The North Korean Nuclear Multilemma: Options to Break the Nuclear Deadlock in Northeast Asia

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The DPRK's emerging nuclear weapons capability threatens the strategic status quo, from Korea all the way to the global non-proliferation regime. As a result, the region finds itself caught in a deadlock, with no apparent way out. In fact, we argue that the problems posed by the DPRK's nuclear weapons are so complicated and multi-level that they present policymakers with a true *multilemma*. This issue was designed to give the reader a comprehensive and even-handed presentation of the true complexity of the North Korean nuclear issue. It elicits realistic policy options for the Trump and post-Park Administration that will outlast the immediate political transitions in Washington and Seoul, and provides insight as to where and how the two allies might approach the DPRK's nuclear threat based on a rethinking of the North Korean crisis.

Key Words: multilemma, complexity, strategic linkage, deadlock, Trump, nuclear weapons, deterrence, compellence, reassurance, nuclear weapons free zone

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I. Introduction

This special issue of Korea Observer is published at a critical moment. The DPRK's emerging nuclear weapons capability challenges the strategic status quo, from Korea all the way to the global non-proliferation regime. Its small but rapidly growing nuclear weapons program has introduced great complexity at each level of the international system, and imposed enormous costs not only upon itself, but upon the South as well as its neighboring states. As a result, the region is caught in a deadlock, with no apparent way out.

This situation is often referred to as a *security dilemma*. At one level, that is true: there are elements of a spiraling action-reaction dynamic in the US-ROK conflict with the DPRK whereby one party acts — for example, deploys a weapon system — and the other(s) respond, by deploying an even more powerful weapon system. However, the deadlock with the DPRK is far more complicated and multi-level than a "mere" security dilemma. As we explain below, it is really a *multilemma*.

It contains *domestic* dynamics that are deeply connected across borders, for example, the intense anti-Japanese sentiment in the ROK and China that controverts standard balancing logic whereby the ROK and Japan should make common cause with each other against their common adversary, the DPRK, but can't. It includes the effects in the region of the *global great power triangle* between Russia, China, and the United States whereby global or other regional issues are more important for some or all of the three great powers than regional security or the North Korean threat. It includes the potential for *sudden, massive disruptions* to the established order due to the impact of globalization processes of integration and displacement that threaten to cut across established routines and the status quo of inter-state relations. Some disruptions may be political (for example, the rise of President Trump and the fall of President Park), technological (for example, autonomous precision weapons that surpass nuclear weapons in military utility, cyber weapons that create a new domain of threat and warfare), or military (for example, the emergence of non-state actors

that aspire to nuclear terrorism). Other changes cumulate over time, reach a threshold, are recognized suddenly and then have enormous effects. Such a swan might be the gradual emergence of megacities in Asia, and a possible giga-city (billion person city) stretching from Shanghai to Beijing to Pyongyang to Seoul and Tokyo in the next few decades with enormous potential impact on migration and equality given demographic and automation trends in China, the two Koreas, and Japan.

Thus, the North Korean nuclear threat is entangled in so many other cross-cutting issues and linkages, each of which contains its own logic and tradeoffs for the parties involved, that it is truly so dimensional and multilayered as to be opaque even to the key participants, let alone to ordinary citizens. It is not for nothing at the end of marathon negotiations with North Korea that diplomats often scratch their head and ask: what just happened?

As if this is not complicated enough, North Korea's nuclear armament poses unique and urgent problems that demand immediate responses. First and foremost are the questions that relate to its proliferation activity, testing, and deployment of warheads on delivery systems. These nuclear and missile tests and the DPRK's ideological, institutional, and political adoption of nuclear weapons as a key organizing principle of the regime shapes US-ROK and US-Japanese political and military reactions, and along the way, those of Russia, China, and other states with interests in the Korean Peninsula and Northeast Asia. A huge effort has failed to reverse North Korea's push to nuclear arms, but the task of attempting to restrain and reverse its armament necessarily continues. Within this task are hidden many traps and apparent dilemmas such as assuming that the past is a guide to the present when everything is changing at the same time in fundamental ways, rendering the past a poor guide to the future. There is no reason to think that North Korea is somehow immune to this effect.

