

CONCESSIONS TO THE LIMITED POWERS: Considerations of Low-Yield Nuclear Weapons, Asymmetrical Capability, and Extended Deterrence

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Introduction

Quite recently, nuclear strategy scholars Kier Lieber and Daryl Press posited that arms' tables have turned, citing the asymmetry of limited nuclear powers as a reboot of the United States (US)-North Atlantic Treaty Organization (NATO) tactical nuclear playbook during the Cold War.¹ Their key message—that “The United States must take seriously the nuclear capabilities and resolve of its foes”—isn't lost on us: we previously called for the need to begin serious counter-weapons of mass destruction (WMD) planning for adversarial use of nuclear weapons below the threshold of Armageddon.² We must raise an objection, however, to the assertion that states with limited nuclear capabilities are reprising the US' 20th century strategy of coercion and dissuasion with their handfuls of weapons. Instead, we see a world wherein not only Russia and China, but militarily asymmetrical nuclear aspirants, such as North Korea and Iran, increase their resolve to employ nuclear threats to gain concessions outside previously conceived escalation ladders.

American adversaries—and the foes of US allies under the nuclear umbrella—cannot rationally threaten a massive nuclear strike and expect to benefit militarily after certain retaliation. This classic model of deterring behavior through assured *failure*, if not complete destruction, was emblematic of the dyadic US-Soviet relationship that endured for the Cold War.³ As Lieber and Press describe in their most recent article, *The Return of Nuclear Escalation*,⁴ the US-NATO strategy for so-called “tactical” nuclear weapons in Europe was spawned from a desire to avoid direct intercontinental exchanges, and

either dissuade any territorial aggression toward NATO or at least coerce Moscow into halting a conventional campaign. Per that theory, a few short-range, lower-yield weapons would be enough to demonstrate American resolve to alliance commitments without immediately escalating to mutual destruction.

We posit that more so today than in the last century, the rise of the nuclear taboo, at least among Western democracies,⁵ and fear of retaliation from even singular nuclear use reinforces the dissuasion of first strike doctrine.⁶ The desire to avoid *any* nuclear attacks on one's homeland was determined early in the nuclear age to underpin the fruitlessness inherent in nuclear exchange. At least among those states on parity to exchange volumes of nuclear weapons, certain resort to conventional war was the only rational choice.⁷ So arose the Atomic Age mantra of nuclear war as unwinnable from the start, as Bernard Brodie suggested as early as 1946,⁸ and a clamoring chorus that “the ever-diminishing plausibility of the nuclear threat and ever bolder challenges to make good on it,” as Morgenthau wrote in 1964,⁹ itself voids the proposed value of deterrence.

Pyongyang is not NATO—or Islamabad

But North Korean enterprises in the nuclear space are not simply copycat efforts reflective of this dyadic US/NATO vis-à-vis Soviet history. Although Pyongyang's nascent nuclear and conventional capabilities are certainly far weaker than those of the Republic of Korea (ROK)-US alliance, this is an extreme asymmetry, and thus is not nearly comparable to the US-NATO strategy against Soviet territorial

aggression in Europe. According to data from the Federation of American Scientists (FAS), the dyadic US-Soviet nuclear inventories were relatively balanced by the mid-1970s, when each held approximately 50% of worldwide warhead stockpiles; prior to this, the US maintained a monopoly on the largest quantity of nuclear arms.¹⁰ It is therefore difficult to compare US/NATO strategies for tactical nuclear weapons to be comparable with the asymmetry contemporary nuclear powers and aspirants who possess limited quantities of weapons have vis-à-vis the United States.

Pakistan is also not North Korea. Lumping together states with small nuclear arsenals or nuclear aspirations implies that comparisons exist beyond quantities alone. A more complex categorical assessment should center on *intent*. Regardless of how many weapons exist, Islamabad has clearer intentions for using nuclear arms to deter neighboring India.¹¹ More importantly, there's no extended deterrence guarantee from Washington for either side of such an engagement, and the potential for nuclear exchanges remains isolated to these nations based upon their own interactions. North Korea, on the other hand, is poised to engage not just with its neighbor, but a formidable alliance with direct-attack targets that are far from the Peninsula.

