North Korea's Nuclear and Missile Programs: Strategies, Directions, and Prospects

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Introduction

At the January 2013 session of this symposium, I addressed the North Korean nuclear and missile threat in the early transition from Kim Jong-Il to Kim Jong-un.[1] At the time, there were numerous questions and few definitive answers. The DPRK had yet to conduct its third nuclear weapons test, though it had just completed a successful satellite launch in December 2012. It had also abruptly walked away from the "Leap Day" agreement of February 2012 and had declared several months later that North Korea was "a nuclear-armed state" in its revised constitution. Barack Obama had just begun his second term as U.S. president, and Park Geun-hye was awaiting inauguration. North Korean policy statements offered no indication that the DPRK would step back from (let alone reverse) its nuclear and missile programs. However, Kim Jong-un's pledge that the citizens of North Korea would never again have to "tighten their belts" suggested to some analysts that the North's commitment to full-scale nuclear development was primarily a symbolic rather than definitive policy commitment. It was also uncertain whether technical and economic constraints might limit the pace of weapons development, and whether North Korea was truly intent on development of an operational nuclear capability. There was the additional question of whether Kim would continue to defy Chinese warnings not to conduct additional tests.

North Korea has since provided unambiguous answers to these questions. There is no reason to conclude that Pyongyang will slow or reverse its weapons programs. The

[1] Jonathan D. Pollack, "The North Korean Nuclear and Missile Threat and Future U.S.-ROK Relations," Brookings-KRINS 2013 Conference Proceedings, pp. 25-40.

DPRK argues that it will expend the necessary resources to achieve a credible weapons capability, though the extent of these resource commitments and the DPRK's definition of a credible nuclear force depend on the presumed purposes of its strategic programs and the scope of North Korean technological and industrial capabilities. In February 2013, North Korea conducted its third nuclear test and at the end of March put forward its *byung-jin* policy, committing the regime to parallel development of nuclear weapons and economic advancement. At the same time, the Supreme People's Assembly promulgated legislation "consolidating possession of nuclear weapons state for self-defense," a ten-point law that prefigured many of Pyongyang's subsequent actions. [2]

Between 2013 and 2015, progress in the missile program seemed somewhat fitful. However, over the past two years but especially in 2017 multiple testing programs have advanced very rapidly, triggering repeated warnings by senior U.S. officials that North Korea was on the cusp of an intercontinental capability (i.e., a missile with a range in excess of 5500 km) able to reach the continental United States. In 2016, North Korea also accelerated its nuclear testing program with two additional nuclear tests (the first was purportedly the initial test of a hydrogen weapon and the latter was purportedly the test of a nuclear warhead design). There were approximately two dozen missile tests during 2016, as well as static engine tests that prefigured subsequent breakthroughs in weapons development. These included multiple failures and the sole successful launch of the long deployed but previously untested Hwasong-10 (also known as the Musudan), and the first successful launch of the Pukukksong-1, a solid-fueled, sea based ballistic missile that followed several failed tests.

Viewed in hindsight, Kim Jong-un had decided to double down on his nuclear and missile wager. The results of Kim's decisions became fully evident during 2017. In his New Year's speech of January 1, Kim declared that North Korea had "entered the final

[2] The SPA law has not received the attention it deserves. For a detailed review of *byung-jin* and the nuclear legislation, consult Cheon Seong-Whun, "The Kim Jong-un Regime's 'Byungjin' (Parallel Development) Policy of Economy and Nuclear Weapons and the 'April 1st Nuclearization Law'," Korea Institute for National Unification Online Series CO 13-11, April 23, 2013.

stage of preparation for the test launch of [an] intercontinental ballistic missile."[3] Over the course of the next eleven months, North Korea raced to its self-declared finish line. There were an additional two dozen missile tests, including three with potential intercontinental reach (all flown on a depressed trajectory within the East Sea/Sea of Japan) and two IRBM tests that overflew Hokkaido. These involved perhaps five previously untested (and in some instances, hitherto unknown) missiles, including the Pukukksong-2, the land-based version of the North's solid-fueled missile. North Korea also claimed that it had perfected a miniaturized nuclear warhead to place atop its missiles.

