

KOREA PROJECT

Micro Deterrence Signaling

Policy Innovation During the 2017 Korean Missile Crisis

General (Ret.) Vincent K. Brooks

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HARVARD Kennedy School
BELFER CENTER
for Science and International Affairs

REPORT
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Harvard Kennedy School

79 JFK Street

Cambridge, MA 02138

[belfercenter.org/project/korea-project](https://www.belfercenter.org/project/korea-project)

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About the Authors

General (Ret.) Vincent K. Brooks is a career Army officer who retired from active duty in January 2019 as the four-star general in command of over 650,000 Koreans and Americans under arms. He serves as Chairman and President of the Korea Defense Veterans Association. He is a Senior Fellow at the Harvard Kennedy School's Belfer Center for Science and International Affairs. He holds a Bachelor of Science in Engineering from the U.S. Military Academy at West Point and a Master of Military Art and Science from the U.S. Army School of Advanced Military Studies. General Brooks was a National Security Fellow at Harvard University's John F. Kennedy School of Government.

John Park, Ph.D., is Director of the Korea Project at the Harvard Kennedy School's Belfer Center for Science and International Affairs. At Harvard, he is an Associated Faculty Member of the Korea Institute, a Faculty Member of the Committee on Regional Studies East Asia, and a Faculty Affiliate with the Project on Managing the Atom. His core Korean Peninsula-related research projects focus on nuclear proliferation, economic statecraft, and North Korean cyber operations. He previously directed Northeast Asia Track 1.5 policy dialogues at the U.S. Institute of Peace. Dr. Park received his Ph.D. from the University of Cambridge. He completed his predoctoral and postdoctoral training at the Harvard Kennedy School.

About the Korea Project

The goal of the Korea Project is to foster a deeper understanding of rapidly evolving security challenges on the Korean Peninsula and develop creative approaches to address them. The Korea Project also partners with interdisciplinary researchers to capture insights from the Peninsula's role as an oracle of global trends—from criminal cyber operations to pandemics to nuclear proliferation to economic statecraft.

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Setting the Stage: Kim Jong Un's *Byungjin* Strategy Tests the Trump Administration

During the transition in Washington in January 2017, departing President Barack Obama warned President-elect Donald Trump that North Korea would be his first test in office. Obama highlighted that the North Koreans had been rapidly developing their nuclear and ballistic missile capabilities and that sanctions did not appear to be slowing them down.¹ The conventional standoff between North Korea and the United States—under the Armistice since 1953—still held, but new weapons and cyberattacks had started to reveal an inadequacy in U.S. and Alliance policy.

Kim Jong Un, the third generation of North Korea's ruling family, sought to make major leaps forward with North Korea's missile program, starting with a series of remarkable steps in 2012 following his father Kim Jong Il's death. These steps culminated in a demonstration of a space launch vehicle that placed an earth observation satellite into orbit. From these steps, it became clear that Kim Jong Un was no longer the underestimated third son of the late North Korean leader. Unlike his father, Kim Jong Un made no overtures to the United States to explore a missile testing moratorium-for-cash deal. He instead focused primarily on acquiring a viable nuclear deterrent capability that could decisively counter the United States' "hostile policy"² by holding the U.S. mainland at risk.

Despite his explicit pronouncements about advancing the regime's *Byungjin* strategy—the simultaneous development of a nuclear-armed intercontinental ballistic missile (ICBM) arsenal and an expansion of

1 David Nakamura and Anne Gearan, "Obama warned Trump on North Korea. But Trump's 'fire and fury' strategy wasn't what Obama aides expected," *Washington Post*, 9 August 2017. https://www.washingtonpost.com/politics/obama-warned-trump-on-north-korea-but-trumps-fire-and-fury-strategy-wasnt-what-obama-aides-expected/2017/08/09/f3f02e0e-7d19-11e7-9d08-b79f191668ed_story.html

2 North Korea's reference to the United States' "hostile policy" is rooted in its belief that a U.S. attitude of hostility toward the North has prevented the resolution of the decades-long confrontation. North Korea does not view the nuclear issue as the cause of U.S.-North Korea confrontation. In foreign ministry statements, it points out that the United States designated North Korea an enemy and refused to recognize its sovereignty from the beginning. In this respect, North Korea frames the nuclear issue as a symptom of ongoing U.S.-North Korea confrontation. Scott Snyder, "North Korea and the U.S. 'Hostile Policy,'" *Asia Unbound*, Council on Foreign Relations, 7 September 2012. <https://www.cfr.org/blog/north-korea-and-us-hostile-policy>

North Korea's economy—many analysts initially dismissed Kim Jong Un as the heir to a weakened and withering family-run regime that kept bungling diplomatic opportunities.³ Previously, when his father Kim Jong Il launched a multi-stage rocket in April 2009, President Obama received a clear response to his earlier offer to “extend a hand to those willing to unclench their fist” in his January 2009 inauguration speech.⁴ With North Korea “breaking the rules once again,”⁵ the Obama administration adopted an approach of “strategic patience.”⁶

Following the death of Kim Jong Il in December 2011, his son accelerated the pace of the *Byungjin* strategy.

The second Obama administration (January 2013–January 2017) saw the greatest number of annual ballistic missile tests to date in 2014, 2015, and 2016, including three large nuclear tests in February 2013, January 2016, and September 2016 (see Figure 1: *North Korea's Nuclear and Missile Tests*). Kim Jong Un swiftly advanced the nuclear weapons programs initiated by his grandfather and continued by his father.⁷

3 During Track 1.5 dialogues in Beijing in June 2013 organized by the Belfer Center's Korea Working Group, a dominant view among U.S. and Chinese policy analysts was that the young and inexperienced new leader would not be able to navigate North Korea's complex set of economic, political, and security challenges. Most participants viewed Jang Song Thaek, the new leader's powerful uncle, as the guiding hand behind the throne.