Moreover, limited nuclear powers like the DPRK do not possess quantities of weapons necessary to defeat either in-kind nuclear or even conventional retaliation. That's not true for Islamabad, which has openly discussed preparations of nuclear landmines to directly deter troop advances in border regions.¹² At "zero range," Pakistan and India could fight a nuclear war of attrition most akin to the US-NATO strategy that Lieber and Press point to as the basis for limited use in the context of strategic asymmetry. During the Cold War, the Soviet Union held its own reserve of strategic weapons capable of inflicting mutually assured destruction should it either be the victim of aggression, or be embroiled in a protracted war in Europe. North Korea, on the other hand, faces the alliance of both a neighbor and a faraway adversary that could project overwhelming conventional and nuclear force (without even relying on the more than 28,000 troops that are deployable at the North Korean doorstep),¹³ and has little recourse to respond with the force that the Soviet Union previously possessed.

Limited taboo, limited use

While the taboo on nuclear use has been concretized among democracies, the behavior of states that reject these currently accepted norms and have little or no dependency on the

opinions of their citizenry suggest a lack of internalization for non-use of nuclear arms. We posit that low-yield, high-precision WMD employment strategies which are outside of self-imposed restraints on their use become attractive as effective tools for military operations (in both combat and improved deterrence roles) when the internalization of non-use is limited or wholly lacking.¹⁴ Because technical improvements in weapons' precision and payload miniaturization have effectively upended certain moral qualms that girded any nuclear taboo and sustained its legacy of non-use since WWII,¹⁵ WMD employment that stays within other normalized behavior of the international system of arms' capability becomes a palatable option for those states already wavering on military utility. The United States may still choose not to employ WMD in this way, even when it is a proportional use of force, but global actors who have less internalization of the nuclear taboo may seek to exploit gains from both the US (and its allies') restraint through their own limited use of low-yield nuclear weapons. As survey research has shown, the aversion to nuclear use among ordinary Americans regresses when clear military advantages are shown;¹⁶ why then would we expect despotic regimes with poor track records for the respect of human rights to hold more restraint?

Historic military-technical revolutions (MTRs), correspondingly referred to as the revolutions in military affairs (RMAs), were not immediately recognizable at the time new technologies entered inventory, but became salient only when armies implemented "major changes in the way they prepare and conduct operations in war" for increased effectiveness.¹⁷ The realization of a revolution's gains, therefore, does not necessitate the creation of a new type of weapon or scientific study, rather only the willingness and bureaucratic reform to shift paradigms from existing methods of warfare. Such an envisioned adoption of chemical, biological, radiological and nuclear (CBRN) weapon employment, however, is not equivalent to an erosion of the international norms or ethics that prohibit indiscriminate targeting, disproportionate effects, or gross collateral damages. Instead, the next MTR will be in the realization that CBRN effects—on the battlefield and as tools of deterrence—can favorably limit the feared outcomes associated with this entire category of arms that has injudiciously undergirded their labeling as weapons of "mass" destruction. Indeed, it may be, and we opine is likely, that new generation CBRN agents will be employed for their particular, tactically disruptive effects, which may incur "down-range" destructive manifestations (to economics, infrastructures, socio-political functionality/coherence, as well as public

health), but that do not meet regnant criteria for WMDs per se. Changes in international narratives about the viability and value of low-yield nuclear weapons may incur “spill-over” effects upon perspectives, tolerances and thresholds of use of other types of instruments (e.g., novel chemical/biological agents¹⁸ or autonomous weapons)¹⁹ to incur disruptive influence.