The testing program culminated in the latter months of 2017 with a claimed thermonuclear test in September with an explosive yield estimated as high as 150 kilotons, followed by the launch of the Hwasong-15 in late November that in a normal trajectory could have reached anywhere in the continental United States. In addition, North Korea claimed that a prototype reentry vehicle had survived intact, though intelligence analysts in the U.S., ROK and Japan disputed this claim. The DPRK also stated that the Hwasong-15 would be able to deliver a "super heavy nuclear warhead." A *Rodong Sinmun* editorial then declared that North Korea had built "a nuclear armed force for self- defense…[that] put an end to the US imperialists' atrocious and outrageous nuclear threat and blackmail and [would] firmly safeguard the dignity of the nation, the sovereignty of the country and peace on the Korean Peninsula and in the rest of the world."[4]

These stunning advances greatly accelerated multilateral efforts in the UN Security Council to isolate and sanction the regime, as well as various unilateral actions imposed by a number of states. The North's missile successes also triggered active consideration of still undisclosed "military measures" under consideration by the Trump Administration. Two days after Trump's election, President Obama had warned the President-elect that North Korean nuclear and missile programs would preoccupy the

[3] Korea Central News Agency, January 2, 2017. Though Kim made no explicit reference to achieving an ICBM capability by a specific date, there were repeated unconfirmed reports that the end of 2016 (and subsequently the end of 2017) constituted Kim's timeline.
[4] "A Grand Auspicious Event of the Nation," *Rodong Sinmun* Editorial, November 30, 2017.

incoming administration, and this prediction proved accurate. Even as North Korea claimed possession of a nuclear deterrent that protected it from direct attack, U.S. efforts to deny Pyongyang completion of its core strategic objective increased appreciably, raising tensions on the Korean peninsula to their highest level in decades.

The acceleration of the North's weapons development raises numerous questions. Why, after more than six decades without major armed conflict on the Korean peninsula, had North Korea opted to extend its strategic reach far beyond the peninsula and the region? (North Korean missiles have traveled much more extensively than Kim Jong-un, who appears to have not traveled outside the DPRK since returning to Pyongyang in the very early 2000s.) What best explains Kim Jong-un's simultaneous commitment to multiple strategic programs? Is there any discernible strategic design shaping Kim's personal identification with these activities? Are there any indications of what the DPRK (or Kim) believes would be sufficient for its strategic purposes? At the same time, is there a point at which the costs and risks could outweigh any presumed strategic advantage these capabilities might yield for North Korea?

During the Kennedy Administration, the renowned systems analyst Alain Enthoven posed the essential question facing every strategic and defense planner: how much is enough? What level of capability do political and military leaders deem necessary to achieve their national security objectives? North Korea is not exempt from these considerations, though in a totalitarian system these decisions are not subject to serious scrutiny, let alone public deliberation. To judge by the extraordinary effort and expense invested in the North's weapons programs, nuclear weapons and missiles represent the highest priorities of the Kim regime. The question is why. What needs, purposes, and fears motivate Kim Jong-un, and justify the prodigious economic and political costs of these efforts? Can Kim sustain these programs indefinitely without undermining other regime goals? Are there realistic options for the U.S., ROK and others to deny North Korea realization of its objectives? To address some of these issues, we need to turn attention to the beliefs animating North Korean nuclear and missile development under Kim Jong-un.

North Korea's Strategic Objectives

In my judgment, three broad, long-term pursuits underlie Pyongyang's nuclear and missile pursuits: (1) legitimation; (2) deterrence; and (3) coercion. (There are also subordinate objectives discernible in Kim Jong-un's statements and actions, but these three seem dominant.) Kim Jong-un inherited all three beliefs from his forbears, but he has developed and extended them in significant ways. To varying degrees, each is discernible in DPRK propaganda and behavior, and warrants brief elaboration.

