## Evaluating the Efficacy of the Washington Declaration: An Analysis of US Extended Deterrence Against North Korean Nuclear Threats

## Suhyeon Kim

### (Seoul National University)

The US-ROK security alliance stands as a pivotal pillar of regional security in East Asia. The Washington Declaration, signed in 2023, represents an upgrade to their commitment to strengthen the alliance against North Korean nuclear threats. This study draws on the deterrence theory to analyze the effectiveness of the Washington Declaration in shaping the US-South Korean security alliance. Specifically, this paper uses three success factors of the nuclear deterrence theory (capability, communication, and credibility) to examine the efficacy of the Washington Declaration. This paper concludes that the aspects of capability and communication seem to uphold the deterrent effects, while the factor of credibility remains challenging.

#### Introduction

Commemorating the seventh anniversary of their security alliance, South Korea and the United States signed the Washington Declaration in April 2023. This upgrade in the treaty alliance came in the wake of a growing call in South Korea to arm itself with its own nuclear weapons against North Korea's threats of preemptive attack and its continuous expansion of nuclear capabilities. Against the background of a heightened sense of vulnerability from South Korea given their reliance on the US for defense, the Washington Declaration reassures the South Korean domestic public that the US is a reliable security partner, mainly through two aspects: (1) a reaffirmation of the US' strong commitment to extended deterrence, and (2) an increase in South Korea's contribution to discussions regarding how or even when the US should consider using its nuclear capabilities

against military threats, through the establishment of the bilateral Nuclear Consultative Group (NCG).

However, the question remains as to how effective the Washington Declaration is. In the closing remarks of the policy briefings from the Ministry of Foreign Affairs and National Defense in January 2023, South Korean President Yoon Suk-yeol made a rare remark that South Korea may turn to "deploying tactical nuclear weapons or possessing its own nuclear weapons" as a last resort if North Korea's nuclear threats become more serious than it is now.<sup>1</sup> This sentiment is largely reflected in the poll by the Chicago Council on Global Affairs, in which 71 percent of the Korean respondents supported the idea of South Korea developing its own nuclear weapons. While the deployment of US nuclear weapons in South Korea was the second most popular option, the public overwhelmingly prefers an independent arsenal (67 percent) over US deployment (9 percent), when asked to choose between the two options.<sup>2</sup> This begs the question of the extent to which the latest US approach to South Korea addresses North Korean nuclear threats.

This paper aims to answer this research question by examining the Washington Declaration using a theoretical framework based on the nuclear deterrence theory. Firstly, it provides a brief introduction to the deterrence theory. Secondly, it provides an overview of the Washington Declaration. Thirdly, it assesses the effectiveness of the deterrence provided in the Washington Declaration through the deterrence theory framework.

#### **Deterrence Theory**

Deterrence is broadly defined as "the power to dissuade" others from taking an action by convincing them that the prospective costs of the action outweigh its prospective gains.<sup>3</sup> There are two different mechanisms of deterrence: (1) deterrence by denial and (2) deterrence by punishment.

#### Deterrence by denial

Deterrence by denial manipulates an adversary's perception of costs by showing its capability to retaliate with deadly damage. <sup>4</sup> Simply put, it deters would-be aggressors by making them believe that they cannot accomplish their objectives through the use of force because of the resistance they would face and the losses they would suffer. This mechanism reflects the intuitive idea that a logical state will not act if it expects to gain nothing from doing so. The case of a possible invasion of Taiwan by China presents a real-life application of this concept. The geography of Taiwan is characterized by a mountainous terrain, which covers the eastern two-thirds of the island. This precipitous terrain, along with the island's shallow straits and stormy seas, limit opportunities for an invading force to land on the island. These characteristics would also make Chinese military operation against Taiwan a challenging endeavor since it would require constant resupply either by air or sea. Taiwan has therefore invested in critical asymmetrical capabilities, such as advanced air defenses and shorter-range ship missiles. Alongside the 1979 Taiwan Relations Act, which promises US support in arming Taiwan to defend itself, Taiwan continues to invest in a range of military capabilities and training exercises to remind China of the resistance it would face and the losses it might suffer, thereby embodying the principle of deterrence by denial.

