



Lawrence Livermore National Laboratory 

Toward Improved Theories of Victory in Conflicts with Nuclear-Armed Adversaries

Workshop Summary

February 4-5, 2026



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Toward Improved Theories of Victory in Conflicts with Nuclear-Armed Adversaries

Center for Global Security Research (CGSR)
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On February 4-5, the Center for Global Security Research (CGSR) at Lawrence Livermore National Laboratory (LLNL) hosted a workshop titled “Toward Improved Theories of Victory in Conflicts with Nuclear-Armed Adversaries.” The workshop drew on participants’ experience playing a wargame facilitated by Strand Analytica’s Bestias platform. The discussion was guided by the following key questions:

- In conflicts against nuclear-armed adversaries, what strategic choices by the U.S. and its allies and partners are most likely to disincentivize further escalation, motivate de-escalation, and set the conditions for war termination and a durable peace?
- How does the potential for opportunistic aggression in a second theater affect those strategic choices and outcomes?

The wargame scenario featured a complex multi-theater contingency involving:

- An initial move by Russia into a Baltic state to demonstrate that NATO cannot “defend every inch” and pressure allies into signing his peace deal, followed by limited Russian nuclear employment to stave off defeat in a war gone bad.
- Parallel lethal, conventional provocations by North Korea, resulting in an escalating military crisis on the Korean peninsula that eventually saw Pyongyang covertly use biological weapons and separately employ a nuclear detonation demonstration to threaten South Korea and its allies and partners.

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- A decision by China's leader to issue a formal planning order to ready for invasion of Taiwan that ultimately led to an actual invasion of the island by the game's last move.

The game proceeded through three moves constructed to focus Red, Blue, and Green teams on how best to manage escalation, de-escalation, and war termination with an eye to reducing risks but also benefiting from them where necessary—all in a multi-theater context.

This summary reviews the main features of workshop discussion and gameplay. It tracks the main topics in discussion but is organized thematically rather than on a panel-by-panel basis (common to other CGSR workshop summaries). Gameplay data is the subject of further analysis and lessons learned will be the focus of a separate CGSR report following a campaign of on-line games to develop and test theories of victory.

Key takeaways:

1. A theory of victory (ToV) is a plausible set of principles for overcoming an enemy. More elaborately, per Frank Hoffman: “a good strategy must have an internal logic that ties policy to both ways and means to create desired strategic effects. That logic is the continuous thread of thinking that provides strategic intent and informs ways and creates linkages in strategic design that drive the applications of means via military operations.” A ToV is that internal logic.
2. ToVs must be comprehensive. The need to overcome an enemy exists across the full conflict continuum. Thus, the “continuous thread of thinking” must address the requirements of success in different phases: from competition and sub-lethal conflict through militarized crisis to war.
3. Moreover, within the war phase there are also multiple phases: the initial “agreed battle” with static parameters; an escalatory and possibly de-escalatory phase with volatile parameters; and possibly also uncontrolled general war featuring large-scale nuclear use. In that volatile middle phase of war, belligerents need theories that link actions to the specific choices they face about whether and how to alter their use of force to accomplish their objectives. These decisions revolve around three primary objectives: to disincentivize further escalation; to motivate de-escalation; and to favorably terminate war in a manner that promises a durable peace. Wargames like the one hosted by CGSR can be designed to help identify and test potential ToVs.



