Heads of State meet for the NATO Summit in Washington D.C., 9–11 July 2024.

The Evolving Context for Deterrence

Technology and Policy Challenges

By Prof. Stephen J. Cimbala and Dr. Adam Lowther

The member-states of the North Atlantic Treaty Organization (NATO) face an unprecedented challenge in Russia's aggression against Ukraine and their threats to employ nuclear weapons against NATO.[1] There is also the potential risk of Chinese aggression against Taiwan; should the United States come to the aid of Taiwan and China attack the United States, the US would likely seek support under Article 5 of the NATO charter. Either directly or indirectly, Europe cannot avoid the consequences of a war in the Pacific. This makes it imperative for NATO member-states that deterrence holds.

The following discussion identifies eight of the most important challenges facing alliance efforts to maintain deterrence. The reality of modern deterrence is that it is more uncertain, and difficult to maintain because of the added complexities of the cyber and space domains and additional post-Cold War geopolitical variables. With both the space and cyber domains playing a prominent role that did not exist during the Cold War and new technologies reshaping deterrence, understanding deterrence is certainly a more pressing need than ever before.[2]

Eight Challenges of Modern Deterrence

1. The threat of cyberattacks. Cyberwar among state and non-state actors is already a significant danger to international security.[3] Cyberattacks occur as solo excursions or as supplements to kinetic attacks.

Should Russia ever attack NATO, it would likely lead with a cyberattack to leave NATO blind, deaf, and dumb.[4] China would likely follow a similar approach. Both authoritarian regimes understand that there is a chance for victory if the United States and its allies are prevented from mobilizing combat forces and supporting logistics. This makes the early use of cyberattack enticing for potential aggressors, and countering them an essential aspect of NATO's deterrence strategy. After all, if NATO is paralyzed by cyberattacks to alliance C2 networks, or by a combined cyber & IO campaign which undermines or delays political unity, airpower becomes impotent.

It is important to keep in mind that both the public and private sectors are vulnerable to cyberattack. The possibility of a crippling attack against, for example, the private firms that support US Transportation Command's logistics network is very high.[5] A cyberattack on the United States' integrated tactical warning and attack assessment network and nuclear command and control networks would likely precede the use of a nuclear weapon by the Russians, for example. This makes a robust and secure cyber domain a fundamental component of a deterrence strategy, writ large, and nuclear deterrence, more specifically, buy denying a key vulnerability to the adversary.

Should conflict arise, we must be prepared for Russia to attempt to use cyber warfare to make NATO deaf, dumb, and blind.

2. NATO's reliance on space assets. NATO relies heavily on space assets for intelligence collection and military operations. Airpower is particularly dependent upon space to employ precision-guided munitions. It should come as no surprise that Russia has an array of anti-space capabilities designed to prevent the use of those space assets that are critical to Allied air, land, and sea operations.[6] American and European government agencies are already working with defense contractors to explore ways to increase the reliability and resilience of space-based and space-dependent systems for reconnaissance and surveillance, communications, early warning, command and control, and other functions.[7] Russia and China tested satellites for Rendezvous and Proximity Operations (RPO) in various orbits, ostensibly for inspection and repair of friendly satellites, but which would also be capable of close inspection or destruction of NATO member-state satellites, if so tasked.[8] Options for increasing the resilience of orbital platforms include deploying

numerous smaller satellites in critical orbits, equipping satellites with defensive measures (including stealth and manoeuvrability), and offensive capabilities for responding to perceived threats.[9] Legal issues arise with respect to whether an attack on critical mission satellites for national defence constitutes an attack on NATO, but it is undoubtedly a real challenge the alliance must deter.

