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Conditions Conducive to Enforcing a Non-Proliferation Regime in the Asia Pacific Region

A Korea Strategic Outcomes Virtual Think Tank (ViTTa®) Report

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Author

George Popp

Please direct inquiries to George Popp at gpopp@nsiteam.com

What is ViTTa®?

NSI's **Virtual Think Tank (ViTTa)** provides rapid response to critical information needs by pulsing a global network of subject matter experts (SMEs) to generate a wide range of expert insight. For this Strategic Multilayer Assessment (SMA) Strategic Outcomes on the Korean Peninsula project, ViTTa was used to address eight key questions provided by the Joint Staff project sponsors. The ViTTa team received written response submissions from 50 subject matter experts from academia, government, military, and industry. Each Korea Strategic Outcomes ViTTa report presents 1) a summary overview of the expert contributor response to the ViTTa question of focus, and 2) the full corpus of expert contributor responses received for the ViTTa question of focus. Biographies for all expert contributors are also included in each report.

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ViTTa Question

[Q4] Under what regional and domestic political, economic, and social conditions would it be possible to reinforce a non-proliferation regime in the region including extra-regional sales? What conditions would have had to occur to make that possible?

Subject Matter Expert Contributors

Dr. Bruce Bennett, RAND; **Dr. Stephen Cimbala**, Penn State Brandywine; **Ken Gause**, CNA; **Dr. David Hunter-Chester**, Training and Doctrine Command G-2; **Dr. Jeffrey Knopf**, Middlebury Institute of International Studies; **Dr. Gregory Kulacki**, Union of Concerned Scientists; **Dr. Andrew O'Neil**, Griffith University; **Ankit Panda**, The Diplomat; **Dr. James Platte**, United States Air Force Center for Strategic Deterrence Studies; **Joshua Pollack**, Middlebury Institute of International Studies; **Anthony Rinna**, Sino-NK; **Dr. Gary Samore**, Harvard University; **Robert Shaw**, Middlebury Institute of International Studies; **Brig Gen Robert Spalding**, United States Air Force; **Yun Sun**, Stimson Center; **Dr. Michael Swaine**, Carnegie Endowment for International Peace; **Dr. Cindy Vestergaard**, Stimson Center; **Kelly Wadsworth**, University of Pittsburgh

Summary Response

This report summarizes the input of eighteen insightful responses from the Korea Strategic Outcomes Virtual Think Tank (ViTTa) expert contributors. While this summary response presents an overview of the key expert contributor insights, the summary alone cannot fully convey the fine detail of the contributor inputs provided, each of which is worth reading in its entirety. For this report, the expert contributors consider political, economic, and social conditions that are conducive to enforcing a non-proliferation regime in the Asia Pacific region. This summary first highlights the conditions most frequently cited as being conducive to regional non-proliferation, and then details several non-proliferation regimes and the contributors' assessments of whether such regimes could be enforced in the Asia Pacific region.

Conditions Conducive to Non-Proliferation in the Asia Pacific Region

Two key conditions emerge from the expert contributor response as particularly conducive to non-proliferation in the Asia Pacific region: the presence of a multilateral regional security dialogue, and providing the DPRK with political, economic, and security assurances and guarantees.

A Multilateral Regional Security Dialogue and Framework

The condition most frequently cited as being conducive to regional non-proliferation in the Asia Pacific is the establishment of a multilateral regional security dialogue and framework that encompasses both key regional actors and international organizations. Such an Asia Pacific regional security architecture would have to consider important regional non-proliferation issues, including the region's principal proliferation concerns regarding the DPRK's acquisition and export of nuclear technology, materials, and expertise, as

well as other regional concerns relating to illicit nuclear proliferation activities.[1] Approaching these key regional non-proliferation matters within a formal multilateral regional security dialogue and framework, contributors suggest, is a fundamental prerequisite for any real progression toward developing a regional non-proliferation regime.[2] Ultimately, as Dr. Andrew O'Neil of Griffith University explains, an Asia Pacific regional non-proliferation regime is more likely to materialize as a corollary of a formal multilateral regional security architecture than as something that emerges spontaneously.

Political, Economic, and Security Assurances and Guarantees

Providing the DPRK with political, economic, and security assurances and guarantees is also frequently cited by contributors as a condition conducive to non-proliferation in the Asia Pacific region. Contributors diverge, however, on what they perceive to be the best approach to providing such assurances and guarantees, as well as in the types of assurances and guarantees they suggest.

Some contributors advocate for economic assurances and guarantees above all else. Ken Gause of CNA and Dr. Gregory Kulacki of the Union of Concerned Scientists, for example, believe that the best way to reinforce regional non-proliferation with the DPRK is through enhanced economic measures, rather than enhanced security measures. Gause contends that if the DPRK is properly compensated in terms of economic and security guarantees, there will be no real reason for the regime to proliferate (i.e., the regime would not want to risk being caught, nor would it want to risk having to further sacrifice elements of its nuclear program as punishment). Kulacki maintains that creating and advancing a clear pathway for economic development in the DPRK is the condition most conducive to regional non-proliferation, as DPRK proliferation activities, he argues, are driven by economic needs, not political ambitions. Ultimately, Gause and Kulacki agree that regional actors may be able to extract compromises or concessions from the DPRK on regional non-proliferation reinforcement and verification initiatives in exchange for economic assistance.

Other contributors advocate for a combination of political, economic, and security assurances and guarantees. Dr. Jeffrey Knopf of the Middlebury Institute of International Studies, for example, highlights political stability, diminished security threats, and steady economic growth as regional conditions that are conducive to non-proliferation. He believes that making serious progress toward all three conditions would be quite desirable to the DPRK and may foster regional cooperation and integration, which, he contends, would also be conducive to regional non-proliferation. Dr. Cindy Vestergaard of the Stimson Center similarly assesses that providing a combination of political, security, and economic assurances is conducive to regional non-proliferation. She highlights strengthening regional relations and decreasing regional tensions as such political measures;[3] developing comprehensive security safeguard agreements and, notably, DPRK disarmament[4] as such security conditions; and implementing trade-related safeguard agreements and oversight mechanisms (i.e., establishing provisions on the trade of nuclear material and technology as part of regional nuclear cooperation agreements) as such economic measures.[5] Finally, Anthony Rinna of Sino-NK highlights targeted bilateral and multilateral cooperation, particularly as a means of shifting current DPRK capabilities away from military use and toward peaceful civilian use, as a

[1] See contributions from Platte and Rinna.
[2] See contributions from Cimbala; O'Neil; Rinna; and Shaw in particular.
[3] Vestergaard suggests that the removal of THAAD capabilities and the implementation of regular ROK-China-Japan trilateral engagements may represent potential on-the-ground advancements that could help strengthen relations and decrease political tensions in the region.
[4] Vestergaard contends that "without disarmament in the DPRK, there can be no non-proliferation regime in the region."
[5] Vestergaard stresses that NPT and IAEA safeguards will need to be integrated into any regional non-proliferation regime before any subsequent trade involving material or technology can occur with the DPRK (i.e., otherwise the states doing the trading will be in violation of the NPT).

condition that is both conducive to regional non-proliferation and fundamental to enforcing any eventual regional non-proliferation regime.[6]

Enforcing a Non-Proliferation Regime in the Asia Pacific Region

Contributors also reflect on more specific non-proliferation regimes, considering both existing and potential non-proliferation regimes and whether such regimes could be enforced in the Asia Pacific region.

The Treaty on the Non-Proliferation of Nuclear Weapons (NPT)

Several contributors reflect on the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and whether it could be reinforced in the Asia Pacific region. The NPT is an international treaty, with 191 state signatories, that aims to prevent the spread of nuclear weapons and weapons technology, promote cooperation in the peaceful use of nuclear energy, and further the goal of achieving nuclear disarmament.[7] The treaty forbids the transfer of nuclear weapons by nuclear-weapon states (Article I) and the receipt or possession of nuclear weapons by non-nuclear-weapon states (Article II).[8] With such a foundational international non-proliferation regime already in place, it is reasonable to wonder why it has not been enforced in the case of the DPRK. One issue with attempting to enforce the NPT with the DPRK, and in the Asia Pacific region more broadly, contributors explain, is that while all other countries in the region are parties to the NPT, the DPRK is not.[9] Consequently, as Vestergaard argues, there ultimately cannot be a strong non-proliferation regime in the Asia Pacific region as long as the DPRK remains outside of the NPT and the international system of nuclear safeguards.

The most straightforward condition for enforcing a non-proliferation regime in the region, therefore, may be convincing the DPRK to rejoin the NPT.[10] Knopf reminds us, however, that the role of international organizations in verifying and, therefore, reinforcing non-proliferation commitments cannot be discounted. If the DPRK were to commit to rejoining the NPT, it would also have to commit to allowing the International Atomic Energy Agency (IAEA) to monitor and verify compliance, and ultimately enable it to function as a confidence-building mechanism between the key parties.[11] Dr. James Platte of the United States Air Force Center for Strategic Deterrence Studies believes that this may be the ideal outcome in terms of enforcing a non-proliferation regime in the region. He cautions, however, that because the DPRK has failed several times in the past to live up to commitments to not develop nuclear weapons, there may be significant skepticism regarding any future DPRK commitment to rejoin or adhere to the NPT. Therefore, as O'Neil suggests, the utility of an international non-proliferation regime such as the NPT may be limited in the case of the DPRK and the Asia Pacific region. Contributors generally agree, however, that the NPT regime does offer a useful legal and political framework and point of reference for any efforts to develop of a new regional non-proliferation regime tailored to the Asia Pacific.