Regime legitimation concerns Kim Jong-un's claims to absolute power, and reflects the deeply adversarial conception of Kim family rule. Kim Jong-un has tied the fate of the North Korean system (including the continued quest for reunification under the control of the Korean Workers Party) to the possession of the world's most lethal weapons. Like his father and grandfather, he has justified highly skewed internal priorities to his belief in a deeply malign external environment, but he has taken these priorities much farther than either his father or grandfather. Despite periodic references in North Korean propaganda to the goal of denuclearization supposedly bequeathed by Kim Jong-Il, the available evidence does not bear out this judgment. In March 2012, a Japanese newsweekly acquired a purloined copy of Kim Jong-Il's purported final will and testament of October 18, 2011. The document states: "Keep in mind that constantly developing and possessing a sufficient amount of nuclear weapons, long-range missiles and biochemical weapons is the way to keep peace on the Korean peninsula, and never drop your guard…We have to win the psychological war with the United States. By standing up imposingly as a legitimate nuclear power, we have to weaken American influence in the Korean Peninsula."[5]

The development of intercontinental missiles thus provides North Korea a means to punch above its weight, and place it on a nominal par with the world's major nuclear powers. In Kim's view, the presumption of strategic equivalence with the United States will ultimately leave the United States and others with no choice than to accept North

[5] Yoji Gomi, "Last Will of Kim Jong-Il Obtained," *Shukan Bunshun*, April 19-25, 2012, pp. 34-37. Though there is no way to establish conclusively the authenticity of the document, Gomi is a highly regarded reporter, and the detail in the document lends added credibility to the article's claims.

Korea as a legitimate nuclear weapons state. It has the additional advantage of North Korea owning weapons of mass destruction not possessed by the ROK or Japan, conferring psychological and strategic advantage over both of its non-nuclear neighbors. In addition, Kim believes that nuclear weapons will ultimately erode the credibility and durability of the US-ROK alliance and the US-Japan alliance. (This also explains the DPRK's decades-long efforts to undermine and delegitimize American extended deterrence commitments to Seoul and Tokyo.) Strategic autonomy enables North Korea (in theory and prospectively in practice) to articulate an all-azimuth nuclear strategy directed against the United States, the ROK, Japan, and (increasingly) China. (The case of Russia seems more ambiguous: despite North Korea's "enemies are everywhere" stance, it never leaves itself wholly exposed, even if the relationship with Moscow proves tactical rather than strategic.

Deterrence constitutes the second key objective, and North Korea's primary declared rationale for nuclear weapons and long-range missiles. In the years following its first nuclear test in 2006, Pyongyang frequently asserted that it was entitled to standing comparable to India and Pakistan as a nuclear-armed state outside the Nonproliferation Treaty, but this seems more an argument about status than about deterrence as such. (Not surprisingly, Pyongyang has never made comparisons to Israel.) In recent years, North Korea has repeatedly argued that without nuclear weapons it would be vulnerable to US decapitation and regime change akin to the fate of Saddam Hussein and Moammar Qaddafi. However, this rationale is a mischaracterization of history. From the signing of the Korean armistice in July 1953 until the early to mid-2000s, North Korea did not possess a single nuclear weapon. Even in the face of egregious North Korean behavior directed against the United States and the ROK, US forces never retaliated or attacked (let alone attempted to overthrow) the DPRK regime. Though the reasons for abjuring the use of force varied from situation to situation, avoiding the resumption of large-scale armed conflict and the maintenance of deterrence was a consistent US goal. Any possible use of force against the DPRK presumed initiation of hostilities by the North, and hence a central component of the deterrence and defense mission underlying the US-ROK alliance.

In a deeper psychological sense, Kim seems to regard nuclear weapons as the regime's ultimate form of protection, guaranteeing its survival in a highly malign world. In the words of Bernard Brodie's prophetic volume published only a year after Hiroshima, North Korea's leaders regard nuclear weapons as the "absolute weapon," without which the regime would be inherently vulnerable. Amidst its palpable exclusivity and isolation, nuclear weapons keep the outside world at bay, enabling Kim Jong-un to withstand every pressure, and to impose his will on the North Korean system.