Emergence of a new nuclear age

Since the Cold War, the US has maintained a stockpile of nuclear weapons with multi-megaton yields that were intended to deter similarly equipped nuclear weapon-capable states (NWS) from a direct attack on the homeland or allies; but this armamentarium has not been modified to address broader security concerns beyond mutually assured destruction.²⁰ Such inaction may be traced to perceptions and *ad nauseam* discourses about the characteristically disproportionate and indiscriminate nature of nuclear warfare, which have given rise to the Global Zero campaign and reiterative leadership commitments on non-use.²¹ The history of nuclear use and dyadic race to larger, thermonuclear yields made “nuclear” synonymous with “mass destruction” and categorically placed this entire class of technology on a linear path of use avoidance. Meanwhile, the US has accepted liberal use of remotely piloted aircraft (RPA, colloquially called “drones”) to prosecute the actual conflicts of the last two decades, lauding their precision and ability to reduce casualties as ethical.²² Whether in conflict with states or non-state actors, the US has invested in weapons innovations to reduce casualties and increase the range of available response options with discrete effects at longer ranges, from air-launched precision guided munitions during Operation Desert Storm²³ to the Army’s latest generation Precision Strike Missile (PrSM).²⁴ Even against a pacing challenge with the PRC, the US has committed to developing artificial intelligence and autonomous machines of war with a “responsible and ethical approach,” as Deputy Secretary of Defense Kathleen Hicks said in introducing the Replicator initiative during a conference in Washington last fall.²⁵ Yet, the US nuclear stockpile remains chained to the moniker of “mass destruction.” Given the very real possibility of facing conflict with an asymmetric nuclear actor, we challenge assumptions that US deterrence remains strong without changes to the status quo stockpile to address militarily feasible, flexible response options afforded by mating nuclear warheads with practical yields to the revolution in precise delivery systems.

Discussing flexibility does not equate to ethical laxation that will violate the nearly 79-year taboo on nuclear use if such weapons were operationally introduced, but should be

considered given that the lack of flexibility may instead lead more directly to abrogation of those norms. From the advent of the Nuclear Posture Review (NPR) in 1994, “modernization” of the stockpile has meant de facto “service extension” of existing designs in each restatement. The existing stockpile, however, has done nothing to deter Russian aggression in either Georgia or Ukraine, nor ongoing Chinese assertions about, and threats against Taiwan.²⁶ None of the previous NPRs established a new pathway for the aging nuclear arsenal to meet contemporary requirements beyond direct/extended deterrence, and the discourse has remained primarily focused upon Russian nuclear capability and threat.

The latest NPR (2022)²⁷ offers some compromise on acknowledging the need for “flexible” nuclear options, but the cancelation of a nuclear-armed sea-launched cruise missile (SLCM-N) replacement for the Tomahawk falls short of the type and extent of modernization required to address low-yield nuclear threats in the contemporary era of greater multi-polarity.²⁸ Even the W76-2 warhead for the submarine-launched leg of the Triad, which was deployed on the heels of the previous 2018 NPR,^{29,30} raises criticism that it’s “low yield” still means “death and destruction, perhaps on a massive and indiscriminate scale,” as Ken Olivier and George Perkovich of the Carnegie Endowment rebutted State Department reasoning to support its role in extended deterrence and more flexible response options.³¹ Choosing the appropriate posture, however, must not simply equate the contemporary renewal of the Great Power competition of Russia and China³² with a return to the Cold War paradigm of strategic deterrence alone.³³ Instead, a balanced review could include the need for reliable constraints on Russia, as well as on an emergent China, while concomitantly preventing proliferation of nuclear capabilities among lesser, but iteratively more capable powers —such as Iran and North Korea— in efforts to count the full range of threats outlined in the latest National Defense Strategy (2022).³⁴

North Korea’s nuclear ambitions offer a non-theoretical lens through which to observe (1) how adversarial use of low-yield nuclear weapons well below MAD thresholds might occur; (2) how the lack of internalization of the nuclear taboo still exists in the global community; and (3) how the current US response options may be insufficient to deter such violations of non-use. While the world in 2024 is consumed with concern that Russia might use a “tactical” nuclear weapon in the Ukraine,³⁵ that situation is less pertinent to the abrogation of non-use as a global norm: existing deterrence theory has always expected that any NWS suffering significant battlefield loses could seek

nuclear weapon options as a last resort. Russia's failures in the Ukraine only support the extant playbook. Although a grave violation of non-use and a deviation from Western commitments never to use nuclear weapons against a non-NWS, Russian propagandizing has set the stage to contain any battlefield nuclear employment to a narrative of existential self-defense—reasons all NWS use to justify sustainment of arsenals against calls for full elimination. Instead, North Korea's potential for low-yield use to achieve limited objectives outside of "last resort" narratives would open a new era of the Third Nuclear Age, wherein flexible options for use are seen as salient, military actions defensible by *jus in bello* principles of proportionality. This is the profound shift in thinking that would revise the international order, setting back decades of peaceful security-building and US-led counterproliferation regimes. How this might materialize requires first an understanding of whether (and to what extent) literature on taboo holds for Pyongyang under scrutiny of its historical relations.