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[6] Rinna notes that targeted bilateral and multilateral cooperation will be essential for 1) safeguarding DPRK nuclear weapons knowledge, material, and technology if and when the DPRK were to agree to either destroy its nuclear weapons or transfer them to another country, and 2) fostering economic opportunities that capitalize on the DPRK's small-scale but noticeable marketization to mitigate any perceived need within the DPRK to sell nuclear know-how abroad.

[7] United Nations Office For Disarmament Affairs. *The Treaty on the Non-Proliferation of Nuclear Weapons (NPT).* https://www.un.org/disarmament/wmd/nuclear/npt/

[8] See contribution from Pollack.

[9] See contributions from O'Neil; Platte; Pollack; and Vestergaard.

[10] See contributions from Knopf; Platte; Pollack; and Vestergaard.

[11] See contribution from Knopf.

An Asia Pacific Regional Non-Proliferation Regime

Contributors also reflect on potential alternative options for developing enforceable regional non-proliferation regimes in the Asia Pacific. Ankit Panda of The Diplomat and Yun Sun of the Stimson Center highlight what may be fundamental conditions for achieving any enforceable non-proliferation regime in the region. According to Sun, the international community would have to embrace the DPRK as a normalized member of the international community and, at the same time, the DPRK would have to embrace full IAEA safeguards. Panda echoes this assessment, expounding that, once such progress is made (i.e., the US determines that it will have to live with a nuclear-armed DPRK in the short-term), the US should endeavor to incorporate the DPRK into contemporary non-proliferation regimes. He warns that doing so may be challenging, however, as the DPRK is inherently skeptical of invasive arms control regimes.

Contributors offer several potential Asia Pacific regional non-proliferation regimes for consideration. Dr. Stephen Cimbala of Penn State Brandywine believes that an Asian Non-Proliferation and Nuclear Threat Reduction Council (ANNTRC) could be established to form the basis for a non-proliferation regime amongst the regional states, the UN, and both nuclear-weapons and non-nuclear-weapons states that have a stake in the region. Such a council, he explains, could initially serve as a forum for discussions relating to issues and concerns about the spread of nuclear weapons and as a template for constructive conflict avoidance, resolution, or containment, and could eventually be broadened to include non-nuclear-related security and stability issues. Joshua Pollack of the Middlebury Institute of International Studies envisions a Northeast Asian Nuclear-Weapons-Free Zone (NEANWFZ) Treaty that aims to establish non-transfer commitments as a potential enforceable regional non-proliferation regime. Conceding that non-proliferation commitments are difficult to verify, he believes that a regime that includes stronger assurances against the transfer of weapons could offer a more practical and achievable approach to verifying commitments relating to the cessation of fissile-material production.[12] Finally, Platte presents a regional non-proliferation regime that incorporates measures to target aspects of the DPRK's nuclear program from both the supply-side (e.g., sanctions on nuclear weapons-applicable materials and technology) and the demand-side (e.g., reducing the desire for nuclear weapons; ensuring alternative, non-nuclear revenue streams; and decreasing the demand for nuclear technology and expertise among potential foreign customers).[13] Reinforcement of such a non-proliferation regime, he contends, will first require strong enforcement of supply-side measures (i.e., sanctions), which he acknowledges are imperfect, and will then require strong enforcement of demand-side measures, which if not appropriately addressed, he explains, may enable the DPRK to exploit the imperfections in the supply-side measures.

Other contributors focus on conditions conducive to reinforcing potential regional non-proliferation regimes in the Asia Pacific. Dr. Gary Samore of Harvard University believes that reinforcing any DPRK commitment to non-proliferation requires, above all else, strong enforcement capabilities (e.g., strong intelligence capabilities to detect export attempts and regional cooperation to interdict such attempts). Dr. Michael Swaine of the Carnegie Endowment for International Peace offers a similar assessment, arguing that any significant reinforcement will require an expanded, more binding, and more enforceable version of the Proliferation Security Initiative to include both China and India, as well as improved intelligence, investigation, and detection agreements among key regional actors.[14] He warns, however, that achieving such conditions may require additional funding from the UN and/or participant nations, a

[12] Pollack notes that "the verified cessation of lithium-6 production and tritium production could serve the same purpose as well."

[13] See also the contribution from Bennett for a similar reflection on a regional non-proliferation regime that incorporates measures to address both supply-side and demand-side aspects of the DPRK's nuclear program.

[14] See also the contributions from Bennett and Wadsworth.

more formal oversight structure, and greater transparency. Robert Shaw of the Middlebury Institute for International Studies and Kelly Wadsworth of the University of Pittsburgh argue that establishing strong export control measures is essential to reinforcing regional non-proliferation.[15] Finally, however, Brig Gen Robert Spalding of the United States Air Force offers an alternative perspective and a word of caution, warning that China may play spoiler to any US efforts to reinforce regional non-proliferation. China does not view proliferation as a threat, he contends, but rather as an opportunity to further weaken the US and, therefore, should be expected to enable nuclear proliferation as a means of creating continuing challenges for the US to solve.

[15] Shaw and Wadsworth suggest that current non-proliferation export control regimes (e.g., the Missile Technology Control Regime, Nuclear Suppliers Group, Australia Group, and Wassenaar Arrangement) could be modified to entice DPRK buy-in (e.g., diversifying regime membership to play to the DPRK's security and global legitimacy interests).

Subject Matter Expert Response Submissions

Dr. Bruce Bennett

Senior International/Defense Researcher (RAND)
25 May 2018

This issue requires consideration of both supply and demand. In terms of demand, the terrorist groups worldwide will remain interested in obtaining nuclear weapons, though they may not be prepared to pay the required price. Some countries (e.g., Iran and Syria and perhaps others) have previously and likely still are turning to North Korea for help in nuclear weapon development. In addition, groups in South Korea are pushing for ROK acquisition of nuclear weapons, and some groups in Japan are considering Japanese acquisition. Stopping ROK and Japanese demand for nuclear weapons will require a very firm US nuclear umbrella commitment, but also increasingly the involvement of South Korean and Japanese personnel in the development of regional nuclear strategy (the ROK government development of nuclear strategy has already begun, but does not yet require ROK nuclear weapons). The US nuclear umbrella will become questionable to either US ally if any significant US conventional force reduction occurs within the region.

On the supply side, the Proliferation Security Initiative will help control nuclear proliferation. But North Korea is already apparently sharing nuclear weapon information with Iran and Syria, and may have done so with other countries. We do not know whether the North has shared nuclear weapons or nuclear weapon information with terrorist groups. Stopping the North from proliferating will be very difficult, especially if it reduces or eliminates its own nuclear program and has scientists looking for employment. A major US/partner cooperative threat reduction initiative will be required, especially to find employment for the North Korean nuclear scientists.

Dr. Stephen Cimbala

Distinguished Professor of Political Science (Penn State Brandywine)
16 May 2018

U.S. objectives include the denuclearization of North Korea, the deterrence of armed attack on South Korea or Japan, and the construction of a durable, deterrence-stable and crisis shock resistant security architecture for the Asia-Pacific region. This implies a regional security architecture in which the control of nuclear weapons spread is important, as is the diplomatic management of relations among the existing nuclear weapons states in Asia to ensure against deliberate or accidental-inadvertent nuclear first use.

The denuclearization of North Korea cannot be accomplished in a single bilateral negotiation, nor as a fait accompli growing out of a militarily imposed solution. The negotiations that may result in the denuclearization of North Korea will, of necessity, involve other regional U.S. partners and allies: including South Korea, Japan, China and Russia. This format will require consultation and collaboration among the five parties negotiating with Pyongyang as to their immediate, intermediate and longer-range objectives.

Denuclearization of North Korea will require the five negotiating partners to agree measures for continuing reassurance and stable deterrence. Reassurance starts with what North Korea wants most: a permanent end to the Korean war in the form of a peace treaty signed by the relevant powers (North and South Korea, the United States and China) and supported by the other negotiating partners (Russia and Japan) as well as the UN Security Council. The treaty should provide explicit acknowledgment of North Korea as a state member of the international community and renounce efforts at imposed regime change by outside powers. Absent such an agreement, North Korea has little or no incentive to provide concessions on military or other matters as a result of diplomatic negotiations.

Denuclearization may be defined differently by North Korea compared to its five interlocutors in the six-party framework (as above). For the United States, officials have stated the venerable formula of CVID (comprehensive, verifiable, irreversible dismantlement) of North Korea's nuclear weapons and supporting infrastructure. It must be realized how ambitious this aim is. Without nuclear weapons or at least the capacity to promptly manufacture and deploy nuclear weapons, North Korea is a much less important international actor. Its leader Kim Jong-un vaulted himself into global prominence in 2017 precisely by a staccato of nuclear and missile tests and by explicit threats of nuclear attack against the United States and its regional allies. In addition, it is thought by military experts that, although the North Korean conventional military forces are large in size, they are inferior to

those of South Korea in technology and in other ways. In any war between the two Koreas without the use of nuclear weapons, South Korea (presumably supported by the U.S.) would prevail.

Therefore, the first step in any multilateral negotiation with North Korea is to agree the five partners on a gradualist strategy for DPRK denuclearization. The increments of a gradualist strategy might be as follows: (1), North Korea agrees to a moratorium on all nuclear and missile testing; (2), North Korea agrees to a road map for its future production of fissile materials, with limitations on the amounts of enriched uranium and weapons grade plutonium, as verified by international inspectors; (3) North Korea agrees to limitations on the numbers and ranges of its ballistic missiles; (4), North and South Korea agree to ongoing bilateral military to military professional exchanges, including shared observers at military exercises; (5), North Korea, South Korea, Japan, China, Russia and the United States agree on cooperative threat reduction measures in the Asia-Pacific theater to reduce the likelihood of any outbreak of conventional war or resort to nuclear coercion. These measures could include steps to avoid accidental or inadvertent naval engagements, air collisions, provocative military exercises, and-or declarations of hubristic no fly zones or expanded air identification zones.