The tragic irony of the current US-North Korea nuclear crisis as well as earlier peninsular crises is that American consideration of the possible use of force did not emerge until there was incontestable evidence of Pyongyang's pursuit of nuclear weapons. In essence, North Korea placed its security more at risk by the decision to develop nuclear weapons and delivery systems than before it possessed them. This has been especially the case once Kim declared pursuit of a capability to reach the continental United States his primary objective, thereby putting the US homeland at risk. At the same time, North Korean threats to rely on preemptive attack or to place its nuclear warheads on standby alert (even if they are principally slogans for political or psychological effect) has compelled the US and the ROK to prepare for the most extreme of contingencies.[6]

Regardless of the uncertainties and risks, the shifts in North Korean strategy (especially in the context of major breakthroughs in weapons development) have elevated nuclear deterrence to far greater prominence in North Korean and US policy calculations. Given its existing level of capabilities, North Korea appears focused principally on assured retaliation, which is a far more realistic option in peninsular or regional terms than seeking to target the United States. (This doctrine obviously does not preclude targeting US forces in Korea or in Japan.) [7] However, Pyongyang is dealing with a very different US administration and an American president whose words (if not necessarily his actions) impart an urgency to the nuclear crisis. Voices within the administration arguing

[6] Choi Kang and Kim Gibum, "A Thought on North Korea's Nuclear Doctrine," *The Korean Journal of Defense Analysis*, Vol. 29, No. 4, December 2017, pp. 500-503. The allowance for the first use of nuclear weapons under the North's nuclear legislation (even if justified as part of a deterrence doctrine) reinforces this conclusion.
[7] Choi and Kim, pp. 499, 503-04.

regularly that “time is running out” or that North Korea might even be “undeterrable” imply worst-case scenarios that Kim must weigh carefully.

For example, an early December 2017 Foreign Ministry statement characterized recent US “preparations for an outbreak of war” as an effort “to provoke us by daring to find fault with our supreme leadership.” This revealed a US “sinister intention to make us take hardline countermeasures, [thus] using them as an excuse to finally light the fuse of a nuclear war on the Korean Peninsula.”[8] This assessment could argue for a posture that gives no ground (possibly believing that American threats are more bluster than demonstrations of intent) or one where (words aside) North Korean avoids actions that might trigger extreme US actions. In either circumstance, deterrence of major conflict and the avoidance of armed hostilities appears to predominate, since the survival of the regime is at immediate risk should war break out.

The third major objective is coercion. Assuming that North Korean nuclear and missile assets continue to mature, Pyongyang could begin to see their possession as a means to compel other states to shift their policies toward North Korea. (Such a concept pertains to the stability/instability paradox.) Pyongyang would be able to advance or achieve goals that would otherwise be beyond its reach, and tolerate levels of risk well beyond present levels, thereby diluting or undermining US deterrence pledges. Two leading Korean scholars have explored these possibilities in a recent publication.[9] Choi Kang and Kim Gibum posit two divergent strategic paths for North Korea: assured retaliation or asymmetric escalation. The former path is widely if not universally favored by most nuclear weapon states, and accords more with states whose strategic assets are relatively limited. The latter option presumes a level of sophistication and complexity in weaponry, targeting doctrine and command and control procedures (including delegating authority to commanders in the field) that seems starkly at odds with the extremely centralized North Korean command system.

However, it is not yet possible to offer definitive judgments on the directions of North Korean strategic thinking. Statements of intent and possible indicators of desired

[8] Korean Central Broadcasting Station, December 6, 2017.
[9] Choi and Kim, “A Thought on North Korea’s Nuclear Doctrine.”

capabilities are far too contradictory to draw clear conclusions. Many statements seem more propaganda for domestic consumption than credible strategic assessments. Pyongyang remains somewhere between demonstration and development. There is ample uncertainty on all but the most basic questions about North Korea's actual capabilities and strategic choices, assuming that Kim and his principal strategic advisers have even made these decisions. Under such circumstances, it should not surprise anyone that North Korea continues to convey mixed messages, leaving its adversaries guessing about its intent and its extant capabilities. When combined with the utter lack of message discipline evident in the Trump Administration (beginning with the President himself), there is a palpable sense of crisis, posing the question of whether two enduring adversaries can avoid the slide toward intentional or inadvertent war.

Reviewing North Korea's Weapons Development

North Korea's strategic weapons program has followed a discernible path under three generations of Kim family rule: from early aspirations and initial development of scientific infrastructure under Kim Il-sung; to the accumulation of requisite materials, experimentation and fuller testing under Kim Jong-Il; to the consummation and accelerated procurement under Kim Jong-un. Missile development has followed a somewhat different pattern from the nuclear program. The required technologies and even complete systems have at times been available from external sources, whereas the nuclear weapons infrastructure required creation from the ground up. However, both programs fully exploited the opportunities to acquire needed technologies and end items from covert supply chains that facilitated and diversified indigenous R&D efforts.