4 President Barack Obama's Inaugural Address, Office of the White House Press Secretary, 21 January 2009. <https://obamawhitehouse.archives.gov/blog/2009/01/21/president-barack-obamas-inaugural-address>

5 Remarks By President Barack Obama In Prague As Delivered, Office of the White House Press Secretary, 5 April 2009. <https://obamawhitehouse.archives.gov/the-press-office/remarks-president-barack-obama-prague-delivered>

6 In December 2009, U.S. Special Representative Stephen Bosworth met with North Korean officials in Pyongyang. Commenting on the trip, Secretary of State Hillary Clinton pointed out “the approach that our administration is taking is of strategic patience in close coordination with our six-party allies.” “Remarks With Croatian Foreign Minister Gordan Jandrokovic After their Meeting,” U.S. Department of State Press Release, 10 December 2009. <https://2009-2017.state.gov/secretary/20092013clinton/rm/2009a/12/133416.htm>. The main elements of “strategic patience” were: emphasizing that North Korea had to commit to take the denuclearization steps as it previously agreed to in the Six-Party Talks; maintaining close coordination with allies South Korea and Japan; applying pressure on China to apply its own pressure on North Korea; and increasing the use of sanctions to block the further advancement of North Korea's nuclear and ballistic missile programs. The Obama administration stated that “a comprehensive package deal for North Korea's complete denuclearization in return for normalization of relations and significant aid” was possible under the right conditions. North Korea would be required to freeze its nuclear activities and implement a moratorium on testing before returning to denuclearization negotiations. Emma Chanlett-Avery, Mark Manyin, Mary Beth Nikitin, Caitlin Elizabeth Campbell, and Wil Mackey, “North Korea: U.S. Relations, Nuclear Diplomacy, and Internal Situation,” Congressional Research Service, R41259, 27 July 2018, pp. 11–12. <https://fas.org/sgp/crs/nuke/R41259.pdf>

7 “This was a change in kind as well as degree of the North Korean threat. Without an ICBM capability, Pyongyang could not credibly hold the American homeland at risk. The United States could contemplate military measures against the North with relative impunity. With such weapons, North Korea could arguably deter attacks by the United States and might be able to undermine the U.S.-ROK alliance, if an American leader were to be reluctant to risk San Francisco to protect Seoul.” Interview with William Tobey (Senior Fellow, Belfer Center), 11 December 2020.

As warned, President Trump soon witnessed a dramatic escalation in the quantity and quality of North Korea's ballistic missile tests during the Korean Missile Crisis⁸ of 2017, including a test launch of its first ICBM on July 4—the Hwasong-14—with another on July 28. This development cycle culminated in North Korea's test launch of its longest-range ICBM at that time—the Hwasong-15—on November 29.⁹

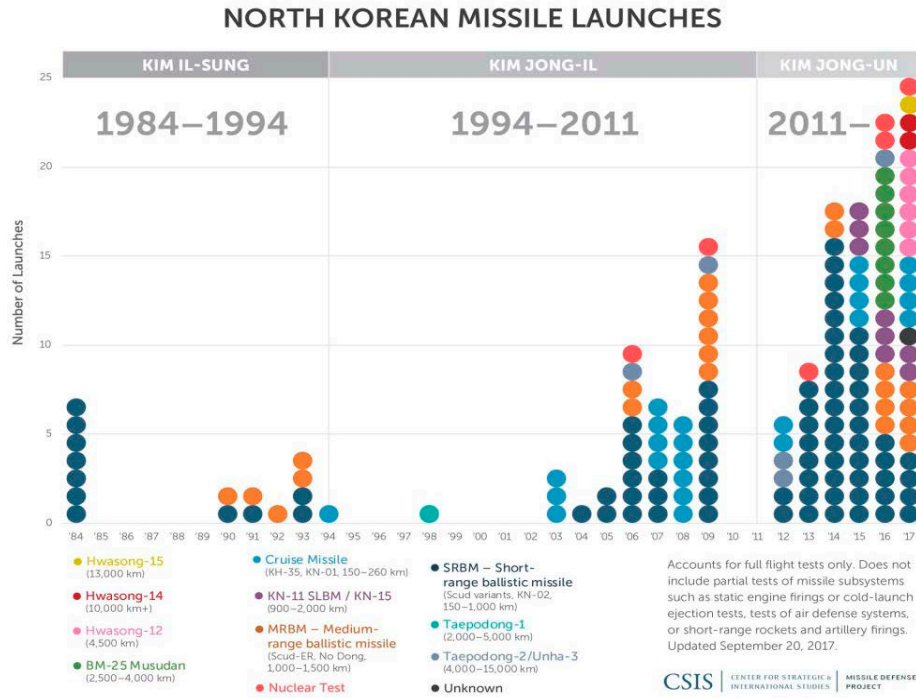
On the frontline of dealing with this rapidly expanding threat stood the U.S.-Republic of Korea (ROK)¹⁰ Alliance and its interwoven commands—U.S. Forces Korea (USFK), ROK-U.S. Combined Forces Command (CFC), and United Nations Command (UNC)—with U.S. General Vincent Brooks at the helm of each in his multi-hatted leadership role. The crisis presented General Brooks with a unique opportunity to rethink deterrence and develop a dynamic playbook to change Kim Jong Un's calculus. The result he called “micro deterrence signaling.”

