Back to the Future

Conventional-Nuclear Integration and Regional Deterrence

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This article explores the US revival of conventional-nuclear integration (CNI) to bolster regional deterrence amid intensifying great power rivalry, particularly with Russia and China. Proponents argue that CNI enhances deterrence and reassurance by combining nuclear and conventional capabilities into a unified strategy. Yet critics raise concerns about entanglement, where overlapping systems could trigger miscalculation or accidental escalation. While CNI aims at strategic cohesion and signaling strength, entanglement warns of operational risks. Ultimately, both perspectives are vital for understanding evolving deterrence needs in a complex, multipolar security landscape.

The United States provides security guarantees to nearly 40 allied countries, including extended deterrence pledges that involve nuclear assurances. Although these extended deterrence commitments faded into the political background following the collapse of the Soviet Union and the Warsaw Pact, conventional and nuclear deterrence are again increasing in military importance and political salience.

The United States' peer and non-peer adversaries are attempting to acquire or are integrating increasingly advanced nuclear capabilities or new nuclear doctrines into their defense establishments and operational planning for future conflicts. This is creating an issue for defense planners, because the US tactical and theater nuclear capability that emerged in the 1950s with the Eisenhower administration's "New Look" defense policy—which aimed to balance military needs with fiscal limits by emphasizing nuclear deterrence strategies—was eliminated in the immediate aftermath of the Cold War. Nuclear weapons have been largely removed from US conventional theater forces. This reality requires the United States to consider possible adversary nuclear use during a conventional conflict and to invest in integrated conventional and nuclear capabilities for US theater forces to better deter and defeat such threats.

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There is a growing movement to reintroduce nuclear capabilities in theater forces and regional deterrent postures.[1] As an April 2025 analysis notes, "France is making noise about expanding a nuclear umbrella to other European nations. Poland and South Korea are publicly calling for Washington to deploy US nuclear weapons on their soil, and Sweden has announced its willingness to host US nuclear weapons in wartime."[2] American interest in combining conventional and nuclear forces, which is often described by the terms *conventional-nuclear integration* (CNI) or *entanglement*, is replacing a preoccupation with special operations that characterized the Pentagon's approach to the Global War on Terrorism. American planners are slowly recognizing that a focus on tactics and weapons acquisition to win the next engagement is not the same as devising a strategy and force posture to deter the next war.[3]

CNI is important because plausible scenarios for nuclear conflict can arise out of a conventional war that escalates into a theater nuclear conflict. Russian nuclear doctrine, for instance, advances the concept of "escalate to de-escalate," which suggests that nuclear weapons can be used to reverse a losing conventional battle or to terminate a successful conventional engagement on favorable terms.[4] Multiple studies and wargames in an Asia context also have suggested that "most of the plausible scenarios for the initiation of nuclear war begin with the escalation of an extended deterrence crisis that started at the conventional level."[5]

But not everyone is highlighting how CNI will bolster America's predominately conventional theater deterrent posture. One expert has warned about the threat of conventional-nuclear entanglement as a source of deliberate or inadvertent escalation during a theater conflict: "Entangled nuclear-conventional crises are set to be more difficult to navigate than the nuclear crises of the US-Soviet Cold War."[6] While the terms CNI and entanglement both characterize the same strategic circumstances, they come to rest on opposing assessments of the risks and benefits of reintroducing nuclear weapons into US forces that are currently

1. James J. Wirtz and Jeffrey A. Larsen, "Who Does Deterrence? The Politics and Strategy of Integrated Deterrence," *RUSI [Royal United Services Institute] Journal* 168, no. 6 (2023).

2. Henry Sokolski and Thomas D. Grant, "How to Leverage US Nukes Overseas," *Breaking Defense*, 17 April 2025, https://breakingdefense.com/.

3. James J. Wirtz, "Deterrence 2027: Keeping the Threat at Bay," CIMSEC [Center for International Maritime Security], 18 November 2024, https://cimsec.org/.

