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Strategy Optimization of Peripheral Nuclear States: *Hybrid Modality Deterrence* in Confronting Regional and Extra-Regional Threats

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Abstract

Peripheral nuclear states face distinct strategic and technological constraints when compared to the established nuclear powers. North Korea illustrates how such states can simultaneously adopt different nuclear postures towards distinct adversaries, calibrated to their respective threat profiles, through what may be described as a *Hybrid Modality Deterrence* model. Within this model, two posture types can be identified. The first, *Systematic Central-Escalation*, is directed against South Korea and relies on centralized command and calibrated escalation, including the option of first-use, to compensate for conventional inferiority. The second, *Limited Retaliatory Response*, is employed against the United States, whereby Pyongyang leverages Guam as a strategic hostage in the absence of reliable mainland strike capability. Taken together, these postures constitute a flexible and adaptive deterrent framework that may also provide useful insights for analyzing the nuclear behavior of other peripheral states.

Keywords

North Korea's nuclear strategy, Asymmetric deterrence theory, Hybrid modality deterrence, Systematic central-escalation, Limited retaliatory response

Introduction

Strategic behaviors of peripheral nuclear states are emerging as a growing challenge to global nuclear stability. In this paper, the term ‘peripheral nuclear states’ refers to nuclear-armed states outside the Permanent Five members of the United Nations Security Council (P5). The label is used deliberately in place of ‘emerging nuclear states,’ since actors such as India, Pakistan, Israel, and North Korea are no longer ‘emerging’ but remain peripheral to the institutional frameworks and norms set by the P5. Their exclusion from formal arms control regimes and confidence-

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building mechanisms heightens the risks of miscalculation and regional instability. Among them, North Korea represents a unique case: a state that has not only acquired nuclear capabilities but also developed distinct deterrence postures tailored to adversaries with differing threat profiles. Despite economic and technological constraints, Pyongyang has crafted a sophisticated deterrence strategy targeting both regional and extra-regional adversaries, namely South Korea and the United States (US), respectively.

This paper argues that North Korea's nuclear strategy reflects a broader, under-theorized pattern among peripheral nuclear states seeking to maximize deterrence despite limited capabilities: the deployment of different nuclear postures across distinct strategic theaters. This pattern tends to arise when states confront capability constraints, most notably the difficulty of achieving the classic form of Mutually Assured Destruction (MAD), understood as homeland-to-homeland assured destruction, against distant adversaries. In North Korea's case, persistent financial and technological limitations have prevented the development of fully credible second-strike capabilities to threaten the US mainland. Lacking such means, Pyongyang has instead adopted a tailored deterrence strategy calibrated to the specific attributes of each adversary and operational context. Rather than adhering to a single, static nuclear posture, it has demonstrated the ability to implement a Hybrid Modality Deterrence (HMD) strategy, employing multiple posture types in parallel depending on the adversary's conventional or nuclear strength, geographic proximity, and North Korea's own delivery capabilities.

For instance, North Korea's nuclear posture towards South Korea is marked by the threat of early escalation, potentially even first-use, driven by geographic proximity and conventional inferiority. In contrast, its approach to the US centers on a limited retaliatory capability focused on Guam, reflecting its current inability to credibly threaten the US mainland. This dual-track strategy underscores the value of the North Korean case for refining theoretical understandings of how peripheral nuclear states adapt their deterrence strategies under capability constraints.

Theoretical Framework and Literature Review

The paper first clearly establishes the theoretical foundation for its analysis, beginning with asymmetric deterrence as the primary lens for interpreting North Korea's nuclear strategy. Examining how this framework accounts for Pyongyang's dual-track strategy of targeting both regional and extra-regional adversaries with distinct postures, helps reveal the limitations of conventional deterrence models and highlights the need for alternative approaches.

Asymmetric Deterrence Theory

Asymmetric deterrence theory offers a critical perspective for understanding North Korea's efforts to deter materially superior adversaries. While traditional deterrence models emphasize material capabilities sufficient to sustain a balance of power as the foundation of strategic stability, asymmetric deterrence shifts attention to strategic ingenuity, highlighting how weaker states can employ unorthodox tactics and credible signaling to impose disproportionate costs on stronger adversaries (Arreguín-Toft, 2001; Mack, 1975; Schelling, 1966). In the nuclear context, this theory suggests that peripheral nuclear states can achieve credible deterrence not by matching the capabilities of major powers, but by leveraging limited arsenals to generate significant strategic effects.

The theory further suggests, as Mack (1975) argues, that peripheral nuclear states facing existential threats are more willing and able to centralize resources and adopt aggressive

strategies that render aggression prohibitively costly. By contrast, stronger states often struggle with the dual burden of justifying high costs and securing decisive outcomes, making them less effective at countering asymmetric strategies. Thus, even with limited capabilities, peripheral nuclear states may compensate through calibrated signaling that enhances the credibility of their threats (Schelling, 1966) while exploiting adversary vulnerabilities (Arreguín-Toft, 2001).

Several scholars have applied this theoretical framework to analyze the broader deterrence behavior of peripheral nuclear states. Ha (1978), Preston (1997), and Baliga and Sjöström (2008), among others, emphasized the role of minimum deterrence – particularly through the threat of counter-city strikes – and the ability of weaker states to exploit strategic uncertainty. These works also note how some peripheral nuclear states have expanded their arsenals to directly counter perceived threats, subtly altering regional power dynamics and introducing new complexities into the global nuclear landscape.

The case of North Korea demonstrates this dynamic. Although its nuclear capability – measured in warhead count, technological sophistication, and delivery systems – remains far inferior to that of the US, Pyongyang has, since 2016, successfully signaled a limited yet credible nuclear threat to Washington (Lee, 2025). This credibility has been achieved through warhead miniaturization and the demonstrated operational readiness of its *Musudan* intermediate-range ballistic missile (IRBM), which placed US territory of Guam within striking range (Lee, 2025). As a result, US military options – particularly the prospect of preemptive strikes – have become restricted, as Washington must now account for the risk of nuclear retaliation, even if limited to its overseas territories (Lee, 2025). North Korea's case thus illustrates how a peripheral state can operationalize the principles of asymmetric deterrence to partially level the strategic playing field against materially superior adversaries.

Existing Gaps

While the literature on asymmetric deterrence offers a strong conceptual foundation for understanding how peripheral nuclear states craft deterrent strategies, comparatively little effort has been made to develop a structured typology of their nuclear postures in response to geographic constraints, technological limitations, or adversary-specific factors. Few studies have systematically examined how these states select or adapt their postures. Among those who have sought to generalize, Narang (2015) provides perhaps the most comprehensive model, identifying three distinct nuclear postures for peripheral nuclear states: catalytic, assured retaliation, and asymmetric escalation.

Catalytic posture refers to a nuclear posture designed to prompt the intervention of a patron state that is averse to nuclear crises. In this posture, peripheral states induce patron's intervention by threatening to break out nuclear catastrophe (Narang, 2015). Deterrent signals are sent to a patron, not to its adversaries, to induce intervention, in resolving the security problems of peripheral states on behalf of themselves (Narang, 2015).

Assured retaliation, on the other hand, is a posture that seeks to directly deter nuclear attack by threatening certain nuclear retaliation even after sustaining significant damage. States with assured retaliation explicitly state that they would use nuclear weapons only as a retaliation when attacked first (Narang, 2015). Another clear indicator of this posture is states' development of secure second-strike forces, and the absence of tactical nuclear weapons (Narang, 2015). Additionally, states with this posture have assertive civil-military relations, where civilians have complete control over the military and the power is centralized (Narang, 2015).

By contrast, asymmetric escalation keeps pre-emptive strikes as an option, thereby aiming to deter both conventional and unconventional attacks from adversaries (Narang, 2015). This posture

is explicitly designed to deter conventional attacks by enabling a state to respond with rapid nuclear escalation, even to conventional aggression, through first-use against both conventional and strategic targets. It typically includes tactical nuclear weapons that may be deployed on the battlefield, including on contested friendly territory (Narang, 2015). Moreover, states adopting this posture tend to have delegative civil-military relations, granting military commanders the authority in decisions regarding nuclear use (Narang, 2015).

By keeping the first-strike option open, the asymmetric escalation posture can be interpreted as consistent with the broader concept of escalation dominance and, more specifically, the ‘escalate to de-escalate’ strategy. This approach involves the threatened use of limited nuclear force early in a conflict to compel a stronger adversary to halt hostilities and accept de-escalation on favorable terms (Frasca Caccia, 2021). By introducing the risk of rapid and unpredictable nuclear escalation, it aims to deter not only nuclear use but also conventional military aggression. This logic reflects key aspects of classical deterrence theory, particularly Schelling’s (1960) notions of brinkmanship and coercive bargaining, where the manipulation of risk is used to influence adversary decision-making.