Second and no less urgent are questions of war planning and contingency response given the enormous uncertainty and wide array of possible contingencies that could erupt on the Korean Demilitarized Zone without notice. Escalation logic, for example, suggests that

"decapitating" the DPRK and thereby immobilizing the nuclear command-and-control system that would send fire orders to nuclear units may be more effective in a war or at the brink of war than attacking the nuclear forces themselves — which may be hard to find and target effectively. Conversely, Kim Jong Un and his communications may survive such an attack, and he may then order his nuclear forces to fire at will; or, if he is killed but has pre-delegated authority to fire to nuclear units, they may then fire in spite of Kim's death and loss-of-communications.

Caught in this *multilemma*, the leaders of the six parties do not know what to do or which way to turn. Although they have tried to resolve the North Korea nuclear issue for nearly three decades, they do not share clarity of purpose with each other, let alone with North Korea, on how to reverse the DPRK's nuclear armament. The DPRK under Kim Jong Un is committed to expanding and accelerating its nuclear weapons program. The United States led by Donald Trump may try to break the deadlock with the DPRK over its nuclear weapons; but it may also try to bring down the North Korean regime. The ROK is paralyzed by Park Geun-hye's impeachment and transition to new leadership. Doors are opening and slamming shut almost faster than any time in post-Korean War history. The leaders of the six parties most directly involved in the Korean issue are literally caught in a deadlock, where each is waiting for the other to somehow release a lock to the solution of the set of linked problems, and where each withholds a necessary resource from one or more of the others, thereby leading to systematic stalemate and inability to act. The deadlock has been reinforced now by eight years of failure to meet at the Six Party Talks, almost guaranteeing that not only are key resources withheld, but that essential signals and channels have been corrupted or broken, thereby amplifying the difficulty of communicating effectively on the need for coordinated and collaborative action that would break the deadlock.

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Given the pace and scale of disruptive change, scholarly research on how to break this deadlock has never been more urgent. This issue was designed to give the reader a comprehensive and even-handed presentation of the true complexity of the North Korean nuclear issue. It also tried to elicit realistic policy options for the Trump and post-Park Administration that will outlast the immediate political transitions in Washington and Seoul, and provide insight as to where and how the two allies might approach the DPRK's nuclear threat based on a rethinking of the North Korean crisis. Doing so entails revisiting past assumptions, challenging core beliefs, and soliciting divergent and even inconsistent analysis, in order to capture the full range of possible policy options. The authors of this special issue provide both the minimum information required for informed policy-making; and a wide-angled lens that enables them to connect hitherto separate issues when in fact they were intimately connected across levels, borders, or boundaries, but the connection for one reason or another was not visible.

II. DPRK Fissile Material Production

Sigfried Hecker, Chaim Braun, and Christopher Lawrence provide a meticulous accounting of the DPRK's production of fissile material needed for making nuclear weapons. They carefully estimate the DPRK's production of plutonium, the amount used in its five nuclear tests to date, the inventory of plutonium remaining from past production, and the production of new plutonium from resumption of reactor operations at Yongbyon. With "moderate confidence," they estimate that the DPRK today has between 20 and 40 kilograms of weapons-grade plutonium, enough to make between 4 and 8 nuclear weapons. To this might be added less than 6 kilograms of plutonium each year going forward, or about enough for one additional nuclear weapon per year.

Enriched uranium can also be used to make nuclear weapons using a different design. The DPRK's enriched uranium production is far more uncertain than for plutonium production because of the

covert nature of this activity until Hecker visited one of the DPRK's enrichment centrifuge plants in 2010. Based on what is known plus the physics of enrichment, these authors are able to estimate the DPRK's highly enriched uranium inventory as between 200 to 450 kilograms. This is sufficient to make 10 to 25 nuclear weapons. To this might be added roughly 150 kilograms of highly enriched uranium each year going forward, or about enough to make another seven or eight nuclear weapons per year.

Combined, plutonium and uranium fissile material available to the DPRK could support a possible stockpile today (assuming it is all weaponized) of 14 and 33 nuclear weapons, increasing by eight or nine weapons per year.

In addition to plutonium and uranium must be added the tritium factor, given that the DPRK claimed to have tested a thermonuclear weapon in 2016. This claim may have referred to a boosted yield fission weapon that employs tritium. These authors suggest that the DPRK may be proficient in producing tritium by irradiating lithium in the DPRK's 5MWe reactor at Yongbyon, and that they could have extracted tritium produced thereby in hot cells that exist on the same site. Thus, there is no reason to suggest that tritium is a constraint on boosted yield or thermonuclear weapons in the future.