#### Deterrence by punishment

On the other hand, deterrence by punishment seeks to threaten an adversary with severe penalties, such as nuclear escalation or severe economic sanctions, if an attack is to occur. <sup>5</sup> The policy of Mutually Assured Destruction (MAD) between the United States and the Soviet Union during the Cold War exemplifies the concept of deterrence by punishment. Both superpowers maintained large nuclear arsenals, and the prospect of catastrophic retaliation served as a potent deterrent against starting a nuclear conflict.<sup>6</sup>

# Denial vs punishment and the Washington Declaration in the context of US-ROK alliance

The distinction between the two is succinctly summarized by Wilner and Weger.

"[W]hereas punishment manipulates behavior by augmenting costs, denial works by stripping away benefits [...] so whereas punishment deters through the fear of pain, denial deters through the fear of failure. (Wilner and Wenger, 2021, 7) <sup>7</sup>

However, the difference between the two concepts is not an absolute one; There is an overlap in the sense that both concern the sensitivity of the adversary to "costs."<sup>8</sup> For instance, as Brantly puts it,

"Both deterrence by punishment and denial are intended to manipulate the cost-benefit analysis of an adversary."<sup>9</sup> Deterrence by denial incorporates an element of punishment in the act of denial itself. Preventing an enemy from achieving a military objective by denial necessitates punishing their forces. A defending state may use punishment as a means of denial, for example, by denying an enemy force access to a key resource or strategic location. Thus, the element of punishment is needed to deter the enemy from attempting to capture the objective again in the future. Therefore, while deterrence by denial and deterrence by punishment are distinct approaches to deterrence, they can overlap in practice, and a combination of the two may be used to achieve the desired deterrent effect.

In the context of the US-ROK and the Washington Declaration, both deterrence by denial and by punishment are evident. According to S. Kalyanaraman, there are two questions to raise when determining which type of deterrence applies:

- 1. Whether the dominant method of deterrence is through denial of objectives to the adversary (by denial) or inflicting costs and punishment upon it (by punishment)
- Whether the war would be waged purely defensively in its own territory (by denial) or a counter-offensive would be undertaken to take the war into enemy territory (by punishment)<sup>10</sup>

Deterrence by denial	
Dominant method of deterrence through denial of objectives to the adversary	<ol> <li>Upgrades and deployment of US strategic assets in South Korea, such as ballistic missile submarine (SSBN), which undermines North Korean confidence</li> <li>Creation of a "Nuclear Consultative Group" signaling the US- ROK alliance's ability to fight through a nuclear attack</li> </ol>
War would be waged purely defensively in own territory	<ul> <li>It emphasizes collective defense, military readiness, and the defensive posture in own territory</li> </ul>
Deterrence by punishment	
Dominant method of deterrence through <i>inflicting costs and</i> <i>punishment upon it</i>	<ul> <li>Linking ROK STRATCOM (Strategic Command) with ROK/US Combined Forces Command - whose aim is to threaten North Korea to impose costs of an attack, including decapitation strikes against North Korean leadership (to be established in 2024)</li> </ul>
A counter-offensive would be undertaken to take the war into enemy territory	<ul> <li>It reiterated the US' commitment to "extended deterrence," which rests on an assumption that the US would retaliate if North Korea used nuclear weapons against South Korea</li> </ul>

Table 1. Washington Declaration in the context of deterrence theory

The table shows how the Washington Declaration in the context of the US-ROK security alliance fits into the two questions provided. The first two questions about deterrence by denial fit the Washington Declaration: regarding the dominant method of deterrence through denial of objectives, this aspect is exemplified by the introduction of advanced assets, notably the SSBN, deployed by the United States in South Korea. The presence of SSBNs serves to undermine North Korean confidence by restricting its ability to achieve strategic objectives. In terms of defensive war, the creation of the "Nuclear Consultative Group" is a pivotal component of deterrence by denial. This signifies the US-ROK alliance's collective commitment to combatting a nuclear attack. The emphasis on fighting defensively within South Korea's own territory underscores the strategy's orientation towards collective defense, military readiness, and a resolute defensive posture.

Regarding the last two questions about deterrence by punishment, the Washington declaration involves linking the Republic of Korea Strategic Command (ROK STRATCOM) with the ROK/US Combined Forces Command. The integration aims to threaten North Korea with the prospect of substantial costs, including potential decapitation strikes against its leadership, set to be established by 2024. This would mean even though the method of deterrence may not be the "dominant," it is substantial enough to fit into the category of deterrence by punishment. In terms of the possibility of a counter-offensive, the reaffirmation of the US commitment to "extended deterrence" in the declaration further underscores this strategy, resting on the assumption that the United States will retaliate vigorously if North Korea employs nuclear weapons against South Korea.