8 “Korean Missile Crisis” refers to Graham Allison's observation that with the standoff between Donald Trump and Kim Jong Un in 2017 “. . . we [were] witnessing a Cuban Missile Crisis in slow motion.” Graham Allison, “Preventing Nuclear War: Schelling's Strategies,” *Negotiation Journal*, 23 July 2018. <https://www.belfercenter.org/publication/preventing-nuclear-war-schellings-strategies>. Also, see Scott Sagan, “The Korean Missile Crisis: Why Deterrence is Still the Best Option,” *Foreign Affairs*, November/December 2017. <https://www.foreignaffairs.com/articles/north-korea/2017-09-10/korean-missile-crisis>

9 Ankit Panda, “The Hwasong-15: The Anatomy of North Korea's New ICBM,” *The Diplomat*, 6 December 2017. <https://thediplomat.com/2017/12/the-hwasong-15-the-anatomy-of-north-koreas-new-icbm/>

10 The Republic of Korea (ROK) and the Democratic People's Republic of Korea (DPRK) are commonly referred to as South Korea and North Korea, respectively.

Figure 1. North Korea’s Missile and Nuclear Tests



Source: Center for Strategic and International Studies

The Relationship Between Micro Deterrence Signaling and Traditional (Macro) Deterrence

To provide context to how General Brooks developed and employed micro deterrence signaling during the 2017 Korean Missile Crisis, it is helpful to revisit the concept of traditional (macro) deterrence.

Thomas Schelling defines deterrence as “to prevent from action by fear of consequences.”¹¹ Deterrence requires two parties: deterrer and deterree. In successful deterrence, deterrer prevents deterree from taking an action it would otherwise have taken or likely have taken by persuading it that if it were to do so, it will suffer consequences that exceed the benefits of taking

¹¹ Thomas Schelling, *Arms and Influence* (New Haven: Yale University Press, 1966), p. 71.

the action.¹² Schelling emphasized the critical importance of reassurance to deterrence—i.e., the threatened harm will not be carried out if deterrence holds. There is no incentive to comply with deterrent demands in the absence of credible reassurance.¹³

The requirements for successful deterrence as laid out by Graham Allison are the four Cs: *clarity* about what redline cannot be crossed and what consequences will accrue to the deterree if it does; *credibility* that the deterrent will actually take the actions that impose the cost; *capabilities* to take actions that impose costs that exceed benefits; and *communication* in which the point is less the signal that is sent but the signal that is received. Does the deterree hear and believe the first three Cs?¹⁴

An example of successful macro deterrence where the first three Cs were met was preventing a North Korean attack to overrun South Korea since 1953.¹⁵ However, during the Korean Missile Crisis of 2017, a great deal of activity occurred below the threshold of war (macro) that requires closer examination. Kim Jong Un's "micro" actions—i.e., development of ICBMs that could deliver a nuclear warhead to the continental United States—were below the level of triggering war.

During this period, General Brooks, the forward commander in closest proximity to the effects of a miscalculation, innovated on the traditional application of deterrence. His U.S. Forces Korea headquarters—in conjunction with the Headquarters of U.S. Pacific Command in Hawaii, and the Joint Staff in the Pentagon—led efforts in developing and applying a new approach called micro deterrence signaling (MDS) that addressed this gap. Compared to traditional (macro) deterrence, micro deterrence signaling served as a more tailored and a more targeted effort intended to change the North Korean leader's calculus, by sending signals that the rules of the

12 Graham Allison, "Nuclear Accountability: Forensic Technology May Deter States from Giving Terrorists Nukes," *MIT Technology Review*, 1 July 2005. <https://www.technologyreview.com/2005/07/01/230681/nuclear-accountability/>

13 Schelling, *Arms and Influence*, p. 74.

14 Graham Allison, "Deterring Kim Jong-Il," *Washington Post*, 27 October 2006. <https://www.washingtonpost.com/archive/opinions/2006/10/27/deterring-kim-jong-il/3530e934-1858-46f7-af32-75a6cfaa2422/>

15 Graham Allison, "Memo on Deterrence," 20 April 2021.

“game” had changed, all during a period of rapid escalation of tensions on the Korean Peninsula.

Developing a New Way

Initially, Brooks did not call it micro deterrence signaling. He focused on developing a comprehensive set of options to deter the North Korean leader from further advancing his ICBM program. Brooks recognized that traditional U.S. and Alliance responses to provocations by North Korea had become predictable. They were largely demonstrations of military power that during execution did not threaten North Korea. New options that caused uncertainty, ambiguity, and a rising sense of danger were required. When designing each option, he kept in mind the purposes and effects of each option; in doing so, he noticed how distinct signaling and deterrence characteristics emerged. Brooks drew on his extensive knowledge of the measured use of military force to develop a new approach that incorporated both military and non-military dimensions of the environment. He also focused on providing leverage for other-than-military instruments of national power.

General Brooks’ formulation of micro deterrence signaling featured five core principles:

Micro Level Actions

1. **Identifying deterree’s micro-level actions:** The deterree’s series of “micro” actions are significantly below the level of triggering war (e.g., one North Korean missile test firing).
2. **Taking micro deterrence actions to target leader perception:** The deterrer focuses on leader-specific deterrence (i.e., changing Kim Jong Un’s calculus of risk) instead of country-specific deterrence (i.e., a country leadership structure’s calculus of risk).

Changing Deterree's Perception of Threat

3. **Elevating/empowering the ally:** The deterrer empowers the ally to increase credibility and perception of will vis-à-vis the deterree. Doing so enables the deterrer and the ally to introduce uncertainty and cause the deterree to re-evaluate risk perceptions and calculations.
4. **Centrality of self-restraint:** The deterrer communicates the deterrer's motivation and capability. The purpose is to make clear to the deterree that the deterrer deliberately chose not to respond in a measured manner because the deterrer was exercising self-restraint and is willing to continue demonstrating self-restraint in the absence of the deterree's "micro" action. (Note: it is a necessary condition that the deterrer has overwhelming capability for micro deterrence signaling to succeed.)

Changing Deterree's Perception of Opportunity

5. **Leveraging military and non-military opportunities for off-ramp:** The deterrer creates and leverages both military and non-military opportunities to increase credibility of diplomatic options and offer the deterree a way out of the crisis.