4. Anya L. Fink, *Russia's Nuclear Weapons: Doctrine, Forces, and Modernization*, R45861 (Congressional Research Service, 21 April 2022), https://www.congress.gov/; and Bruno Tertrais, "Russia's Nuclear Policy: Worrying for the Wrong Reasons," *Survival* 60, no. 2 (2018).

5. Benjamin Zala, *Nuclear-Conventional Entanglement in Northeast Asia: The Case for Crisis Management Interoperability* (Asia-Pacific Leadership Network, July 2024), 5; and see, for example, Markus Garlauskas et al., *A Rising Nuclear Double-Threat in East Asia: Insights from our Guardian Tiger I and II Tabletop Exercises* (Atlantic Council, 15 May 2025), https://www.atlanticcouncil.org/; and Jon B. Wolfsthal and Toby Dalton, "Addressing the Growing Risks of Nuclear Use in East Asia," *Journal for Peace and Nuclear Disarmament* 8, no. 1 (2025), https://doi.org/.

6. Zala, *Nuclear-Conventional Entanglement*, 9.

armed only with conventional weapons. And whichever term one chooses to use, they both suggest that theater nuclear capabilities are returning to US extended deterrent guarantees. The US Navy, for instance, is working to deploy a Submarine Launched Cruise Missile-Nuclear (SLCM-N) by the mid-2030s.[7]

This article describes how the terms CNI and entanglement capture two separate concepts which highlight different facets of the effort to equip theater forces with nuclear weapons to bolster deterrence. In exploring the reintegration of nuclear weapons into theater deterrent forces as an emerging issue for defense planners, this article identifies the ways in which the two terms address different aspects of the reintroduction of tactical and theater nuclear weapons into conventional units, pointing to the increasing salience of theater nuclear deterrence.

The Pendulum Swings: Theater Nuclear Deterrence is Returning

An unmistakable shift in the American nuclear force posture occurred in September 1991 when President George H. W. Bush announced the Presidential Nuclear Initiatives. In a unilateral step, he removed all tactical ground-based nuclear weapons from US units and all tactical nuclear weapons from surface ships, attack submarines, and naval aircraft.[8] One conventional system, the Tomahawk Land Attack Missile, was retained, and its nuclear warheads were kept in warm storage until they were fully retired by President Obama's *2010 Nuclear Posture Review*.[9] This process did more than just eliminate the risks and costs of a class of weapons that were rendered obsolete by the end of the Cold War. The Presidential Nuclear Initiatives began a process whereby dual-use, nuclear-conventional systems were largely removed from conventional units as nuclear forces were centralized under the command and control of the newly created US Strategic Command in Omaha, Nebraska. The Cold War nuclearization of the US military was reversed—all nuclear weapons were now treated as a strategic asset, reserved to deter existential threats.[10]

With the rise of great power competition, however, the global nuclear balance, nuclear deterrence, and the status of US nuclear forces became a matter of political concern in Washington and allied capitals. Concerns about deterrence were driven by Russia's annexation of Crimea in 2014 and its 2022 in-

7. John Grady, "Sea Launched Cruise Nuclear Missile to Deliver in 2034, Says Admiral," *USNI News*, 8 May 2025, https://news.usni.org/.

8. Matthew Fuhrmann and Bryan R. Early, "Following START: Risk Acceptance and the 1991–1992 Presidential Nuclear Initiatives," *Foreign Policy Analysis* 4, no. 1 (January 2008); and Susan Koch, *The Presidential Nuclear Initiatives of 1991–92*, Case Study Series 5 (Center for the Study of Weapons of Mass Destruction, National Defense University, September 2012).

9. Robert Gates, *2010 NPR* (DOD, 2010).

10. Lawrence Freeman and Jeffrey Michaels, *The Evolution of Nuclear Strategy*, 4th ed. (Palgrave Macmillan, 2019).

vasion of Ukraine, which was accompanied by a barrage of Russian nuclear threats against NATO countries. Evidence of a sustained Chinese nuclear buildup only heightened fears about a shifting nuclear balance. If current trends involving quantitative and qualitative changes in competitors' nuclear arsenals continued, it appeared that the United States would find itself in last place in a twenty-first-century nuclear arms race.[11]

The rising integration of tactical and theater nuclear capabilities into competitors' force structures and doctrine suggested that the US nuclear arsenal was becoming increasingly out-of-date and ill-suited to the emerging threat. US central strategic systems—which are traditionally referred to as the strategic triad of long-range bombers, intercontinental ballistic missiles, and submarine-launched ballistic missiles—carried nuclear warheads that had yields too large for tactical employment on the battlefield. Moreover, because they would have to be launched at transcontinental distances to hold targets at risk, central systems would probably have to overfly other nuclear-armed states, which could prove to be highly provocative.