4. A single theory is unable to address each objective, and thus it is necessary to elaborate a comprehensive approach that tailors concepts and actions to each phase in a potentially long, drawn-out campaign. As that campaign unfolds, theories of how to meet the next challenge must be adapted to experience and to what the choices made by others reveal about their judgments, resolve, and misperceptions. Think of this as an intra-war deterrence campaign.²
5. Blue, Red, and Green have not made equal progress in adapting legacy thinking to new challenges. Red ToVs for regional wars against the United States and its allies and partners were elaborated in the 1990s and 2000s with an urgency arising from the perception of danger and vulnerability in a unipolar world. They give a central place to nuclear-backed coercion. These theories appear to be fully developed. But they have also proven to be dynamic, evolving in response to lessons learned in Ukraine, Iran, and elsewhere.
6. Green ToVs are in rapid development, fueled by a sense of mounting urgency about the need to survive the dangerous current moment and to secure a more stable future. Updated Blue ToVs appear not to have been in urgent or rapid development. Workshop discussion suggests that they are usually framed in a Cold War context. Blue ToVs appear to rely heavily on escalation and the threat thereof, without a clearly articulated narrative about how such escalation would be managed, how adversaries are expected to respond, or how nuclear risks are to be managed. As one illustration, in workshop gameplay, Blue and Green players had no agreed framework to guide the construction of courses of action (COAs) other than the “deterrence calculus” set out in the 2006 U.S. joint concept on deterrence.
7. Because ToVs are about shaping the strategic choices of an adversary by influencing decision making and political will, Blue needs a conceptual map of potential COAs. In a dynamic conflict, each belligerent faces a few key decision points related to the use of force. To simplify, they must decide whether to:

² For more on the topic of intra-war deterrence, see Brad Roberts, *Between Tragedy and Catastrophe: Taking Intra-War Deterrence Seriously* (Livermore, CA: Center for Global Security Research, 2025). https://cgsr.llnl.gov/sites/cgsr/files/2025-09/CGSR_Livermore_Paper_16_Between%20Tragedy%20and%20Catastrophe%20WEB_0.pdf. Accessed March 3, 2026.



- Intensify the conflict by escalating vertically or horizontally or by expanding war aims (“escalate”);
- Reduce the intensity without abandoning objectives (“de-escalate”);
- Cede the issue in dispute (“terminate”);
- Sustain ongoing military operations and political signaling (“persist”).

Each choice reflects a different theory of success in achieving national aims. For example, the choice to escalate is based on the following logic: if Red escalated to nuclear employment on the judgment that this would awaken Blue and Green to an asymmetry of stake favoring Red and with the expectation of Blue de-escalation, then a Blue (or Blue/Green) nuclear response should demonstrate Blue/Green resolve sufficient to deter further counter-escalation by Red. This simple construct masks a great deal of complexity as surfaced in gameplay, as the specific form such choices might take are numerous and blur some distinctions. For example, escalation could occur by either conventional or nuclear means—with hugely different consequences.

8. Gameplay illuminated some of the interactions between different ToVs and the requirements of success in a particular COA. In pre-workshop gameplay when deciding how to disincentivize further escalation by an adversary, half of Blue players chose to escalate, though with a clear preference for conventional over nuclear escalation, even in response to Red nuclear employment. Green players generally chose to persist while encouraging Blue to escalate, on the argument that the credibility of U.S. extended nuclear deterrence was at risk at a time of greatly heightened danger for them. Red players generally chose to sustain operations at the existing level of intensity rather than de-escalate, having unmet political objectives and having interpreted Blue’s restrained escalation as a sign of nuclear risk aversion and thus of weakness and lack of resolve. At this stage of conflict, Blue and Green decision-making generally revolved around judgments about adversary intentions and alliance management challenges.
9. In deciding how to incentivize de-escalation by an adversary that has apparently ceased to escalate, Blue players generally chose to sustain military operations without escalating or de-escalating. This had mixed results in influencing subject matter experts playing Red in these scenarios. China opted to modestly de-escalate. But the DPRK chose to sustain operations. And Russia chose to de-escalate tactically but not strategically in order to buy time to re-gather its forces. Green players generally opted for “slight de-escalation” to try to encourage restraint by their neighbors at a moment



they perceive as a major tipping point. At this stage of conflict, Blue and Green decision-making generally revolved around comparisons of stake and interest. Leadership reputation concerns also played a role. This was reflective of the larger role of public opinion at this stage than in the others. Decision-making also touched on whether the minimum necessary level of damage – generally assumed to be military damage vice economic damage or some other cost – has been inflicted on the aggressor so that a leader might compromise without appearing to have backed down out of fear.