Table 1. Comparing Micro Deterrence Signaling to Traditional Macro Deterrence

Principles	Micro Deterrence Signaling	Traditional (Macro) Deterrence
1) Deterree's Actions	Actions are well below level of triggering war (e.g., single ICBM test)	Actions are at level of triggering war (e.g., DPRK artillery attack on a major ROK city)
2) Deterrer's Actions	Target individual leader's perception of risk (e.g., Kim Jong Un)	Target country leadership group's perception of risk (e.g., government)
3) Elevating/ Empowering Deterrer's Ally	Empowers ally with new tactics to increase credibility and introduces uncertainty (e.g., ROK's Hyunmoo-2A launch)	Partners with ally to conduct traditional, predictable tactics to maintain credibility (e.g., regularly scheduled joint military exercises)
4) Centrality of Deterrer's Self-Restraint	Communicates the deterrer's self-restraint in response (e.g., joint U.S.-ROK statement). Demonstrates higher capability—rapid response time (<6 hours) sends clear signal of imposing cost	Communicates the deterrer's self-restraint, but with slower response time sending unclear message of cost (e.g., strategic bomber run weeks/months later)
5) Leveraging Deterrer's Military and Non-Military Opportunities for Off-Ramp	Creates opportunities for a diplomatic way out of the crisis (e.g., MDS makes the threat of escalation look real and credible to the deterree, thereby elevating the appeal of the diplomatic off-ramp)	Does not create opportunities for diplomatic way out of the crisis (e.g., the threat escalation does not look credible because it is a predictable military exercise)

Implementing these core principles required Brooks to teach this way of thinking to his three command staffs and his subordinate commanders. Brooks noted, “It was more challenging to do this across cultural and linguistic lines within the binational CFC, but eventually it became natural for the ROK Joint Chiefs of Staff (JCS) and the Combined Command, as well as the U.S. Joint Staff and U.S. Pacific Command.”

In its application, the United States and South Korea needed to make sure that they prominently incorporated micro deterrence signaling into every action they undertook and every statement they made. The actions of the United States and South Korea had become predictable as an Alliance; as a result, the effect of traditional (macro) deterrence had become stale and limited. Brooks' primary focus was demonstrating capabilities that North

Korea had not seen the United States and Combined Command use before in their response options.

Macro deterrence had unintentionally created space for Kim Jong Un to move rapidly toward his stated goal of attaining a nuclear ICBM capability. A combination of being predictable and slow resulted in macro deterrence opening up lanes of movement for Kim. Micro deterrence, in practice, placed obstructions in these lanes to cause Kim to reassess his risk calculus. Under micro deterrence signaling, the United States changed from episodic response to continual response with 2–3 events each week, such as a U.S. nuclear ballistic missile submarine making a port call in Busan, South Korea.¹⁶ These targeted events significantly filled this space. Rather than being just reactive, micro deterrence signaling set a calibrated tone in response to a provocation.¹⁷

Examples of Micro Deterrence Signaling in Practice

Starting in mid-2017, General Brooks led efforts to apply this playbook in the form of two novel military-focused MDS activities. The first was a coordinated ROK and U.S. response to North Korea's maiden testing of its Hwasong-14 ICBM on July 4. The following day, the allies responded by jointly firing their own respective ballistic missiles—the U.S. Army's Tactical Missile System (ATACMS)¹⁸ and the ROK's Hyunmoo-2A—into the East Sea.¹⁹ Immediately after this unique joint missile firing, the two top military leaders in South Korea from the respective allied countries, General Brooks

16 Steve Herman, "US Nuclear Sub Arrives in S. Korea Amid N. Korean Threat," *Voice of America*, 25 April 2017. <https://www.voanews.com/east-asia-pacific/us-nuclear-sub-arrives-s-korea-amid-n-korean-threat>

17 "In theory, the timing of a micro deterrence signal should affect its fidelity in the eyes of Pyongyang. If I send a signal in the immediate aftermath of your aggression, it is clear(er) that I am responding to you. You might be more likely to receive my message loud and clear. But if I send a signal in the absence of a grounding episode/crisis/provocation, you might be more likely to misperceive my signal; perhaps my signal will come across as overly aggressive instead of as a deterrent signal." Interview with Reid Pauly (Dean's Assistant Professor of Nuclear Security and Policy, Brown University), 21 December 2020.

18 "ATACMS is a long-range precision missile that has navigational capabilities. It is not just a ballistic missile—it begins as a ballistic missile but it has significant precision qualities to it and can range much of North Korea." Interview with General Brooks, 22 June 2020.

19 General (Ret) Vincent K. Brooks, General (Ret) Leem Ho-young, and Ashton S. Cho, "Alliance Innovation and Resilience under Uncertainty: ROK-US Simultaneous Ballistic Missile Fire Response to DPRK's First ICBM Tests in 2017," Draft Report, 14 September 2020, p. 9.

(Commander of USFK, CFC, and UNC) and General Lee Sun-jin (Chairman of the ROK Joint Chiefs of Staff), issued a joint statement.