Furthermore, the asymmetric balance in theater nuclear capabilities between the United States and its peer competitors is becoming important for observers who are concerned that the United States lacks a nuclear weapon or delivery system that it would be willing to use in a theater engagement. In other words, the United States might be self-deterred from executing an extended deterrent threat following an adversary's use of a low-yield nuclear weapon on the battlefield.

On paper at least, CNI and the parallel requirement for US regional combatant commands to work together has existed for nearly 20 years following the publication of the DOD's *Deterrence Operations: Joint Operating Concept* mission: to "deny benefits and impose costs, plus encourage adversary restraint."[12] The *2018 Nuclear Posture Review* also recognized the necessity of dealing with this challenge, requiring "the integration of nuclear and non-nuclear military planning."[13] This built on the *2014 Quadrennial Defense Review,* which stated that US nuclear forces will ensure "potential nuclear-armed adversaries that they cannot escalate their way out of failed conventional aggression."[14] Nevertheless, there is now interest in paying more than lip service to CNI; with the pending deployment of SLCM-N on US attack submarines, the Pentagon now has an opportunity to reintegrate nuclear weapons into theater nuclear planning and deterrent postures.

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11. Hans M. Kristensen et al., "Chinese Nuclear Forces, 2024: A 'Significant Expansion,' " Federation of American Scientists, 16 January 2024, https://fas.org/; and *Nuclear Challenges: The Growing Capabilities of Strategic Competitors and Regional Rivals* (Defense Intelligence Agency, 2024), https://www.dia.mil/.

12. US Strategic Command, Director, Plans and Policy, *Deterrence Operations: Joint Operating Concept*, ver. 2.0 (Department of Defense [DOD], December 2006), 6, https://apps.dtic.mil/.

13. Jim Mattis, *2018 Nuclear Posture Review* [*NPR*] (DOD, 2018), VIII.

14. Chuck Hagel, *Quadrennial Defense Review 2014* (DOD, March 2014), 13.

Scholars have taken note of an adverse theater nuclear balance. A 2021 *Strategic Studies Quarterly* analysis stated that policymakers must turn to history to understand theater nuclear deterrence, arguing that "present efforts to address the challenge posed by conventional-nuclear integration (CNI) can be informed by the Cold War."[15] This is a valid observation. A review of past efforts can provide a starting point for the effort to reconstitute US theater nuclear capabilities 30 years after they were removed from fielded forces. Nevertheless, today's international security environment is more complex than the bipolar setting of the Cold War. Today the United States faces two nuclear peer powers in Russia and China, as well as at least one or two smaller adversarial nuclear-armed states in North Korea and, possibly, Iran.

In addition to dealing with more than one nuclear-armed opponent, US commanders must account for adversaries' plans to leverage nuclear risk to gain an advantage in a future regional conflict.[16] A growing number of observers have suggested that this creates a need to rebuild US theater nuclear forces.[17] The possibility that a regional conventional conflict might escalate to the point where one side thinks nuclear weapons should be used on the battlefield demands that the United States have similar capabilities to complicate an adversary's calculations. This does not mean that the United States needs a one-for-one, in-kind response to an opponent's theater capabilities, rather that it needs some kind of theater system that can hold regional targets at risk with a low-yield nuclear weapon.[18]

Analysts who agree with this assessment point out that conventional-nuclear integration is just one name for the intersection of conventional and nuclear forces that strengthens overall deterrence. They contrast the nuclear policies taken by the United States—which, in the aftermath of the Cold War, has attempted to maintain a clear firebreak between conventional and nuclear weapons use—with the approach taken by Russia and China, which are both enhancing their theater, dual-capable missile programs.[19] From about 1989 to post-2014, this

15. Justin Anderson and James R. McCue, "Deterring, Countering, and Defeating Conventional-Nuclear Integration," *Strategic Studies Quarterly* 15, no. 1 (2021): 28.

