia.

The features of a Northeast Asian NWFZ, as advanced by most proponents discussed above, would be broadly consistent with the core principles and provisions of the five existing zones and the requirements set down in the UN guidelines on such zones. However, it would need to go beyond these core provisions to address the specific conditions and requirements within this region. It would certainly need to have a flexible entry into force mode that would allow time for North Korea to become confident in the negative security guarantees that would be provided by the nuclear powers, especially the US, and through comprehensive security agreements to address the long standing fears of invasion and regime destabilization that are legacies of the Korean War and have been exacerbated by major nuclear-capable exercises close to the DMZ. In view of the proliferation that has already occurred, a NEANWFZ would also certainly need to include rigorous and intrusive means of verification for the dismantlement of all nuclear weapons and nuclear weapons related facilities in the region.

In the context of global preoccupation with the current Covid-19 pandemic, and a parallel media pandemic of 24/7 news bites and twitter feeds that privilege moments rather than meanings, the nuclear portents for Northeast Asia can easily be overlooked. As George Santayana warned, all too mindful of the darker moments in human history, “Those who cannot remember the past are condemned to repeat it”. In Northeast Asia, the past to be remembered is the first use of nuclear weapons at Hiroshima and Nagasaki that killed hundreds of thousands of civilians at Hiroshima and Nagasaki. The past also to be remembered is that, over the seven decades since Hiroshima and Nagasaki, millions in this region have been subject to continued threats of nuclear annihilation during wars and crises affecting the region, including most recently in the 2017 exchange of nuclear threats between Trump and Kim Jong Un.

The region is at a fork in the road. The one, an all-too-trodden path towards war and a nuclear precipice, driven by nationalist and militarist mirages of achieving military superiority and assumed deterrence. The other a path of patient regional and international diplomacy to secure cooperative solutions to the threat of a Northeast Asian nuclear conflict.

As dangerous new forms of nuclear escalation emerge in the region, efforts to establish a regional Northeast Asian nuclear-weapon-free zone have never been more urgent.

III. ENDNOTES

[1] However, the Southeast Asian NWFZ has so far not succeeded in securing the required non-use or threat of use security guarantees to the relevant protocol due to nuclear-weapon-state concerns

over its extension of the zone to cover EEZs and require an undertaking not to use nuclear weapons from within these EEZs.

[2] Alfonso Garcia Robles, speech, 29th Session General Assembly, Plenary Meeting, 8 October 1974, A/PV.2261,p.559. Also see similar remarks in Robles' speech to the UN General Assembly First Committee, *First Committee Provisional Verbatim Record of the Two Thousand and Eighteenth Meeting,* UN document A/C.1/PV.2018, 13 November 1974, p.32.

[3] David Lange quotation cited in Veronika Meduna, *New Zealand Set to Mark Anti-Nuclear Victory over the United States,* Australian Broadcasting Commission News, https://www.abc.net.au/news/2016-08-13/new-zealand-celebrates-anti-nuclear-victory-over-united-states/7731644 (accessed 28/5/20).

[4] UN Office of Disarmament Affairs, https://front.un-arm.org/wp-content/uploads/2020/07/NW-Z-Fact-Sheet-July2020.pdf

[5] United Nations, General Assembly, Thirtieth Session, Resolution 3472B, New York, 11 December 1975, https://undocs.org/en/A/RES/3472(XXX)

[6] The UN Disarmament Commission codified regional NWFZ requirements in its 1999 consensus report: United Nations, Report of the Disarmament Commission, UN General Assembly Official Records, 54th Session, Supplement No.42, A/54/42, Annex 1, 16 May 1999, UN, New York, 1999 pp. 7-10. The UNDC report specified, inter alia, that a NWFZ should: (a) provide for the effective prohibition of the development, manufacturing, control, possession, testing, stationing or transporting by the states parties to the treaty of any type of nuclear explosive device for any purpose, and should stipulate that parties do not permit the stationing of any nuclear explosive devices by any state within the zone; (b) should provide for effective verification and compliance; (c) should have clearly defined boundaries; (d) should be respected by all states, including the nuclear weapon states, who should be consulted in the negotiations and on protocols binding them not use or threaten to use nuclear weapons against zonal states; (e) should not prevent peaceful uses of nuclear energy; and (f) should be initiated by the states of the region concerned.