In this landmark joint statement, General Brooks asserted, “Self-restraint, which is a choice, is all that separates armistice and war. As this Alliance missile live fire shows, we are able to change our choice when so ordered by our Alliance national leaders. It would be a grave mistake for *anyone* [emphasis added] to believe anything to the contrary.”²⁰

Amplifying this unified message, General Lee stated, “Despite North Korea’s repeated provocation, the ROK-U.S. Alliance is maintaining patience and self-restraint. As the combined live fire demonstrated, we may make resolute decisions any time, if the Alliance Commanders in Chief order. *Whoever* [emphasis added] thinks differently is making a serious misjudgment.”²¹

The ATACMS and Hyunmoo-2A tactical ballistic missile firings served as an effectively coordinated public demonstration of military capabilities, leader-level intentions, and clear allied resolve. The two allies employed the simultaneous missile firings as a carefully calibrated signaling tool to denote a critical shift in the Alliance’s response to North Korean aggression. If the United States and South Korea had aimed their response missiles at North Korea, instead of into the East Sea, the missiles would have landed in Wonsan. General Brooks was not sure this message registered with Kim Jong Un, but viewed it as an example of intent to change Kim’s calculus. Previously, South Korea mostly initiated and led joint responses to North Korean provocations, with the United States playing a supporting role. That support came in the form of a joint display of force, which increasingly included deployment of U.S. strategic assets to the Korean Peninsula.²²

Initially, the idea was only for USFK to fire its ATACMS. That evolved into the joint firing of ATACMS and Hyunmoo-2A in a manner closely coordinated with ROK military leaders. With the first Hwasong-14 test

20 “Combined Statement on Alliance Response 한미동맹의 대응에 대한 공동성명서,” U.S. Forces Korea, Press Release, 5 July 2017. <https://www.usfk.mil/Media/News/Article/1237008/combined-statement-on-alliance-response/>

21 Ibid.

22 “Alliance Innovation and Resilience under Uncertainty,” p. 10.

on July 4, the North Korean missile threat crossed into the territory of potentially being able to reach the continental United States. A new type of deterrence signal would be required. In response to a rapid escalation of missile testing in 2016, the United States and South Korea built a web of integrated binational operational-strategic coordination mechanisms. The first Hwasong-14 test on July 4 created an opportunity to activate these newly built mechanisms with the joint firing of the ATACMS and Hyunmoo-2A.²³

Significantly, the precedent-setting simultaneous U.S. and ROK tactical ballistic missile firing demonstrated that each country's national security structure and chain of command could carry out real-time joint decision-making. On the U.S. side, a "national event conference" is convened when a missile threat is detected, which includes the National Security Advisor, Secretary of Defense, and Secretary of State. On the ROK side, a similar video conference goes live with approval coming directly from the ROK president. With the new binational mechanisms in place, once national security leaders on both sides arrive at a joint decision to launch, ROK and U.S. missile units can now fire their ballistic missiles.²⁴

The comprehensive binational communication and coordination mechanisms that made the joint firing of the ATACMS and Hyunmoo-2A tactical ballistic missiles possible existed prior to 2016, but were generally exercised twice annually during the major command post training events. Incidents—such as the North Korean artillery shelling of South Korea's Yeonpyeong Island in 2010, and the North Korean placement of anti-personnel "box mines" along the military demarcation line in 2015 that grievously wounded two South Korean soldiers—would activate these binational mechanisms.

However, the period of 2017 with North Korea's nearly continuous series of actions, the United States and South Korea set an unprecedented pace that regularly exercised binational decision-making up to the highest level within each government. With the first Hwasong-14 test on July 4, the Alliance response time was approximately 20 hours. This was within the

23 Ibid.

24 Ibid.

established norm of 24 to 48 hours following a North Korean provocation. With the second Hwasong-14 test on July 28, the United States and South Korea fired one ATACMS and two Hyunmoo-2A missiles, respectively, within six hours of North Korea's test.²⁵

In the second implementation of the MDS strategy, General Brooks and his headquarters successfully recommended that U.S. Pacific Command and the Joint Staff design a modified demonstration of U.S. and Alliance striking power by committing U.S. B-1B bomber flights in the international air space beyond ROK air space. The B-1B bomber flights would follow a route south to north and return on a course that differed fundamentally from the traditional east-to-west flight path through South Korean airspace routinely used in responses to North Korean provocations.

In September 2017, one of these new south-to-north flight paths featured a large set of aircraft in the middle of the night. (While coordinated with the South Korean military leadership, this operation, by South Korea's choice, did not include South Korean aircraft.) This action reportedly led to relocations of North Korean air defenses and firings of North Korean commanders who reacted poorly or not at all.²⁶ This remains one of the best examples of evidence that the change in signals reached decision makers in Pyongyang.

Before this specific MDS activity, a typical action would have been a B-52 strategic bomber run. This would include conducting an exercise with the Japanese Air Self Defense Force as the B-52 bombers crossed through Japanese air space. The Japanese would then hand over escort responsibilities to the ROK Air Force, which, in turn, would escort the bombers into South Korean air space.

The route was always east to west flying parallel to the demilitarized zone (DMZ), but not so close that the North Koreans could physically see it, with the bombers then turning south—usually over Seoul as well as over an ROK air base to show resolve and presence. That was a signal to reassure

25 Ibid., p. 11.

26 Track 1.5 dialogue in Seoul in February 2018 convened by the Belfer Center's Korea Project on implications of North Korea's enhanced military capabilities on regional security.

South Korea. The U.S. bombers would then exit South Korean air space and proceed back to their originating location.

Applying a New Way to the Goal of Deterrence—Changing Kim Jong Un’s Calculus

Brooks sought a change in Kim’s calculus in two areas: 1) how Kim assessed the degree of risk he was undertaking and 2) how to get Kim to place greater value in choosing to move forward with diplomacy, not military action against the United States, South Korea, or Japan. In close coordination with U.S. Secretary of Defense James Mattis, U.S. Secretary of State Rex Tillerson, senior military planners at U.S. Pacific Command led by Admiral Harry Harris and later Admiral Philip Davidson, as well as at the Joint Staff led by Chairman of the Joint Chiefs General Joseph Dunford, Brooks sought to raise a sense of discomfort, uncertainty, ambiguity, fear, and danger (an escalating scale of psychological effects) in Kim so that he would ultimately choose diplomacy over military action. A critical element included figuring out how to cause Kim to realize that the more he went down the path of nuclear ICBM development, the less he would get in economic development. As Brooks observed:

“To get Kim Jong Un to think that way, we tried to figure out what actions could create signals. We were trying to understand how he thinks with very limited available insights into that and trying to get close and not get it too wrong. We focused on how to send signals that indicate to Kim that he’s going in the wrong direction—one that he would regret and would lead him and his regime in a direction he would not want. That was the main aim.”