16. Anderson and McCue, "Deterring," 30.

17. Greg Weaver, *The Imperative of Augmenting US Theater Nuclear Forces* (Scowcroft Center for Strategy and Security, The Atlantic Council, 11 April 2025); Brandon M. Patterson, "The Navy Needs a Low Yield Nuclear Weapon," *Proceedings* 148, no. 12 (2022), https://www.usni.org/; Robert Peters and Eli Glickman, *Forward Deployment of Non-Strategic Nuclear Weapons Is Needed to Deter Adversary Aggression*, Issue Brief no. 5375 (The Heritage Foundation, 2025), https://www.heritage.org/; and Eric S. Edelman and Franklin C. Miller, *Joint Prepared Statement and Opening Remarks Before the United States Senate Committee on Armed Services, United States Nuclear Strategy and Policy, September 20, 2022, No. 538*, National Institute for Public Policy, 10 November 2022, https://nipp.org/.

18. The authors thank an anonymous reviewer for raising the issue of symmetry in theater nuclear systems.

19. Doreen Horschig and Nicholas Adamopoulos, "Conventional-Nuclear Integration to Strengthen Deterrence," CSIS [Center for Strategic & International Studies], 4 October 2023, https://www.csis.org/.

asymmetry in force posture and doctrine was not strategically salient; however, that time has now passed.

Characterizing the New Nuclear Setting

Today the United States faces an emergent strategic setting that for decades was widely considered to be consigned to the ash heap of history. Nuclear weapons lacked much political or strategic relevance as nuclear arsenals shrank and modest nuclear force modernization was the order of the day—that is, when funds were expended to extend the life of aging weapons and associated delivery systems.[20] When the threat of theater nuclear war receded in the 1990s, no one suggested that retiring tactical or theater nuclear weapons was a bad idea, or that the world would be a safer place if nuclear weapons continued to be deployed with conventional units.[21] The fact that Russia tended to hang on to its tactical nuclear forces despite the elimination of many US systems was largely attributed to a desire to retain some sort of defensive capability given the sharp decline in the size and quality of Moscow's conventional forces. There was a time during the unipolar moment and its long demise when global security challenges did not appear to require nuclear weapons by any major power.[22] Unfortunately, those days are gone. Instead, two terms are currently being used to characterize the reintroduction of non-strategic nuclear weapons into existing forces and planning: conventional-nuclear integration and entanglement.

Conventional-Nuclear Integration

Conventional-nuclear integration has been defined as "the deliberate, calculated decision by a state actor to combine conventional and nuclear-capable forces to realize strategic, theater, and/or tactical military objectives that it assesses cannot be achieved through the use of conventional forces alone."[23] Such thinking carries over across the entire range of required activities necessary to implement a decision to once again procure tactical nuclear weapons. This includes research and development, acquisition of fissile materials, weapon design and testing, deployment in the field, creation of doctrine, training of forces, and so on. From a US perspective, it is a significant decision that assumes the possibility of nuclear escalation by one or both sides in a regional conflict.

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20. James J. Wirtz, "Nuclear Policy at a Crossroads," in Muthia Alagappa, ed., *The Long Shadow: Nuclear Weapons and Security in 21st Century Asia* (Stanford University Press, 2008).

21. Richard K. Betts, *Nuclear Blackmail and Nuclear Balance* (Brookings Institution, 1987).

22. Timothy D. Miller and Jeffrey A. Larsen, "Cash for Kilotons: Dealing with Russian Tactical Nuclear Weapons," *Naval War College Review* 57, no. 2 (2004); and Hans M. Kristensen and Robert S. Norris, "Russian Nuclear Forces, 2015," *Bulletin of the Atomic Scientists* 71, no. 3 (2015).