[7] UN Office of Disarmament Affairs, op.cit.

[8] For studies and accounts of the Tlatelolco Treaty, see: Alfonso Garcia Robles, *The Denuclearization of Latin America* (Washington, D.C.: Carnegie Endowment for International Peace, 1967); Alfonso Garcia Robles, *The Latin American Nuclear-Weapon-Free Zone (*Muscatine, Iowa: The Stanley Foundation, 1979); Davis R. Robinson, "The Treaty of Tlatelolco and the United States: A Latin American Nuclear Free Zone," *The American Journal of International* Law 64, no.2 (April1970), pp. 282-309; John R. Redick, "Regional Nuclear Arms Control in Latin America," *International Organization* 29, no.2 (Spring 1975), pp. 415-445; John R. Redick, "The Tlatelolco Regime and Nonproliferation in Latin America," *International Organization* 35, no.1 (Winter 1981), pp. 103-134; Monica Serrano, *Common Security in Latin America: The 1967 Treaty of Tlatelolco* (London: Institute of Latin American Studies, London University, 1992); Monica Serrano, "Latin America: The Treaty of Tlatelolco," in Ramesh Thakur, ed., *Nuclear Weapons-Free Zones* (London: Macmillan Press, 1998), pp. 35-58; John R. Redick, "Precedents and Legacies: Tlatelolco's Contribution to the 21st Century," in Pericles Gasparini Alves and Daiana B. Cipollone, eds. *Nuclear-Weapon-Free Zones in the 21st Century* (Geneva: United Nations Institute for Disarmament Research, 1997), pp. 39-48; Thomas Graham, Jr.,*The Treaty of Tlatelolco: Its Role in the International Regime of Non-Proliferation* (OPANAL, Articles on the 30th Anniversary of Tlatelolco Treaty, 1997), http://www.opanal.org/Articles/Aniv-30/graham.htm

[9] For detailed studies of the SPNFZ, see: Michael Hamel-Green, *The South Pacific Nuclear Free Zone Treaty: A Critical Assessment* Peace Research Centre, Research School of Pacific Studies, Australian National University, Canberra, 1990 (available online at ANU Library, https://openresearch-repository.anu.edu.au/handle/1885/111864); Gregory Fry, "Regional Arms Control in the South Pacific," in Pitt and Thompson, eds., *Nuclear-Free Zones*, Croom Helm, London, 1987, pp. 46-66; T.V. Paul, "Nuclear-free-zone in the South Pacific", *The Round Table*, 75:299, pp.252-262, 1986.

[10] Oluyemi Adeniji, *The Treaty of Pelindaba on the African Nuclear-Weapon-Free Zone* (Geneva: United Nations Institute for Disarmament Research, 2002); Julius O. Ihonvbee, "Africa – the Treaty of Pelindaba," in Thakur, ed., *Nuclear-Weapons-Free Zones*, pp. 93-120.

[11] Marco Roscini, "Something Old, Something New: The 2006 Semipalatinsk Treaty on a Nuclear Weapon-Free Zone in Central Asia," *Chinese Journal of International Law* 7, no.3 (2008), pp. 593-624; Jozef Goldblat, "Denuclearization of Central Asia," *Disarmament Forum,* United Nations Institute for Disarmament Research, no.4 (2007).

[12] Erikj Ortiz and Arata Yamamoto, "Sen.Graham: Trump Says War with North Korea an Option", *NBC News,* August 1, 2017, https://www. Nbc-news.com/news/north-korea/sen-lindsey-gr-ham-trump-says-war-north-korea-option-n788396, cited in Ankit Panda, *Kim Jong Un and the Bomb: Survival and Deterrence in North Korea,* Hurst, London, 2020, p.295.