Korea: Nuclear issues; then and now

Contemporary bargaining with Kim Jong Un about nuclear weapons can best be understood in the historical context of longstanding American threats to use overwhelming force against his familial regime. In the clearest expression, President Truman overtly threatened to use "every weapon that we have" (November 1950)³⁶ in direct response to a press question about atomic weapon deployment in Korea (just five years after their initial use to compel the surrender of Imperial Japan), and subsequently deployed hundreds of air- and ground-launched weapons to the Korean Peninsula between 1958 and 1991.³⁷ During those post-Armistice decades, the ROK made covert research attempts³⁸ and the US continued testing of increasingly larger thermonuclear—adding context to North Korea's own ambitions as an independent NWS. In less direct terms, the US demonstrated its conventional capabilities to topple similarly adversarial regimes during numerous military campaigns after the Korean conflict without the single use of a nuclear weapon: Operations Desert Storm, Deliberate Force, Allied Force, Enduring Freedom, Iraqi Freedom, and Odyssey Dawn are exemplary of such actions that occurred after the self-declared American denuclearization of South Korea's territory under President George H.W. Bush.³⁹

Thus, whether conventional or nuclear, the United States has retained superiority over North Korea since the international division, strengthened the ROK-US alliance to conduct forcible entry,⁴⁰ and articulated warnings of "fire and fury" against the North from the highest level of government as late as 2017.⁴¹

From this perspective, it is not surprising that Kim Jong Un, as his father and grandfather preceding him, has sought strategic capabilities in an attempt to balance this lopsided equation, and why he is unlikely to trade any deterrent capacity without certainty that his grip on power will not be loosened or lost in the same ways as Mladić, Hussein, or Qaddafi.

A sub-text, however, might be considered as to why the US never used a nuclear weapon in Korea (or China), having done so in Japan only five years earlier, and instead fought a high resource/high casualty war without clear victory. Toward such ends, it may be useful to take a historiographical approach on the record of overt and so-called "back channel" threats to employ atomic bombs against the North during active hostilities between 1950 and 1951,⁴² much of which has only become available to researchers in the last decade.⁴³

The paradox of suitable targets

Certainly, not all reservations about the use of nuclear weapons in Korea were based on their outright rejection as immoral, given the initial suggestions of Eisenhower and MacArthur days into the war.⁴⁴ Within the military establishment, the discussion of atomic use met forcefully along the line of whether the conflict presented any "suitable" targets that would not already be well-served by conventional air bombs and artillery⁴⁵ or would avoid escalating Soviet involvement, given the USSR's NWS status had been established the previous year. Unlike World War II, which had been defined as total war involving the mobilization of all civilian, industrial, political, and military resources spanning the globe, Korea was viewed as a locally-defined territorial conflict with limited belligerents and a singular objective for reunification. As such, concerns remained over how strategic weapons, which had been used only in counter-population scenarios for compelling an adversary not to risk destruction of its home territory, could be applied to a tactical ground campaign in Korea where unification was sought by both sides.

The extent to which ethical inhibitions and proscriptions on the use of nuclear weapons under any conditions following WWII impacted the selection of "suitable" targets, has been proposed,⁴⁶ but remains an unquantifiable unknown. Moreover, in the intervening five years following the Second World War, no major advances had been made in training American infantry to fight in a radiation zone, nor had troops (yet) been equipped with mechanisms for delivering small-yield "tactical" nuclear weapons against constantly moving enemy positions.⁴⁷ In effect, the selection of targets would have been hampered by the lack of pre-war planning for employment in such a scenario as Korea

because the planning had not been undertaken or had been deemed so implausible as not to warrant sufficient study, even within the military establishment. As of 1950, atomic weapons were exclusively intended for “strategic value” targets with a reserved “special” status, and the Department of Defense had not engaged in operationalizing their use in a limited war against tactical objectives, even as US scientists and weapons’ developers were precisely preparing a future class of small-yield, battlefield-ready atomic rounds for such use.⁴⁸ For Korea, the shift away from “massive retaliation” strategy toward “flexible response” would not come until the Kennedy Administration.⁴⁹