In addition to the conclusion of a peace treaty ending the Korean war (as above), parallel or reciprocal moves by the Five could be as follows: (1), reduction in the frequency and intensity of U.S. – South Korean military exercises (but not their elimination); (2), economic assistance to North Korea for food aid and infrastructure, including schools, hospitals, transportation, electrification, and environmental needs; for example, in the case of transportation, China and Russia agree to finance a "Silk Road –Korean extension" high speed rail and superhighway to carry Russian and Chinese exports through North Korea to South Korea (and Korean exports in reverse); (3), an aggressive program of cultural exchanges between the two Koreas and between North Korea and free market countries, including performances by theater groups and other artists as well as lecture series, student exchanges, research collaboration between academics, and an open door for investment partnerships; (4), admission of North Korea to the international banking system without restriction along with eligibility for development loans from IMF or other international financiers; along with this, encourage U.S. and other free market economy states to establish business schools in North Korea (Wharton Pyongyang); (5), South and North Korea agree to talks on the possibility of reunification or, failing that, demilitarization of the Korean peninsula (to the extent of large scale reductions in the capabilities of their offensive conventional military forces, including long range air, artillery and missiles), supported by agreed transparency measures, possibly including regional or UN observers.

Regardless the particular schedule for implementation of these or other measures, it will also be necessary to address specifically the wider problem of nuclear weapons spread in Asia. An Asian Nonproliferation and Nuclear Threat Reduction Council (ANNTRC) should be established among states in the region, supported by the UN and including NWS and NNWS that are shareholders or stakeholders in Asian-Pacific regional stability (shareholders live in the neighborhood or deploy significant military forces there – stakeholders are others whose economies or security are directly affected by Asian-Pacific stability or lack thereof). The Asian Nonproliferation and Nuclear Threat Reduction Council would be a forum for the discussion of issues and concerns about nuclear weapons spread and, as well, a possible template for constructive conflict avoidance, resolution or containment (in the case of dangerous incidents or outbreaks of regional war with the potential for nuclear escalation). Ultimately this council might be broadened in its mandate to include non-nuclear related security and stability issues: an Organization for Security and Cooperation in Asia (OSCA) modeled along the lines of the present OSCE (Organization for Security and Cooperation in Europe).

Ken Gause

Director, International Affairs Group, Center for Strategic Studies (CNA)
4 June 2018

If North Korea is properly compensated in terms of security and economic guarantees, there will be no real reason for the regime to proliferate. It would not want to risk being caught. It would not want to sacrifice parts of its precious program (assuming it does not fully denuclearize). Therefore, the best way to ensure non-proliferation is not through enhanced security measures, it is through economic measures. Don't give NK a reason to proliferate and they won't.

Dr. David Hunter-Chester

Senior Research Analyst, Athena Team (Training and Doctrine Command G-2)
Senior Research Analyst (Intelligent Decisions Systems, Inc.)
4 September 2018

Security guarantees for the DPRK, but no diminution of U.S. military assets in the region. Further marketization and infrastructure improvement in the DPRK.

Dr. Jeffrey Knopf

Professor (Middlebury Institute of International Studies)
13 June 2018

Again, North Korea's internal decisions are key. If they decide that a non-nuclear path makes sense for them, then it has a chance to happen. But here the regional environment becomes more important. There will need to be political stability, low security threats, and steady economic growth in the region to ensure that the DPRK sees continued regional cooperation and integration as desirable.

US domestic politics will also matter. Congress will have to fund any economic assistance the US pledges to provide. If this becomes a partisan issue, Congress might not vote to support the implementation of a deal with North Korea. A future US president might also pull out of a deal, as President Trump did with the Iran deal – but this would likely only happen as a result of a split in the Republican party that brings a more traditional hawkish conservative to power.

Finally, international organizations become potentially important here. Although the DPRK cares most about the US as a negotiating partner, it may not be comfortable with the US as the sole arbiter of compliance. If the North rejoins the NPT as part of a deal, the IAEA will become important to verifying compliance. The CTBTO could also play a confidence-building role by monitoring and verifying that there are no more nuclear tests.

Dr. Gregory Kulacki

China Project Manager (Union of Concerned Scientists)
22 May 2018

DPRK proliferation is driven by economic needs, not political ambitions. So, allow a clear path for DPRK economic development is the best and most effective non-proliferation measure that needs to be taken. All countries in the region should be able to extract DPRK compromises on international means to verify compliance in exchange for economic assistance.

Dr. Andrew O'Neil

Dean, Research (Griffith University)
Professor, Political Science (Griffith University)
31 May 2018

Any regional non-proliferation regime would in essence be a corollary of formal multilateral security architecture in Northeast Asia; it would not emerge organically. The idea of a Northeast Asia Security and Cooperation Dialogue (in its various guises and with evolving nomenclature) has been around since at least the 1980s, but has not gained traction in policy. Essentially, unresolved territorial claims overlaid by deep-seated geopolitical rivalries have consistently thwarted efforts to institute a security dialogue in Northeast Asia. The closest the region came to this was the 6-Party Talks (2003-2008), but these failed to constrain North Korea and had little if any impact on blunting Pyongyang's preference to engage the US and China on exclusively bilateral terms. Because of its *de facto* status as a nuclear power, the regime in Pyongyang now feels even more entitled to resist multilateralism and insist on bilateral engagement with the major powers. Indeed, the regime may even harbor illusions that North Korea has become a major power. All these obstacles are important because the creation of a regional security dialogue is

a fundamental pre-condition for the creation of a regional non-proliferation regime. The latter would possibly use the NPT regime as an enabling legal-political framework, but given North Korea's withdrawal from the NPT – and the simple fact that North Korea is for all intents and purposes a nuclear weapons state – the utility of the global non-proliferation regime would be limited.

Ankit Panda

Senior Editor (The Diplomat)
21 May 2018

If and when the United States determines that it will have to live with a nuclear-armed North Korea, it should endeavor to bring Pyongyang into contemporary nonproliferation regimes. This won't be a simple task, as evidenced by lingering concerns over Pakistan. North Korea additionally has an inherent skepticism of invasive arms control regimes.

Dr. James Platte

Assistant Professor (United States Air Force Center for Strategic Deterrence Studies)
1 June 2018

In East Asia, the principal proliferation concern is North Korea's acquisition of and export of nuclear technology, materials, and expertise. It obviously is in US interest to ensure that South Korea, Japan, China, and Taiwan also do not conduct illicit nuclear proliferation activities, but all of those countries are members of the global nonproliferation regime that is based on the Nuclear Non-Proliferation Treaty (NPT). Ideally, North Korea would rejoin the NPT-based nonproliferation regime, and International Atomic Energy Agency (IAEA) inspections of North Korea's nuclear facilities would resume. North Korea has committed several times in the past to not develop nuclear weapons, so it would be understandable if one is skeptical of North Korea rejoining or adhering to the NPT-based nonproliferation regime. Outside of North Korea rejoining the NPT and admitting IAEA inspectors, what else would constitute an effective regional nonproliferation regime?

An effective regional nonproliferation regime would have to include measures that address both supply-side and demand-side aspects of North Korea's nuclear program. There already are a suite of measures addressing the supply-side aspects of North Korea's nuclear programs, including bilateral and multilateral sanctions on nuclear weapons-applicable materials and technology. Reinforcing an effective nonproliferation regime in the region starts with getting all regional actors to enforce existing sanctions. China, in particular, must more strictly enforce sanctions against North Korea. Some 90 percent of North Korea's licit trade goes through China, and the vast majority of North Korea's illicit trade and financial transactions also goes through China. Convincing China that it is in their interest to strictly enforce multilateral sanctions would go a long way to reinforcing an effective nonproliferation regime in the region. Enforcement of sanctions and other supply-side measures will never be perfect, but it is the strongest supply-side measure that could be taken now.

Enforcing sanctions does not address the demand-side aspect of North Korea's nuclear proliferation, and without addressing the demand side, North Korea would continue to exploit imperfections in supply-side measures to export and import nuclear technology, materials, and expertise. Addressing the demand side means reducing North Korea's desire for nuclear weapons and ensuring that North Korea has other revenue streams. It also means reducing the demand for nuclear technology and expertise in North Korea's potential foreign customers, such as Iran, Syria, and Egypt, but addressing the demand side for North Korea is more relevant here.

Reducing North Korea's desire for nuclear weapons means addressing the security concerns and domestic politics that drive that desire. Resolving the inter-Korean conflict and promoting domestic political reform in North Korea could significantly dampen North Korea's desire for nuclear weapons, although both will require going down a long, rocky road. Reducing North Korea's desire to export nuclear technology also will be challenging, but promoting economic development in North Korea could be promising in the short-term. If North Korean state enterprises have steady revenue streams that fill up the state coffers, then they may be less motivated to turn to nuclear-related exports. It also must be made clear to Pyongyang that any nuclear-related exports or assistance would be met with stiff punishments, starting with suspension of any economic development assistance but also including more punitive measures. Again, regional actors must convince Kim Jong Un that he has to abandon the nuclear weapons aspect of his *byungjin* strategy and only focus on economic development.