[13] Ankit Panda, *Kim Jong Un and the Bomb: Survival and Deterrence in North Korea,* Hurst, London, 2020, p.254-5. Panda provides a detailed account of the exchange of threats by both sides. He notes "During 2017, the United States and North Korea came close to nuclear disaster…throughout 2017, the US deployed both non-nuclear and nuclear-capable strategic bombers to airspace around the Korean Peninsula as part of allied reassurance for Japan and South Korea. The North Koreans, as in the past, viewed these aerial operations as highly threatening. These signs could easily have been interpreted as an American threat of first-use, given the president's over-the-top language, which departed from more standard US deterrence rhetoric towards North Korea. In September, Trump stood before the world's gathered leaders at the UN General Assembly and threatened to 'totally destroy' North Korea."

[14] Korean Central News Agency (KCNA), "KPA Will Take Practical Action: Commander of Strategic Force", 10 August 2017, http://www.kcna.co.jp/index-e.htm.

[15] Ibid.

[16] Ibid.

[17] Bob Woodward, *Rage*, Simon & Schuster, New York, 2020, p.74

[18] Ibid., p.72.

[19] Ibid., p.72.

[20] Ibid., p.74.

[21] Ibid., p.80.

[22] Ibid., pp.74-75.

[23] Panmunjom Declaration between Chairman Kim Jong-un and President Moon Jae-in,

http://m.korea.net/chinese/Government/Current-Affairs/National-Affairs/view?affairId=750&subId=680&articleId=3400&viewId=43873 and Joint Statement of President Donald J. Trump of the United States of America and Chairman Kim Jong Un of the Democratic People's Republic of Korea at the Singapore Summit, 12 June 2018, https://www.whitehouse.gov/briefings-statements/joint-statement-president-donald-j-trump-united-states-america-chairman-kim-jong-un-democratic-peoples-republic-korea-singapore-summit/

[24] Shannon Kile & Hans Kristensen, "World Nuclear Forces", SIPRI Yearbook 2020, *SIPRI Yearbook 2020: Armaments, Disarmament and International Security http://www.sipriyearbook.org*

[25] The Guardian, "North Korea has 'probably' developed nuclear devices to fit ballistic missiles – UN", 4 August 2020, http://www.theguardian.com/world/2020/aug/04/north-korea-has-probably-developed-nuclear-devices-to-fit-ballistic -missiles-un

[26] Ibid.

[27] Michael Zagurek Jr., "A Hypothetical Nuclear Attack on Seoul and Tokyo: The Human Cost of War on the Korean Peninsula", *38 North,* October 4, 2017, http://www.38north.org/2017/10/mzagaruk100417/ (cited in Panda, op.cit., p.295).

[28] O.Toon, C.Bardeen, A.Robock, L.Xia, H.Kristensen, M.McKenzie, R.Petersen, C.Harrison, N.Lovenduski, R.Turco, "Rapidly expanding nuclear arsenals in Pakistan and India portend regional and global catastrophe", *Science Advance, 5,* eaay5478.10.1126/sciadv.aay5478, 2019.

[29] SIPRI Yearbook 2020, op.cit.

[30] Ibid.

[31] Ibid.

[32] Ibid.

[33] Ibid.

[34] Ibid.

[35] Ibid.

[36] Patricia Lewis, Heather Williams, Benoit Pelopidas and Sasan Aghlani, Too Close for Comfort: Cases of Near Nuclear Use and Options for Policy, Chatham House, *The Royal Institute of International Affairs*, 2014, http://www.chathamhouse.org/sites/files/chathamhouse/home/chatham/public_html/sites/default/files/20140428TooCloseforComfortNuclearUse