III. North Korea's Goal: Submarine Launched Nuclear-Armed Ballistic Missiles

Having fissile material and testing them underground in a hole is one thing. Making them into deployable weapons is a wholly different challenge. Currently, the best that can be said is that the DPRK has tested five nuclear devices, three of which clearly worked, but only one of which reached a nominal yield of around 20 kilotons, a benchmark for a test that would demonstrate that they have designed a working device that could serve as a warhead. The reliability of this device when emplaced on a delivery platform in a warhead rather than an underground cavern remains uncertain.

However, more tests are sure to follow, and with it, some degree of confidence that a deployed warhead put onto a delivery platform would work with enough reliability to give the DPRK's leadership confidence that it could be used, *in extremis*, or at least, might be viewed as sufficiently credible to force the ROK and the United States to recalibrate their own strategic calculus in how they interact with the DPRK in various contingencies. Assuming that they achieve this status — or are satisfied that underground testing achieves sufficient reliability without ground level or atmospheric testing, let alone a live fire test of a nuclear warhead on a missile — what delivery system are they likely to employ?

The easiest way for the DPRK to deploy a nuclear device tested underground is as a land mine. However, this reliable delivery system (by truck or railroad) limits its use to north of the Demilitarized Zone with limited capacity to project nuclear threats against the ROK and the United States. This might be the most reliable and militarily meaningful delivery system, but it won't serve for the kind of psychological warfare that has been conducted by nuclear weapons states using the threat of nuclear attack since the late nineteen forties. The DPRK leadership is assuredly not going to be satisfied with a purely defensive nuclear weapons posture, and its declaratory policies to the effect that it will attack the United States or its allies, possibly pre-emptively, require short, intermediate, and long-range delivery capacity with a modicum of credibility.

Being slow and vulnerable to US and ROK airpower and naval forces, the DPRK would not likely use surface ships or bombers to deliver nuclear weapons. Some have worried about pre-emplacement of North Korean merchant ships or fishing vessels that carry nuclear weapons into South Korean or Japanese ports, for example. However, this method of deployment strains credulity given its disadvantages with respect to maintaining central control, risk of discovery and seizure, and slow deployment requiring decisions to made days and weeks in advance of use.

Moreover, the DPRK's stocks of short, medium, and long-range rockets give it many options to choose from that avoid these disadvan-

tages and offer central control, relatively assured invisibility (especially mobile and underground pop-up missiles in networks of caves), deception potential, speed of delivery, and decades of research and development to produce home-made missiles combined with an accelerating test program since Kim Jong Un came to power in 2011.

Theodore Postol and Markus Schillings' essay examine systematically the DPRK's likely preference for ballistic missiles to deliver nuclear warheads onto targets. They survey all the intermediate and long-range missiles that are available to DPRK today, and examine closely how they might improvise and design new variants on each theme that could deliver a nuclear warhead.

This veritable smorgasbord of missiles includes multiple variants of reworked SCUD missiles; the Musudan land-mobile and intermediate range ballistic missile; the Taepodong 1 satellite launch and the Kwangmyoungseong Satellite launch vehicles and possible long range ballistic missile derivatives of both; and the KN-08 and other long-range land-mobile liquid propellant ICBM variants. Many of these rockets rely on Russian-derived rocket motors.

Along the way, they argue that critical assistance from Iran and Pakistan likely was provided to the DPRK program for propellants and engine design respectively. They also infer that Russian missile engineers and scientists played and play today a crucial role in establishing the North Korea's rocket engineer institution. "Without this on-going mentoring," they suggest, "it is inconceivable that the DPRK rocket designers and engineers could have succeeded so well for so long."