Overall, using the indicators and mapping the Washington Declaration onto those categories, this section concludes that the Washington Declaration is situated at the interplay between deterrence by denial and deterrence by punishment, which will be explored further into analysis.

#### Three key components of deterrence theory

Traced back to the earliest theories of the first wave of deterrence theory, there are three critical elements that determine the success of deterrence: capability, communication, and credibility.<sup>11</sup>

First, capability refers to nuclear retaliation capability. This includes first-strike and second-strike capabilities.<sup>12</sup> This can be measured through factors such as the number of nuclear weapons, their yield, delivery systems (e.g., missiles), and the ability to protect and maintain these assets. Second, credibility refers to the extent to which the threats or promises made by the deterring states (US and South Korea) are believed by the deterred state (North Korea). Any deterrence may fall through if the deterred state doubts the commitment of the deterring state. Third, the communication factor states that the deterring state understands the potential consequences of its actions. This includes clearly defining circumstances in which the first strike would be expected, what would trigger retaliation, and the scale of inflicted damage.

How these three determinants interact with one another in deterrence is illustrated as a trinity in figure 1.

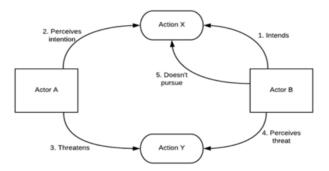


Figure 1. The ideal formulation of deterrence <sup>13</sup>

This figure illustrates the scenario where B intends to carry out Action Y. For A to successfully deter B, it is crucial that B believes A possesses the capability to execute Action Y (capability and credibility). Meanwhile, these are underpinned by A's successful communication with B (communication).

#### **The Washington Declaration**

The Washington Declaration can be summarized into three critical elements: expanding Korea's input in nuclear operations, confirmation of the United States' commitment to extended deterrence, and reaffirmation of Korea's intention to stay in the Nuclear Non-Proliferation Treaty (NPT).

#### Expanding Korea's input in nuclear operations

The ROK-US Mutual Defense Treaty, signed in 1953, is based on conventional weapons. There was a growing call for an update to a new ROK-US defense treaty that included not only conventional weapons but also nuclear weapons.<sup>14</sup> This was addressed in the Washington Declaration by establishing the "Nuclear Consultative Group (NCG)" between the US and South Korea, modeled after nuclear consultations within NATO.<sup>15</sup> This extends the commitments from the ROK-US Mutual Defense Treaty to cover the nuclear realm. Through this new consultative body, the US-South Korea alliance would engage in joint planning and implementation of responses to North Korean nuclear use through improving joint education and training activities in the context of nuclear deterrence. It also includes "bolstering the deployment of US strategic assets, and augmentation of information-sharing, joint contingency planning, and an inter-agency table-stop simulation."<sup>16</sup> At least theoretically, it would give South Korea a bigger say in preparations regarding nuclear retaliation, as Korea had only taken part in very limited nuclear operations before the Washington Declaration.

# Confirmation of the United States' commitment to extended deterrence

President Biden directly targeted North Korea and emphasized that the United States would "mobilize all its capabilities to support extended deterrence." <sup>17</sup> As a tangible measure for this, the US and South Korea decided to make efforts to regularly increase the visibility of nuclear strategic assets and strengthen the standing intergovernmental consultative system, including the Extended Deterrence Strategy Consultative Group (EDSCG).

### Reaffirmation of Korea's intention to stay in the Nuclear Non-Proliferation Treaty

The Nuclear Non-Proliferation Treaty is an international treaty with the purpose of preventing the spread of nuclear weapons and promoting peaceful uses of nuclear energy. The success of the NPT has been especially crucial to the US since the prevention of the further spread of nuclear weapons promotes global stability by reducing the likelihood of nuclear confrontations. However, the increasing public support for nuclearization in South Korea and the regional ramifications from South

Korea as a nuclear state cast a shadow on the stability and security in East Asia and beyond. Thus, the reaffirmation of South Korea's intention to commit itself and stay in the NPT implies that South Korea is, albeit indirectly, pledging not to venture into the creation of its own nuclear weapon capabilities in favor of deterrence measures through an alliancecentered approach.