Instead, the most dramatic change in nuclear policy during the Eisenhower Administration came well-after the July 1953 Armistice, and was oddly proposed as a cost-saving measure rather than to meet a military objective. During a NSC meeting in September 1956, Eisenhower set a directive to reduce the costs of sustaining large numbers of personnel for US Forces Korea (USFK) and funding joint ROK operations—totaling USD\$800 million that year, or USD\$7.85 billion when accounting for inflation.⁵⁰ The options discussed required reducing the troop footprint dramatically, while still keeping a deterrent force on the Peninsula to maintain the Armistice. Despite training and support to ROK military, the NSC concluded in subsequent studies that the withdrawal of USFK would almost certainly encourage the North to abrogate the Armistice and again attempt forcible reunification.

In response, the Eisenhower Administration proposed the deployment of newer, low-yield, tactical nuclear “atomic rounds,” which had not been available during the war.⁵¹

Rather than deploying strategic US B-29 bombers to fly into theater, these new weapons could be pre-stationed with ground forces to enhance their deterrent capacity. By 1958, the first of such tactical weapons arrived on the Peninsula, including 280-mm atomic cannons (artillery shells with low-yield warheads) and Honest John short-range, surface-to-surface atomic missiles.⁵² The addition of these weapons achieved what the Joint Chiefs of Staff had wanted the Truman Administration to approve in 1950, but such technology for the US arsenal had not yet been created. These weapons were deemed to be more suitable to a variety of tactical implications because they could be more precisely fired by ground forces, rather than requiring the time-delay of requesting strategic support from the Strategic Air Command (SAC). In addition, their low-yield mass was viewed by some as more ethically acceptable than Mark III or Mark IV air-dropped bombs,

because they could (at least theoretically) be limited to a threat radius of only enemy forces, rather than the far more expansive counter-population targeting of civilian cities.⁵³ This policy of tactical nuclear weapons deployment to South Korean territory continued until December 1991, when President George H. W. Bush ordered their withdrawal.⁵⁴

Pyongyang’s nuclear calculus

For whatever long-term costs the overt and back-channel threats to use nuclear weapons in Korea had on the North Korean calculus to pursue weaponization, the deployment of tactical weapons to the Peninsula staged a much more explicit American threat directly across the demilitarized zone (DMZ). From the Armistice in 1953 to the deployment of tactical weapons in 1958, the number of US troops on the Peninsula decreased from around 300,000 to 50,000,⁵⁵ thereby reducing the direct threat of a ground assault. Yet, the sustained presence of nuclear weapons allowed the Eisenhower Administration to achieve its objective of cost-savings, while still enhancing the deterrent threat against North Korea; a threat that the North Korean government, military, and populus endured for more than three decades.

In addition to explicitly staring down the destructive power of the US nuclear arsenal opposite its border until 1991, the DPRK has since had access to NSC-68 (declassified 1975), which would have clarified the extent to which the US viewed Korea as a proxy battleground with the Soviet Union, rather than for strategic value or alliance with the ROK alone. The current availability of such documents depicts the rising din of what were once classified internal discussions, attempted strategic messages, and overt threats to use the expanding nuclear force in Korea.⁵⁶

Further, in 2017, the US attempted to bring about North Korean denuclearization, through what may best be regarded as a form of brinkmanship, or as “mad man” theory.⁵⁷ When President Trump first met Kim Jong Un in Singapore in 2018, he brought along a video that was part real-estate pitch, combined with a solid amount of strongman-style threatening of the isolation that what would happen if the “hand of peace”⁵⁸ was not well-received. Through the Hanoi Summit of February 2019,⁵⁹ US threats against North Korea continued at the highest level, even when an agreement on denuclearization was being sought. Despite the desire for something more positively engaging, the second and last Trump-Kim meeting yielded much more of the same, cyclical threats for compelling Pyongyang through renewed conflict, if necessary.

Concessions to the limited powers

North Korea is just one example: outside US-Russia-PRC relations vis-à-vis one another, every nuclear arsenal or aspirant weapons program is asymmetric compared with the US. This iterative ecology of potential nuclear belligerents’ pretexts, paces of development and engagement, possible target(s) and intents is presented in Table 1, below.