Without nuclear weapons, they suggest, this panoply of North Korean missiles does not pose a mortal military threat to the ROK or other countries. But with nuclear weapons, these missiles pose an existential threat. Of these, they conclude that the DPRK's solid propellant KN-11 submarine launched ballistic missile is the most important and likely to serve the DPRK's purpose. They suggest that it is the missile option that presents the least challenges in terms of missile, reentry vehicle, and warhead development, combined with the most survivable launch platform. Against a deployed North Korean electric-

diesel submarine, US and ROK anti-submarine naval and air forces would not be able to detect and defeat such a force due to the shallow seas of the west coast of the DPRK which makes it hard to locate, track and kill a submarine. Because it can attack from many different angles, it would also be impossible to rely on missile defense systems to shoot down an incoming submarine-launched nuclear-armed missile aimed at the ROK, Japan, or surface warships such as aircraft carriers (although the last might be able to maneuver out of harm's way depending on warning time and ship's speed).

When might this submarine-launched missile come into play? Given the game-changing nature of such a development, it is worth citing their conclusion on possible timelines:

> It is hardly possible to predict when this system might become active. The uncertainties are substantial — it could take decades for North Korea to develop a deliverable nuclear weapon, or it might already be close to having one; new port facilities might be built, for example on the Yellow Sea, to take advantage of the most difficult antisubmarine warfare environments for potential adversaries; refinements in submarine operational practices would also take considerable time. It is possible we could see the beginnings of a functional system within the next five years, but we will not necessarily know that the system is carrying viable nuclear warheads that can be delivered by its missiles.

Whether the North Korean operational force is really confined to a hole in the ground in the DPRK itself, or already fields a reliable nuclear warhead on a reliable re-entry vehicle on a reliable missile from a reliable submarine somewhere in the ocean, is unknown except to a small number of North Koreans. This range of possible outcomes presents enormous uncertainty to US and ROK decisions as well as to third parties such as Russia, China, and Japan.

But if we attribute meaningful short range missile delivery capacity to the North Koreans aimed at the ROK and Japan today and perhaps intermediate and even long-range missile delivery capacity to outlying parts of the United States in the next five or ten years, what then?

IV. Strategic Effects of Increased Nuclear Threat on Korean Stability

Jong Kun Choi and Jong-Yun Bae tackle this question head on. The DPRK's fifth nuclear test, they argue, signals that it is a *de facto* nuclear state. Although its nuclear weapons make the Korean Peninsula and Northeast Asia more dangerous and insecure, they argue that the existing stability of deterrence between the nuclear great powers persists at a regional level, and that this standoff based on strategic nuclear threat continues to affect the intentions and actions of the two Koreas in ways that will give both pause, and even more so now that the DPRK has nuclear weapons.

Thus, the net effect of the DPRK's nuclear force is to tighten the already taut conventional and nuclear deterrence operating against the DPRK from the US and allied (including ROK) forces, thereby dampening escalation and reducing first strike propensity. In this view, the strategic fundamentals predominate in crisis decision-making or at the brink of war. Hot, intemperate rhetoric by any side to this conflict, creation of war-plans aimed at decapitation and preventive first strikes, and other risk-taking behavior involving overt or covert attacks is simply psychological warfare and epiphenomenal.

It follows that such bluster, whether it is the North's flamboyant and outrageous threats, or the South's more clinical countervailing threats, can and should be ignored. Instead, the United States and the ROK, in combination with other great and medium powers, must do everything possible to address directly the DPRK's security concerns thereby inducing it to freeze its nuclear program as part of a comprehensive settlement while maintaining sufficient nuclear and conventional deterrence to give all parties, but especially the DPRK's leaders, pause.

V. The Bleak Strategic Nuclear Landscape

Patrick Morgan takes up from where Choi and Bae end. He dismisses attempts to freeze North Korea's nuclear program as too little, too late. The DPRK's nuclear threat has already increased the salience of nuclear weapons in the relations between all states in the region which "could soon become, and perhaps already is, the most the most dangerous place in the international system." The effects cascade across countries and levels, increasing the nuclear threat between potential adversaries, spreading into more aggressive behavior and higher levels of tension in each conflict and the risk of war and nuclear war, tightening the links between the United States, the ROK, Japan, and Taiwan, and raising the risk of further proliferation, with possible US withdrawal of extended deterrence and the end of its hegemonic role, including its stabilizing influence over the propensity of its allies to start wars.

Morgan asks what the structural implication is of a nuclear-armed DPRK if the United States is no longer engaged as nuclear hegemon? Would the other states establish an alternative security framework built on the deterring effect nuclear weapons that would be stable in the absence of the United States. If so, would a single state (China?) supplant the US role; or would a bipolar duo (China-Japan?) or two groups of nuclear-armed states emerge that offset each other, based on the imperative of avoiding nuclear war? Morgan holds that such re-ordering is conceivable, but that it is as least as plausible that the five parties or some subset of them will decide to unite against the DPRK in decisive manner.