10. In deciding how to set the conditions for war termination and a durable peace, Blue players chose to persist, largely on the argument that persistence had been rewarded in the prior move by some de-escalation. Experts playing Red pursued varying COAs. The DPRK responded with an effort to terminate its conflict while preparing for escalation if termination failed. But Russia responded with a bold campaign to take Kiev and paralyze Ukraine militarily. China responded with a decision to go to war against Taiwan and employed a few nuclear weapons to attack U.S. naval vessels, sinking an aircraft carrier. At this stage of conflict, Blue and Green decision-making generally revolved around questions about whether punishment was a necessary feature of a just peace and whether non-military means of punishment might be sufficient. There were also different views about whether a peace that leaves three nuclear-users in power should be acceptable and whether it is inevitable so long as they are nuclear armed. Some particularly vulnerable allies were critical of Blue decisions not to seize the moment to address severe threats presented by the DPRK and Russia once and for all, despite the risk.

11. This gameplay revealed that:

- There is no silver bullet. That is, there is no COA that was significantly and consistently more successful than others in accomplishing Blue objectives.
- Blue escalation sometimes achieved the intended objective but sometimes failed to do so, disastrously so. Success appears to have been context dependent.
- There were some general preferences for particular COAs but also a great deal of variation. In any given move, it was rare for a significant majority of individuals playing a particular actor to choose the same course.
- In a multi-front war, the major powers and many of the middle powers are simultaneously pursuing multiple COAs tailored to each conflict. The spillover effects were complex and sometimes unhelpful.



- Red actors need not be fully aligned and coordinated to severely stress Blue and Green strategies. Simultaneity is the primary problem, not the particular form it takes (e.g., whether covert or overt cooperation among them, or whether the cooperation is military or political in nature).
- Blue and Green were generally well aligned. But not always, and sometimes sharply not so. Some Green actors wanted more Blue resolve and risk taking, especially early in a conflict when clear and strong Blue signals might usefully alter the trajectory of conflict. The capacity of some Green players for independent escalation is a potentially significant complication for Blue.
- Game players are much more familiar with the challenges of disincentivizing further escalation than of incentivizing de-escalation and laying the grounds for successful war termination.
- These initial insights will be further developed as part of a follow-up review of game data and further gameplay.

12. Stake is a critical determinant of strategic choice. But it is not written in stone. It is a political judgment, meaning that different leaders will perceive and articulate stake differently. But judgments about stake should be rooted in national interests, which are enduring. Red leaders appear to hold some dangerous ideas about stake. They seem to believe that an asymmetry of stake underpins any conflict with the US, leading them to judge that they can “sober but not enrage” the United States with strikes, including nuclear strikes, that awaken Blue and Green to that asymmetry. But they may well have misjudged Blue’s cultural stake in winning. And they seem to have discounted the possibility that their nuclear employment, intended to be precisely calibrated and somewhat restrained, will enrage Blue and Green, prompting either significant counter-escalation or at least protraction of the conflict.

13. The decision-making necessary to manage three simultaneous complex nuclear contingencies would be highly demanding on institutions and individuals. The contingencies cannot be managed separately at the leadership level, as there will inevitably be many unwelcome trade-offs and unexpectedly consequential precedents. In this scenario, for example, the Blue choice in Europe to respond to limited Russian nuclear employment by conventional means alone directly motivated more risk-taking behavior by Red in Asia.



14. None of the actors are as monolithic as the simple labels Blue, Red, and Green imply. The three contingencies explored here would likely generate a great deal of internal political friction and widely divergent but quite intense public emotions. Moreover, national leaders would be asking for all they can get out of the diplomatic, informational, military, and economic (DIME) construct to shape the behaviors of their adversaries, thus engaging parts of their governments and the private sector in new and unexpected ways.



Session 1: Toward Cumulative Learning on Theories of Victory

- What theories are in current discussion in the U.S. and allied communities of interest?
- What have prior studies, wargames, and workshops revealed?
- How do we build cumulative empirical evidence on these questions?