23. Anderson and McCue, "Deterring," 31.

Conventional-nuclear integration does not imply that the conventionalization of nuclear weapons is underway—that is, that nuclear weapons will be integrated into arsenals to be used as the situation arises, just as conventional weapons are currently employed.[24] Neither is CNI about placing nuclear warheads on precision-guided delivery systems so that they can be readily employed alongside conventional munitions for purposes of preemption or routine battlefield use. Instead, CNI requires the development of a regional deterrent strategy that explains the role theater or tactical nuclear weapons will play in deterring both conventional and nuclear conflict. CNI is not about warfighting; it is about theater deterrence, especially deterring the opponent from employing nuclear weapons in the first place. It reflects the need to focus on deterrence—including nuclear deterrence—in regional defense strategy.

Beyond a straightforward decision to use nuclear weapons to defeat a conventionally armed opposing force, an adversary may wish to pursue several possible courses of action during a regional conflict. These different operations and strategies provide opponents with various rationales for pursuing a deterrent strategy incorporating CNI:

- To guarantee at least a draw in a conflict (and thus preserve their regime)
- To discourage allied participation and/or US intervention
- To provide fidelity for (theater) brinkmanship
- To complicate rules of engagement and targeting
- To enhance the lethality of standoff strike options[25]

How can the United States respond to such thinking by an adversary in a regional confrontation? The ability and willingness of an adversary to escalate a conventional conflict to nuclear levels will certainly affect US cost-benefit calculations about the use of force, especially a conflict that might trigger the use of central strategic nuclear forces. Regional nuclear asymmetry also will have an immediate impact on allied views of the desirability of American support in case of war. According to the *Strategic Studies Quarterly* analysis mentioned above, "adversaries and allies must believe the United States has both the political will and military capacity to directly counter, deter, and if necessary, defeat an integrated force fielding conventional and nuclear-capable assets in a regional fight far from US shores."[26] CNI provides assurances to allies that opponents cannot exploit a regional nuclear asymmetry to their advantage, which from the allied perspective reduces the likelihood that nuclear weapons will be used against them if they side with the United States in a regional conflict.

24. Robert Jervis, *The Meaning of the Nuclear Revolution* (Cornell University Press, 1990).
25. Anderson and McCue, "Deterring."
26. Anderson and McCue, "Deterring," 40.

CNI, often by other names and without fanfare, appears to have been at least partly incorporated into US defense planning. For instance, the *2022 Nuclear Posture Review*, while generally calling for less reliance on nuclear weapons in US national security strategy, nevertheless stated that one of its goals was to "adopt an integrated deterrence approach that works to leverage nuclear and non-nuclear capabilities to tailor deterrence under specific circumstances."[27] The US nuclear posture "is intended to complicate an adversary's entire decision calculus, including whether to instigate a crisis, initiate armed conflict, conduct strategic attacks using non-nuclear capabilities, or escalate to the use of nuclear weapons on any scale."[28] That is the essence of CNI. While not using the term conventional-nuclear integration in these phrases, such discussions have couched the term in the language of the Biden administration's *integrated deterrence* concept—which implied the entanglement of nearly everything, preferably in ways that benefited US security. The Trump administration has not disavowed this organizing construct and may wish to carry it forward, even if under a new name.[29] CNI is an extrapolation of that policy.

In terms of integrated deterrence, the *2022 Nuclear Posture Review* clearly states that an important factor is "better synchronizing nuclear and non-nuclear planning, exercises, and operations." It further notes that the War Department's aim is "to strengthen deterrence and raise the nuclear threshold for our adversaries in regional conflict by undermining adversary confidence in strategies for limited war that rely on the threat of nuclear escalation."[30] While the blanket term integrated deterrence has been overtaken by events, CNI might be an emergent, albeit if more constrained, manifestation of the need to coordinate and bolster today's deterrent posture in both Europe and Asia.

CNI represents more than just a shift in US nuclear procurement and deployment policy. It is intended to transform an aspirational or rhetorical goal into a new regional nuclear capability, reversing the decision to separate conventional forces from the central strategic deterrent that was intended to deter existential threats to the United States and its allies. CNI also reflects a new emphasis on deterrence in US defense policy, produced by great power competition and the ongoing great power war (by proxy) in Ukraine, a focus that was lost amidst the endless series of military actions taken in support of the Global War on Terrorism and US engagements in Iraq and Afghanistan.