However, Morgan notes that the core values, culture, and institutions of the United States and the DPRK are so antithetical that the United States is unlikely ever to deal pragmatically and incrementally with the DPRK, as preferred by its other great power neighbors most of the time, and by the ROK some of the time. The result is that no state will do much to prevent what is happening in the North because each has different stakes in the North, and none can be assured that the others will align with it at any point in time.

Morgan sketches for alternative outcomes for the region given this lineup. The first is that existing trends continue, that nuclear and conventional arms racing ensue, and that the ROK and Japan proliferate with nuclear weapons (and maybe even the Taiwanese follow suit). Due to the further complications that arise from these trends, everyone is worse off. The second is more of the first to the point that no-one is managing the region and the United States possibly pulls back and disengages altogether. The third is the same as the second, but instead of disengaging, the United States creates a trilateral alliance in Northeast Asia with Japan and the ROK in ways similar to the relationships between the United States, Britain and France in the Cold War where the British and the French developed independent nuclear forces to confront the former Soviet Union, but under American de facto leadership. As Morgan notes, such a group would advance far faster given its combined wealth, technological innovation, economic resources than any combination of China, Russia, and the DPRK which, from a strategic viewpoint, is baggage that the two great powers would have to carry in a much faster race if such a trilateral US-ROK-Japan alliance emerges.

In the fourth alternative, instead of disengaging from the region or creating a trilateral alliance, the United States reasserts its nuclear hegemonic role by redeploying nuclear weapons to the ROK or more likely, Guam, in order to offset the DPRK's nuclear arsenal and to reinforce nuclear extended deterrence to the ROK and Japan. This can be done relatively quickly by redeploying B61 gravity bombs in the ROK itself, and recertifying US fighter bombers based there. It is more likely, however, that the United States would move nuclear weapons to Guam, which would avoid political conflict over forward deployment in the ROK, and would allow nuclear extended deterrence from the same weapons to be "shared" by the ROK and Japan. Storage bunkers would need to be recertified and upgraded, to support either transiting long-range bombers which could pick up the B61s *en route* to targets in the DPRK in a war. Or, the weapons themselves could be redeployed at short notice to Kunsan Air Base where US fighter aircraft could be armed with the nuclear weapons in a crisis or a war. US

forces in the ROK would be recertified in order to emphasize the reassertion of nuclear extended deterrence to the DPRK, China, and Russia. The fourth alternative is really a return to the Cold War except this time, China rather than the former Soviet Union would be the primary object of American nuclear threat.

Morgan's essay raises two important issues for follow-on study. The first is that while many conflate these concepts, nuclear weapons may be used to compel (make someone stop doing something that they are already doing, often very hard to achieve), deter (make someone not do something that they are intending to do, arguably less difficult to achieve than compellence), and reassure (often allies, but also adversaries or third parties). Usually, all three elements of influence are present in a given nuclear threat but with one predominating. The last two decades may have seen a shift towards greater use of compellence threats relative to deterrence and reassurance nuclear threats by all nuclear armed states in the region. If so, then this use of nuclear threat may devalue the use of nuclear threat for deterrence uses over time, which could lead to mistakes, loss of control, nuclear war, and increased nuclear risk in the region, even if deterrence use remains as a gravitational force acting on the stabilizing ballast on the keel of nuclear armed states that is not seen but nonetheless felt. A comparative and careful study of American, North Korean, Chinese, and Russian nuclear threats in this region is needed to answer this question.

The second key issue is whether wild cards may disrupt the trends described by Morgan, leading for example to a major, unanticipated breakthrough in relations with the DPRK. If Trump can be elected against all odds, if Park's presidency can implode due to her personal eccentricities, then anything might happen with Kim Jong Un. If such rapid changes were to occur, then what appears to be an inexorable trend towards greater reliance on nuclear weapons may revert to the secular post-Cold War trend of the recession of nuclear weapons threats whereby states relied on them less and less, even though they remained in the background. If these two trends emerge — a shift towards compellent uses of nuclear threat and reversion to recession

of nuclear threat of any kind — then the future would differ from the four alternative geo-strategic outcomes advanced by Morgan. These two trends might also work against each other, so a world in which nuclear weapons are less used but when they are, are used for aggressive compellence purposes, might not be a safer world; but it would be different and would present different management challenges for policy makers.