Joshua Pollack

Senior Research Associate (Middlebury Institute of International Studies)
Editor, The Nonproliferation Review (Middlebury Institute of International Studies)
15 May 2018

Art. I of the NPT already forbids the transfer of nuclear weapons by nuclear-weapon states, just as Art. II forbids their receipt or possession by non-nuclear-weapon states. If North Korea cannot be induced to return to the NPT, an alternative possibility would be to negotiate a Northeast Asian Nuclear-Weapons-Free Zone (NEANWFZ) Treaty containing a no-transfer commitment, among others.

But because these commitments are difficult to verify, a stronger assurance of no transfers of weapons—short of CVID—would probably be the best achievable verification of no continuing fissile-material production. If fissile material is scarce, then North Korea is less likely to part with it. The verified cessation of lithium-6 production and tritium production could serve the same purpose as well. (North Korea has sought to market excess Li-6 in the past, according to the UN Panel of Experts.)

For context, no state is known to have transferred a complete nuclear weapon to another. Any but the simplest types of nuclear weapons are demanding to maintain, requiring specialized facilities and trained personnel, making an outright transfer unattractive if the weapon is not meant to be used shortly thereafter. NATO nuclear sharing, in which US warheads remain under US control on allied soil, is the existing arrangement closest to a transfer scenario. The USSR is alleged to have promised to supply China with a sample warhead in the late 1950s, but if it did make such an offer, it did not follow through. Transfers of weapon designs and small amounts of fissile material have taken place, notably between the US and UK (documented exchanges of fissile material in the 1950s, and possible sharing of weapons design information) and China and Pakistan (an alleged transfer of fissile material and a weapon design from China to Pakistan in the early 1980s). There are also recurring fears that fissile material might be stolen and smuggled out of its country of origin; at least some small amounts of fissile material have gone missing, notably in Russia.

A more ordinary concern is the transfer of fissile-material production technology, which the Nuclear Suppliers Group—a voluntary arrangement between supplier states—has sought to limit in its Guidelines. North Korea secretly supplied Syria with a plutonium-production reactor; it conceivably also could seek to export a reprocessing facility or enrichment technology. If an agreement can be reached with North Korea concerning its peaceful use of nuclear technology—perhaps to provide safe, high-quality fuel for its Experimental Light Water Reactor at Yongbyon—the North's adherence to NSG Guidelines could be made one of the conditions of supply.

Anthony Rinna

Senior Editor (Sino-NK)
28 May 2018

In the near- medium- and long-term time frames, there are two levels at which non-proliferation can be reinforced: at an inter-Korean level and at a wider regional level. The success of a nuclear non-proliferation regime would entail both economic and military measures. Both the inter-Korean and regional levels should include targeted bilateral and multi-lateral cooperation.

In the near-term following a North Korean agreement to disarm, the ideal scenario would entail the DPRK either destroying or transferring their existing WMD to another country. This, however, leaves the issue of how to safeguard North Korea's existing knowledge, materials, and technology. In this case, bilateral cooperation between North Korea and South Korea could be of use, specifically for the purposes of shifting North Korea's current capabilities away from military use to a peaceful civilian function. In the past, the US had a restrictive agreement with South Korea over the latter's use of nuclear energy, namely fuel reprocessing. In 2015 however Seoul and Washington re-negotiated their previous agreement, allowing the ROK more autonomy in its nuclear energy affairs.[16] South Korea's increased autonomy in its peaceful, civilian-oriented nuclear affairs could provide a stepping stone for North Korea to begin the process of converting its own nuclear technology without the feeling that it is working with a South Korea that is subordinate to the US in nuclear affairs (i.e. a greater sense of inter-Korean sovereignty).

Encouraging North Korea and South Korea to cooperate in converting the DPRK's nuclear prowess into a peaceful civilian usage serves several purposes; it would foster an overall increased cooperative relationship between the DPRK and the ROK, thus mitigating tensions; it would allow North Korea to develop a level of energy independence so that it could achieve higher levels

[16] Known as the US-ROK Agreement for Peaceful Nuclear Cooperation.

of socioeconomic development while allowing the Korean Peninsula to remain independent of the need for energy from countries such as Russia; cooperation with South Korea could allow a US-friendly country to have a hand in monitoring North Korea's progress toward conversion for civilian purposes; it would mitigate the risk that the US fall into a trap of giving North Korea direct financial aid to incentivize North Korea to convert its nuclear technology, only to have Pyongyang renege on its promises.

Extra-regional sales of nuclear weapons would remain a risk even if North Korea agreed to disarm. The deplorable economic situation in the DPRK would make fertile grounds for any individual or group (public or private) with access to North Korean nuclear technology to sell it abroad. Even if, for whatever reason the DPRK decided to rid itself of nuclear weapons, this would still mean that the existing weapons and relevant technology existing today could be sold abroad, unless they are secured by another country. This, however, only applies to the tangible elements of the DPRK's WMD program. Regarding the actual knowledge of North Korean engineers and scientists, the fact of the matter is though that there is virtually nothing that could be done specific to North Korea to guarantee the prevention of an outflow of nuclear know-how. This is a hard reality made obvious by the fact that so much of North Korea's current capabilities were derived from outside figures and scientists, specifically from Pakistan and Russia.

Taking advantage of North Korea's small-scale yet noticeable marketization is one key that could mitigate the perceived need for an individual or group of people to sell nuclear know-how abroad (this of course does not account for mere human greed or even a desire to see North Korea's capabilities in the hands of the US's other enemies). Direct foreign aid to North Korea (i.e. attempting to "buy off" the regime in exchange for denuclearization) runs the risk of simply seeing funds diverted to government coffers, with no guarantees that funds would subsequently be diverted for purposes unfavorable to US or allied interests. Therefore, it is essential to foster unofficial trading networks in the areas of North Korea bordering China and Russia. It would be helpful to do the same along the Demilitarized Zone with South Korea - this, however would require an extraordinary degree of normalization of ties between Pyongyang and Seoul, though falling short of unification.

In the long term, one plausible way of reinforcing a non-proliferation regime in Northeast Asia would be to establish a multilateral regional security mechanism involving China, the DPRK, the Republic of Korea, Russia and the United States could potentially help stem proliferation. This comes with the understanding that a multilateral security regime is *aimed specifically at stopping the proliferation of nuclear weapons*, (rather than being a more comprehensive security bloc). This type of security mechanism could be called "targeted multilateral security".

Regional navies and surveillance aircraft from local militaries could conduct patrols in the waters off North Korea. The US Navy's relationships with other navies such as the Chinese and the Russian navies are most likely not sufficiently robust to implement joint patrols. The US, could, however consider delegating a role to regional allies such as South Korea to coordinate patrols within designated areas of responsibility outside of each country's respective maritime regions. One example could be fostering cooperation between Russia and South Korea in patrolling and monitoring the waters off of North Korea's west coast. The Russian and South Korean navies, while not interoperable, nevertheless have engaged in some limited professional exchanges in recent years.

There are two major factors to be considered in any attempt to enlist the help of the Chinese or Russian navies in patrolling the high seas to enforce non-proliferation. The first is that, at the diplomatic level, the US must make the highest levels of the Chinese and Russian governments understand that whereas there may be disagreements over issues such as the implementation of a sanctions regime against North Korea, it is in everybody's interest to ensure a non-proliferation environment in Korea.

Second, coordination on non-proliferation in Northeast Asia between the great powers (China, Russia and the US) would best be implemented as much as possible at the regional command level, rather than at the most senior levels of each country's military. While ultimate decisions over coordination will obviously have to be taken by each country's defense ministry, regional leaders (including senior figures from China's Northern Theater Command, Russia's Eastern Military District, and pertinent sub-divisions of PACOM) and the appropriate subordinates should be in regular contact to enforce non-proliferation. The rationale behind this recommendation is that while the US has strategic-level tensions with both China and Russia in different theaters, the Northeast Asian maritime commons is one single area where all three powers have grounds to pursue common interest. Indeed, Washington's ability to coordinate policy with Beijing and Moscow over North Korea has been complicated in part by macro-level tensions.

Dr. Gary Samore

Executive Director, Research, Belfer Center for Science and International Affairs, Kennedy School of Government
(Harvard University)
2 June 2018

To reinforce any North Korean commitment not to export nuclear weapons and missile technology requires above all strong enforcement capabilities, including good intelligence to detect export attempts and regional cooperation (U.S., ROK, Japan, China) to interdict such attempts.

Robert Shaw

Program Director, Export Control and Nonproliferation Program, James Martin Center for Nonproliferation Studies
(Middlebury Institute of International Studies)
Adjunct Professor (Middlebury Institute of International Studies)
13 June 2018

I'm addressing the question in the context of the President Trump and Chairman Kim US-DPRK summit having just been concluded a little over a day ago. As such the details of the agreement's implementation plan are still unclear, as is whether this development will: a) ultimately lead to the desired outcome of a denuclearized North Korea or b) whether North Korea's noncompliance with UN Security Council Resolutions will continue unabated or worsen. My response to this question will be mainly general, with the conditions described in theory applicable to either scenario – "a" or "b" above. This will then be followed by brief comments on how the conditions may be shaped by each of these scenarios. Also, my response is focused on my particular area of expertise: export control as a nonproliferation mechanism. However, because export controls fully involve government, private and academic sectors, they offer a particularly suitable lens for considering the political, social and economic dimensions related to this report's question of focus (Under what regional and domestic political, economic, and social conditions would it be possible to reinforce a non-proliferation regime in the region including extra-regional sales? What conditions would have had to occur to make that possible?).