#### **Discussion and Analysis**

#### Capability

Under the declaration, the US decided to deploy a ballistic missile submarine (SSBN) equipped with tactical nuclear warheads to the Korean Peninsula. This measure can improve the capability element in two ways: first, each submarine is capable of carrying 20 Trident II ballistic missiles, each of which carries four nuclear warheads.<sup>18</sup> This puts a total of 80 nuclear warheads, which greatly strengthens its deterrence capabilities against nuclear threats from North Korea. Each nuclear warhead has 10 to 30 times the power of the atomic bomb dropped on Hiroshima.<sup>19</sup>

Apart from its sheer power, what is worth noting is the SSBN includes low-yield Trident missiles. This boosts deterrence capabilities for a number of reasons. For instance, low-yield nuclear weapons are considered more usable than high-yield ones since their relatively weaker destructive power can be used to signal an intention to use more destructive ones, therefore increasing the perceived credibility of its deterrence threats. In addition, low-yield nuclear weapons can aim at specific targets, ruling out any possibility of mass destruction.<sup>20</sup> This lowers the threshold for its use as it prevents massive retaliation from the deterred state by minimizing the risk of collateral damage (i.e., civilian casualties).

The deployment of the SSBN also increases capability because of its nature as a sea-based nuclear force. Sea-based nuclear forces, particularly SSBNs, are commonly considered more effective than land-based or air-based systems. One of its strengths is its stealthy operational capabilities. Attacks launched from SSBNs are difficult to intercept compared to, for instance, those from land-based systems which can be easily countered with an anti-ballistic missile (ABM). This means it will increase the costs of any nuclear attacks for North Korea as it will be nearly impossible to detect and respond to nuclear launches from SSBNs.

#### Communication

Communication is one of the key determinants of whether deterrence will succeed in discouraging adversaries from taking provocative nuclear attacks. The tone and language in the text of the Washington Declaration are analyzed to gauge the level of the US-ROK alliance's commitment to using nuclear deterrence. This section will be divided into two aspects: (1) explicit nuclear commitments and retaliation; and (2) perceptions of adversaries (i.e., raising the question of whether the deterrent efforts were communicated effectively so that North Korea (deterred state) perceives the commitment of US and South Korea (deterring states) to the Washington Declaration as credible.

On explicit nuclear commitments and retaliation, the Washington Declaration expressed a strong will to defend the ROK from the North Korean regime. President Biden described the US extended deterrence for South Korea as "permanent and ironclad" and that "any nuclear attack by the DPRK against the ROK will be met with a swift, overwhelming, and decisive US response."21 At the summit, President Biden emphasized that the US extended deterrence is "supported by mobilizing all US capabilities, including nuclear weapons."22 A similar sentiment was present at the summit with former president Moon Jae In May 2021, when the US pledged to "provide extended deterrence using all available capabilities of the United States."23 After the summit where the Washington Declaration was announced, President Biden said, "North Korea's nuclear attack against the United States, its allies, or friendly countries is unacceptable" and that "any regime that commits such actions will face the end," referring to the end of the North Korean regime. The intention was clearly worded by specifying who the target of the warning is and what response will be made.<sup>24</sup>

In terms of perceptions of adversaries, the Washington Declaration is perceived by North Korea as a new threat to the survival of its regime. North Korea's initial reaction to the declaration came in the form of a statement released by the Korean Central News Agency on April 29, 2023. Kim Yo-jong, Vice Minister of the Central Committee of the Workers' Party of Korea and sister of Kim Jong-un, referred to the Declaration as "an integrated product of the extremely hostile policy toward North Korea, reflecting the most hostile and aggressive will to

act."<sup>25</sup> She also asserted that with the launch of the US-ROK NCG and the deployment of US strategic assets as announced in the Washington Declaration, "the military and political situation on the Korean Peninsula has become unable to escape the unstable trend," and that "[North Korea] must take corresponding, more decisive action." She pointed to the need to "improve nuclear war deterrence and be more perfect in the second mission," the second mission being a nuclear preemptive strike when a nuclear attack looms large from the US-ROK security alliance. Since the announcement of the Washington Declaration, alongside the deployment of the SSBN, North Korea has been mobilizing North Korean media to criticize the declaration.