VI. The China Factor and Realistic Goals for Six-Party Talks and Cooperation

The underlying premise of Morgan's analysis is that China could have done more to stop the North Korean nuclear breakout. In contrast, Dingli Shen observes that China cannot dictate to the DPRK. Indeed, rather than the DPRK being vulnerable and therefore dependent on China, Shen points out that the DPRK's nuclear armament has enabled the DPRK to deal with its insecurity on its own, without China's backing, and even against China's wishes. In his view, it is China that is vulnerable and in some key respects, dependent on the DPRK. As he puts it: "Therefore, China and the DPRK may have developed a strange partnership — instead of China using economic sanctions to condition the DPRK, the DPRK has a firm grip on China's Achilles' heel for its own benefit."

It follows that those who think that China benefits from the DPRK's bad choices and has chosen to back them need to rethink. The China-DPRK relationship is far more complex and its nuances far more subtle than is appreciated in the West. Attempting to "outsource" the resolution of the DPRK issue to China is, to put it mildly, unrealistic. Demanding that it force the DPRK to capitulate or face collapse is simply disconnected from reality. Moreover, countermeasures such as THAAD are more political than military in nature. "Once they detected that China was disinterested in seeing the DPRK collapse," Chen points out, the United States "pushed THAAD as a counter measure, to play the double game of both retaliating China and inserting a

wedge between Beijing and Pyongyang."

Shen also argues sanctions are not a viable method to bring North Korea back to talks aimed at disarming its nuclear weapons. Nor is it possible to think now about military pre-emption, if it ever was given the DPRK's conventional deterrent aimed at Seoul. An American or ROK or allied pre-emptive attack could result in a devastating North Korean nuclear retaliation that destroys Seoul, Tokyo or in the not distant future, Guam, Juneau, Honolulu, or even Los Angeles.

Consequently, Shen suggests that the goal of six party talks must shift from CVID or complete, verifiable, and irreversible nuclear disarmament to CRE or capping, reversing, and eliminating (eventually) North Korea's nuclear arsenal. The interim objective of the five parties would be to entice the DPRK to freeze its nuclear and missile development, in return for which the DPRK would be offered the chance to become a normal state in a normal relationship with the international community. A CRE agreement between the five parties and the DPRK would require it to freeze its production of fissile material, nuclear weapons, and long range missile tests; to declare all nuclear weapons related sites; to accept inspections; to declare no first use of nuclear weapons; and to recommit to eventual nuclear disarmament. Shen recognizes that a CRE agreement will face stiff opposition. However, some limits are better than none; and some limits can be achieved only by talking in a six party framework, given the interests at play. Such a pragmatic agenda is the only way to return to the ideal goal of CVID, although this may take many years to be realized.

VII. The Trump and Park Factors

John Merrill addresses directly the impact of uncertainty on how states address the North Korean nuclear threat. He reviews two unanticipated forces that erupted in 2016, the rise of President Elect Donald Trump, and the implosion of Park Geun- Hye's presidency, and how these may affect North Korea policies.

Before these two events, the maintenance of a hard-line isola-

tionist stance by the two allies seemed almost certain. The Democrats promised to impose more sanctions and to pile on the pressure to move China to in turn force the DPRK to reverse course. Park Geun-Hye also sought to punish the DPRK and having already sacrificed the only remaining economic relationship by shutting down the Kaesong Industrial Zone, to reach instead for military options that would cause heartburn in Beijing, in particular, approval for the US deployment of the THAAD anti-missile systems. Merrill notes that a Clinton-Park alignment heralded increased tension, confrontation, and even war.

Rather than follow orthodox policies, Merrill suggests that Trump may exploit the opening caused by Park's political demise to come to terms with the DPRK, in effect, offering Kim Jong Un a deal too good to refuse. This may be a stretch, but depending on who he appoints, Trump may realize that the United States would gain from detaching the DPRK from China's orbit, that China would be relieved if this occurred, and that pragmatic and less idealistic goals such as freezing the DPRK's nuclear weapons and missile programs, reduction of inter-Korean tension, and expanding external relations with the DPRK are more likely to lead to denuclearization than sitting on his hands, as Obama has effectively done for eight years while the DPRK built nuclear weapons. Concurrently, depending on who replaces Park in the Blue House, Merrill suggests that a Trump-DPRK deal may enable the ROK to find ways to re-engage the DPRK while contributing more to the alliance at a regional level.