While Narang’s model has significantly advanced our understanding of posture variation among peripheral nuclear states, North Korea’s trajectory since 2016, when it acquired the ability to directly threaten the US, highlights areas where the framework can be further refined. Pyongyang’s nuclear doctrine, reinforced and sharpened by the capabilities it demonstrated in the years following 2016, does not align neatly with any single posture. Instead, three dynamics that became even more pronounced after 2016 complicate straightforward classification.

First, North Korea simultaneously faces primary adversaries both within its region and beyond it. This dual-adversary structure makes it difficult to describe its nuclear strategy using a single posture. Its doctrine contains elements of both first-use escalation and assured retaliation (KCNA, 2013, 2022) – suggesting a hybridized or theater-specific approach aimed at deterring distinct adversaries with different threat perceptions and capabilities.

Second, the existing model suggests that first-use postures are more likely under delegative command structures, though they are not strictly required. North Korea exemplifies this exception, retaining a highly centralized system in which the central leadership under Kim Jong Un holds exclusive authority over nuclear decision-making. Despite this concentration of control, North Korea has maintained a first-use posture against regional adversaries such as South Korea, intended to deter both conventional and nuclear threats (KCNA, 2013, 2022). This highlights the need to refine posture typologies so they can more fully account for exceptions in which centralized regimes nonetheless display characteristics of asymmetric escalation through a first-use posture.

Third, there is a need to further differentiate between full and limited forms of assured retaliation. North Korea, for instance, lacks the ability to threaten the US mainland, but may still

Table 1. Comparison of Narang’s Nuclear Postures: Catalytic, Assured Retaliation, and Asymmetric Escalation

Factors	Catalytic	Assured retaliation	Asymmetric escalation
Need for patron intervention	Required	Not Required	Not Required
Possession of tactical nuclear weapons	N/A	No	Yes
Pre-emptive nuclear strike policy	N/A	No	Yes
Civil-military relations	N/A	Assertive	Delegative

Source: Adapted and reorganized by the author based on Vipin Narang’s typology of nuclear postures.

exercise a limited deterrent by threatening US territories like Guam. Such a constrained retaliatory capability offers less strategic stability than the classic form of MAD, understood as homeland-to-homeland assured destruction, yet it still provides Pyongyang with a version of deterrence. A more precise framework is therefore needed to capture these distinctions.

Hence, North Korea's post-2016 trajectory underscores the need to further refine existing postural frameworks in a supplementary manner, so as to more fully capture the complexity and adaptability of its nuclear strategy. Building on these observations, this paper addresses two guiding questions: How can we conceptualize the case of North Korea, a peripheral nuclear state confronting adversaries in both regional and extra-regional theaters? And what posture types might supplement existing models to better account for North Korea's hybridized deterrence behavior?

Deterring Adversaries Within and Beyond the Region: The North Korea Case

Before advancing the new conceptual framework, this section first demonstrates that North Korea's nuclear doctrine is characterized by a dual-track strategy tailored to different adversaries. This behavior is shaped above all by persistent financial and technological constraints, resulting in North Korea's far inferior conventional capability against a geographically proximate South Korea and its inability to inflict the classic form of MAD, understood as homeland-to-homeland assured destruction, against the US.

To address these limitations, North Korea has developed tailored deterrence postures designed to fit the attributes of each adversary and the specific operational context. Against South Korea, its posture emphasizes the threat of early escalation, including the possibility of first-use, reflecting both geographic proximity and conventional inferiority. Against the US, by contrast, the posture highlights retaliatory readiness against Guam, given North Korea's limited ability to credibly threaten the US mainland. To substantiate this analysis, the paper will now examine North Korea's nuclear doctrines of 2013 and 2022, along with relevant domestic publications on its nuclear strategy.

Law on Consolidating the Position of a Nuclear Weapons State

North Korea released Law on Consolidating the Position of a Nuclear Weapons State in April 2013 (KCNA, 2013). This law could be considered as Pyongyang's nuclear doctrine, as it, for the first time, comprehensively depicted how it would use nuclear weapons against its adversaries.

Article 1 predominately serves to justify its nuclear possession, while Article 6 to 10 focuses on Pyongyang's efforts towards non-proliferation, arguably aimed at gaining recognition as a responsible nuclear state from the international community. Thus, the paper focuses on analyzing Article 2 to 5.

Article 2 of North Korea's 2013 nuclear law states that nuclear weapons "*serve the purpose of deterring and repelling the aggression and attack of the enemy against the DPRK and dealing deadly retaliatory blows at the strongholds of aggression until the world is denuclearized*" (KCNA, 2013). This provision offers an important window into Pyongyang's nuclear posture, though in deliberately ambiguous terms. The wording leaves significant interpretive space, allowing North Korea to frame nuclear use as defensive and retaliatory while still preserving the possibility of preemptive action if it perceives an attack as imminent. This elasticity is unlikely to be accidental; rather, it reflects Pyongyang's effort to sustain deterrence across different

adversaries and scenarios.

On the Korean peninsula, South Korea's proximity and Pyongyang's ability to deliver nuclear strikes against nearby targets make it plausible that "detering and repelling" encompasses not only defensive but also preemptive options. In North Korea's framing, preemption could still be presented as retaliation against an attack judged to be imminent. This interpretation aligns with the asymmetric escalation posture: Pyongyang signals that even a limited conventional clash could trigger immediate and overwhelming retaliation, potentially involving nuclear first-use. Such a posture, however, is regionally confined due to the technological credibility of North Korea's long-range delivery systems.

By contrast, the reference to "dealing deadly retaliatory blows at the strongholds of aggression" applies more clearly to the US, whose power projection depends on military installations located in its overseas territories, such as those in Guam. In this context, the logic is not preemption but punishment: threatening to impose unacceptable costs after US military action. Although North Korea lacked in 2013 a fully reliable intercontinental capability to strike the US, it had begun to develop systems able to target Guam – an outpost Pyongyang likely views as a key "stronghold" of American power projection. This reading is reinforced by state messaging, including governmental statements and missile tests (Lee, 2025).

Taken together, Article 2 demonstrates how intentional ambiguity enables North Korea to sustain a dual-track nuclear strategy. Against South Korea, it leaves open the option of preemptive escalation to deter conventional threats; against the US, it emphasizes a retaliatory framework designed to deter intervention at a distance.

Article 3 of the 2013 nuclear law – "*The DPRK shall take practical steps to bolster up the nuclear deterrence and nuclear retaliatory strike power both in quality and quantity to cope with the gravity of the escalating danger of the hostile forces' aggression and attack*" (KCNA, 2013) – provides further insight into North Korea's dual-track strategy. It declares that Pyongyang will take "practical steps" to enhance its "nuclear retaliatory strike power both in quality and quantity", though without specifying how this will be achieved. On its face, the emphasis on "retaliatory power" points to the development of strategic capabilities associated with survivable second-strike options. Yet the absence of detail leaves room for broader interpretation. In Pyongyang's framing, even tactical nuclear weapons could be justified as contributing to "retaliatory power," since preemptive use against conventional threats might still be portrayed as retaliation against imminent aggression. This deliberate ambiguity thus sustains dual possibilities: reinforcing a strategic retaliatory posture towards the US, while also preserving flexibility for a more escalatory posture against South Korea.

The emphasis on "retaliatory power" points most directly to an intention to strengthen second-strike capabilities, a defining feature of deterrence by retaliation. Such a posture requires delivery systems that can both survive an initial strike and credibly threaten unacceptable damage in return, typically through strategic nuclear weapons. As Constant (1981) observes, strategic nuclear weapons – capable of striking cities, infrastructure, and military targets deep within an adversary's territory – form the foundation of such deterrence.

In this light, North Korea's capability developments in 2016, particularly its IRBM and submarine-launched ballistic missile (SLBM), take on clear significance (Lee, 2023). Although not intercontinental, these systems may qualify as strategic weapons because their range and potential survivability enable strikes on US targets beyond the Korean peninsula, most notably Guam. By extending Pyongyang's reach to a critical American hub, they established a rudimentary basis for imposing retaliatory costs on the US. Aligning these delivery capabilities with the language of "nuclear retaliatory power" in the 2013 law, Pyongyang translated doctrinal intent into operational capacity, thereby reinforcing the credibility of its retaliatory capability

against Washington.