[37] Matt Korda & Hans Kristensen, 'US ballistic missile defences", 2019, *Bulletin of the Atomic Scientists*, 75:6, 295 306, DOI: 10.1080/00963402.2019.1680055, note China's claims that THAAD's AN/TPY-2 radar could penetrate deep into China's territory, and that there are plans to make THAAD "increasingly interoperable with the Patriot missile defense. In theory, this would allow the shorter-range Patriot system to utilize THAAD's long-range AN/TPY-2 radar for its own targeting purposes, thus vastly increasing its battlespace"; also see Veterans for Peace, *Statement Opposing U.S.THAAD 'Missile Defense' System Deployment in South Korea,*

2017, *https://www.veteransforpeace.org/our-work/positio-*
-statements/vfp-board-statement-opposing-us-thaad-missile-defense-system-deployment-south-korea

[38] Union of Concerned Scientists, "Frequently Asked Questions about Taking Nuclear Weapons Off Hair-Trigger Alert", https://www.ucsusa.org/sites/default/files/attach/2015/01/Hair-Trigger%20FAQ.pdf

[39] Korda & Kristensen, op.cit. note that, according to the Trump Administration's recent Missile Defense Review, the US will "continue to enhance its four primary [including THAADS] missile defense systems – one for homeland defense and three for regional defense – without 'any limitation or constraint'. Doing so is likely to be destabilizing, as potential adversaries will attempt to build offensive systems to offset the United States' defensive systems. This dynamic is currently on display with Russia and China, both of which are developing missiles that are specifically designed to counter US missile defences"; also see Veterans for Peace, *Statement Opposing U.S.THAAD 'Missile Defense' System Deployment in South Korea,* 2017, *https://www.veteransforpeace.org/our-work/position-statements/vfp-board-statement-opposing-us-thaad-missile-defen-e-system-deployment-south-korea*

[40] Michael Pembroke, *Korea: Where the American Century Began*, Hardie Grant Books, London, 2018, pp.147-8, 156-8. In this meticulously documented new history of the Korean War and its aftermath, Pembroke notes that "Not only were more bombs dropped on Korea than in the whole of the Pacific theatre during World War II – 635,00 tons as against 503,500 tones – but more of what fell was napalm in both absolute and relative terms"; that, according to a report from the US Embassy in Seoul, "air bombing was so devastating that everything was flattened…little remained standing"; that some three million Koreans were killed, wounded or missing, mainly non-combatants; that the damage to the people of North Korea was "incalculable – in lives lost, families broken, property destroyed and psychological dysfunction"; and that by the end of the 3-year war the total population had declined by 1.3 million people.

[41] Wilfred Wan, *Nuclear Risks are laid bare by COV ID-19*, European Leadership Network, 11 June 2020, https://www.europeanleadershipnetwork.org/commentary/nuclear-risks-are-laid-bare-by-covid-19/(accessed 21/8/20).

[42] United Nations Office for Disarmament Affairs, Treaties, *Antarctica*, Treaty Text, http://disarmament.un.org/treaties/t/antarctic/text

[43] John R. Redick, *Nuclear Illusions: Argentina and Brazil* (Washington D.C.: The Henry L.Stimson Center, Occasional Paper 25, December 1995), p. 19.

[44] Thomas Graham & Damien LaVera, Mongolian Nuclear-Weapon-Free Zone, *Cornerstones of Security: Arms Control Treaties in the Nuclear Era,* University of Washington Press, Seattle, 2003, pp.91-96.

[45] United Nations Office for Disarmament Affairs, Treaties, Treaty of Tlatelolco, Additional Protocol I, text, http://disarmament.un.org/treaties/t/tlateloco_p1/text

[46] United Nations Office for Disarmament Affairs, Treaties, *Bangkok Treaty*, Protocol, text, http://disarmament.un.org/treaties/t/bangkok_protocol/text

[47] United Nations Office for Disarmament Affairs, Treaties, *South Pacific Nuclear Free Zone Treaty*. Protocol 3, text, http://disarmament.un.org/treaties/t/rarotonga_p3/text

[48] Koo, Bon-Hak, "A Northeast Asian Nuclear-Weapon-Free Zone: A Korean Perspective" in

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