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27. Lloyd J. Austin III, *2022 Nuclear Posture Review (NPR)* (DOD, 2022), 3.

28. Austin, *2022 NPR* (DOD, 2022), 9.

29. James Wirtz and Jeffrey Larsen, "Wanted: A Strategy to Integrate Deterrence," *Defense & Security Analysis* 40, no. 3 (2024); and see also Larsen and Wirtz, "Obstacles to Integrating Deterrence," *Joint Force Quarterly* 117, no. 2 (2025), .

30. Austin, *2022 NPR*, 10.

Entanglement

Entanglement—a term credited to a 2001 publication delineating the ways in which a US-Russian conflict might escalate—is used to describe how a nation's nuclear and conventional forces and strategies can become intertwined, especially in unanticipated and unintended ways that can lead to inadvertent escalation.[31] Entanglement is usually invoked to capture the dark side of CNI: "If an attack designed to degrade an adversary's conventional forces also compromises their nuclear forces in some way, this can incentivize the early use of nuclear weapons by creating a 'use or lose them' situation (whether real or perceived)."[32] This is a growing concern because technological breakthroughs in remote sensing, missile accuracy, space-based capabilities, and autonomous weapons systems have in some estimates made nuclear forces more vulnerable to attack and less survivable in a second-strike mode.[33] Some analysts have suggested that entanglement itself might deter attacks on dual-use systems out of a reluctance to risk escalation by damaging an opponent's nuclear infrastructure or forces.

One widely read Carnegie Endowment for International Peace analysis of the notion of entanglement focuses on the potential for escalation if an adversary were to attack US conventional command-and-control nodes. The discussion notes that the United States has specifically threatened to retaliate with nuclear weapons if its increasingly dual-use nuclear command, control, and communications (NC3) system comes under attack.[34] Others have also identified this issue while describing the general risks inherent in the turn toward dual-capable platforms, delivery systems, and associated systems.[35] As dual-use systems become increasingly common—as evidenced in the proliferation of satellites, ground stations, weapons systems, and commercial transmission pathways—it will become harder to differentiate between an attack meant to provide an advantage in a conventional conflict with one that could equally be seen as a prelude to a nuclear strike.[36]

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31. John Steinbruner, *Principles of Global Security* (Bloomsbury Publishing, 2001), as cited in James M. Acton, "Why is Nuclear Entanglement so Dangerous?," 55, Carnegie Endowment for International Peace, 23 January 2019, https://carnegieendowment.org/.

32. Zala, *Nuclear-Conventional Entanglement*, 5–6.

33. Zala, *Nuclear-Conventional Entanglement*, 5; and see also Kier Lieber and Daryl Press, *The Myth of the Nuclear Revolution: Power and Politics in the Atomic Age* (Cornell University Press, 2020).

34. Acton, "Nuclear Entanglement."

35. James Wirtz and Jeffrey Larsen, eds., *Nuclear Command, Control, and Communications: A Primer on US Systems and Challenges* (Georgetown University Press, 2022).

36. Don Snyder and Alexis A. Blanc, *Unraveling Entanglement: Policy Implications of Using Non-Dedicated Systems for Nuclear Command and Control* (RAND Corporation, 2022), https://www.rand.org/; and John E. Hyten, "Space Symposium Media Roundtable," transcript, US Strategic Command, 9 April 2019, https://www.stratcom.mil/.

The Carnegie report highlights the need for cooperative efforts to reduce the dangers created by dual-use NC3 systems: "In a conflict, states might act with greater restraint if such leaders were aware of the risks that their intentions could be misinterpreted if, for example, they ordered non-nuclear attacks on dual-use command-and-control systems."[37] A separate analysis also emphasizes the need for cooperative measures and reciprocal restraint by both sides in a conflict to avoid misunderstanding or miscalculation, labeling the set of recommendations as "crisis management interoperability."[38] Given the expiration or termination of existing arms control agreements, however, as well as what appears to be an almost universal disinterest in engaging in arms control, there appears to be little chance that negotiations related to entanglement will begin in the foreseeable future.