Along the way, Trump may not only drop democratization, human rights, and other issues that have interfered with dealing with the DPRK's nuclear weapons program; he may also discover that American power is limited, and that the United States has to negotiate with other powers to cooperate and coordinate in their engagements with the DPRK. After all, the reconstruction of the DPRK portends a gigantic infrastructure and reconstruction project that far exceeds the combined ability of the ROK and the United States to finance and implement. In particular, the United States and the ROK will need massive Chinese investment to pull off a deal with Kim Jong Un that

amounts to trading nuclear weapons, or at least freezing the nuclear weapons and missile programs, in return for an economy.

VIII. Constructing a Multilateral Security Settlement

Although the strategic environment is now uncertain, the fact that it is in flux also suggests that major changes may be possible that were hitherto blocked. Parallel to Merrill, Hayes and Goodby argue that not only must US policies toward the DPRK be reformulated, given the latter's nuclear breakout, but that the United States has a plethora of options for shaping and creating a new geo-strategic framework that could be more effective in handling the DPRK. They argue that only the United States has the power to reshape the regional strategic environment in ways that require all local leaders to recalibrate their own calculi. Thus, the reversal of the DPRK's nuclear armament is really a test case for solving a broader problem, the need in Northeast Asia to create institutional arrangements that regulate and reduce the use of nuclear threat in inter-state relations.

To this end, they outline an array of possible approaches, especially multilateral ones, to creating a new strategic framework in which to realize an enduring peace and ensure the security of all states in the region — even the DPRK should it manage to survive its own domestic downward spiral and long run malaise. The key elements in such a multilateral approach are an agreement, possibly in treaty format, to end the Korean War. In addition to obvious necessary elements such as establishing a demarcation line to replace the DMZ, etc., the critical issue is what entity replaces the Military Armistice Commission, and what type of consultative organization ("peace mechanism") would be established to replace it. As part of the peace treaty and presumably implemented under the peace regime mechanism, the ROK and DPRK would need to agree on specific military adjustments such as reduction and rear-basing of offensive and heavy arms, and on-site monitoring and verification of the agreements. This Korea-specific entity must be embedded in a broader multilateral

cooperative security regime to succeed. Thus, the resolution of the Korean conflict (and with it, the North Korean nuclear issue) is indissolubly linked from regional security institution-building, and in particular, the state of US-China strategic relations.

"Thus," they conclude, "the DPRK's nuclear weapons program has become the fulcrum around which regional security affairs, even those unrelated directly to the Peninsula, must turn." Finally, they suggest that the type of multilateral approach outlined in their essay is consistent with at least some of Trump's campaign promises and policy orientations.

IX. Sanctions and Settlement of the North Korea Nuclear Issue

Even the most far reaching and comprehensive settlement will encounter intractable difficulties. In this regard, one of the least appreciated aspects of a comprehensive settlement of the North Korean nuclear weapons program, should this occur, is the lifting of sanctions. Sanctions come in multilateral form, imposed by the UN Security Council and other international agencies; and in unilateral form, imposed by individual states in accordance with domestic politics and laws. However, the United States has a peculiar position in between these two forms in that American unilateral sanctions, implemented domestically, have global effects by playing on the risk adversity of third country banks and trading companies that would otherwise risk doing business with the DPRK.

Stephan Haggard provides an overview of these sanctions against the DPRK. He explains that in spite of the intention of some players, the primary purpose of sanctions is not to punish North Korea, but to play a role in coercive diplomacy by imposing costs on it that will continue so long as it does not comply with international law and other more political demands made by great powers.

Thus, the role of sanctions is not to force the DPRK to capitulate to American (and South Korean) demands that it somehow collapse or

disappear, but to increase the cost of not complying with UN Security Council resolutions, and of not implementing its obligations arising from the Six Party Talks, the 1992 inter-Korean Denuclearization Declaration, and before that, its commitment to the Nuclear Non Proliferation Treaty. As sanctions cannot directly compel the DPRK to abandon its nuclear weapons program, they exist only to be removed. As Stephan Haggard puts it, "they grant leverage precisely by the promise to lift them in return for a negotiated quid-pro-quo."