- **Since the early 2000s, national-level export control systems in countries throughout the Asia region have been augmented considerably, and this trend should continue and be actively supported at the regional level. This support should include continued and expanded international assistance provided by the governments of the US, Japan, South Korea, and Australia – and more active international assistance provided by China (which, to this day, tends to position itself as more of a recipient of international assistance specific to improving its export control system).** Assistance typically takes the form of help with the drafting of laws/regulations, help with international best practices in implementing and enforcing such laws/regulations, and help with educating the private sector on its obligations under such laws/regulations. The US government's EXBS (Export Control and Related Border Security Program, administered by the Dept. of State) and INECP (International Nonproliferation Export Control Cooperation Program, administered by the Dept. of Energy) are examples of specific programs utilized to provide international assistance in improving capabilities and capacities to develop, implement and enforce export controls.
    - Driven in particular by the introduction of UN Security Council Resolution 1540, which obligates UN member states to develop/upgrade export controls to prevent non-state actors from acquiring Weapons of Mass Destruction (WMDs), Singapore, Malaysia, Philippines, India and Pakistan have introduced comprehensive export control laws reflecting the latest in international best practices. Thailand is close to introducing such a law, and China, South Korea, Hong Kong, and Vietnam have significantly upgraded their existing export controls. Japan, while having a robust export control system dating back to the late 1980s, has also introduced innovations in export control implementation and enforcement – largely driven by the government's response to the threat posed by North Korea's WMD programs.
- **Member countries of the major multilateral nonproliferation export control regimes – specifically the Nuclear Suppliers Group (NSG), Australia Group (AG), Missile Technology Control Regime (MTCR) – and adherents to these regimes (whether formally adhering via a public declaration or informally by simply incorporating into national regulations the regimes' guidelines and lists of export-controlled goods/technologies) should improve regional-level cooperation in developing, implementing and enforcing export controls**.

- **Serious consideration should be given to bringing China into the Australia Group, Missile Technology Control Regime, and Wassenaar Arrangement as a full member – or, if full membership is too politically difficult to arrange, as a recognized adherent, perhaps accorded a special status.**
    - This is politically difficult as opposition within the MTCR and Wassenaar from India can be expected. Additionally, the US government will have to weigh the risks of the Chinese military more easily acquiring sensitive technologies via regime membership. However, strategies including unilateral US export controls may be available to mitigate these risks, while strengthening the regimes via active participation by the world's second largest economy and a major producer of dual-use goods.
- **Enforcement of export controls should be more transparent, publicized, and accorded more resources by all governments in the Asia-Pacific region.**
    - Granted, this may not take into account some business cultures reluctant to embrace something that might involve "naming and shaming", but the impact on the community of private sector enterprises, large and small, engaging in international trade would be game-changing. Already, multiple decades of active US governmental enforcement of US extra-territorial re-export controls has led to emergence of compliance departments and professional staff tasked with export compliance in leading producers of dual-use goods and technology throughout Asia.
- **Related to the above, the concept of compliance with export controls as not only an obligation of private sector enterprises engaged in international trade but also a core component of corporate social responsibility such be actively promoted**.
    - Supporting this, efforts to increase export compliance as a profession and respected career should be supported within the private sector. This would include cultivating the development of professional associations and increasing the prominence of export controls within the curriculum of business schools, and especially, well-regarded executive training programs.
- **Finally, beyond export controls, a regional multilateral nonproliferation institution should be established to fully reinforce and complement the nonproliferation regime, inclusive of export control regimes**.
    - Presently, nonproliferation institutions arguably have an excessive "Atlantic" tilt, being generally headquartered in Vienna or supported via UN missions in Geneva or New York. An Asia-Pacific institution, focused on regional issues but also reinforcing existing institutions, could amplify the already increasing priority accorded to these institutions by governments in the region. The institution could be at a Cabinet-level or even Head-of-State level, with annual or semi-annual meetings held in concurrence with more working level events such as the Asia Export Control Seminar held each February in Tokyo or the major UN Disarmament and Nonproliferation Conferences held in South Korea and Japan each November.

Regarding the two scenarios described in the introduction to these comments, the above conditions could apply in either scenario – but of course differing in how North Korea would be engaged.

Under the scenario of continued diplomatic rapprochement with North Korea and progressive steps toward denuclearization, all of the above conditions would work to reinforce the strengthened nonproliferation regime. Additionally, North Korean engagement and active participation would be a key – even central – feature of each of the above conditions. We can envision, in such a scenario, North Korea embracing international nonproliferation mechanisms inclusive of export controls and best practices in their development, implementation and enforcement.

Under the scenario of a continued or accelerated North Korean noncompliance with UN Security Council Nonproliferation Resolutions, the above conditions would still be key to reinforcement of a non-proliferation regime in the region – but with a focus on potentially long-term containment of the DPRK via sanctions and export controls. Each of the above conditions would be oriented toward containing the DPRK, perhaps with China being incentivized by MTCR and WA membership to in turn maintain sanctions. In theory, sanctions could be tailored to not prohibit some engagement with the emerging entrepreneurial communities in North Korea, who could see how successful enterprises in Asia are embracing nonproliferation and export compliance as core values. This in turn might foster the development of political and economic factions in North Korea willing to steer a new policy course that would ultimately comply with actions called for in UN Security Council resolutions (e.g. – abandonment of nuclear weapons and missile programs).

Brig Gen Robert Spalding

Special Assistant to the United States Air Force Vice Chief of Staff (United States Air Force)
15 May 2018

Absent a change in the Chinese Communist Party expect the Chinese to enable nuclear proliferation as a means of creating challenges for the US to solve. China does not view proliferation as a threat, but sees it as an opportunity to further weaken the US.

Yun Sun

Co-Director, East Asia Program (Stimson Center)
Director, China Program (Stimson Center)
29 May 2018

For that to happen, DPRK will have to be embraced as a normal member of the international community and accepts full IAEA safeguards.

Dr. Michael Swaine

Senior Fellow (Carnegie Endowment for International Peace)
25 May 2018

Any significant reinforcement would likely require an expanded and more binding and enforceable version of the Proliferation Security Initiative, including both China and India, as well as improved intelligence, investigation and detection agreements among the major Asian powers. This might require a commitment of dedicated funds by the United Nations and/or participant nations, a more formal oversight structure, and greater transparency.

Dr. Cindy Vestergaard

Director, Nuclear Safeguards Program (Stimson Center)
4 June 2018

First, on terminology, the question presupposes there is "a non-proliferation regime" in the region to "reinforce." While all other countries in the region are a party to the NPT, there cannot be a regional non-proliferation regime so long as the DPRK remains outside of the NPT and the international system of nuclear safeguards. For safeguards by the International Atomic Energy Agency (IAEA) to be applied, a number of factors or conditions need to be considered.

A clarification on 'the region': for the purposes of this response, a regional non-proliferation regime includes at a minimum 6 parties: North Korea, South Korea, Japan, China, Russia and the United States.

Regional and Political Considerations

Regional relations will need to be strengthened between various actors in order to support and maintain a system of safeguards for the DPRK. For any deal with North Korea to happen – and be successful – relations between ROK and China will need to improve. Accordingly, one of the conditions for reducing political tensions between ROK and China will be the removal of THAAD (and in return Chinese sanctions on ROK related to THAAD).

Trilateral summits between China, ROK and Japan to continue on a regular, annual basis (trilateral summits were started in 2008 and meant to be held annually. The trilat held in May 2018 was the first meeting since November 2015).

Safeguards agreements for DPRK should include, at a minimum, comprehensive safeguards agreements (INFCIRC/153) and an Additional Protocol (INFCIRC/540), meaning that DPRK is back under the NPT. Without disarmament in DPRK, there can be no non-proliferation regime in the region.

The 5 parties (China, Japan, ROK, Russia and US) will need to get on same page with respect to basic obligations they want out of DPRK (nuclear disarmament, re-joining the NPT, etc.) before negotiations on a deal or regional non-proliferation regime. If a true regional "regime" is to be established (say similar to Euratom), then a charter/Statute will also need to be negotiated and drafted.

Formally ending the Korean War – the idea has been considered "lofty" and even "impossible" by some US military representatives that I have spoken to over the years. The notion however has to be contemplated alongside a drawdown of US troops to get to the point of a formal peace treaty to end the Korean War. A peace treaty is not the first step in the non-proliferation process (nor a requirement for it), but one of the last steps in a long process towards regional cooperation.

Economic/Trade

International (or regional) safeguards agreements include the provisions for trade of nuclear material and technology. It is a possibility that a nuclear deal for DPRK could replicate the 'Procurement Channel' of the Iran deal (but perhaps not under the current U.S. Administration given its recent withdrawal from the Iran deal), or perhaps a similar but differently termed oversight mechanism for trade for a period of time (say the first 5, 10 or 15 years of an agreement).

North Korea will need to develop and share a plan for its nuclear power program if it is to receive material and technology from states in the region (China, South Korea, Japan, and Russia) or abroad. The NPT and IAEA safeguards will need to be in place before any trade can occur with North Korea (otherwise states with be violating the NPT).

Tariffs and an 'America-First' policy are still being playing out and may have regional implications for a regional/international safeguards agreement. Current U.S. administration policies may lead to regional states to push back and retaliate to US tariffs creating difficulties down the road for trans-pacific economic relations which in turn could impact any safeguards agreement for DPRK.