The results of decades of incremental development have generated ample returns for Pyongyang. The extraordinary acceleration of the testing programs under Kim Jong-un (especially recent breakthroughs in missile development) have few parallels in the history of weapons development of other states. Characterizing North Korean testing programs as "provocations" seems misleading. Kim Jong-un has undoubtedly used various tests to defy and embarrass President Xi Jinping immediately prior to major multilateral meetings in China. He employed a comparable approach in a missile test that occurred during a dinner meeting between Prime Minister Abe and President

Trump in Mar a Lago. However, the tests are part of ongoing weapons programs, not actions designed to provoke the United States or anyone else.

Kim sees the regime's strategic programs as a singular priority. Despite North Korea's acute economic constraints and increasingly severe multinational sanctions, the weapons programs have advanced far beyond and far faster than what most analysts deemed possible only several years ago. Pyongyang asserts that it has now fulfilled a core, irreducible strategic objective: the ability to reach American soil with a nuclear-armed missile. Kim Jong-un's January 1, 2017 claim that North Korea was approaching final preparation of an ICBM test prompted Donald Trump's first tweet directed against North Korea, pledging that a North Korean test of a nuclear-armed missile able to reach the United States "won't happen!" In a literal sense, his declaration remains true at the end of 2017. Pyongyang has yet to demonstrate an operational nuclear weapons capability, even as it asserts that such a capability exists. However, Trump's tweet initiated a year of extreme tension and potential crisis that has carried into 2018, as Kim Jong-un contemplates his next steps.

Does North Korea Possess an Operational ICBM?

Kim Jong-un is very directly associated with North Korea's pursuit of strategic weapons. Unlike his father, he has permitted unaccustomed transparency to the testing program, including photographs at his desk signing various launch orders and personally observing many of the missile tests, though there are no photographs of Kim appearing at any failed tests. (In some photographs, Kim is smoking during the fueling of various missiles, which seems extremely dangerous. To my knowledge, Kim has not been present at the nuclear test site for the three tests undertaken since he assumed power.) He clearly sees major propaganda value in overseeing these activities, quite possibly tying his own legitimacy to advances in various programs. His direct involvement contrasts markedly with that of Kim Jong-Il, who did not participate in any launch activities, which occurred far less frequently during his rule.

Kim Jong-un has also formed bonds with younger generations of scientists and defense industrial personnel overseeing the weapons programs. Unlike the repeated purges and reported executions of senior officers in the Korea People's Army since Kim assumed

power, there have been no known dismissals among the scientists and individuals responsible for military procurement and production, who now enjoy added stature and "perks" for their successes.[10] Even as Kim has made major demands of these individuals, he appears to grasp that missile failures are an inherent part of the development process: mistakes are an unavoidable part of the learning curve. That said, the successes are increasingly outnumbering the failures.

What best explains the vast improvements and much lower failure rates of the missile program in 2017? Analysts have repeatedly debated this issue. One school of thought credits the North Koreans with indigenous capabilities nurtured over a long period of technology acquisition and development and of the capacity to learn from past failures, especially of the Musudan. This interpretation acknowledges North Korea's acquisition of earlier generations of Soviet missile technology and later cooperation and missile sales to numerous Third World customers. Over time, this enabled North Korea to develop an indigenous technological and manufacturing base, including missiles of its own design and manufacture, while still not precluding acquisition of new technological inputs from abroad. On balance, this school of thought views North Korea's successes as primarily home grown.[11]

A second interpretation sees a hidden hand in the North's recent missile advances. In the latter view, the recent successes reflect the long deferred "below the radar" role of Russian technology and missile specialists (probably dating from the period immediately following Soviet collapse), only to reach fruition several decades later.[12] There is credence to both arguments. However, the former school attests to the North's diligent, incremental improvement of Soviet legacy systems, as contrasted by the abrupt appearance (other than mock ups in various military parades) of more advanced systems, including engine technologies reflecting late Soviet origins. To an extent, this pattern replicates the shifts in the nuclear weapons program from plutonium to highly enriched uranium as a source of fissile material. North Korea began with indigenous

[10] Choe Sang-Hun et al., "Rocket Men: The Team Building North Korea's Nuclear Missile," *New York Times* Interactive, December 15, 2017.
[11] Joshua H. Pollack, "How North Korea Makes Its Missiles," *NKNews*, August 18, 2017.
[12] Michael Elleman, "The Secret to North Korea's ICBM Success," *Survival*, Vol. 59, no. 5, October-November 2017, pp. 25-36.

efforts at plutonium production, relying on a single light water reactor at Yongbyon, and only later acquired the needed technologies for highly enriched uranium via illicit supply networks. This culminated with the building of an indigenous HEU production base alongside the older plutonium-based option.