Yet, because Article 3 does not specify how “retaliatory power” will be enhanced, its ambiguity leaves space for an alternative interpretation. In North Korea’s framing, even tactical nuclear weapons could be cast as serving a retaliatory function if used against what it defines as imminent aggression. Given South Korea’s proximity, such weapons would provide options for proactive or preemptive use in the early stages of a conventional conflict. Tactical nuclear systems – gravity bombs, short-range missiles, or nuclear artillery – are typically designed for battlefield use (Alexander & Millar, 2005). Unlike strategic systems, which underpin deterrence by retaliation against the US, tactical systems are closely associated with asymmetric escalation posture that threaten nuclear first-use to deter or halt conventional attacks from proximate adversaries.

By leaving its modernization pathway intentionally unspecified, Pyongyang appears to be maximizing strategic ambiguity: reinforcing a retaliatory deterrent against the US while also retaining flexibility for immediate nuclear escalation against South Korea. In this way, ambiguity is not a doctrinal weakness but a deliberate feature, enabling North Korea to sustain a dual-track strategy that differentiates its posture by adversary. This calculated ambiguity lies at the heart of its asymmetric deterrence approach.

By contrast, Articles 4 and 5 of the 2013 nuclear law provide more explicit insight into North Korea’s distinct nuclear postures towards the US and South Korea.

Article 4 states that *“the nuclear weapons of the DPRK can be used only by a final order of the Supreme Commander of the Korean People’s Army to repel invasion or attack from a hostile nuclear weapons state and make retaliatory strikes”* (KCNA, 2013). This provision makes clear that nuclear use is permissible solely by the Supreme Commander’s final order and is framed explicitly in terms of repelling or retaliating against a hostile *nuclear* power – clearly referring to the US. By explicitly linking nuclear use to the act of repelling an invasion or attack by another nuclear state, the paper contends that Article 4 frames such use as conditional on US initiation of hostilities rather than on Pyongyang’s preemptive choice. This formulation narrows the scope of nuclear use to retaliation, suggesting that Pyongyang is less likely to endorse a first-use option against Washington. In this context, ambiguity is minimized: North Korea signals that its nuclear posture towards the US is primarily retaliatory, consistent with its limited but growing long-range capabilities.

Article 5 states that *“the DPRK shall neither use nukes against the non-nuclear states nor threaten them with those weapons unless they join a hostile nuclear weapons state in its invasion and attack on the DPRK”* (KCNA, 2013). This provision introduces significant nuance: while it appears to offer reassurance to non-nuclear states, it immediately qualifies the pledge with an exception for cases where such states participate in an invasion alongside a hostile nuclear power. This formulation creates a conditional no-first-use principle (Kim & Cohen, 2017). Given South Korea’s alliance with the US, any conflict on the peninsula would almost certainly involve Seoul in joint operations. By extension, the exception effectively places South Korea outside the protection of the no-first-use pledge. This framing leaves ample room for nuclear use against Seoul and, by implication, preserves flexibility for first-use in the regional theater. In this way, Article 5 reinforces the interpretation that North Korea adopts an escalatory posture towards South Korea.

Taken together, Articles 2 through 5 reinforce this paper’s central claim: North Korea is not simply adopting one of the conventional nuclear postures identified in existing typologies but is instead developing a distinct, dual-track strategy. Towards the US, Pyongyang maintains a retaliatory stance, signaling restraint and emphasizing second-strike capability. In contrast, towards South Korea, it preserves the option of nuclear first-use, reflecting an escalatory posture aimed at deterring conventional military threats in a regional context.

Law on DPRK's Policy on Nuclear Forces Promulgated

This dual-track approach was further institutionalized with the passage of the Law on the DPRK's Policy on Nuclear Forces in September 2022. Enacted by the Supreme People's Assembly, the law replaced the earlier 2013 legislation that had first articulated North Korea's nuclear doctrine (KCNA, 2022). While the 2022 law offers an update – further elaborating certain conditions for nuclear use – these revisions do not constitute a fundamental departure from the core principles laid out in 2013. Rather, they reaffirm, further articulate and codify existing doctrine – particularly the dual emphasis on retaliation and escalation. As such, this section focuses not on repeating the analytical framework already applied to the 2013 law, but on identifying the specific provisions that are either newly articulated or more explicitly defined in the 2022 version. This approach avoids overlapping while highlighting points of divergence or clarification. According to the law, North Korea would resort to nuclear weapons under the following conditions:

Articles 1 through 3 formalize and reinforces North Korea's position that nuclear weapons may be employed not only in retaliation but also preemptively, including in cases where attacks are deemed imminent. This codification institutionalizes dual options of both retaliation and preemptive strikes, thereby reinforcing the flexibility and ambiguity embedded in the state's deterrent posture. While this logic was already implicit in the 2013 law, the 2022 version further clarifies thresholds and broadens applicability to include non-nuclear attacks on leadership and strategic infrastructure.

For instance, Article 1 – *“In case an attack by nuclear weapons or other weapons of mass destruction was launched or drew near is judged”* (KCNA, 2022) – specifies two conditions for nuclear use: a nuclear or WMD attack that has already been launched, and one that is judged to be imminent. The first condition points to a retaliatory option, while the second establishes a subjective standard – “judged to be imminent” – that preserves space for preemptive use. Together, these provisions institutionalize dual options of retaliation and preemption within North Korea's nuclear doctrine.

Article 2 authorizes nuclear use *“in case a nuclear or non-nuclear attack by hostile forces on the state leadership and the command organization of the state's nuclear forces was launched or drew near is judged”* (KCNA, 2022). By including non-nuclear attacks, this provision indicates that Pyongyang may employ nuclear weapons even in response to conventional strikes, especially those targeting regime survival or its nuclear forces. It underscores North Korea's acute sensitivity to such threats and appears to respond directly to the US–South Korea alliance's operational doctrine of decapitation and counterforce targeting in crisis scenarios. At the same time, the phrase “or when such an attack is judged to be imminent” affirms dual options: retaliation after an attack, or preemptive nuclear use should such an attack be anticipated.

Article 3 states that nuclear weapons may be used *“in case a fatal military attack against important strategic objects of the state was launched or drew near is judged”* (KCNA, 2022). By leaving “important strategic objects” undefined, the provision amplifies ambiguity and broadens the conditions under which Pyongyang could justify nuclear use. As with the previous articles, nuclear use is authorized both in retaliation for an actual attack and preemptively if such an attack is merely anticipated. This deliberate vagueness enhances strategic flexibility, enabling Pyongyang to frame both retaliatory and preemptive nuclear options as defensive measures under broad and subjective criteria.

Articles 4 and 5, by contrast, expand the operational logic of North Korea's nuclear doctrine, with particular emphasis on conventional warfighting scenarios. Article 4 authorizes nuclear use *“in case the need for operation for preventing the expansion and protraction of a war and taking the initiative in the war in contingency is inevitably raised”* (KCNA, 2022). This provision

allows Pyongyang to justify nuclear use not only in defensive terms but also to seize the initiative during a conventional conflict. This language reflects a shift from reactive deterrence to a more proactive posture, suggesting that nuclear weapons may be employed not merely in response to aggression but also to shape the course of a conventional conflict from the outset. It introduces a doctrinal logic in which escalation can be initiated to control wartime dynamics and seize strategic advantage.

Article 5 states that nuclear weapons may be used *“in other case an inevitable situation in which it is compelled to correspond with catastrophic crisis to the existence of the state and safety of the people by only nuclear weapons is created”* (KCNA, 2022). This provision is even more expansive, permitting nuclear use in the event of an undefined “inevitable situation” involving a “catastrophic crisis” to state survival or civilian safety. Unlike the more concrete conditions outlined in Articles 1 through 4, this clause is framed in highly elastic, existential terms. It grants the leadership broad interpretive discretion to define what constitutes a catastrophic threat, thereby enabling the justification of first use across a wide range of contingencies – including domestic instability, strategic isolation, or prolonged military stalemates. This built-in vagueness reinforces strategic ambiguity, allowing Pyongyang to deter adversaries by obscuring its red lines, while preserving the flexibility to escalate, or de-escalate, depending on shifting political or battlefield conditions.

Taken together, the 2022 law further articulates a nuclear doctrine that blends retaliatory and preemptive flexibility. While Articles 1 to 3 codify thresholds for both retaliatory and preemptive use, particularly in response to threats against leadership or strategic infrastructure, Articles 4 and 5 expand the potential role of nuclear weapons as a form of preemptive deterrence in conventional conflict scenarios and existential crises. This dual logic underscores a broader principle of North Korea’s nuclear strategy: one that incorporates both retaliation and escalation as tools for maximizing deterrence with its limited capability. In this way, the 2022 law both reaffirms and further articulates the logic of the 2013 doctrine. It confirms that North Korea’s nuclear posture is not unitary but dual in orientation, adopting an escalatory, first-use posture towards South Korea while maintaining a retaliatory posture towards the US, whose nuclear capabilities and global reach pose a fundamentally different type of threat.