The concept of entanglement closely resembles that of *inadvertent escalation* explored in a 1992 study on conventional military operations and nuclear forces.[39] It notes that CNI also created risks of unwanted or unintended nuclear escalation during the Cold War. NATO's plan to undertake precision strikes against Soviet command-and-control systems could have produced inadvertent escalation if Soviet loss of situational awareness had been interpreted by Moscow as a harbinger of nuclear attack. Actions that can produce inadvertent escalation also could prompt rather deliberate escalation if various NC3 and delivery systems are designed not to "fail safe" but to "fail deadly." That is, systems could be employed automatically if deteriorating conditions fell within pre-set parameters. For example, weapons that require a continuous "do not fire" signal could be launched if that signal is lost during a crisis or war. Analysts still fear that the Soviet/Russian "Dead Hand" early-warning and command-and-control system has a "fail deadly" setting—a posture that is extraordinarily dangerous because it would automatically authorize a nuclear strike if certain parameters were met.[40]

Other operational and tactical phenomena might also fall in the basket of issues characterized as entanglement. During the 1990s, for example, one nuclear security expert wrote extensively about the potential for inadvertent escalation produced by a "ratcheting effect" occurring between opposing dual-use, nuclear-conventional command, control, and early warning systems. In other words, a change in party A's alert posture could prompt party B to place their forces on higher alert, which could lead to an additional increase in the alert posture of party A, and so on. This ratcheting effect could cause some unex-

37. Acton, "Nuclear Entanglement."

38. Zala, *Nuclear-Conventional Entanglement*.

39. Barry Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks* (Cornell University Press, 1992).

40. Bruce Blair, "Russia's Doomsday Machine," *The New York Times*, 8 October 1993, A5; and see also David Hoffman, *The Dead Hand: The Untold Story of the Cold War Arms Race and Its Dangerous Legacy* (Anchor Books, 2010).

pected incident during peacetime, crisis, or war to entangle nuclear and conventional forces in unexpected ways.[41]

Similarly, analysis on "normal accidents"—unanticipated human-machine interactions affecting tightly coupled high energy systems—suggests another possible pathway to entangle conventional and nuclear forces at the worst possible times in the worst possible ways. This work highlights an especially pernicious pathway to entanglement. Safety and surety programs add complexity and uncertainty to operations, increasing the potential ways that operators might lose control of increasingly complex systems.[42]

Analysis

Although it is hard to say how long it will take the United States to reintegrate theater nuclear weapons into its conventional force posture, both terms—CNI and entanglement—capture key elements of the reintroduction of noncentral nuclear weapons into regional deterrent strategies. Both terms are useful, yet both are somewhat misleading because they highlight certain facets of the emergent strategic setting at the expense of others.

CNI directs attention toward the mechanics of reintroducing nuclear weapons into forces that are currently equipped only with conventional weapons. In other words, it highlights procurement, basing, command and control, and operational issues that arise when theater nuclear weapons are reintroduced to the force. At the same time, it downplays the impacts theater nuclear forces will have on US strategy and foreign and defense policy. CNI is a manifestation of the shifting US focus away from warfighting—the precise use of force to achieve circumspect military and political goals—to a deterrence posture that deliberately increases the risk of nuclear war to bolster what to date has been a conventional regional deterrent posture.

CNI might be thought of as shorthand for the growing reliance on nuclear weapons to strengthen deterrence, especially the effort to reduce the chance that opponents will use theater nuclear weapons first in a crisis or war. The most important element of CNI is in fact integration—that is, using nuclear weapons to bolster a deterrent posture that largely remains focused on conventional weapons.

The term entanglement addresses a more negative component of CNI, identifying specific connections between conventional and nuclear weapons that can act as a pathway to nuclear escalation, especially unwanted escalation, if certain conditions occur during a crisis or conventional war. While a good deal of the literature on entanglement focuses on dual-use C3 systems and sensors,

41. Bruce Blair, *The Logic of Accidental Nuclear War* (Brookings Institution, 1993).

42. Scott D. Sagan, *The Limits of Safety: Organizations, Accidents, and Nuclear Weapons* (Princeton University Press, 1993).

there are hundreds of escalation pathways that could form, especially as theater nuclear weapons are distributed widely across units currently armed only with conventional weapons.