When Secretary Mattis came into office, he asked for creative options to respond to Kim’s escalation. Brooks noted:

“We had become predictable with our limited number of options available to us. Sanctions were already in place—both unilateral U.S.

sanctions and international ones in the form of UN Security Council sanctions that had been in existence for a number of years. Applying more sanctions was a predictable action—and not painful enough because of the high level of international consensus they required to produce real biting sanctions effects. Military posture changes in deployments—carrier battle groups, B-1B bombers—could introduce new options.”

At his headquarters, Brooks encouraged new thinking. To him, the heart of policy innovation is finding new ways to achieve the same ends on which you were not having much success. If strategy is the correlation of ways and means to ends, Brooks focused more on developing new ways in 2017.

Brooks tried to piece together Kim’s thoughts on what the United States might do. He focused on:

“Can we discern what Kim will do in response to our own military behavior? The answer was a clear yes—the U.S. military had been very regular for decades. One regular part was that the United States never strikes North Korea following a major provocation. The last time the United States struck North Korea with a missile attack or a bomb was 1953. That is not the case for North Korea, which has struck U.S. and ROK targets many times over the decades. The North Koreans know this record.”

On one of his briefing trips to Washington, Brooks used the following analogy to explain this dynamic:

“The situation was similar to a dog on a chain with the neighborhood cat casually walking by. As the cat approaches, the dog always races toward it only to be yanked back by the chain and choked. The cat knows exactly how long the chain is. North Korea is the cat. And the Alliance is the dog. The chain is the United States, which has limited how far the Alliance can go.”

In staff discussions at his headquarters, Brooks posed the question of how to change the way the cat thinks about its safety. He elaborated:

“Do you have it (the dog) bark louder? That probably would not do it. Do you extend the chain? Possibly, without the cat knowing it. Or can you introduce another dog without a chain into the neighborhood. This was the heart of the idea of looking for new ways to make the cat feel unsafe—that is, to make North Korea feel unsafe about what the Alliance would do.”

Brooks and his staff began devising a playbook and disseminated the options so that key actors on the U.S. and ROK sides would get on, and remain on, the same page. Deployment of U.S. naval forces was one such play. However, Brooks noted how they posed a key limitation, but also offered an opportunity depending on the type of capability:

“Naval forces could do a tremendous job of signaling, but what they did not bring was sustained commitment. They can send a very powerful signal of interest, but the United States could not keep a carrier strike group off the coast of North Korea indefinitely. Did it have to be a carrier strike group? Could it be a nuclear ballistic missile submarine, which the United States generally does not publicly display? Could the United States make it visible to send the message that it is in the neighborhood as an option? Could the United States show a nuclear submarine in the area via a port call in South Korea? The message to North Korea would be, you can launch one ICBM, but a U.S. nuclear ballistic missile submarine can launch over twenty.”

Brooks and his staff also considered options available with U.S. Air Force assets, including taking some of the continuous bomber presence—generally based in Guam and sometimes forward deployed in Okinawa—and flying them into South Korean air space. He pondered the possibility of flying them in a different direction in closer proximity to the DMZ so that they were electronically visible to frontline air defense units in North Korea.

The proposed innovation was flying from south to north instead of east to west. The eastern coastline of North Korea slopes from southwest to northeast a considerable distance—if one were to draw the longitudinal and latitudinal lines, it resembles the hypotenuse of a right triangle (see Figure 2:

North Korea's Eastern Coastline). The logic was that this geographic feature offered the opportunity to fly northward in international air space while getting closer to North Korea, thereby signaling Kim Jong Un in a new way.

Figure 2. North Korea's Eastern Coastline



Source: BBC News

Employing this thinking, Brooks and his staff explored different ways to incorporate U.S. Army (long-range tactical surface-to-surface missile system), U.S. Navy (carrier strike groups, nuclear ballistic missile submarines), and U.S. Air Force (B-1B bombers) components as additional options in the playbook of threats for micro deterrence signaling and changing Kim Jong Un's risk calculus.

Getting Allies “On the Same Page”

Devising a set of criteria for employing micro deterrence signaling enabled the U.S. and the ROK allies to be on the same page in its application. Brooks pointed out that “As with all things human, there were many views about the value or lack of value in what we were doing. Spanning the four administrations²⁷ during my time as commander in Korea, the view varied widely and usually diametrically. We spent much effort in articulating purpose and effect associated with options. However, as time went on, cultural differences in understanding North Korea caused the allies to drift from being ‘on the same page,’ which placed some strain on the respective governments.”

²⁷ During the Korean Missile Crisis of 2017, both the United States and South Korea underwent leadership transitions. The first was in Washington with the transition from President Barack Obama to President Donald Trump in January 2017. The second was in Seoul with the impeachment of conservative President Park Geun-hye in March 2017 and the election of progressive President Moon Jae-in in May 2017.

Brooks and senior U.S. military officials kept allies on the same page by developing and climbing a matrix of options. They systematically looked for North Korean reactions and determined a course of action based on the matrix. These options provided an opportunity to calibrate U.S. action and avoid an inadvertent escalation leading to conflict.

Brooks deemed it very important to hear other voices during the 2017 Korean Missile Crisis period. He made it a point to hear the defense and foreign ministers of other countries who had questions, concerns, and advice—especially because some of them had contact with North Korean leaders through their country’s diplomatic channels. “Interacting with officials enabled us to refine our intended signals and the understanding of what, if any, effects we were achieving,” he emphasized.