Further evidence of North Korea’s retaliatory posture towards the US can be found in a 2016 Pyongyang-published volume, *North-South Relations and the Nuclear Issue*. The text notes: “If the US misjudges the situation and decides to play a military card, then the DPRK, as a nation possessing hydrogen bombs, will unleash its already declared powerful self-defensive nuclear deterrence” (Oh, 2016, p. 226). This statement underscores Pyongyang’s intent to deter US aggression by signaling the certainty of nuclear retaliation, consistent with the posture codified in both the 2013 and 2022 nuclear laws.

North Korea’s nuclear doctrine, codified in its 2013 and 2022 laws, demonstrates a clear pattern of posture distinction towards different adversaries. This dual-track strategy underscores the need to generalize the possibility of states adopting distinct postures, rather than assuming uniformity in their deterrence orientation. The North Korean case therefore compels a reconsideration of how peripheral nuclear states design deterrence strategies to optimize their effectiveness under material and technological constraints.

Hybrid Modality Deterrence

Building on this observation, the paper introduces the concept of Hybrid Modality Deterrence (HMD). Developed to better account for North Korea’s nuclear behavior, HMD captures

the strategy of employing multiple nuclear postures simultaneously, calibrated to distinct adversaries. While derived from the North Korean case, the framework provides a broader lens for understanding how peripheral nuclear states can formulate and optimize deterrence against superior powers without adhering to a single posture.

To more precisely account for North Korea’s behavior under the HMD model, the paper introduces two new posture types: Systematic Central-Escalation (SCE) and Limited Retaliatory Response (LRR). Each posture corresponds to distinct structural conditions under which it offers the most credible and effective deterrent. Before detailing each in turn, the following table provides a comparative overview of SCE and LRR across their key dimensions:

Hybrid Modality Deterrence Model 1: Systematic Central-Escalation

North Korea’s nuclear posture towards South Korea shares certain features of asymmetric escalation posture, most notably the threat of first-use in response to conventional military pressure. Yet, it departs from the posture’s underlying assumptions about civil–military relations. Asymmetric escalation is generally linked to delegative command structures, in which military commanders may be authorized to initiate nuclear use. In contrast, North Korea retains a highly centralized system: only Kim Jong Un has the authority to order a nuclear strike (Kim & Cohen, 2017).

The SCE posture represents a distinct model of deterrence, in which the threat of first-use is exercised under centralized political control. In this framework, escalation is initiated by the central authority in a deliberate and controlled manner. First, it is defined by centralized civil-command authority, where the decision to employ nuclear weapons resides solely with the top political leadership rather than being delegated to the military. Second, it involves a highly structured approach to escalation management, in which nuclear signaling and potential use are directed through a disciplined chain of command originating from the leadership. In contrast to asymmetric escalation, which relies on rapid and decentralized decisions by battlefield commanders, SCE allows the central leadership to escalate deliberately while preserving control over outcomes. This enhances the credibility of deterrence by signaling resolve, while at the same time reducing the risk of uncontrolled or accidental nuclear conflict.

Centralized command authority. The North Korean case demonstrates that nuclear escalation decisions are concentrated exclusively in the hands of the top political leadership,

Table 2. Comparison of Systematic Central-Escalation (SCE) and Limited Retaliatory Response (LRR)

Dimension	Systematic Central-Escalation (SCE)	Limited Retaliatory Response (LRR)
Command structure	Centralized	Centralized
Operational focus	Early and rapid nuclear escalation to deter existential threats	Limited, survivable strike to deter external intervention
Use threshold	Low – prepared for early use under severe conflict scenarios	High – reserved for last-resort retaliation
Strategic function	Coercive escalation to preempt or counter regime-threatening attack	Measured deterrence to maintain stability and raise cost of aggression
Posture type	Escalation-centric deterrent behavior	Retaliation-centric deterrent behavior
Application context	North Korea’s approach to military confrontation on the Korean peninsula	North Korea’s threat signaling toward lower-intensity US targets

Source: Compiled and conceptualized by the author.

with no delegation to military officials (Kim & Cohen, 2017). Although Kim Jong Un holds formal military titles, such as Chairman of the Central Military Commission, this commission functions as a body of the Workers' Party of Korea (WPK) rather than as an independent military institution. The Korean People's Army (KPA) therefore operates under party guidance, making North Korea's civil–military relations assertive rather than delegative.

Kim Jong Un's precise classification as a civilian or military leader may be debated, but what is beyond dispute is that authority resides firmly within the ruling party apparatus. This structure resembles other authoritarian systems, such as China under Xi Jinping, where military decisions are channeled through party-led mechanisms (Cho, 2023). Such an arrangement insulates nuclear decision-making from battlefield pressures and ensures that escalation signaling remains closely aligned with the regime's political intent. By consolidating control in the top leadership, North Korea is able to conduct nuclear signaling in a unified and coherent manner. This centralized structure ultimately allows Pyongyang to escalate nuclear tensions deliberately, sustaining the credibility of deterrence while minimizing the risk of unauthorized or accidental use.

Systematic control in escalation. Unlike asymmetric escalation, the SCE posture concentrates decision-making at the highest level of leadership, ensuring tighter control. Within this framework, and assuming rational leadership, the use or threat of nuclear weapons is more likely to reflect deliberate political intent, thereby reducing the risk of catastrophic miscalculation.

For a state like North Korea, maintaining centralized control over the escalation process is vital to regime survival. An escalation that exceeds intended thresholds risks not only dragging the regime into an unwanted war but also potentially undermining its domestic authority of the leadership if it suffers defeat in any form of battle. The SCE posture thus adapts the logic of asymmetric deterrence of imposing costs on stronger adversaries, while preserving strict oversight of how far and how fast escalation proceeds.

Equally important, centralized control provides greater flexibility in de-escalation. Because authority rests with the top leadership, a state can quickly reverse course if circumstances change or if signaling objectives have been achieved. This built-in capacity for rapid adjustment distinguishes the SCE posture from asymmetric escalation, where decentralized decisions increase the danger of escalation spirals slipping beyond control.

In this context, the SCE posture embodies and effectively facilitates broader 'escalate to de-escalate' approach: it enhances deterrence by preserving the first-strike option while maintaining centralized control to minimize the risk of uncontrolled escalation. The SCE represents a structured adaptation of this logic, relying on deliberate, leadership-driven nuclear signaling to manage escalation pathways and compel adversaries to de-escalate under the threat of disproportionate retaliation.

Paradoxically, it is centralized control that enables North Korea to incorporate an escalatory doctrine while retaining confidence in its ability to manage and de-escalate crises. The 2022 nuclear law's further articulation of this escalatory posture reflects this logic, underscoring Pyongyang's confidence in deliberate escalation under centralized authority, consistent with the SCE posture. By institutionalizing both the option of first-use and the mechanisms of tight political oversight, North Korea signals that it can escalate to impose costs on adversaries while preserving the capacity to control the tempo and terms of conflict.

While some may contend that centralized nuclear authority may heighten the risk of uncontrollable escalation, this need not always be the case. Even in highly authoritarian systems like North Korea, there is evidence that the leadership seeks to institutionalize internal constraints on nuclear use. In a 2022 speech, Kim Jong Un stressed the need for "precise legal regulations that clearly define the standards and principles for [nuclear weapons'] management

and operation” (Choson Sinbo, 2022). He cautioned that without such oversight, nuclear weapons could be “misappropriated for unintended purposes,” leading to “catastrophic consequences.” This rhetoric indicates that, even within an extremely centralized system, there is a deliberate effort to manage nuclear risk through structured internal control.

Such caution is understandable given North Korea’s strategic environment. South Korea, even without US extended deterrence, possesses overwhelming conventional superiority. Moreover, the geographical proximity of the two Koreas means that any full-scale conflict would pose existential risks to the North, regardless of its possession of nuclear weapons. These structural constraints reinforce the rationale for maintaining strict centralized control – not only to manage escalation effectively but also to preserve the flexibility for rapid de-escalation when circumstances demand.

Taken together, these distinctions highlight why the SCE posture is a necessary conceptual addition to the study of nuclear postures of peripheral states. It helps explain cases such as North Korea’s approach towards South Korea, which diverge from the assumptions embedded in the asymmetric escalation model.

Hybrid Modality Deterrence Model 2: Limited Retaliatory Response

North Korea’s nuclear posture towards the US reflects a distinct form of deterrence, one that diverges from both the classic MAD model – defined as homeland-to-homeland deterrence. Despite its possession of nuclear weapons, Pyongyang lacks a reliable long-range strike capability against the US mainland. Instead, it threatens lower-value but symbolically significant targets, such as US territories in the western Pacific. This posture, which the paper conceptualizes as the LRR, more accurately captures North Korea’s deterrence behavior against the US under conditions of technological constraint.