This opening panel focused on defining theories of victory (ToVs) and establishing the state of Blue ToVs while examining the role wargames can play in developing and ultimately testing such theories. By “Blue theories of victory,” this panel meant the plausible set of principles for overcoming an enemy, or “Red,” that the United States, or “Blue,” would employ across the spectrum of conflict. The discussion centered on what earlier U.S. policy documents and wargames have suggested about potentially viable Blue ToVs. It concluded that while a need for such theories is well established, the theories themselves remain underdeveloped. Additional wargaming offers promise in helping generate the cumulative knowledge necessary to develop and test Blue ToVs.

Several themes stood out when discussing the need for Blue and “Green,” or allied, ToVs. Panelists agreed that it is easy to get hung up on terms – including about “theory of victory” itself – making the establishment of clear definitions an important starting point for ToV development. A literature review and consultations with generative AI underscored the potential for confusion, especially when so many academics and policymakers conceptualize Blue ToV options differently. Compounding the challenge of generating Blue ToVs is getting them to productively interact with Green ToVs. A need also exists for additional intra-Blue collaboration, or syncing up across various military, political, and economic institutions that play a role in ToV development. Participants expressed hope that experts moving beyond their functional silos would help them understand the full suite of ToV options. Finally, lack of understanding about the operational military effects of limited nuclear use complicates ToV generation and testing. Some participants suggested that ensuring a common set of assumptions about nuclear weapon effects would help inform ToVs.

A consensus emerged during this panel that wargames can be useful in generating and testing potential ToVs. But exactly how remains debatable. Among the challenges, it can be difficult for analysts to know if ToVs fail in a game because they were wrong, poorly applied, or miscommunicated between leaders and operators. Further complicating matters, traditional wargames focus on institutional learning and individual intuition building rather than generating the cumulative knowledge necessary for theory development. Finally, past wargame findings may be conditioned by understandings of Blue stakes in conflicts that may not hold across varying political leaders.

Among the potential benefits of wargames, excitement surrounded the possibility of generating cumulative knowledge from analytically structured gaming. The importance of developing and testing dynamic and tailored ToVs in wargames was another common refrain as was the value of games for generating corporate knowledge. The challenge of applying past theories of victory to the present was a motivating driver behind using wargames to develop and test new Blue ToVs.

Several themes emerged that focused on making wargames more useful in generating cumulative empirical evidence for developing and testing ToVs. First, analytical wargames must differentiate evidence generation for ToV testing and ToV development; these are different activities. Additionally, future wargames should build on past findings and processes, though analyst skill will need to control



for differences among games and be sensitive to the motivating purposes of each. Future wargames will also need to account for the epistemic revolution driven by new information technologies and artificial intelligence (AI) informing wargaming and simulation. Building the technical infrastructure to merge interest in cumulative knowledge about ToVs and modern technological tools will be essential for future gaming. Such infrastructure, when combined with a commitment to analytical wargaming, will reduce fragmentation across games and help generate cumulative knowledge. Finally, participants reflected on how two positive trends – academics calling for more systematic approaches to wargames and the emergence of novel ways of creating artificial strategists using AI – will strengthen wargaming for ToV development.

Panelists noted that CGSR has made strides toward generating cumulative knowledge about Blue ToVs via four wargames since 2022. These games yielded several insights. Most importantly, they demonstrated how nuclear scenarios – especially those featuring simultaneity across multiple theaters– pose unique problems that have received insufficient attention. These scenarios require more than capability development and cunning escalation management, they necessitate acknowledging and better evaluating the risks associated with all courses of action (COAs). Past CGSR wargames also saw Blue players pessimistic about their options while seeking a “sweet spot” to address adversary nuclear aggression and balance unwanted risk. Blue tended to send conflicting signals to Red across messaging, response mechanisms, and desired results while ignoring Red’s political goals. Meanwhile, Red seemed to have more options because of its willingness to run high risks and conduct deeper pre-conflict analysis of possible Blue responses. Further complicating matters, Blue players frequently used key terms like “proportionality” in different ways, introducing confusion. Finally, Blue experienced challenges across all phases of conflict, including de-escalation and termination. Both require dialogue that wartime leaders are reluctant to initiate and Red willingness to take off ramps that was rarely demonstrated.