A recent article in the *Washington Post* on North Korean breakthroughs in missile development lends support for the latter interpretation. [13] Drawing on newly located documents from the Makeyev Rocket Design Bureau, Joby Warrick traces North Korea's acquisition of detailed technical and design information utilized in some of the DPRK's newest missiles. These development efforts very likely involved some former Russian missile experts employed in North Korea. As Warrick concludes: "The fact that it has taken Pyongyang so long to exploit the Russian designs is perplexing. But North Korea had long lacked the sophisticated materials, engineering expertise and computer driven machine tools for the kinds of advanced missiles it has recently tested…With an industrial base enhanced by years of slow, patient acquisition efforts, North Korea is only now in a position to capitalize on technology it has been sitting on for years or even decades." These protracted but incontestable advances should sober the outside world on the immediate or mid-term prospects to slow (or shut down) the North Korean nuclear and missile program.

Despite the North's extraordinary breakthroughs during 2016 and especially in 2017, this does not mean that the DPRK has crossed the strategic finish line. Kim Jong-un has made maximal claims about the North's missile and nuclear advances. Even in a system where his power is unchallenged, he must justify the prodigious price the regime has paid to reach this point. Following the late November launch of the Hwasong-15 – the largest, most powerful missile that North Korea has yet to test—Kim declared that it marked "the completing [of] the state nuclear force…on which the great might of putting the strategic position of the DPRK on a higher stage was given birth." He further claimed that it "was capable of carrying [a] super-heavy nuclear warhead and attacking the whole mainland of the US," all purportedly derived from domestic technology.[14]

[13] Joby Warrick, "Documents shed light on gains by N. Koreans," *Washington Post*, December 28, 2017.
[14] Korea Central News Agency, November 29, 2017.

None of these advances means that North Korea has achieved its aspirational goal of a nuclear-armed missile able to reach the United States, one that President Trump and President Moon Jae-in both appear to view as a red line. Though many Americans believe the missiles are intended principally to threaten the United States, Kim's primary audiences are much closer to home, first within North Korea and extending to the peninsula and the immediate surrounding region. At the same time, he must convince his elites and the mass populace that North Korea has defied the outside world, and for that consummate goal, the United States looms as the ultimate political and strategic object.

However, North Korea has yet to prove definitively that it possesses an intercontinental capability. Despite all its missile tests and the obvious advancement of its nuclear weaponry, crucial tasks pertaining to systems integration and operational testing are far from complete. There is no evidence that North Korea has ever "mated" a warhead to a missile, and simulations and ground tests offer insufficient proof. As matters stand, additional missile tests will be required to demonstrate that North Korea has a reliable delivery vehicle with a prototype warhead able to survive reentry.

If it is to make its case, North Korea must also overcome the inherent constraints of geography and technology, both of which will entail great expense and very great risk. It has yet to launch an ICBM on a normal trajectory, which weapons experts deem necessary to validate data required for successful reentry. This would entail major technical challenges in heat resistance, guidance systems and control mechanisms. As observed by a leading Japanese rocket specialist, "North Korea's ICBMs are at the rocket stage. They have not progressed to the missile stage, which means mounting warheads that can withstand reentry…Weaponization is a difficult process."[15]

North Korea has also not tested a nuclear warhead from a missile, either because it is simply not yet capable of doing so, or because of the uncertainties, dangers, and potential implications of such a test, and of how the United States might choose to respond. It claims possession of a miniaturized warhead, and it is plausible that through

[15] Toshiki Ito (Professor at the Kanazawa Institute of Technology), as quoted in *Yomiuri Shimbun*, December 16, 2017.

its multiple nuclear tests it has move much closer to that goal. However, as noted previously North Korea also claims that the Hwasong-15 "[is] capable of carrying a super-sized heavy nuclear warhead and striking the entire US mainland." A warhead of ample weight (North Korea has never disclosed the weight of any of its purported warheads, though it has published numerous photographs of them) would limit the distance that a missile can travel. North Korea might make many grandiose claims, but it cannot defy the laws of physics.