Unlike the classic form of MAD, the LRR posture enables states to threaten secondary or less valuable targets – such as overseas territories. By holding such targets at risk, LRR complicates adversary cost–benefit calculations and may deter preemption under certain conditions. Emerging from these empirical patterns, LRR represents a supplementary posture: one that arises from limited technological reach, yet still may generate meaningful deterrent effects.

Yet, LRR remains an incomplete deterrent. Because it cannot impose existential costs, adversaries may, in extreme circumstances, may choose to absorb the loss of secondary targets if their core interests are threatened. LRR therefore functions as a transitional posture – a limited but operationally useful phase in a broader effort to achieve full-spectrum deterrence through greater range, survivability, and credibility. Unlike the stability associated with the classic MAD model, LRR depends on carefully calibrated and politically controlled signaling, designed to deter aggression without provoking all-out war. Its credibility derives less from overwhelming destructive power than from the strategic flexibility and restraint it conveys, particularly the ability to threaten retaliation against important but non-core targets.

The deterrence logic of LRR becomes evident in North Korea’s capacity to hold US territories in the western Pacific at risk, even in the absence of reliable intercontinental capabilities. The *Musudan* and *Hwasong-12* missile tests in 2016 and 2017, respectively, demonstrated Pyongyang’s credible ability to strike Guam (Defense Intelligence Agency, 2021; Kwok, 2016). Although these capabilities fall short of enabling the full form of MAD by threatening the US homeland with annihilation, they are sufficient to influence Washington’s military planning by placing vital regional targets at risk (Lee, 2024).

Beyond Guam, US bases in Japan, including Okinawa, plausibly fall within the extended scope of LRR. Strikes against these targets would constitute a weaker form of retaliation, yet they could still inflict infrastructure damage, along with US civilian casualties, particularly

among the families of deployed personnel. While less direct than an attack on Guam, such actions would nonetheless conform to the logic of LRR. US bases in South Korea could also be considered potential LRR targets, since they involve American assets and civilians; however, their vulnerability is more closely tied to the dynamics of escalation on the Korean peninsula. For this reason, they are analyzed here under North Korea's asymmetric escalation posture rather than within LRR.

Beyond territorial targets, the analysis also considers alternative forms of nuclear employment, such as an electromagnetic pulse (EMP) attack. Though non-lethal, such an attack could disable critical infrastructure and inflict severe economic and psychological disruption. This illustrates a defining feature of LRR: even under technological constraints, it can still generate deterrent effects by targeting what the adversary values regionally, without directly threatening its existential core.

Flexibility in threat posturing. Because peripheral nuclear states often lack the technological capability to achieve the full form of MAD, the LRR posture provides a higher degree of strategic flexibility, particularly in shaping direct negotiations with adversaries. LRR enables a peripheral state to pursue two seemingly contradictory objectives at once: sustaining the credibility of its deterrent through aggressive nuclear signaling, while compensating for its limited reach through diplomatic engagement aimed at de-escalation.

Thus, aggressive signaling under LRR does not necessarily indicate a path towards inevitable conflict. Instead, it can function as a calculated maneuver to adversaries into concessions, or dissuade them from initiating aggression, by drawing them to the negotiating table. Paradoxically, the inability to achieve the full form of MAD allows peripheral states to gain greater diplomatic flexibility to compensate for their operational limitations. By channeling limited but credible threats into calibrated signaling rather than an all-or-nothing posture of overwhelming retaliation, LRR preserves pathways for de-escalation and conflict resolution. In this sense, deterrence under LRR derives as much from diplomatic management as from military capability, enabling credible signaling while containing escalation risks.

This dynamic is evident in the North Korean case. Pyongyang has likely developed internal protocols to ensure that threats against Guam serve less as precursors to uncontrollable escalation than as bargaining tools to deter US preemption and encourage diplomatic engagement. After the *Musudan* and *Hwasong-12* tests in 2016 and 2017, Kim Jong Un quickly pivoted to high-level diplomacy, culminating in summits with US President Donald Trump in 2018 and 2019. These episodes suggest that North Korea employed its limited deterrent not merely to avoid conflict, but to actively reshape the security environment through direct negotiation (Lee, 2024).

In this way, the North Korean case also highlights how LRR diverges not only from the classic form of MAD, but also differs from the catalytic posture, where a peripheral state seeks to provoke crisis in order to draw intervention from a more powerful patron. By contrast to the catalytic posture, LRR enables a state to engage its adversary directly, ensuring that its national interests are negotiated first-hand. This autonomous form of deterrence diplomacy is a defining feature of the posture.

Determinants of Posture Selection in Hybrid Modality Deterrence

Having introduced the constituent postures of SCE and LRR, this section now integrates them to explain the conditions for peripheral nuclear states to decide their postural decisions under HMD. Crucially, posture selection is not arbitrary. It is shaped by three interrelated conditions: (1) whether the adversary possesses nuclear weapons, (2) geographic distance between the peripheral state and the adversary, and (3) the peripheral state's level of technological development. These

factors jointly determine the strategic viability and credibility of either posture in a given context. The table below summarizes how these conditions influence posture selection in hybrid modality deterrence:

Nuclear status of the adversary. A peripheral nuclear state is more likely to adopt a retaliatory posture towards a nuclear-armed adversary. Escalating a nuclear confrontation with another nuclear state risks catastrophic retaliation. In this context, the peripheral actor aims to prevent nuclear escalation by emphasizing credible second-strike threats – achieving deterrence through punishment rather than preemption.

Conversely, against a non-nuclear adversary, the peripheral state is more likely to adopt an escalatory posture. In the absence of the threat of nuclear retaliation, the state can use its nuclear arsenal to offset conventional disadvantages and assert dominance. The threat of first-use becomes a powerful tool to deter conventional aggression, even when the adversary possesses superior conventional forces.

Geographic distance. Geographic proximity further affects postural choice. A peripheral state may find an escalatory posture more viable against a nearby adversary, particularly when that adversary holds conventional superiority. Shorter missile flight times and reduced reaction windows increase the perceived threat and urgency, making first-use threats more credible and potentially effective.

By contrast, distant adversaries are harder to target effectively with a first-strike due to the technical challenges of missile reliability, interception risks, and delivery accuracy. In such cases, peripheral states are more likely to adopt a retaliatory posture, focusing on developing survivable capabilities to respond to attacks rather than initiate them. Even if technological advancement enables long-range capability, the risk of failure in a first-use scenario may undermine deterrence credibility.

Technological capability. A peripheral state’s own technological capability, particularly its ability to deliver nuclear weapons over long distances, also shapes its deterrence posture. If the state lacks reliable long-range delivery systems, it cannot mount a full-spectrum retaliatory posture in the traditional sense. Instead, it may pursue incremental technological improvements and adopt limited deterrence strategies – threatening specific targets that are within range, even if the adversary’s mainland remains out of reach.

North Korea’s dual-track posture and adaptive deterrence. These conditions help explain why North Korea adopts different deterrence postures towards South Korea and the US, reflecting a unique dual-track strategy. South Korea – geographically proximate, conventionally superior, and

Table 3. Determinants of Posture Selection in Hybrid Modality Deterrence

Factors	SCE	LRR
Level of technological progression	Advanced enough to cause a large-scale nuclear catastrophe regionally	Not fully developed to carry out a complete nuclear retaliation extra-regionally
Adversary’s possession of nuclear weapons	No	Yes
Geological distance	Closer (within the region)	Farther (Beyond the region)

Source: Compiled and conceptualized by the author.

non-nuclear – fits the criteria for SCE. Pyongyang has developed sufficient short- and medium-range delivery capabilities to strike targets throughout the South, fulfilling the operational requirements for the controlled first-use doctrine. In such context, escalation option and clear political control make the posture both feasible and strategically rational, aiming to deter conventional attacks through the threat of early nuclear use.

In contrast, the US poses a fundamentally different challenge. As a nuclear-armed and geographically distant adversary, it cannot be credibly deterred with its current capability. North Korea has not yet achieved a fully reliable ICBM capability, having failed to complete key steps such as real-distance flight and atmospheric re-entry testing (Kristensen & Norris, 2018). This means Pyongyang cannot apply an SCE posture against the US, nor can it rely on the full form of MAD. Given these limitations, North Korea's few remaining viable options include the use of IRBMs, such as the *Musudan* and *Hwasong-12*, to threaten US regional assets like Guam.

Together, these cases demonstrate how North Korea calibrates its nuclear posture based on the characteristics of each adversary. The HMD captures this adaptive logic, showing how a state can simultaneously pursue two distinct operational strategies under a unified political command. It highlights the pragmatism of nuclear strategy when full deterrent symmetry is technologically out of reach.