The role of the ROK ally was particularly critical in applying micro deterrence signaling. Brooks noted that successive Ministers of National Defense “all understood the need for unpredictability, forcefulness, and timeliness in Alliance actions during the Korean Missile Crisis.” They also reflected a more adjustable “turn it up; turn it down” mindset relative to the ultimate ROK desires to resume direct communications with North Korea, effectively lower tensions, and achieve peace.

For the United States, its stated policy focus of “maximum pressure”²⁸ left less room for adjustment and nuance. This dwindling space was due to the U.S. belief that any release of pressure could not be regained or would be pocketed by North Korea. South Korea played a key role in helping the United States understand how to navigate the nuances of North Korea. South Korea was less likely to trigger a miscalculation by North Korea or panic among the South Korean public.²⁹ Ultimately, South Korea would be the primary actor in any live fire responses to North Korean missile launches. That let the United States concentrate on being ready to strike decisively while South

28 In 2017, the Trump administration launched its “maximum pressure and engagement” policy, which entailed applying international economic and diplomatic pressure on the DPRK to initiate negotiations with them on denuclearization. “North Korea: U.S. Relations, Nuclear Diplomacy, and Internal Situation,” p. 4.

29 Ordering a Noncombatant Evacuation Operation (NEO)—“the evacuation of U.S. Government dependents, American citizens, and select third country nationals from Korea in the event of natural disaster, civil unrest or war” (<https://8tharmy.korea.army.mil/site/families/neo.asp>)—during the Korean Missile Crisis of 2017 is an example of how the United States could have triggered a miscalculation by North Korea.

Korea demonstrated immediate response capabilities in real time, which was a key dynamic in micro deterrence signaling.

Key Lessons Learned in Applying Micro Deterrence Signaling

Yet, Washington remained skeptical of Kim Jong Un's changed calculus. Diplomatically, through U.S. Ambassador Joseph Yun, the Special Representative for North Korea Policy, Washington sought to “calm things down” with the North Koreans for 60 days in the fall of 2017 after the UN General Assembly in New York. Although the North Koreans did not signal they would do so, they refrained from engaging in a provocation for 73 days, which Brooks attributed, in part, to micro deterrence signaling. In Brooks' view, “Washington missed it, determining this period did not count because North Korea never informed the United States. The sixth nuclear test on September 2 and the third ICBM test on November 29 were the bookends. U.S. rhetoric increased during this time. This period of signaling was bereft of understanding the signals made by either side.” From Brooks' perspective, this period was the point of highest danger through miscalculation.

Brooks highlighted the key early lessons learned in designing and applying MDS. It was important to think early, propose early, and communicate consistently until understanding occurred, then expand the communication between senior leaders on the U.S. and the ROK sides. It was critical not to forget South Korea. Brooks exercised empathy for South Korea and North Korea to understand their perspectives and how they might perceive U.S. actions (as well as actions by the three commands—USFK, CFC, and UNC). Brooks also emphasized full transparency with the CFC Deputy Commander (ROK four-star general) and the ROK Minister of National Defense as they could move the Blue House. Likewise, Brooks emphasized full transparency with the U.S. Chairman of the Joint Chiefs, the Pacific Commander, and the Secretary of Defense as they could move the White House or stabilize the circumstances of an unanticipated move by the White House.

Elliptical Orbits—Coordinating Seamlessly to Reach a Higher Plane

In implementing MDS, General Brooks drew on his early studies in astrophysics to develop a model for coordinating many parts moving at different speeds. Using the Hohmann Transfer Orbit—which describes how an object moves from a lower orbit to a higher one using an elliptical orbit to intercept a target—Brooks identified the importance of military pressure (lower orbit), organized his three command staffs to apply that pressure (elliptical orbit), and created momentum to open opportunities for diplomacy (higher orbit). Requiring precision in planning and timing, this astrophysics concept as a metaphor provided the larger framework within which he and specific elements of each of his three command staffs could visualize the moving parts and coordinate accordingly.

In this manner, Brooks could create sufficient pressure on the North Korean leadership from employing MDS that, in turn, created a new opportunity, like an unprecedented foreign ministers conference in Vancouver in January 2018. The Vancouver Foreign Ministers' Meeting on Security and Stability on the Korean Peninsula was specifically oriented toward a global response and convened foreign ministers from twenty countries specifically to tackle North Korea's growing threat to international security. Backed by the momentum from MDS, this major international diplomatic event placed the focus on a preferred diplomatic solution rather than a military one to the Korean Missile Crisis.

The early and sustained support from Secretary of Defense Mattis for this intricate approach highlighted the effectiveness of incorporating the Hohmann Transfer Orbit concept. Mattis' suggestion that the Vancouver meeting consist of foreign ministers demonstrated his alignment with what Brooks had proposed.³⁰ Mattis recognized that if Vancouver had instead been a meeting of defense ministers, it would have signaled a preferred military option to North Korea.

³⁰ Lisa Ferdinando, "Mattis Highlights Diplomatic Solution for North Korean Situation," *DOD News*, 16 January 2018. <https://www.defense.gov/Explore/News/Article/Article/1416350/>

The event, proposed by Brooks to Secretary Mattis, was to capitalize upon and to elevate to national levels the monthly roundtable of Ambassadors to Seoul from the various “sending states” or nations that had provided military forces and support during the Korean War. Convened by the Commander of United Nations Command, this recurring meeting created an international forum for micro deterrence diplomatic signaling. Brooks and Mattis set a foundation that enabled the Vancouver foreign ministers conference to send a strong message about the role and primacy of diplomacy over military action. Along with Secretary of State Tillerson, they agreed on the need to employ and signal deterrence in dealing with Kim Jong Un during the Korean Missile Crisis. The U.S. leaders sent a clear message that if Kim continued advancing his nuclear-armed ICBM capabilities, the consequence would be the destruction of his regime. Both Mattis’ direction to Brooks to “Maintain a steady strain” and Brooks’ translation of that to both U.S. and ROK military forces to keep a posture of “Steady and ready” projected a strong and measured deterrence stance infused with self-discipline not to overreact to North Korean provocations.