Kelly Wadsworth

PhD Student (University of Pittsburgh)
18 May 2018

Summary

- **In order to effectively deter rogue states from illegal weapons trade, existing non-proliferation regimes should increase the payoffs for nonproliferation by including the input and values of a more "diverse" set of regime members such as India and China.**
- Including more diversity in the regimes will offer incentivized cooperation and a greater chance of consensus among rogue states like North Korea that are neither ideologically parallel nor aligned with Western interests.
- As a responsible exporter and nuclear power, India should be included in the conversation about the creation of nonproliferation policies, enabling voices of non-Western countries to be heard.
- China also has potential to be an extremely influential partner in curbing the DPRK's proliferation efforts—if the enforcement regimes can convince China that interdiction was more profitable than allowing North Korea to continue to proliferate.
- **A policy change must be introduced that reflects both North Korean and Chinese values and increases trust and learning between the DPRK, China and non-proliferation regimes to the extent that cooperation is more attractive than achieving their financial and political aims via illegal means.**

The Proliferation System

There are three primary actors contributing to the system of proliferation: Rogue states such as North Korea, Iran, and Pakistan, that proliferate WMD technology and traditionally consider Western states as hostile and untrustworthy; Western-dominated nonproliferation export control regimes that were created to deter and interdict proliferation (Nuclear Suppliers Group, Missile Technology Control Regime, The Wassenaar Arrangement, and the Australia Group), and; China, who despite inclusion in some regimes, purportedly continues to aid rogue states in their proliferation efforts. These regimes are Western-dominated as their majority membership consists of American or European powers. The preferences of these unbalanced Western powers give the regimes a perceived Western liberal democracy bias, rendering them relatively ineffective as a decisive force in influencing the proliferation behavior of non-Western states.[17]

There is an assumption amongst members of these regimes that there is a mutual willingness to cooperate and form international guidelines to limit WMD proliferation. These regimes were formed in order to monitor production and exports of dual-use

[17] Kumar, A. Vinod, *India and the Nuclear Non-Proliferation Regime: The Perennial Outlier* (Cambridge University Press: 2014).

material, particularly to prohibit export to instable states. The members of these export control regimes assume –sometimes incorrectly—that fellow member states will adhere to the agreed-upon guidelines. States who decide to trade illegally assume that they will not suffer major consequences for doing so (PSI "Chairman's Conclusions," 2003).

Despite continued efforts by regime member countries to interdict, North Korea continues to proliferate banned materials and technology, often aided by China. Many participants of these multilateral regimes have enforced a number of sanctions against North Korea in an effort to curb their transfer of WMD technology and knowledge to other countries. The sanctions have not deterred the North from proliferating weapons, as demonstrated by their most recently intercepted transfers in 2011, 2013 and 2014. **In fact, many experts believe that the sanctions may inadvertently strengthen anger and resentment by the DPRK government hardliners in their position that the U.S. is hostile to their regime**.[18]

The regimes are thus in a continuous struggle with how to best deter the North Korean government and companies from transferring WMD parts and technology. **The DPRK is making their decision to proliferate largely based not on information being communicated to them by the regimes but on their own values – to protect the dictatorship from the hostile (and untrustworthy) West, gain global respect, and boost their economy. The nonproliferation regimes are also creating policies based on their collective values – to monitor, contain and minimize the threat of rogue states. The values between these two actors conflict, and therefore the nonproliferation efforts do not currently take the North Korean values into account, rendering them ineffective.**

The continuous cycle of proliferation lies in the breakdown of communication between the majority Western countries creating the nonproliferation policies and the proliferating states the policies are meant to contain. **The regimes were initiated and led by states with Western ideals, creating guidelines that do not yield an appealing payoff to non-participant states. The regimes have failed to recognize the perceived Western bias in the cultural values and actions represented by the regimes. Both the language of the guidelines and perception of the regimes needs to evolve in order to change the North Korean perception of the hostile intent of these regimes and to increase the payoff for nonproliferation.**

If more diversity in countries—countries with differing values, governments, religions, ethnicities—are included in producing the nonproliferation policies, the current proliferation system will change as Western regime members learn from ideologically different states more effective methods of deterrence that relate to a more diverse set of values, thereby increasing the expected payoff for rogue states.

Introducing Change in the Proliferation System

The logic of action lies in building an organized set of values between enforcement regimes and states like North Korea that are participating in illegal proliferation to the extent that cooperation yields a greater payoff than achieving their financial and political aims via illegal means. I suggest that a new, more diverse system is created using Innes & Booher's concept of collaborative rationality.[19] Collaborative rationality tackles "wicked problems," complex problems such as the nonproliferation policy problem, with multiple actors in interdependent relationships; problems shrouded in uncertainty and a changing context. **The nonproliferation problem would benefit from face-to-face dialogue with all of the principle actors—not just the Western-dominated regimes—to be able to express their views and be fully heard. The current system does not include North Korea or China, and therefore cannot logically reach a consensus on a basis for constructive action. A policy change must be introduced that reflects both North Korean and Chinese values and increases trust and learning between the DPRK, China and the regimes to the extent that cooperation is more attractive than achieving their financial and political aims via illegal means.**

China

Due to similar governmental ideologies and a historical relationship that goes back thousands of years, China has a strong influence in North Korea. It has become the DPRK's strongest trading partner, and has used its power in the United Nations Security Council to delay or weaken sanctions against the country (Wertz & Vaez, 2012). Studies have shown that increased engagement from China has encouraged the DPRK to open its boarders to trade with South Korea (Haggard & Noland, 2008)—increased engagement via China could also be enough to incentivize North Korea not to proliferate its technology.

China's participation in nonproliferation efforts would serve as a point of change in the system because it would lead to the actors' collective learning, shared language, and challenged uncertainty. Including China could help the Western members of the regime learn more about the values and ideologies of North Korea, enabling them to better understand the DPRK's perspective and concerns. That in turn will initiate a change in the language of the policy to better relate to the values of North Korea. Both actors—the enforcement regimes and the DPRK—will have decreased uncertainty as a result of China's participation. The

[18] Wertz, Daniel and Ali Vaez, "Sanctions and Proliferation in North Korea and Iran: A Comparative Analysis," *Federation of American Scientists* (June 2012).
[19] Innes, Judith and David E. Booher, *Planning with Complexity: An Introduction to Collaborative Rationality for Public Policy* (New York: Routledge, 2010).

uncertainty of the regimes will be lessened as they learn more from China about the DPRK's values and perspective; North Korea's uncertainty that the nonproliferation guidelines are written with their interests in mind will be lessened because of their trust in China and China's inclusion in writing the guidelines. North Korea will then have greater incentive to adhere to the policies, better relating to them and believing that they were written in their best interest, and would experience economic gains as a result of removed sanction and opened trade relations**. If the economic and reputational payoffs for North Korea are great enough, the state will increase its positive engagement with the regimes while achieving greater economic independence funded by other than illicit means. With this new information the DPRK would change their hostile perception of the West, trust and respect would increase between the actors, and North Korea would have greater incentive in the future not to proliferate.**

China therefore has potential to be an extremely influential partner in curbing the DPRK's proliferation efforts—if the enforcement regimes could convince China that interdiction was more profitable than allowing North Korea to continue to proliferate.

India

As India grows in power, China has been working to strengthen its ties to the country. **If India is admitted as a full participant in these regimes, it would not only add more balance to the Western powers and in doing so add to the diversity of values and different perspective of interests to the enforcement regime, but it could use its improving relationship with China to provide China a greater financial and political incentive to abide by and enforce nonproliferation policies. The group could then hold an authentic dialogue in which a collective decision on nonproliferation policy might be reached that would appeal to—rather than punish, anger and deface—North Korea, allowing the positive system communication cycle of nonproliferation to begin.**

Conclusion

With the inclusion of India, and subsequently China, in nonproliferation regimes, the emerging, more diverse system has a high capacity for sustainable action in the policy arena. **Once the DPRK's incentive to proliferate is removed and they adhere to nonproliferation, the change will percolate throughout the system.** Uncertainty and distrust will dissipate and Western countries might become open to including North Korea in the creation of future nonproliferation policies, leading to even greater diversity and collective learning among the actors. The system would change again, adapting to the new information and continuing a positive cycle: **The resulting policies may then be able to reach other states that engage in proliferation, such as Iran, or Pakistan, being better able to relate to their differing language and values. Ideally this change in policy—the inclusion of China and India as decision-making powers in the export control regimes—could serve as a catalyst leading to a successful global system of nonproliferation.**

Subject Matter Expert Biographies

Dr. Bruce Bennett

Senior International/Defense Researcher (RAND)

Bruce W. Bennett is a senior international/defense researcher at the RAND Corporation who works primarily on research topics such as strategy, force planning, and counterproliferation within the RAND International Security and Defense Policy Center and the RAND Arroyo Strategy, Doctrine, and Resources Program. Bennett's work applies war gaming, risk management, deterrence-based strategy, competitive strategies, and military simulation and analysis. He specializes in "asymmetric threats" such as weapons of mass destruction (WMD) and how to counter those threats with new strategies, operational concepts, and technologies. He is an expert in Northeast Asian military issues, having visited the region more than 110 times and written much about Korean security issues. He has also done work on the Persian/Arab Gulf region. His Northeast Asian research has addressed issues such as future ROK military force requirements, the Korean military balance, counters to North Korean chemical and biological weapon threats in Korea and Japan, dealing with a North Korean collapse, potential Chinese intervention in Korean contingencies, changes in the Northeast Asia security environment, and deterrence of nuclear threats (including strengthening the U.S. nuclear umbrella). He has worked with the Office of the Secretary of Defense, the Defense Threat Reduction Agency, U.S. Forces Korea and Japan, the U.S. Pacific Command and Central Command, the ROK and Japanese militaries, and the ROK National Assembly. Bennett received his B.S. in economics from the California Institute of Technology and his Ph.D. in policy analysis from the Pardee RAND Graduate School.