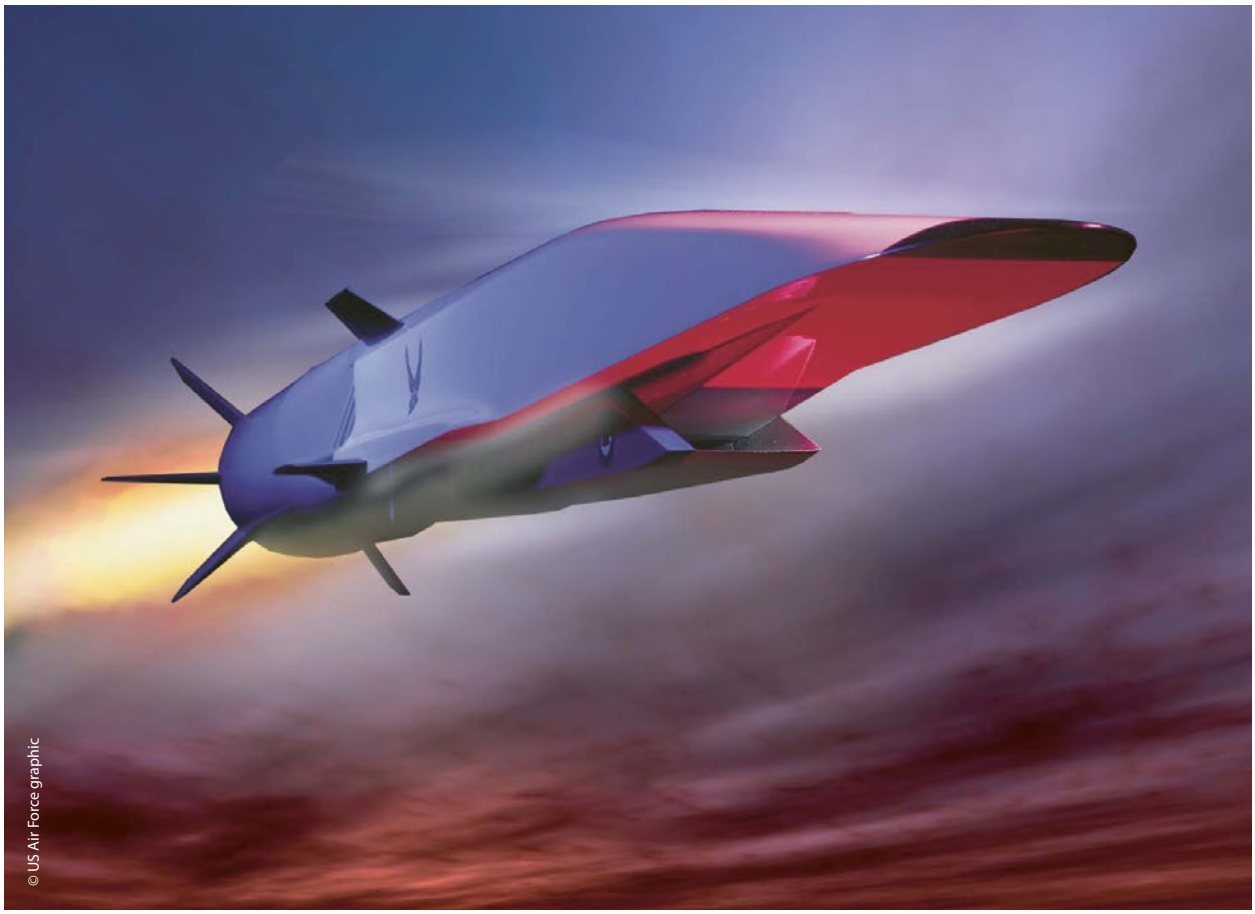
3. The Role of Hypersonics. Adversaries' development of hypersonic weapons, including delivery systems for nuclear warheads, raises serious issues for deterrence and defence planners.[10] In the case of nuclear deterrence, a reliable second-strike capability is a necessary condition for the success of deterrence by credible threat of retaliatory punishment. Hypersonic weapons compress the time available for warning and selection of an appropriate response.[11] This is particularly problematic in Europe, where distances from Russian bases are shorter, and hypersonic weapons can easily reach targets. The only viable option may be possessing a secure second strike capability in order to ride out a first strike, determine whether it is conventional or nuclear, and respond accordingly.