No nation has tested a nuclear weapon from atop a ballistic missile since a Chinese MRBM test in October 1980. (China's continental size obviously enabled it to test this missile within its own territory; North Korea does not have that option.) Testing a nuclear weapon in the atmosphere (and especially one detonated from atop a ballistic missile) is one international norm that North Korea remains unprepared to violate. Foreign Minister Ri Yong-ho's late September 2017 threat to a reporter at the UN that it would undertake an atmospheric test in the Pacific occurred immediately following President Trump's "rocket man" taunt in his speech to the General Assembly, and Ri's threat might have been a return taunt.

At the same time, no intelligence agency believes that the prototype reentry vehicles have yet proved able to withstand the stress, speed, and high temperatures of reentry. For all of North Korea's missile and nuclear advances, has not realized its most ambitious goal. The only way to reach this objective would be through additional missile tests, though these do not necessarily require tests of international range. Kim must therefore decide whether North Korea must continue to test with all the attendant risks and costs, or if he is content with the widespread perception that North Korea is or will very soon become a fully arrived nuclear power.

The Road Ahead: Kim Jong-un's New Year's Day Speech

On January 1, Kim Jong-un marked his personal and strategic successes of the past year in his annual New Year's address.[16] Speaking at times in the first person, he declared that "we achieved the great historic cause of the perfection of the state nuclear

[16] All citations are drawn from the text appearing in *Rodong Sinmun*, January 1, 2018.

forces," reminding his audience that he had pledged completion of this task in his previous New Year's Day speech. He asserted, "Our Republic, at long last, possesse[s] a powerful and reliable war deterrent that no force and nothing can reverse….Our state nuclear force can smash and respond to any nuclear threat by the United States, and it serves as a powerful deterrent that restrains the United States from the adventurous game of playing with fire. The United States can never provoke a war *against me* and our state. (Emphasis added.) The [US] should clearly know that the fact that the entire US mainland is in our nuclear striking range, and that a nuclear button is always on my office desk, are never a threat but reality." He asserted that the DPRK was now in "the position of a strategic state –which is recognized by the world- in a dignified manner, befitting celebrations that would mark the seventieth anniversary of the regime's establishment in 2018.

Kim's triumphalism and displays of omnipotent power were very much a domestic message, combining elements of the three core components of the regime's nuclear goals (validation, deterrence, and coercion). He contended that North Korea now needed to "mass produce nuclear warheads and ballistic rockets…and put spurs to the work of deploying them for action. It is also necessary to always maintain an immediate nuclear counterattack operational posture to cope with the enemies' nuclear war maneuvers…[which would enable] the construction of a socialist powerful state." At the same time, he referred to the language of the April 2013 nuclear legislation, with its implicit retention of a first use option: "we will not use a nuclear weapon as long as the aggressive hostile forces do not infringe upon our country's sovereignty and interests."

Kim's claims to the realization of the DPRK's long-standing nuclear ambitions are not the end this story. By implication, the regime must demonstrate that it possesses a fully secure and reliable deterrent and that it can somehow deliver on its grandiose visions of national power. These pledges also presume that the major powers and North Korea's neighbors are prepared to accommodate to these changed circumstances, and will reassess a strategy of pressure, isolation and delegitimation. In particular, it is very doubtful that President Trump might be convinced to employ the language in recognizing Jerusalem as the capital of Israel, when he contended that the United

States was “acknowledging this as a fact.” However, in the case of North Korea, acknowledgment does not presuppose acceptance.

The threats of a far larger crisis continue to loom, suggesting that the central task for all involved states remains the avoidance of war, not the reconciliation of starkly different views of East Asia’s nuclear future. The risks of misperception, misestimation, and miscalculation are palpable, and the stakes could hardly be higher. It is impossible to know where events could head in 2018, but there is little reason to believe that the Korean Peninsula and Northeast Asia have arrived at a “new normal.”