Dr. Stephen Cimbala

Distinguished Professor of Political Science (Penn State Brandywine)

Stephen J. Cimbala is Distinguished Professor of Political Science at Penn State Brandywine. He is the author of numerous works in the field of national security studies and nuclear arms control, among other topics. Dr. Cimbala is also an award winning Penn State teacher. His most recent work is Getting Nuclear Weapons Right (Lynne Rienner Publishers: 2018). He is available at sjc2@psu.edu

Ken Gause

Director, International Affairs Group, Center for Strategic Studies (CNA)

Ken Gause is the director of the International Affairs Group, a part of CNA's Center for Strategic Studies. He is CNA's senior foreign leadership analyst and has spent the last 20 years developing methodologies for examining leadership dynamics of hard-target, authoritarian regimes. In particular, he is an internationally respected expert on North Korea who has written three books on North Korean leadership. His latest book is "North Korean House of Cards: Leadership Dynamics Under Kim Jong-un." Leadership and opposing force (OPFOR) analysis are core areas of expertise within CNA Strategic Studies and Gause has personally directed studies on the North Korean, Iranian and Russian leadership and decision-making. His work on foreign leadership dates back to the early 1980s with his work on the Soviet Union for the U.S. government. Over the last three decades, he has devised analytical techniques used to understand adversary decision-making. These techniques span a five-tier set of methodologies that range from biographical analysis to studies on how to impact and shape an authoritarian or totalitarian regime's actions. These studies include a range of approaches from sophisticated game design to proprietary analysis based on a "virtual network" of researchers around the world dedicated to providing analysis on regimes of interest, their leadership, and how they make decisions. Gause has also published numerous articles on leadership structures for such publications as Jane's Intelligence Review, Jane's Defense Weekly, and the Korean Journal of Defense Analysis. He has a B.A. from Vanderbilt in Russian and Political Science and an M.A. from The George Washington University in Soviet and East European Affairs.

Dr. David Hunter-Chester

Senior Research Analyst, Athena Team (Training and Doctrine Command G-2)
Senior Research Analyst (Intelligent Decisions Systems, Inc.)

Dr. David Hunter-Chester is a Senior Research Analyst, working for Intelligent Decisions Systems, Inc (IDSI), on the Athena Team, Training and Doctrine Command G-2. He served in the United States Army from 1981 until his retirement as a Colonel in 2007. Dr. Hunter-Chester was selected as a Foreign Area Officer for Northeast Asia (Japan and Korea) in 1985. His tactical assignments were in Germany and Japan. Among other positions he was the chief of the US Forces Japan liaison office in Okinawa, the head of government relations for US Forces Japan, the Country Director for Japan in the Office of the Secretary of Defense, and the Executive Assistant for the Office of Policy, Planning and Analysis, Coalition Provisional Authority, Iraq. After retirement from the Army, he was an assistant professor at the U.S. Army Command and General Staff College, and the director for Raytheon's Japan Remote Island Defense Initiative before assuming his present position. Dr. Hunter-Chester has a Master of Arts degree in East Asian Studies from Stanford University and a doctorate in East Asian History from the University of Kansas. He is the author of a book on Japan's Ground Self-Defense Force and of several articles.

Dr. Jeffrey Knopf

Professor (Middlebury Institute of International Studies)

Jeffrey W. Knopf is a professor at the Middlebury Institute of International Studies (MIIS) in Monterey, California, where he serves as the chair of the M.A. program in Nonproliferation and Terrorism Studies. He is also a senior research associate with the Institute's James Martin Center for Nonproliferation Studies. Dr. Knopf received a Ph.D. in Political Science from Stanford University. Prior to joining the MIIS faculty, he taught at the University of Southern California, the University of California-Santa Cruz, and the Naval Postgraduate School. Dr. Knopf is the co-editor of a forthcoming volume on *Behavioral Economics and Nuclear Weapons*. He is also the editor of *International Cooperation on WMD Nonproliferation* (University of Georgia Press, 2016) and *Security Assurances and Nuclear Nonproliferation* (Stanford University Press, 2012) and the author of *Domestic Society and International Cooperation: The Impact of Protest on U.S. Arms Control Policy* (Cambridge University Press, 1998).

Dr. Gregory Kulacki

China Project Manager (Union of Concerned Scientists)

Gregory Kulacki is an expert on cross-cultural communication between the United States and China. Since joining UCS in 2002, he has promoted dialogue between experts from both countries on nuclear arms control and space security and has consulted with Chinese and U.S. governmental and non-governmental organizations, including the U.S. House China Working Group, the Senate Armed Services Committee, the U.S. National Academies, NASA, and the Office of Science and Technology Policy. Over the last decade, Kulacki has been cited by a number of U.S. and Chinese news organizations, including the Christian Science Monitor, Nature, New York Times, NPR, Washington Post, and Washington Times. Dr. Kulacki, who is fluent in Mandarin Chinese, has lived and worked in China for more than 20 years. Prior to joining UCS, he served as an associate professor of government at Green Mountain College, director of external studies at Pitzer College, and director of academic programs in China for the Council on International Educational Exchange. Dr. Kulacki earned a doctorate degree in political theory and a master's degree in international relations from the University of Maryland in College Park. He also completed graduate certificates in Chinese economic history and international politics at Fudan University in Shanghai.

Dr. Andrew O'Neil

Dean, Research (Griffith University)
Professor, Political Science (Griffith University)

Andrew is Dean (Research) and Professor of Political Science in the Griffith Business School. Prior to being appointed Dean in April 2016, he was Head of the School of Government and International Relations (2014-2016) and Director of the Griffith Asia Institute (2010-2014). Before coming to Griffith in 2010, Andrew was Associate Head (Research) in the Faculty of Social Sciences at Flinders University, and prior to entering academia he worked as a Commonwealth public servant with Australia's Department of Defence. Andrew's research expertise focuses on the intersection of strategic, political, and economic change in the Asia-Pacific with particular emphasis on the security dimension of international relations, and he is a frequent media commentator on these topics. Working in teams, Andrew is the recipient of Australian Research Council (Discovery and Linkage Project) funding, and he has also received competitive industry funding from the Department of Foreign Affairs and Trade, the Japan Foundation, and the Department of Defence. He is a former member of the Australian Foreign Minister's National Consultative Committee on National Security Issues and former advisory board member of the Lowy Institute's G20 Studies Centre. Andrew is the former editor-in-chief of the Australian Journal of International Affairs and is currently an editorial board member of the *Korean Journal of International Studies*, the *North Korean Review* the J*ournal of Intelligence History*, and *Security Challenges*.

Ankit Panda

Senior Editor (The Diplomat)

Ankit Panda is an award-winning writer, analyst, and researcher focusing on international security, geopolitics, and economics. His work has appeared in a range of publications across the world, including the Diplomat, the Atlantic, the Washington Quarterly, Al Jazeera, Politico Magazine, and War on the Rocks. He is currently a senior editor at The Diplomat, where he writes daily on security, geopolitics, and economics in the Asia-Pacific region and hosts a popular podcast. He is also an adjunct senior fellow at the Federation of American Scientists. Panda is additionally an editor at the Council on Foreign Relations and writes a column on Asian geopolitics for the South China Morning Post. Panda has additionally published longer-form scholarly research in journals including the Washington Quarterly and India Review. He is additionally a contributor to the International Institute on Strategic Studies' Asia-Pacific Regional Security Assessment and Strategic Survey. Panda has also consulted for a range of private and public institutions. He is a frequent participant in Track-2 dialogues in Asia, Europe, and North America. Panda is a graduate of the Woodrow Wilson School of Public and International Affairs at Princeton University.

Dr. James Platte

Assistant Professor (United States Air Force Center for Strategic Deterrence Studies)

Dr. James E. Platte is an assistant professor with the USAF Center for Strategic Deterrence Studies (CSDS), and he is the course director for the Deterrence Research Task Force elective cross-listed with the Air War College and the Air Command and Staff College. Prior to joining CSDS in 2017, Dr. Platte was an intelligence research specialist with the U.S. Department of Energy, and he also has worked on nuclear counterproliferation with the Defense Intelligence Agency and the National Nuclear Security Administration. He received his PhD in international relations from the Fletcher School of Law and Diplomacy at Tufts University and has held research fellowships with the East-West Center, Pacific Forum CSIS, the Council on Foreign Relations, and the Harvard Kennedy School. Dr. Platte broadly is interested in the military and commercial applications of nuclear energy, and his research particularly focuses on nuclear issues in East Asia, including North Korea's nuclear program, U.S. extended deterrence, and the proliferation of nuclear technology across the region.

Joshua Pollack

Editor, The Nonproliferation Review (Middlebury Institute of International Studies)
Senior Research Associate (Middlebury Institute of International Studies)

Joshua H. Pollack is the Editor of the The Nonproliferation Review and a Senior Research Associate, and is recognized as a leading expert on nuclear and missile proliferation, focusing on Northeast Asia. Before joining MIIS in April 2016, Pollack served as a consultant to the US government, specializing in issues related to weapons of mass destruction, including proliferation, arms control, and deterrence. As a defense policy analyst at DFI International, Science Applications International Corporation, and Constellation West, his clients included the Defense Threat Reduction Agency, the Office of the Under Secretary of Defense for Policy, the Department of Homeland Security, the National Nuclear Security Administration, and the Plans and Policy Directorate (J5) of US Strategic Command. In 2015, he was named an Associate Fellow of the Royal United Services Institute. He also serves as a Research Scientist at CNA, a nonprofit research institution in Arlington, VA. Pollack has contributed to ArmsControlWonk.com, 38North.org, and the Bulletin of the Atomic Scientists. His research has appeared in the The Nonproliferation Review in 2011 and 2015.