If North Korea views the Washington Declaration as a credible warning that threatens their regime, to what extent has this been translated into their military posture? In the early morning of July 19, 2023, immediately after the launch of the NCG and the arrival of the nuclear submarines in Busan, North Korea launched two short-range ballistic missiles (SRBMs) into the East Sea. Moreover, even though there is a mixed assessment of whether North Korea's military provocation has been on the rise or decline. North Korea continues to demonstrate its nuclear and missile capabilities though "test launches," including that of the Hwasong-18 intercontinental ballistic missile (ICBM) as well as shortrange ballistic missiles and long-range cruise missiles. More crucially, North Korea revealed a new tactical nuclear submarine equipped with a submarine-launched ballistic missile (SLBM). In addition, plans were put forward to build a nuclear-powered submarine. If North Korea's announcement is accepted at face value. North Korea could obtain the ability to move stealthily underwater and launch a surprise attack with the short and mid-range SLBM. In the meantime, North Korea is expected to continue strengthening its nuclear force for the survival of its regime. It might also use the Washington Declaration as a justification to further escalate tensions on the Korean Peninsula. Such increased provocations from North Korea suggest a state of unease and a perception of crisis within the North Korean leadership, proving the effective communication of the deterrence effect of the Washington Declaration. However, there are limitations to assessing whether the declaration alone is a sufficient deterrence against the North Korean nuclear threat.

### Credibility

Credibility is a critical aspect of nuclear deterrence. North Korea must believe that the US and South Korea are both willing and able to carry out their nuclear threats if North Korea takes a particular action. This can be analyzed in two aspects: (1) consistency and (2) alliance cohesion. Credibility is a product of consistency. Historical actions of the US-ROK alliance and how consistent their nuclear posture has been critically contribute to the belief that US and Korea will act in accordance with the Washington Declaration. Regarding alliance cohesion, this section specifically examines the role of domestic public support. The credibility of the Washington Declaration is partly determined by how the domestic public in Korea trusts the US commitment to extended deterrence. Examining the aspect of alliance cohesion is crucial as cohesive alliances are more resilient and effective in increasing North Korea's perception of unity within the US-ROK alliance and its commitment to the Washington Declaration.

- 1. Consistency: The US extended deterrence within the US-ROK alliance is inherently political and highly subject to the specific priorities and strategic outlook of each administration. The Washington Declaration is not legally binding like a mutual defense treaty. Hence, to avoid criticism of the Washington Declaration as mere political rhetoric and the danger of a new administration (either in the US or South Korea) nullifying the existing commitments, institutionalizing the extended deterrence commitments is crucial. However, given the volatile nature of the nuclear deterrence dynamic between the United States and South Korea, it may prove difficult to establish the credibility of the Washington Declaration in enhancing nuclear deterrence.
- 2. Alliance cohesion: In terms of domestic public support, it appears that the South Korean public is skeptical about the extended deterrence from the US. A 2022 poll by the Chicago Council on Foreign Relations, surveying 1,500 adults, revealed that 71 percent of South Koreans are in favor of South Korea's nuclearization, implying the public's dissatisfaction with the capability of extended deterrence to counter their perceived nuclear threat from North Korea.<sup>26</sup> Moreover, a public opinion poll conducted after the Washington Declaration showed that only 19.9 percent of the respondents believed the Washington Declaration would be effective in deterring North Korean nuclear

threats, and over 75 percent of the respondents thought that a peace process on the Korean Peninsula should be given more priority than strengthening nuclear deterrence.<sup>27</sup> This means the Washington Declaration fails to satisfy either the conservative hardliners who seeks to obtain a sufficient level of extended deterrence (e.g., nuclear redeployment or a complete nuclear umbrella from the US) or the liberals who support peace talks and denuclearization of North Korea. This concern is also reflected in the US, where several voices, such as former US White House National Security Advisor John Bolton, raised concerns that the level of extended deterrence in the Washington Declaration is insufficient to appease South Korea's concerns.

#### **Discussion and Conclusion**

The 2023 Washington Declaration marks a pivotal moment in the history of the US-South Korea security alliance. This paper has delved into its implications through three success factors (capability, communication, and credibility) drawing from deterrence theory.

In terms of capability, the deployment of SSBNs with low-yield nuclear warheads enhances the alliance's deterrence capability, making it more adaptable and less vulnerable to nuclear threats from North Korea. This aligns with the principles of deterrence by denial, presenting North Korea with an increased cost for potential nuclear provocations.