National leaders might have only a few minutes from the initial launch detection of an enemy's first strike to the arrival of warheads at their assigned targets. This 'attack time compression challenge' can leave leaders fearful of losing their deterrence assets.[12] With the United Kingdom, France, and NATO possessing small nuclear arsenals that, in the case of NATO specifically, are vulnerable to first strike elimination, a national command authority (president or prime minister) may view pre-emptive nuclear employment as a necessary option in a 'use it or lose it' circumstance. NATO's collective decision-making process, however, makes

pre-emptive use of dual-capable aircraft for the nuclear mission highly unlikely, which means the most vulnerable nuclear capability is the least likely to see actual use in conflict. The addition of hypersonic weapons to the NATO nuclear umbrella or the British or French arsenals could give Russia pause to reconsider an escalation against NATO in retaliation for member-state support for Ukraine or because of further Russian territorial ambitions – buying restraint from a Russian attack on air bases with nuclear capable fighters.

4. Ballistic and Cruise Missile Defences. Improving missile defence systems make the success of ballistic or cruise missile strikes less certain.[13] Concerning ballistic missiles, the Cold War was marked by the dominance of offensive systems over defences. Improved technologies for short-, medium-, and intermediate-range missile defences are demonstrating their utility in Ukraine and are improving. NATO's primary challenge is its almost complete lack of air and missile defense systems across Europe. Missile defences play a numbers game, but they must first be present, and they are insufficient in quantity in Europe.

Soviet leaders once feared American ballistic missile defences protecting US Intercontinental Ballistic Missile (ICBM) fields would give the US an opportunity for a first strike and be safe from counter-attack. The Soviets would therefore need to increase the ratio of attacking Soviet ICBMs from 2-to-1 to 4-to-1 to ensure a similar probability of success. The lack of missile defences across NATO today offers a degree of assurance to Russian leaders that the alliance cannot effectively prevent an attack which increases Russian confidence in their ability to coerce and deter NATO.[14]



Russia's development of nuclear-capable hypersonic glide weapons increases the uncertainty of deterrence.

Advances in Western missile defence technologies, including space-based systems, undermine Russia's planned use of missile attacks against NATO by reducing their probability of success. Ukrainian and Israeli air and missile defence successes create a fundamental challenge for Russia because they offer lessons learned for improving NATO missile defences. However, there is the real challenge that the more successful and proliferated defences become, the greater Russia's desire to field systems that subvert or defeat them. This is particularly important as Russian President Vladimir Putin grows increasingly dependent on the credibility of his first-strike weapons as a deterrent against more substantive NATO intervention in Ukraine, for example.

5. The Impact of Drones. Russia's war against Ukraine only underscores the significance of this rapidly growing military capability, and the equalizing role drones can play for the weaker side in a conflict. Ukraine's ability to strike Russian military targets hundreds of kilometres inside Russian territory with relatively primitive drones is a game changer with respect to shaping a future aggressor's willingness to go to war.[15] As drone technologies mature, rather than relying on 'first person view' aerial drones equipped with small explosives, which are playing an important role on the battlefield in Ukraine today, it is probable that a near future battlefield will see AI-enabled drones roam the battlefield looking for pre-programmed targets. No longer will they need a pilot in a nearby bunker flying them. Drone swarms may be used for large-scale attacks against military facilities or civilian infrastructure as well.[16] Drones may also take the place of expensive manned aircraft, which potentially benefits Russia more than NATO because Russia cannot match NATO traditional

The MIM-104 Patriot Surface-Based Air Defence (SBAD) system is capable of engaging manned and unmanned aircraft, cruise missiles, and tactical ballistic missiles.

airpower capability. The creative use of drones in ways not seen today, but derived from lessons learned in Ukraine, may either improve or reduce the effectiveness of stabilize or destabilize deterrence. It is too early to tell.

6. Conventional Nuclear Integration. Conventional war waged within a nuclear context is something NATO prepared for during the Cold War, and is a prospect that has regrettably returned. Now called 'conventional-nuclear integration', Russia's 'escalate to win' strategy envisions a Russian nuclear response to a NATO conventional action.[17] Deterring Russia's use of a small number of low-yield tactical nuclear weapons is now a real challenge for NATO planners. Real Russian fears of NATO's overwhelming conventional superiority, particularly its airpower, could lead Russia to see such an 'escalate to win' strategy as its best option for avoiding conventional defeat and attrition of its already limited forces.[18] Ukraine's request for eventual admission into the alliance reinforces Russian paranoia, even if such discussions are aspirational.