This case also raises a broader question: while the model is fundamentally rooted in explaining North Korea, can the framework also be applied to other peripheral nuclear states? Investigating its applicability to comparable cases – such as Israel and Pakistan – as well as to prospective nuclear actors like Iran could offer a promising direction for future research on strategic adaptation under technological asymmetry.

Extending Hybrid Modality Deterrence: Applications to Other Peripheral States

This section explores the model's broader applicability to other peripheral nuclear states. The aim is not to provide definitive empirical validation, but rather to illustrate how the HMD framework – particularly the posture types of SCE and LRR – can help illuminate the strategic logic of nuclear behavior in diverse political and regional contexts beyond the North Korean case. By examining Israel, Iran, and Pakistan, this section assesses whether the model's three core conditions – nuclear status of the adversary, geographic proximity, and technological capability – offer analytical value beyond the original case. While each case varies in institutional structure and technological progression, their deterrence behaviors suggest patterns that may be meaningfully analyzed through the lens of HMD.

SCE: Israel and Iran. Israel provides a useful illustration of SCE. Although at the official level it maintains a policy of nuclear ambiguity – eschewing explicit statements about its capabilities or the circumstances under which nuclear weapons might be used (Kristensen & Norris, 2014; Paritzky, 2003) – its strategic orientation is widely interpreted as consistent with the *Samson Option*. This doctrine entails the potential for overwhelming nuclear retaliation in response to existential conventional threats from non-nuclear adversaries, primarily its Arab neighbors (Beres, 2005). The existence of such a retaliatory doctrine, despite its unofficial status, illustrates the implicit escalation logic undergirding Israel's deterrence posture.

Importantly, the decision to escalate rests not with the military but with the top civilian leadership, aligning Israel's nuclear posture with the structural conditions of SCE. Over time, the Israel Defense Forces (IDF) has transitioned from a relatively autonomous military institution to one increasingly subordinated to civilian oversight (Levy, 2020). While military elites continue to shape policy through their political roles, often as retired generals entering civilian leadership, final decision-making remains firmly embedded in Israel's civilian political structure (Goldberg,

2006). This civilian dominance was clearly exhibited in 2023, when Israel launched retaliatory attacks against Hamas in Gaza. The military did not act unilaterally; rather, the decision was made by Prime Minister Netanyahu's Cabinet, reinforcing the model's criterion of centralized, assertive civil-military relations.

Israel's case also demonstrates that SCE is not exclusive to authoritarian regimes. As a democracy, Israel's capacity to centralize power during crises depends on the presence of domestic consensus that legitimizes executive authority in times of emergency. This was evident following the Hamas attacks in October 2023, when Netanyahu, despite facing multiple political scandals, was able to consolidate power and lead a disproportionate retaliatory campaign not only against Hamas but also against actors in Syria and Lebanon (Karasova & Khlebnikova, 2024). These actions reflect a temporary but politically effective centralization of authority, meeting the conditions for SCE under democratic governance. Such instances illustrate how strategic centralization in democracies can be functionally equivalent to authoritarian control under specific threat perceptions, reinforcing the model's cross-regime applicability.

Iran, while differing markedly in regime type and nuclear status, presents a similar structural configuration for SCE. The logic of SCE also provides a forward-looking framework for understanding how Iran may behave should it achieve full nuclear weaponization. While Iran currently remains a nuclear threshold state, its institutional structure – centered around the Supreme Leader – already satisfies the necessary condition of centralized authority. The Supreme Leader, Ayatollah Ali Khamenei, exercises final authority over Iran's national security and military decisions, enabling a potential future nuclear posture grounded in politically centralized escalation control.

This inference is further substantiated by Iran's past conduct. During periods of heightened regional tension, Iranian officials have paired aggressive rhetoric with calibrated restraint. For example, following the 2019 attacks on Saudi oil infrastructure at Abqaiq and Khurais – attributed to Iran by Riyadh – Foreign Minister Javad Zarif warned that any retaliatory strike would precipitate “all-out war” (United States Institute of Peace, 2023), underscoring a deliberate strategy of escalation. Iran's central authority, however, also showed its intention to control escalation, a trait highlighted in SCE. During the 2023 Israel–Hamas conflict, while Khamenei praised limited Iranian-backed missile strikes as “legal, rational, and legitimate,” he refrained from escalating the confrontation further (Vahdat, 2024). This rhetorical-aggressive but operationally cautious pattern suggests a high level of internal coordination and deliberate escalation control, a hallmark of the SCE framework.

This duality, oscillating between provocative signaling and strategic restraint, demonstrates Iran's capacity to manage escalation under centralized authority. If nuclear-armed, this structure would likely enable Iran to threaten calibrated first-use against non-nuclear regional rivals, such as Saudi Arabia, while retaining the ability to de-escalate when necessary. Such behavior is consistent with the core logic of SCE: imposing costs through a politically controlled, top-down escalation mechanism without risking uncontrolled spirals of conflict.

In contrast, Iran would be far less likely to adopt an escalatory posture towards Israel – a nuclear-armed adversary – due to the potential for mutual annihilation and regional catastrophe. In that context, a retaliatory posture would be more plausible. Given their relative geographic proximity, Iran could conceivably pursue a credible second-strike capability against Israel more feasibly than against the US. This geographic factor enhances the strategic viability of developing a full MAD posture vis-à-vis Israel, making SCE more applicable to Iran's posture towards non-nuclear adversaries while reserving retaliatory postures for nuclear neighbors.

In sum, the cases of Israel and Iran – despite their differences in regime type and nuclear status – demonstrate the broader potential utility of the SCE posture. While the data does not

offer definitive empirical validation, it illustrates how SCE helps explain deterrence behavior characterized by centralized political authority and top-down control over nuclear signaling and potential use, thus meeting its criteria. These examples reinforce the posture's potential relevance beyond the North Korean case and highlight its analytical value for understanding deterrence dynamics in both democratic and authoritarian systems.

LRR: Pakistan. The LRR can also be usefully applied to predict Pakistan's potential nuclear posture in the event of heightened tensions with the US. While the US is not Pakistan's declared adversary, the bilateral relationship has historically oscillated between strategic cooperation and deep mistrust. Notably, tensions flared following the 2011 US military raid in Abbottabad that resulted in the killing of Osama bin Laden. The operation, conducted without prior notification to Islamabad, reignited suspicions about Pakistan's complicity with extremist groups and underscored the asymmetry in the two states' strategic priorities.

Should Pakistan perceive a need to deter the US, particularly in response to potential threats to its sovereignty, it is unlikely to adopt a full-spectrum MAD posture due to enduring financial and technological limitations. Instead, the LRR model more accurately captures the kind of deterrence Pakistan could feasibly pursue. Its longest-range missile, the Shaheen-III, tested in 2015, has a maximum range of approximately 2,750 km (Haider, 2015) – well short of the roughly 11,000 km needed to strike the US mainland.

However, with incremental improvements in its missile capabilities, Pakistan could potentially extend its reach to Diego Garcia, a key US strategic base in the Indian Ocean, located around 3,500 km from Pakistan's southern coast. Reaching such a target would not enable robust retaliation, but it could introduce enough risk to slightly complicate US military planning – thereby constituting a minimal form of deterrence consistent with LRR.

Yet, the deterrent effect of targeting Diego Garcia would remain limited. The base lies within the British Indian Ocean Territory (BIOT), a territory technically administered by the United Kingdom (UK) but leased to the US for military operations. Since the island is not a formal US territory and is far removed from the American mainland, its symbolic and strategic value as a deterrence anchor would likely be modest. To meaningfully restrict US military options, Pakistan would need to further enhance its delivery capabilities to reach Guam, a US-administered territory in the Pacific Ocean. Achieving this range would allow Pakistan to pose a more direct, albeit still limited, retaliatory threat –thereby satisfying the core criteria of LRR: centralized control, technological constraint, and a credible if narrow retaliatory signal.

Historical precedent also supports the feasibility of Pakistan adopting an LRR posture. In the aftermath of the September 11 attacks, Islamabad faced significant pressure from Washington to cooperate in counterterrorism operations. Pakistan did so – providing intelligence, logistical access, and overt political support for the US-led war in Afghanistan. However, it simultaneously sought to preserve regional leverage by maintaining covert ties with factions of the Taliban (Khan, 2007; Sunawar, 2015). This dual-track approach – cooperating while hedging – demonstrates Pakistan's capacity for strategic flexibility in pursuit of its own interests under asymmetric power conditions.

This pattern of behavior aligns well with the LRR model, which emphasizes the interplay between limited military signaling and active diplomatic engagement. Should Pakistan-US relations deteriorate further – particularly in the context of US military presence in the region or perceived violations of Pakistani sovereignty – Islamabad may seek to employ nuclear signaling not as a precursor to escalation, but as a form of coercive leverage aimed at altering US behavior. In such a scenario, LRR offers a plausible path: maintaining a centralized decision-making structure while deploying controlled, limited-threat posturing to blend deterrence with diplomacy.