In terms of communication, the strong and explicit language in the declaration contributes to its credibility, sending a clear warning to North Korea. The perceived credibility of the declaration by North Korea has shown to be as intended, with North Korea viewing the declaration as a direct threat to its survival. However, North Korea's continued nuclear activities and expanding nuclear capabilities mean it requires long-term observation and analysis in the future.

In terms of credibility, the inconsistency of US extended deterrence policies raises doubts about the credibility of the Washington Declaration. This is compounded by the growing South Korean public's skepticism and the non-binding nature of the declaration. Thus, it will be essential to address these concerns to ensure a cohesive alliance.

What does this analysis imply for the US-ROK alliance and the regional security in the Indo-Pacific? First, the Washington Declaration, which renews US' security assurance towards one of its most important

allies in the Pacific, shores up the diminishing trust in US within the context of compelling needs for regional states to hedge between the US and China. The extended deterrence from the declaration helps US establish a robust alliance architecture in the Pacific, which has implications for a potential Chinese military incursion into Taiwan within the upcoming decade.

Second, the affirmation of South Korea's commitment to the NPT through the declaration underscores a strategic choice in favor of alliance-centered deterrence over autonomous nuclear capabilities. This commitment is crucial in the context of regional stability, signaling South Korea's adherence to international norms. Moreover, the deployment of an SSBN equipped with tactical nuclear warheads strengthens South Korea's deterrent capabilities without necessitating autonomous nuclearization. US' provision of advanced military assets, combined with a commitment to extended deterrence, creates a scenario where South Korea can navigate security concerns without venturing into an independent nuclear path. This approach aligns with the broader international effort to prevent the spread of nuclear weapons.

The Washington Declaration signifies a significant step in reshaping the dynamics of deterrence on the Korean Peninsula. While it introduces innovative elements to enhance the alliance's capabilities and communication strategies, consistency and domestic support challenges underscore the complex nature of maintaining a credible and resilient deterrent effect against North Korean nuclear threats. While the declaration's immediate effects have been observed, it would be interesting to witness the evolution of its impact on regional security and the strategic balance in the Indo-Pacific in the coming years.

#### Notes

1 Hyun-Kyung Kang. 2023. "Yoon Keeps Possibility of Seoul's Possession of Nuclear Weapons Open." Koreatimes, January 13, 2023. Accessed September 5, 2023. https://m.koreatimes.co.kr/pages/article.asp?newsldx=343477.

2 Toby Dalton, Karl Friedhoff, and Lami Kim. "Thinking Nuclear: South Korean Attitudes on Nuclear Weapons." Chicago Council on Global Affairs, February 21, 2022. Accessed August 6, 2023. https://globalaffairs.org/research/public-opinion-survey/ thinking-nuclear-south-korean-attitudes-nuclear-weapons.

3 Bernard K. Gordon, "Review of Deterrence and Defense: Toward a Theory of National Security by Glenn H. Snyder." The Journal of Politics 24, no.03 (1962): 588-589. https://doi.org/10.2307/2127710.

4 Ibid.

5 Michael J. Mazarr, "Understanding Deterrence," Santa Monica, CA: RAND Corporation, 2018. Accessed September 2, 2023. https://www.rand.org/pubs/perspectives/PE295.html.

6 T.M.C. Asser Press. "NL ARMS Netherlands Annual Review of Military Studies 2020: Deterrence in the 21st Century—Insights from Theory and Practice." Germany: T.M.C. Asser Press, 2020.

7 Alex Wilner and Andreas Wenger, "Introduction: Deterrence by Denial." In Deterrence by Denial: Theory and Practice, edited by Alex S. Wilner and Andreas Wenger, (New York: Cambria Press, 2021), 1–13.

8 Amir Lupovici, "Deterrence through Inflicting Costs: Between Deterrence by Punishment and Deterrence by Denial." International Studies Review 25, no. 3 (September 2023): viad036. https://doi.org/10.1093/isr/viad036.

9 Aaron F. Brantly, "The Cyber Deterrence Problem." Paper presented at the 10th International Conference on Cyber Conflict (CyCon), organized by the NATO Cooperative Cyber Defence Centre of Excellence, Tallinn, Estonia, 2018.

10 S. Kalyanaraman, "Meaning of Deterrence by Denial, Especially in the Context of India-China," Institute for Defence Studies and Analyses, accessed September 22, 2021. https://www.idsa.in/askanexpert/meaning-of-deterrence-by-denial-especial-ly-the-context-india-china.