Conclusion: Two Enduring Questions

As a policy innovation, micro deterrence signaling represents a new way to change a deterree’s risk calculus at the leader level. During the Korean Missile Crisis of 2017, the policy innovation that General Brooks led stemmed from his thinking that he had “to pursue the same end, but accomplish it in a different way.” Rather than solely focusing on military measures, he led efforts to create different combinations of pressure on Kim Jong Un to defuse the crisis and make the diplomatic off-ramp more appealing and viable. Through the application of an astrophysics concept, Brooks was able to think in complexity and communicate in simplicity—a pivotal skill set in resolving a fast-moving crisis. Brooks communicated and consulted with key counterparts on his game plan to prevent objections to courses of action from forming that would have impeded the movement of other interlinked parts of the plan.

In future crises, micro deterrence signaling will be an important part of the deterrence toolkit. Practitioners will need to contend with two enduring questions to design and apply MDS effectively.

What Are the Success Indicators for Micro Deterrence Signaling?

A core objective of micro deterrence signaling is to create conditions conducive for dialogue. Specifically, MDS succeeds if 1) the micro signal reaches the leader (Kim Jong Un), 2) causes the leader to feel increased danger or uncertainty, 3) changes the leader's risk calculus, and 4) moves the leader toward a diplomatic option.

Reflecting on the Korean Missile Crisis, Brooks noted, “Yes, micro deterrence signaling worked. But it was a qualified yes. MDS did not work in isolation. It was part of a mixture of other activities and stimuli like all of the previous response options. I do believe that MDS worked, though, in creating a bit of a threshold where we did not cross into conflict. When it seemed like we were out of options, in fact, we were not.” Brooks pointed out MDS succeeded in creating new options for a specific purpose—not just outright deterrence but causing “the North Korean leader to decide to take North Korea in a new direction toward dialogue.”

Having a clear-cut set of indicators for success proves difficult in the fog of war. Brooks stated, “There will always be a degree of skepticism on whether micro deterrence signaling worked because you will not get a clear reaction. There are elements of the ‘fog of war.’” Amid this ambiguity, Brooks kept watch for indicators of success, such as:

1. **Success Indicator #1: Leader notices micro signal.** Brooks highlighted that “we created the message and tried to make sure that it reached Kim through interlocutors who had access to the North Korean leadership.” For example, the unusual joint U.S.-ROK missile firings (in response to North Korea's ICBM launch in July 2017) attracted immediate press attention. International news organizations played looping video footage

of the firings. Brooks noted this footage served as “a specific information action, which we believed would be seen by Kim Jong Un.”

2. **Success Indicator #2: Leader senses increase in danger and changes personal behavior (e.g., physically moves out of range).** Brooks pointed out that “the *range* [emphasis added] of the U.S. and ROK missile firings—in the direction of the East Sea—was deliberate. The message was that the range matched from where the Alliance missile took off to where we believed Kim was physically located . . . we coupled the missile firing with a verbal message that we sent through an interlocutor. That was our micro deterrence signal. We had varying degrees of success in creating a sense of danger for Kim.”
3. **Success Indicator #3: Leader responds with immediate actions (e.g., unusual changes to North Korean posture).** For example, in response to a new MDS effort of flying bombers near the border with North Korea, Brooks looked for MDS success indicators like the change in the disposition of North Korean air defense systems or reports of the execution or removal of a regional DPRK military commander responsible for the area where the signal occurred.
4. **Success Indicator #4: Leader indicates increasing openness to diplomatic dialogue.** Initially, the proposed 60-day period of “cooling down” signaled an indication that a diplomatic signal had reached Kim and affected his decision-making. However, the response signal by North Korea, as 60 days transpired and increased to 73 days was largely missed by Washington. In retrospect, this was a success indicator. Further, on the same day of the North Korean ICBM test on November 29, 2017, Kim announced that he had gone as far as he needed to go with testing a nuclear-armed ICBM technology.³¹ Brooks interpreted that statement as a second important signal that MDS succeeded.

31 According to the Korean Central News Agency, Kim Jong Un stated after watching the test firing of the Hwasong-15 that the DPRK has “finally realized the great historic cause of completing the state nuclear force.” “DPRK Declares Test Firing Another Intercontinental Ballistic Missile,” *Xinhua*, 29 November 2017. https://www.chinadaily.com.cn/world/2017-11/29/content_35121644.htm

In Applying Micro Deterrence Signaling, How Should Practitioners Target the Leader and the Leadership Group?

Brooks advises practitioners to design with the objective in mind. MDS is precisely tailored to the leader. With MDS, there is utility in trying to distinguish between leader and leadership group with available information about decision-making styles, processes, and psychologies.

However, there are times where it is useful to influence the broader leadership group. For example, Kim Jong Un may feel doubt about the direction in which he is going, but there are hardliners who are pushing him to continue in that direction. Is it possible to achieve the leader-focused objective if the leadership group is leaning in a different direction? Brooks observed, “If your objective is to cause discord between them, then you can design and target MDS for that purpose.” Brooks argued, “You can amplify the impact of MDS on the leader by also targeting the leadership group.”

To adapt to ambiguity during a crisis, Brooks innovated and kept key design practices in mind. Brooks counseled, “Build into your design what your micro deterrence signal is, how you are sending it, to whom, and how many ways you can cause it to reach your target.”



Korea Project

Belfer Center for Science and International Affairs
Harvard Kennedy School
79 JFK Street
Cambridge, MA 02138

[belfercenter.org/project/korea-project](https://www.belfercenter.org/project/korea-project)