Pakistan's technological ceiling, historical interaction with the US, and established patterns of dual engagement suggest its potential strategic alignment with the LRR posture. Again, while the data does not offer definitive empirical validation, it illustrates how LRR helps explain deterrence behavior characterized by limited strike capability, centralized command, and calibrated threat signaling. Though currently unable to threaten US core territories directly, Pakistan could still potentially constrain specific American options in a crisis by signaling limited but targeted retaliation – without crossing into full-spectrum deterrence. This case reinforces the adaptability and cross-regional utility of the HMD model.

Normative and Ethical Implications of Hybrid Modality Deterrence

While the HMD model offers a practical and explanatory framework for understanding how North Korea tailors its nuclear postures to asymmetrical threats, the case also raises critical normative and strategic questions. Specifically, the posture types of SCE and LRR challenge established global nuclear norms, particularly the principles of no-first-use (NFU), proportionality, and restraint. By allowing Pyongyang to signal aggressive intent as part of its survival strategy, these postures risk nullifying the international community's normative commitments to nuclear restraint altogether. North Korea's ability to achieve deterrence through such aggressive postures sets a precedent that other peripheral nuclear states may find both viable and attractive, creating the prospect of these strategies becoming normalized. If emulated, this would not only accelerate regional arms racing but also undermine the credibility of the global non-proliferation regime, weakening its authority as the central framework for governing nuclear behavior.

This section therefore examines the broader ethical and strategic consequences of HMD, highlighting how the very pragmatism that makes North Korea's approach effective in practice simultaneously threatens to undercut the normative foundations of the global non-proliferation regime.

Normative and ethical dimensions for SCE. The posture of SCE inevitably generates normative and strategic tensions between the survival imperatives of North Korea and the stability of the global nuclear order. At its core, SCE rests on the logic of first-use – an explicit or implicit willingness to initiate nuclear strikes in response to conventional threats. This logic directly contradicts the global norm of no-first-use (NFU), which is intended to minimize the risk of catastrophic escalation and preserve restraint in nuclear policy.

The signaling of a first-use option under SCE therefore raises fundamental normative concerns. It not only undermines the durability of NFU as a cornerstone of global nuclear norms but also increases the likelihood that other peripheral states will emulate such aggressive postures. For states that have already crossed the nuclear threshold – despite the prohibitions indicated in Nonproliferation Treaty (NPT) – the pursuit of regime survival frequently takes precedence over normative commitments. As Kamath (2011) observes, the very act of nuclear acquisition constitutes a *de facto* rejection of non-proliferation norms. SCE then goes to compound this rejection by institutionalizing a posture that openly devalues NFU, making norm erosion not an unintended consequence but a built-in feature of nuclear strategy.

The implications extend well beyond North Korea. By demonstrating that deterrence can be secured through an aggressive first-use posture, Pyongyang risks setting a powerful precedent for other peripheral states. The normalization of such signaling could heighten nuclear brinkmanship, erode the credibility of NFU pledges, and weaken the norms of restraint that underpins existing arms control frameworks – causing lasting damage to the international nuclear order.

Beyond normative degradation, SCE also heightens the risk of regional instability and miscalculation. The deliberate threat of first-use, especially under conditions of high alert and

compressed decision timelines, can generate structural responses from adversaries, ranging from altered military planning to reinforced alliance commitments. The North Korea case illustrates this dynamic clearly: By introducing the possibility of first-use against Seoul, North Korea has profoundly unsettled the security architecture of Northeast Asia. In response, South Korea established the Nuclear Consultative Group with the US (Office of the President, 2023), a step designed to recalibrate extended deterrence in light of Pyongyang's 2022 nuclear doctrine, which explicitly institutionalized the first-use option.

In sum, observation of the North Korea case suggests that while SCE provides strategic leverage for peripheral nuclear states, it simultaneously carries profound normative and stability related costs. It undermines the foundational principles of the global nuclear order and magnifies the risk of miscalculation in volatile regions, making it a posture laden with ethical and strategic trade-offs.

Normative and ethical dimensions for LRR. The LRR posture also introduces important normative dilemmas. While it is designed to help peripheral nuclear states deter materially stronger adversaries without provoking full-scale conflict, it paradoxically relies on practices that blur the line between restraint and aggression. The core logic of LRR – employing limited, centralized threats to dissuade an attack – ironically requires projecting a credible nuclear threat, even with constrained capabilities.

To sustain this credibility, peripheral nuclear states must engage in increasingly aggressive signaling and concrete demonstrations of capability to prove what their limited technology can realistically achieve. North Korea's 2017 threat to strike Guam illustrates this dynamic vividly: Pyongyang's statements included detailed information on flight trajectories, impact zones, and operational timelines (Lee, 2024; Lee & Kim, 2017). Such specificity underscores the paradox of LRR: credibility rests not on restraint, but on visibly showcasing the effectiveness of a limited arsenal through aggressive display.

This paradox carries serious implications for nuclear norms. LRR may appear more measured than full-scale retaliation, but it risks corroding restraint by normalizing aggressive rhetoric as a prerequisite of deterrence. It thereby creates a gray zone between deterrence and provocation, where aggressive rhetoric becomes necessary not to prevail in conflict, but simply to sustain deterrence.

In this sense, LRR embodies a profound tension between strategic necessity and normative erosion. Although it provides an adaptive path to deterrence under technological constraint, it simultaneously fosters an environment where aggressive rhetoric becomes a routine due to a peripheral nuclear state's constant need to appear both credible and coercive. If emulated, such practices would not only complicate regional stability but also weaken the coherence of the global nuclear order – risking the normalization of postures once viewed as dangerously escalatory.

Conclusion: Contributions and Regional Implications

North Korea's nuclear strategy demonstrates how a peripheral state may construct an effective deterrence by applying different nuclear postures across distinct adversaries. The HMD model captures this dual-track strategy by showing how Pyongyang combines posture types directed at both regional and extra-regional adversaries to maximize its deterrence.

In doing so, HMD also clarifies Pyongyang's distinctive nuclear behaviors: the deliberate threat of first-use against regional targets under highly centralized authority in the SCE posture, and the reliance on limited but symbolically significant retaliatory options against extra-regional

targets in the LRR posture. By conceptualizing these postures as structured adaptations to technological constraints, HMD supplements existing typologies and provides a sharper lens for understanding how North Korea sustains credible deterrence despite its limitations. More broadly, the model advances the study of nuclear strategy by offering the framework of posture pluralism under structural constraint, one that may also apply to other peripheral nuclear states facing similar conditions.

Beyond its theoretical contribution, the HMD framework highlights the practical challenges facing South Korea and its allies by clarifying how Pyongyang calibrates deterrence under structural constraints. This underscores the limits of military solutions available to Seoul. While Washington might, in theory, tolerate damage to its extra-regional territories and still consider preemptive strikes, Seoul has no such option: the entirety of its territory lies within Pyongyang's nuclear reach, especially given North Korea's refusal to rule out first use. Thus, Seoul must complement its deterrence and internal balancing with sustained engagement strategies, while closely coordinating with Washington to ensure that diplomacy remains prioritized. For its part, Washington must also give consistent priority to diplomacy on North Korea within its broader strategic agenda, working with Seoul to develop diplomatic approaches that draw Pyongyang back to the negotiating table. In practice, Washington should recognize that absorbing damage to its extra-regional territories is not a viable option, as such strikes would cause mass US civilian casualties, and any preemptive attack conducted at the expense of South Korea – whose entire territory lies under nuclear threat – would undermine the very credibility of the US-led alliance system.

The analytical lens of HMD may also carry implications beyond the Asia-Pacific. North Korea's growing security cooperation with Russia – including its military support for the war in Ukraine (Helen et al., 2025) – has raised the prospect of Pyongyang's deterrence posture acquiring relevance in the European theater. In a hypothetical contingency where NATO escalates its involvement against North Korean units deployed in Russia, or expands its nuclear operational flexibility in ways that implicitly target Pyongyang, North Korea could potentially adapt elements of the LRR posture towards NATO's nuclear members.

With Pyongyang's deterrence solidly anchored through HMD, the task for Seoul, Washington, and Brussels therefore is to complement the balance of power with a unified response that sustains engagement with North Korea. The overriding priority should be to prevent destabilization and foster the conditions for a peace regime through dialogue. In practice, this means starting with modest but concrete objectives – such as freezing North Korea's activities at their current scope – while creating diplomatic space to lower the risk of inadvertent escalation. This is consistent with the dynamics captured by HMD itself: under SCE, centralized authority opens space for deliberate de-escalation, while under LRR, limited retaliatory options also provide Pyongyang with leverage for negotiation. Constrained capabilities thus compel North Korea to incorporate diplomatic maneuvering alongside coercive signaling; and the allies must make the most of this opening.