Anthony Rinna

Senior Editor (Sino-NK)

Anthony V. Rinna is a Senior Editor at Sino-NK, a research organization dedicated to the study of the Korean Peninsula and Northeast Asia. Rinna is a specialist in Russian defense and economic policy in Northeast Asia, and regularly publishes on those topics in academic journals and policy forums. He also frequently gives commentary to the media on Russia's North Korea policy. He has a working knowledge of Korean, Russian and Spanish. A US citizen, Rinna has lived in South Korea since 2014.

Dr. Gary Samore

Executive Director, Research, Belfer Center for Science and International Affairs, Kennedy School of Government (Harvard University)

Gary Samore is Executive Director for Research at the Belfer Center for Science and International Affairs at the Kennedy School of Government at Harvard University. In December 2015, Dr. Samore was appointed as a member of the Secretary of Energy Advisory Board (SEAB) under Secretary Ernest Moniz and served until January 2017. He is also a non-resident Senior Fellow at the Brookings Institution and member of the advisory board for United Against Nuclear Iran (UANI), a non-profit organization that seeks to prevent Iran from acquiring nuclear weapons. He served for four years as President Obama's White House Coordinator for Arms Control and Weapons of Mass Destruction (WMD), including as U.S. Sherpa for the 2010 Nuclear Security Summit in Washington, DC and the 2012 Nuclear Security Summit in Seoul, Korea. From 2006 to 2009, Dr. Samore was Vice President for Studies at the Council on Foreign Relations (CFR) in New York, where he held the Maurice R. Greenberg chair and directed the David Rockefeller Studies Program. Before joining CFR, Dr. Samore was vice president for global security and sustainability at the John D. and Catherine T. MacArthur Foundation in Chicago, and from 2001 to 2005, he was Director of Studies and Senior Fellow for Nonproliferation at the International Institute for Strategic Studies (IISS) in London. At IISS, he produced three "strategic dossiers" on Iran (2005), North Korea (2004), and Iraq (2002), which are considered authoritative and exemplary assessments of nuclear, biological, chemical, and missile programs in those countries. Dr. Samore was Special Assistant to the President and Senior Director for Nonproliferation and Export controls during the Clinton Administration. Before the National Security Council, Dr. Samore worked on nonproliferation issues at the State Department. In 1995, he received the Secretary of Defense Medal for Meritorious Civilian Service for his role in negotiating the 1994 North Korea nuclear agreement. Prior to the State Department, he worked at the Lawrence Livermore National Laboratory and the Rand Corporation. Dr. Samore was a National Science Foundation Fellow at Harvard University, where he received his MA and PhD in

government in 1984. While at Harvard, he was a pre-doctoral fellow at what was then the Harvard Center for Science and International Affairs, later to become the Belfer Center for Science and International Affairs.

Robert Shaw

Program Director, Export Control and Nonproliferation Program, James Martin Center for Nonproliferation Studies (Middlebury Institute of International Studies)
Adjunct Professor (Middlebury Institute of International Studies)

Robert Shaw is Program Director for the Export Control and Nonproliferation Program (XNP) at the James Martin Center for Nonproliferation Studies at the Middlebury Institute of International Studies. Mr. Shaw coordinates the Center's export control-related research and educational activities. He is also an adjunct professor for the Middlebury Institute, co-teaching a graduate course on strategic trade controls and nonproliferation. Mr. Shaw has applied his experience in the private sector to research and articles examining the role of industry in global nonproliferation and export control efforts, the challenge of illicit WMD-related procurement networks, and reform of the US export control system. He has been invited to share an industry practitioner's view at multiple nonproliferation forums, including events organized by the Organization for Security and Co-operation in Europe, the US Department of State's Office of Export Control Cooperation, and the University of Georgia's Center for International Trade and Security.

Brig Gen Robert Spalding

Special Assistant to the United States Air Force Vice Chief of Staff (United States Air Force)

Brig Gen Robert S. Spalding III assumed the duties of Special Assistant to the U.S. Air Force vice chief of staff in February 2018. General Spalding received his commission through Fresno State University's Reserve Officer Training Corps program in 1991. He earned his doctorate in economics and mathematics from the University of Missouri at Kansas City in 2007. The general attended undergraduate pilot training in 1993, and was subsequently assigned as a B-52 Stratofortress co-pilot in the 5th Bomb Wing at Minot Air Force Base, North Dakota. He subsequently transitioned to the B-2 Spirit at Whiteman AFB, Missouri. In 2001, he was selected as one of three Air Force Olmsted Scholars, and was a distinguished graduate of Mandarin Chinese language training at the Defense Language Institute in Monterey, California. Afterward, the general attended Tongji University in Shanghai as a graduate research student. He then returned to Whiteman AFB as a B-2 evaluator pilot and assistant director of operations for the 393rd Bomb Squadron. The general was then assigned to the Office of the Secretary of Defense's Prisoner of War Missing Personnel Office as the military assistant for the deputy assistant secretary of defense. During the Iraq surge in 2007, General Spalding deployed to Baghdad and directed the Personal Security Coordination Center. After a stint at the Air War College at Maxwell AFB, Alabama, he was reassigned to the B-2 at Whiteman AFB. While at Whiteman AFB, he was the chief of safety, operations group commander and vice wing commander. He was then selected as a Military Fellow at the Council of Foreign Relations in New York. General Spalding then served as the chief China strategist for the chairman of the Joint Chiefs, the Joint Staff at the Pentagon, Arlington, Va. Prior to his current assignment he served at the White House as the Senior Director for Strategic Planning at the National Security Council, Washington, D.C. General Spalding speaks Chinese-Mandarin and Spanish.

Yun Sun

Co-Director, East Asia Program (Stimson Center)
Director, China Program (Stimson Center)

Yun Sun is co-Director of the East Asia Program and Director of the China Program at the Stimson Center. Her expertise is in Chinese foreign policy, U.S.-China relations and China's relations with neighboring countries and authoritarian regimes. From 2011 to early 2014, she was a Visiting Fellow at the Brookings Institution, jointly appointed by the Foreign Policy Program and the Global Development Program, where she focused on Chinese national security decision-making processes and China-Africa relations. From 2008 to 2011, Yun was the China Analyst for the International Crisis Group based in Beijing, specializing on China's foreign policy towards conflict countries and the developing world. Prior to ICG, she worked on U.S.-Asia relations in Washington, DC for five years. Yun earned her master's degree in international policy and practice from George Washington University, as well as an MA in Asia Pacific studies and a BA in international relations from Foreign Affairs College in Beijing.

Dr. Michael Swaine

Senior Fellow (Carnegie Endowment for International Peace)

Michael Swaine is a senior fellow at the Carnegie Endowment for International Peace and one of the most prominent American analysts in Chinese security studies. Formerly a senior policy analyst at the RAND Corporation, Swaine is a specialist in Chinese defense and foreign policy, U.S.-China relations, and East Asian international relations. He has authored and edited more than a dozen books and monographs and many journal articles and book chapters in these areas, directs several security-related projects with Chinese partners, and advises the U.S. government on Asian security issues. He received his doctorate in government from Harvard University.

Dr. Cindy Vestergaard

Director, Nuclear Safeguards Program (Stimson Center)

Cindy Vestergaard is the Director of Stimson's Nuclear Safeguards Program. Her current research focuses on the impact of evolving international safeguards obligations on states and facility operators. Her portfolio also includes chemical weapons disarmament, biosecurity and import/export controls. Before joining Stimson in 2016, Vestergaard was previously a senior researcher at the Danish Institute for International Studies (DIIS) in Copenhagen, Denmark. Prior to DIIS, she worked on non-proliferation, arms control and disarmament policy and programming at Canada's foreign ministry. Positions among others included Senior Policy Advisor, Global Partnership Program; Senior Policy Advisor, Foreign Intelligence Division; and Political Officer at Canada's Mission to Hungary and Slovenia. Vestergaard has been an external lecturer at the University of Copenhagen, a regular contributor to media outlets and presents nationally and internationally on weapons of mass destruction, proliferation and disarmament issues. She has a B.A. in International Relations from the University of British Columbia, M.A. in International Relations and European Studies from Central European University (Budapest, Hungary) and Ph.D. in Political Science from the University of Copenhagen.

Kelly Wadsworth

PhD Student (University of Pittsburgh)

Kelly Wadsworth is a PhD student in International Security Studies at the University of Pittsburgh's Graduate School of Public and International Affairs. Her research focus is on nonproliferation and regional stability in East Asia, highlighting the evolving situation in North Korea. Wadsworth has held multiple fellowships from the Center for Strategic and International Studies and the Japan Institute for International Affairs to further her research in this area. Wadsworth earned her MBA and Masters in International Studies (Korea Studies) at the University of Washington.

Author Biography

George Popp

Senior Analyst

George Popp is a Senior Analyst at NSI, Inc. where he conducts research and analysis on a broad range of multidisciplinary analysis projects that focus on understanding the political, economic, and social dynamics of emerging conflict situations and environments throughout the world. The bulk of George's work has been in support of NSI's government initiatives, particularly leading and contributing to human behavior analytics efforts completed for the Strategic Multilayer Assessment (SMA) program on behalf of the Joint Chiefs of Staff and in support of direct requests from US Combatant Commanders to the Department of Defense. George has also supported NSI's commercial initiatives, conducting business intelligence analyses for clients in the video game industry. George started with NSI as an Intern, and has risen through the ranks since. He was promoted to Senior Analyst in 2017. George's degree is in Economics from the University of Massachusetts, Amherst.