Pyeongyang and regimes with similar programs need not borrow from Cold War playbooks that were rooted in assumptions about dyadic escalation. In contrast, these limited nuclear powers cannot afford “one or two” tactical nuclear weapons to dissuade further territorial aggression or off-ramp a conflict back to the conventional threshold: they would meet certain destruction without secure second-strike retaliatory options even remotely approximate to the scale of the US arsenal. Just one or a few weapons of any size might dissuade attack from a non-nuclear or near peer competitor, as between India and Pakistan, but limited nuclear weapons programs are just as likely to invite a pre-emptive first strike from a Great Power vying to curtail further proliferation.⁶⁰ What value, then, can limited powers gain by engaging in nuclear weapons development to compete with the US?

To plan effective deterrence, we must consider that the “WMD” label is truly a misnomer. Lower nuclear yields in the sub-kiloton range—along with chemical, biological, and radiological weapons of true asymmetry—can be delivered on high precision systems with collateral effects below those produced by conventional high explosive ordinance, such as the GBU-43 or roughly 11-ton “mother of all bombs” (MOAB).⁶¹ This strategy is far from the perceived asymmetry

that the US and NATO planned against to block or dissuade Soviet territorial expansion into Eastern Europe, when both sides could threaten escalation to both larger yields and direct attacks on each other’s homeland territory.

Limited nuclear powers cannot rely on Cold War paradigms because their asymmetric arsenals vis-à-vis the US are incapable of threatening such escalation. With only a few weapons, first strike attempts risk certain retaliation and a high likelihood of taking heavier losses than inflicted on the US. Similarly, holding one or a few weapons to dissuade a direct attack from a much more robust nuclear arsenal lacks rational choice that retaliatory strikes would create winnable terms, echoing Morgenthau’s “fruitless” paradoxes that nuclear warfighting is doomed from the start.

Instead, these limited nuclear powers could use low-yield nuclear weapons to garner concessions. Whether held as a reserve threat or actively used, limited powers cannot hope to “win” an already unwinnable war but can bait a stronger NWS to reconsider nuclear restraint. Such a concessions-based scenario is most viable when the likelihood of a stronger NWS violating a deeply entrenched taboo on non-use is low, thereby allowing the limited power to threaten or use one or a small number of weapons without risking swift and assured destruction.

One such scenario where the US/NATO “tactical” weapons playbook could overlap with a limited power seeking to garner concessions would be on the selection of target(s). If regarded as militarily feasible and creating only limited collateral damage, a limited nuclear power could proffer constraints on use that

	Balance	Pretext	Speed	Targets	Intent
US-NATO COLD WAR NUCLEAR STRATEGY VIS-À-VIS SOVIET UNION	Dyad capable of mutually assured destruction	Territorial aggression	Deliberate escalation	Conventional military	Coercion/dissuasion
REGIONAL NUCLEAR ACTORS VIS-À-VIS PEER/NEAR PEER	Mutual or imperfect symmetry	Territorial aggression	Deliberate escalation	Conventional military	Coercion/dissuasion
LIMITED NUCLEAR POWERS VIS-À-VIS EXTENDED DETERRENCE	Complete asymmetry (nuclear/conventional)	None	Unchained provocation	Conventional military	Gain concessions

Table 1

maintains a high bar of restraint by a Great Power. The most feared characteristics of nuclear war, including fallout that can spread beyond the intended operational target theater, have been shown to be mitigated in modeled scenarios assessing a low airburst (10 meters) detonation of a low-yield nuclear weapon of less than a kiloton.⁶² For low-density population targets, the discriminate effects of such “WMD” use against a justified military objective would be well-contained, within the destructive parameters of (previously used) current conventional explosive weapons, and could be delivered without adversarial threat (such as that rendered to the type of low-flying aircraft required to drop multiple conventional explosives capable of achieving similar effects). In conclusion, we posit that the nuclear narrative is changing, and it will be vital for the US and its allies to re-address this discourse – and extant postures of deterrence and defense with strict reference to fact(s), so as to proceed pragmatically, accordingly and with prudence. ■

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