However, should a comprehensive settlement be reached, it would not be easy to lift sanctions. Haggard reviews the complex process which entails overcoming time inconsistency — especially who moves first—and coordination problems between sanctioning states as well as with the sanctioned state in negotiating such settlements. As Haggard states:

> Will it deliver on its promises? Can it reverse the effects of secondary sanctions? And will it have incentives to deliver on promises if the target state takes actions that are not easily reversible, such as dismantling its nuclear capability? Note that these dilemmas are more intense for a state that has already developed weapons such as North Korea than for a state like Iran that is only a latent nuclear power, since usable rather than potential military assets would be foregone.

With a state such as North Korea, the ability to deter private actors from transacting to the DPRK's benefit is critical, and failure to do so simply displaces such financing and trade relations from relatively visible to more opaque players willing to deal with it for a risk premium. In this regard, coordination between the United States and China to align on sanctions is the nub of the sanctions challenge, given China's multiple and competing strategic goals in dealing with the DPRK, which go well beyond its nuclear program, and its competing priorities in its relationship with the United States.

Haggard argues that sanctions are useful if they are part of a wide-ranging and comprehensive settlement of the North Korean nuclear issue rather than viewed as an end in themselves, or intended for other purposes such as squeezing the regime into collapse. Indeed,

in the context of such a comprehensive approach, it may be sensible to tighten sanctions to increase leverage on the DPRK. "Such a settlement," he avers, "would not only include some phased lifting of sanctions but security assurances or guarantees and other economic inducements as well."

X. Civil Society and the Nagasaki Process

The reader might be forgiven for thinking that the strategic landscape in Northeast Asia is irreversibly and uniformly bleak, no matter which way one looks. Tatsujiro Suzuki and Hiro Umebayashi highlight a very different dynamic in Northeast Asia than the one which dominates relations between states and headlines in mass media. They begin with the reasonable observation that tension is increasing, and states are increasing their reliance on nuclear threat, which suggests that states may not be the sole source of a countervailing strategy if this trend is to be reversed.

They assert that the nuclear stalemate with the DPRK cannot be resolved without engaging it, and that such engagement must go beyond to nuclear and missiles issues that predominated in the Six-Party Talks to a more comprehensive agenda. To this end, they describe the proposal for a comprehensive security approach that has been developed in a series of civil society-based conferences since 2011 in Tokyo, Nagasaki, Seoul, Beijing, and Washington. This approach has at least six critical elements, namely: 1) termination of the Korean War; 2) establishment of a permanent Northeast Asia Security Council; 3) a non-hostility agreement; 4) lifting of sanctions; 5) energy and economic assistance to the DPRK and equal access to all forms of energy; 6) a regional nuclear weapons-free zone.

The core of the latter zone would be the non-nuclear states which would receive a legally binding negative security assurance from the neighboring nuclear weapons states that the latter would not use or threaten to use nuclear weapons against the former. This institutional approach would provide an even-handed basis for the DPRK to come

into compliance with the non-nuclear commitments of the non-nuclear states over time, and in that sense, is consistent with the gradualist and phased approaches to denuclearizing the DPRK that is outlined by other authors in this special issue.

To this end, they describe the "Nagasaki Process" wherein non-governmental experts meet in a working group to address key issues posed by the zone approach as a precursor to a Track 1 inter-governmental meeting convened by the United Nations at an appropriate time in the future.

XI. Conclusion

The existence of a Nagasaki Process and other parallel activities in the region suggest that all is not lost and that the momentum made towards nuclear disarmament and nuclear non-proliferation in the nineteen nighties might be resumed and recent setbacks reversed.

Above all, it confronts Koreans with stark choices: will they commit to nuclear and other forms of deterrence as the basis of their future relationship? Or will they escape from the "deterrence trap" that arises from the on-going Korean conflict and the increasing dependence of all parties in recent years on nuclear threat?

We hope that this special issue helps Koreans and their friend around the world better equipped to come to grips with the North Korean nuclear multilemma, and to act in ways that always meets the minimum criteria for any acceptable policy proposal in relation to the Korean conflict: does it increase or decrease the risk of war?