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References

- Alexander, B., & Millar, A. (2005). *Tactical nuclear weapons: Emergent threats in an evolving security environment*. Potomac Books.
- Arreguin-Toft, I. (2001). How the weak win wars: A theory of asymmetric conflict. *International Security*, 26(1), 93–128. <https://doi.org/10.1162/016228801753212868>
- Baliga, S., & Sjöström, T. (2008). Strategic ambiguity and arms proliferation. *Journal of Political Economy*, 116(6), 1023–1057. <https://doi.org/10.1086/595016>
- Beres, L. R. (2005). Israel and Samson: Biblical lessons for Israeli strategy in the nuclear age. *Israel Affairs*, 11(3), 491–503. <https://doi.org/10.1080/13537120500122545>
- Cho, Y. N. (2022, September 9). Jungguk Sijinping Sig-ui Jeongchi Byeonhwa Bunseok-gwa—“Gwollyeok Jipjunghyeong” Gwonwijuui-ui Deungjang [Analysis of political changes during Xi Jinping’s era in China—Emergence of ‘Concentrated Power’ authoritarianism]. *Gukje Jiyuk Yeongu*, 32(2), 41–69.
- Choson Sinbo. (2022, September 9). Choego Inminhoeui je 14gi je 7cha Hoeui-eseo Hasin Kim Jong Un Wonsunim-ui Sijeong Yeonseol [Kim Jong Un’s policy speech at the 14th supreme people’s assembly 7th session]. *Choson Sinbo*. <https://chosonsinbo.com/2022/09/09-81/>
- Constant, J. N. (1981). *Fundamentals of strategic weapons: Offense and defense systems*. Springer Science & Business Media.
- Defense Intelligence Agency. (2021). *North Korea military power 61*. https://www.dia.mil/Portals/110/Documents/News/North_Korea_Military_Power.pdf
- Frasca Caccia, A. (2021). The twofold meaning of brinkmanship: Explaining strategic ambiguity in Russia’s nuclear policy. *International and Political Studies*, 34. <https://doi.org/10.18524/2707-5206.2021.34.229976>
- Goldberg, G. (2006). The growing militarization of the Israeli political system. *Israel Affairs*, 12(3), 377–394. <https://doi.org/10.1080/13537120600744594>
- Ha, Y. S. (1978). Nuclearization of small states and world order: The case of Korea. *Asian Survey*, 18(11), 1134–1151. <https://doi.org/10.2307/2643297>
- Haider, M. (March 9, 2015). Test launch of Shaheen-III ballistic missile successful: ISPR. *Dawn*. <https://www.dawn.com/news/1168421>
- Helen, R., Stambaugh, A., Bae, G., & Knight, M. (2025, January 6). Blinken warns Russia is close to sharing advanced satellite technology with North Korea. *CNN*. <https://edition.cnn.com/2025/01/06/asia/blinken-russia-satellite-technology-north-korea-intl-hnk/index.html>
- Kamath, P. (2011). Make no first use of nuclear weapons: The first step towards global nuclear disarmament. *IUP Journal of International Relations*, 5(1), 7–17.
- Karasova, T., & Khlebnikova, L. (2024). The day after: Israel’s approaches to the military operation in Gaza. *Pathways to Peace and Security*, 1(66), 46–68. <https://doi.org/10.20542/2307-1494-2024-1-46-68>
- KCNA. (2013, April 1). *Law on consolidating position of nuclear weapons state adopted*. <http://www.kcna.co.jp/item/2013/201304/news01/20130401-25ee.html>
- KCNA. (2022, September 9). *Joseonminjujuuinmingonghwagug choegoinminhoeui beoblyeong* [Law on DPRK’s policy on nuclear forces promulgated]. <http://www.kcna.co.jp/calendar/2022/09/09-09/2022-0909-002.html>
- Khan, I. (2007). Pakistan’s post September 11 2001 Afghan policy shift: Impact on Pak—India—Afghan geopolitics. *Journal of Asian and African Studies*, 42(5), 461–475. <https://doi.org/10.1177/0021909607081127>

- Kim, H. J. (2017). Bukhan jeonnyaggun “hwaseong-12 4ballo gwam powisagyeog geomto” [North Korea’s strategic force ‘considering siege firing Guam with four Hwasong-12s’]. *VOA*. <https://www.voakorea.com/a/3979707.html>
- Kim, S. S., & Cohen, M. D. (2017). *North Korea and nuclear weapons: Entering the new era of deterrence*. Georgetown University Press.
- Kristensen, H. M., & Norris, R. S. (2014). Israeli nuclear weapons, 2014. *Bulletin of the Atomic Scientists*, 70(6), 97–115. <https://doi.org/10.1177/0096340214555409>
- Kristensen, H. M., & Norris, R. S. (2018). North Korean nuclear capabilities, 2018. *Bulletin of the Atomic Scientists*, 74(1), 41–51. <https://doi.org/10.1080/00963402.2017.1413062>
- Kwok, M. I. (2016, July 1). Buk maeche, gwam migungji musudan misail gonggyeog yeongsang gonggae [North Korean media releases video of Musudan missile attacking US bases in Guam]. *Yonhap*. <https://www.yna.co.kr/view/AKR20160701199200014>
- Lee, C., & Kim, S. (2017, August 9). (4th LD) N. Korea threatens missile strike near Guam, warns of all-out war. *Yonhap News Agency*. <https://en.yna.co.kr/view/AEN20170809001054315>
- Lee, J. H. (2023). *North Korea’s nuclear strategy pre-and-post-2016: Pyongyang’s evolving nuclear posture and its motivation for strategy transition* [Doctoral dissertation]. King’s College London.
- Lee, J. H. (2024). North Korea’s evolving perception of China: From Kim Jong il to Kim Jong un and the evolution of Pyongyang’s nuclear strategy. *Korea Observer—Institute of Korean Studies*, 55(2), 191–218. <https://doi.org/10.29152/KOIKS.2024.55.2.191>
- Lee, J. H. (2025). The Byungjin (dual progression) and the logic of authoritarian survival: Kim Jong Un’s pursuit of legitimacy through nuclear prowess. *Journal of International and Area Studies*, 32(1), 109–131. <https://doi.org/10.23071/jias.2025.32.1.109>
- Levy, Y. (2020). Israel: A politically monitored military in a militarized society. In W. R. Thompson & H. B. Nassif (Eds.), *Oxford research encyclopedia of politics*. Oxford University Press. <https://doi.org/10.1093/acrefore/9780190228637.013.1895>
- Mack, A. (1975). Why big nations lose small wars: The politics of asymmetric conflict. *World Politics*, 27(2), 175–200. <https://doi.org/10.2307/2009880>
- Narang, V. (2015). Nuclear strategies of emerging nuclear powers: North Korea and Iran. *Washington Quarterly*, 38(1), 73–91. <https://doi.org/10.1080/0163660X.2015.1038175>
- Office of the President. (2023, July 18). *US-ROK joint press release on nuclear consultative group*. Office of the President of the ROK. <https://eng.president.go.kr/briefing/wvKplxPk>
- Oh, B. R. (2016). *Bungnamgwangyewa Haekmunje* [North–South relations and the nuclear issue]. Pyongyang Publishing House.
- Paritzky, E. J. (2003). Removing opacity: Putting Israel’s nuclear capability under the LAMP. *International Journal of Intelligence and Counterintelligence*, 16(3), 389–408. <https://doi.org/10.1080/713830444>
- Preston, T. (1997). ‘From lambs to lions’: Nuclear proliferation’s grand reshuffling of interstate security relationships. *Cooperation and Conflict*, 32(1), 79–117. <https://doi.org/10.1177/0010836797032001003>
- Schelling, T. C. (1960). *The strategy of conflict*. Harvard University Press.
- Schelling, T. C. (1966). *Arms and influence*. Yale University Press.
- Sunawar, L. (2015). Pakistan as a frontline state in the war against terrorism: Cost and benefit analysis. *Political Studies*, 22, 43–62.
- United States Institute of Peace (USIP). (2023). *Timeline of Iran-Saudi relations*. The Iran Primer. <https://iranprimer.usip.org/blog/2016/jan/06/timeline-iran-saudi-relations>
- Vahdat, A. (2024). *Iran’s supreme leader hints at retaliation after missile strike*. Associated Press. <https://apnews.com/article/iran-israel-missile-strike-khamenei-2bce5479abfdac5fd953d5547d04941c>