11 John Smith, "British Defense Policy and the Logic of Deterrence." 2015 Strategic Defence and Security Review. Accessed November 13, 2023.https://apps. dtic.mil/sti/trecms/pdf/AD1087262.pdf.

12 "First strike capabilities" refers to having the capability to attack another nuclear power first and to destroy enough of their arsenal to prevent effective retaliation. Second strike capabilities refer to the ability to strike back with nuclear weapons after being attacked. see.Ford Library Museum. "Vladivostok Summit: A Glossary of Terms." Accessed November 19, 2023. https://www.fordlibrarymuseum.gov/library/exhibits/vladivostok/vglossary.asp

13 John Smith, "British Defense Policy and the Logic of Deterrence."2015 Strategic Defence and Security Review https://apps.dtic.mil/sti/trecms/pdf/AD1087262.pdf. Accessed November 13, 2023.

14 Jinwoo Shin and Hyojoo Son, "[단독](韓 자체 핵보유' 한국인 64%-

미국인 41% 찬성." The Dong-A Ilbo. https://www.donga.com/news/Politics/article/ all/20230331/118609132/1. Accessed November 13, 2023

15 Ankit Panda, "The Washington Declaration Is a Software Upgrade for the U.S.-South Korea Alliance." Carnegie Endowment for International Peace, May 2023. https://carnegieendowment.org/2023/05/01/washington-declaration-is-software-upgrade-for-u.s.-south-korea-alliance-pub-89648.

16 U.S. Department of Defense, "Joint Statement on the Extended Deterrence Strategy and Consultation G." 2023. Accessed September 5. 2023. https://www.defense.gov/News/Releases/Release/Article/3161720/joint-statement-on-the-extended-deterrence-strategy-and-consultation-group-meet/.

17 Ibid.

18 Foreign Policy Research Institute. "Another Washington Declaration: US Nuclear Weapons on the Korean Peninsula - Foreign Policy Research Institute," August 4. 2023. https://www.fpri.org/article/2023/08/another-washington-declaration-us-nuclear-weapons-on-the-korean-peninsula/. Accessed September 3, 2023.

19 John Keller, "Guidance System to Improve Accuracy of Submarine-Launched Ballistic Missiles." Military & Aerospace Electronics, January 12, 2023, https://www.militaryaerospace.com/sensors/article/14300105/guidance-submarine-ballistic-missiles.

20 US Department of Defense, Nuclear Posture Review. (Washington D.C.: Government Printing Office, 2022).

21 U.S. Department of Defense, "Joint Statement on the Extended Deterrence Strategy and Consultation Group", 2023. Accessed September 8, 2023. https:// www.defense.gov/News/Releases/Release/Article/3161720/joint-statement-on-the-extended-deterrence-strategy-and-consultation-group-meet/.

22 David E. Sanger and Sang-Hun Choe, "Inside Biden's Renewed Promise to Protect South Korea from Nuclear Weapons." The New York Times, April 26, 2023. https://www.nytimes.com/2023/04/26/us/politics/biden-korea-nuclear-weapons.html.

23 White House, "U.S.-ROK Leaders' Joint Statement," May 2021. https:// www.whitehouse.gov/briefing-room/statements releases/2021/05/21/u-s-rok-leaders-jointstatement/.

24 Peter Baker and David E. Sanger, "Biden Vows 'End' of North Korean Regime If It Launches Nuclear Attack." The New York Times, April 26, 2023.

25 통일뉴스, "김여정, '"워싱턴선언"은 대조선적대시정책의 집약화된 산물," April 29, 2023. Accessed September 5, 2023. https://www.tongilnews.com/news/articleView.html?idxno=207882.

26 Toby Dalton, Karl Friedhoff, and Lami Kim. "Thinking Nuclear: South Korean Attitudes on Nuclear Weapons." Chicago Council on Global Affairs, 2023. https:// globalaffairs.org/research/public-opinion-survey/thinking-nuclear-south-korean-attitudes-nuclear-weapons.

27 Jung Chan. "[여론조사꽃] 워싱턴 선언 '확장억제효과 있을 것19.9%-평화 유지계획 우선돼야75.3%.," Polinews. May 2, 2023. https://www.polinews.co.kr/news/articleView.html?idxno=608793#0FVB.