Entanglement was a well-known phenomenon during the Cold War that was sometimes manipulated to influence the risk of nuclear escalation in the event of deterrence failure. Because the threat of deliberate nuclear escalation might not appear credible to potential opponents, points of entanglement created the risk that nuclear weapons might be used during a conflict due to misperception, miscalculation, or rational calculations of local commanders that defied national priorities. CNI does blur the lines between conventional and nuclear warfare, and entanglement captures how those capabilities overlap in practice, regardless of the efforts made to create a firebreak when it comes to nuclear escalation. Entanglement is the reason the United States withdrew its nuclear weapons from dual-use units as the Cold War ended and centralized virtually all nuclear weapons under the control of US Strategic Command.

Entanglement will always exist if nuclear weapons remain part of an arsenal. Nevertheless, steps can be made to reduce the pathways that constitute entanglement by removing them in terms of deployment, doctrine, operations, and one's deterrent strategy. This is exactly what occurred at the end of the Cold War. As the threat posed by a collapsing Soviet Union receded, the US government began to remove dual-use systems and the risks they posed from theater forces because the diminishing threat of hostilities no longer justified the risks created by CNI. Those who focus on entanglement as a source of nuclear risk when it comes to CNI are correct, but that risk is also the rationale for integrating nuclear weapons into theater deterrent postures.

A return to the robust theater nuclear capabilities deployed during the Cold War is, unfortunately, once again necessary. As nuclear weapons are redeployed, entanglement will inevitably increase.

Conclusion

A consensus is growing between Congress and the executive branch about the requirement for conventional-nuclear integration in the US military. Both the United States and NATO have emphasized this concept in recent documents. The US *2022 National Security Strategy* and *Nuclear Posture Review* highlighted the increasing requirement for CNI. The 2023 Washington Declaration between the United States and South Korea reiterated this requirement for their joint forces on the Korean Peninsula. NATO's *2022 Strategic Concept* and the 2023 *Vilnius Summit Communiqué* both emphasized the need for greater coherence between the Alliance's conventional and nuclear deterrent forces. NATO's 2023 communiqué also called for integration as a core concept in the Alliance's new regional strategies, and the 2024 NATO Summit in Washington reiterated the previous commitments. During the 2024 summit, the United States also agreed to deploy land-based conventional missiles to northeastern Europe as a deterrent

against Russian adventurism. The weapons to be deployed by 2026 include the Tomahawk, SM-6, and developmental hypersonic weapons.[43] These weapons could presumably be converted to dual-use missions as well, if the decision was made to do so.

CNI and entanglement are concepts of increasing relevance to future force posture, doctrine, and strategy. Both are useful, but both tend to conventionalize nuclear weapons, treating them as simply a more powerful munition, not as weapons intended to deter conflict in the first place. CNI tends to misdirect attention from the need to develop a coherent theater deterrent strategy. Nuclear weapons are not meant for warfighting but would serve as the basis of what Thomas Schelling might refer to as "a threat that leaves something to chance."[44] Entanglement identifies the potential pathways that can leave the threat of nuclear escalation to chance, without acknowledging the fact that the potential for escalation is what bolsters regional deterrence.

All this suggests that using nuclear weapons to create an effective deterrent is not for the faint of heart. Entanglement highlights how CNI is not just about redeploying weapons that appeared obsolete and gratuitously dangerous just a few short years ago. CNI is about deliberately raising the risk of nuclear war to bolster what is currently a largely conventional approach to deterrence.

Welcome back to the future. ✪

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43. "Joint Statement from United States and Germany on Long-Range Fires Deployment in Germany," news release, The White House, 10 July 2024, https://bidenwhitehouse.archives.gov/.

44. Thomas C. Schelling, *The Threat That Leaves Something to Chance,* RAND historical document HD-A1631 (RAND Corporation, 10 August 1959), https://www.rand.org/.