7. China's Nuclear Breakout. China's nuclear breakout may encourage Russian aggression because President Putin sees American attention and capability split between NATO and Asia.[19] A Pentagon report to Congress has noted that China 'will likely field a stockpile of about 1,500 warheads by its 2035 timeline' and is improving its conventional and nuclear military capabilities across the board.[20] China's emergence as a nuclear superpower is not a problem for the United States and its Asian allies alone. Europe cannot avoid a potential conflict in Asia because of the US's membership in NATO.

Thus, NATO's European member-states must both prepare for a conflict with Russia while also preparing to assist the United States in Asia. This will all take place within a context in which both Russia and China may resort to the use of nuclear weapons to halt Western efforts to intervene. Sizing up the Chinese nuclear arsenal and understanding China's evolving thinking about nuclear use, which is moving away from a 'no first use' policy, is especially challenging.[21] Regrettably for Europe, geography is no longer a barrier to conflict with Asia.

Drones are playing an increasingly important and versatile role on the battlefield, though the implications for deterrence remain uncertain.

8. Domestic Politics. Challenges to maintaining political unity within the borders of NATO member-states are growing. Modern democracies, including the United States and its European allies, face challenges within their own domestic polity that bear, at least indirectly, on their ability to sustain military power in support of deterrence. Within the United States, for example, domestic politics are more divisive than during the Cold War, when there was a common enemy. Across Europe, similar political divisions are tearing at the cohesion and common vision of a number of societies. With consensus-building more difficult than during the Cold War, agreeing on a national approach to addressing Russia and China is difficult.

When the citizens in a democracy no longer believe in democratic constitutionalism, especially among elites, it is difficult to engage citizens to make the necessary sacrifices to ensure militaries are effective deterrent forces. This is, of course, exactly what both Russia and China desire. However, as General Colin Powell, the former Chairman of the Joint Chiefs of Staff in the United States, once noted, no foreign power can defeat the United States; only Americans can do that. The same is true of NATO and its member-states.

Conclusion

It is imperative for stable deterrence that Vladimir Putin and Xi Jinping never believe they can wedge the alliance apart. A united NATO is far more capable of

B-52H Stratofortress from the 2nd Bomb Wing line up (Elephant Walk) on the runway as part of a readiness exercise at Barksdale Air Force Base, La., 14 October 2020.

effectively deterring across the spectrum of threats discussed above. Admittedly, the challenges are numerous and offer no ready solutions. However, the current sense of urgency generated by Russian aggression is a good start.

But this sense of urgency must be accompanied by real progress in matching Russian capabilities across the spectrum of conflict. It is no longer enough to protest to Russia that NATO means no harm. Instead, it is time to field a similar set of capabilities to those fielded by Russia, including hypersonic weapons, next-generation air and missile defences, space defences, cyber defences, and a full spectrum of nuclear capabilities. The Russians understand their own capabilities and the implications of their employment, which may lead Russia to exercise restraint. During the Cold War, it was NATO's fielding of the Ground Launched Cruise Missile (GLCM) and Pershing II in the mid-1980s that caused the Soviet Union to seek a reduction of nuclear forces and deterred Soviet aggression because the USSR had more to lose. The same can be true again if NATO takes a strong stance and fields the capabilities Russia respects.

A future crisis instigated by Russia is certain to include what the Soviets called 'dezinformatsia', or disinformation, as Russia seeks to convince the West to doubt what it knows to be true.[22] China will follow a similar game plan if conflict comes. Ensuring that NATO addresses the challenges discussed above, and is not caught unprepared can make such disinformation efforts far less successful. In the end, NATO and its 32 member-states have a daunting task ahead of them. However, it is important to remember that the Alliance was successful in its first 75 years in preventing war and deterring Soviet/Russian aggression. The same is possible over the next 75 years. ●

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