Session 2: Results from Pre-Workshop Individual Gameplay

- What does individual gameplay data reveal about the key analytical questions?
- What did players learn?
- What questions should be further explored through collective gameplay?

Prior to the workshop, CGSR organizers asked all workshop participants to play a wargame on Strand Analytica’s Bestias platform consisting of three decision points. All players received the same scenario information and prompts. Each played as the United States and faced a choice across four COAs: escalate, de-escalate, sustain military operations, or terminate conflicts at each point. AI played as Red and Green to expand the data generated by the game. The game featured cascading opportunistic aggression starting in Europe, moving to the Korean Peninsula, and culminating with an attack by China on Taiwan. This panel reviewed results from pre-workshop individual gameplay that saw 106 complete participant playthroughs that, when combined with AI player actions, generated 10,900 data points across all three decisions.

In evaluating trends in gameplay, panelists especially focused on how players addressed escalation dynamics. In particular, Blue players exhibited a range of views about what COA to pursue at each decision point and the tradeoffs associated with each. It seemed as if knowledge players brought with them into gameplay shaped their preferred decisions. For example, at Decision Point A, 50% of



players chose to escalate, though they varied in how and against what kinds of targets. Across Decision Points B and C, it seemed that players often preferred persistence to escalation but had low to moderate hope that it would realize a favorable outcome, which struck several participants as discordant. Complicating analysis of escalation dynamics was that varying players defined COAs differently and players often wanted to pursue different COAs in different theaters. Thus, the first cut of pre-workshop data defied simple “take aways.” It will take more analysis to fully assess how players learned and evolved over the course of the wargame.

Panelists also examined how pre-workshop players assessed U.S. stakes throughout the wargame, observing that some players saw stakes as very high and others as much lower. Regardless, a central stake mentioned by many players was preserving U.S. credibility in the face of nuclear threats. Players frequently employed strategic commentary citing preservation of resolve and credibility when they escalated. Gameplay also highlighted how combinations of actions – *not* single actions – may be more stabilizing or credible to Blue, Green, and Red across multiple theaters, though the specific bundles of actions need additional study.

The focus on escalation dynamics and credibility suggested to some participants that future gameplay should focus on each rung of escalation and what combinations of actions are stabilizing and credible when executed by an alliance rather than just the United States. Such combinations would make up the signaling packages that Red would see. For instance, pairing a military strike with offer to negotiate might help manage risk and create paths to de-escalation. Additional attention to exploring the fine line between restraint and signaling weakness – both of which can change over the course of a conflict – would also be valuable in future wargames.

Panelists spent significant time examining various aspects of how Blue-Green alliances functioned during pre-workshop gameplay. The pre-workshop data show that players are constantly worried about alliances cohesion, diversion, and differing risk thresholds. Consequently, a key analogy permeating the panel was comparing U.S. alliances to gardens that need constant tending by alliance managers. Successful gardening is rarely about innate ability but rather the need to spot trends, see warning signs, and do collective hard work, including throughout competition, crisis, and conflict. What has worked well in past alliance management may be a guide for the future.

But there will be new alliance issues, too. Some discussion focused on alliance management dealing with nuclear weapons, especially what work can be done before a crisis to coordinate on nuclear issues. Additionally, many participants agreed that alliance management will be even more complex when addressing opportunistic or simultaneous aggression as tradeoffs between theaters emerge. Allies will want to weigh in, and the game suggested that divergences in risk tolerance can create delays and seams in alliances. Nonetheless, sound alliances will be essential to effective alliance escalation and risk management, as reflected in many players making early moves that sustained allied unity and aligned allied military and diplomatic efforts. Sound alliances will also help facilitate information and intelligence sharing, a common point of conversation and area where some participants saw wargaming helping to identify potential problems in advance. Finally, gameplay highlighted the need to grapple with war termination as an alliance problem, not only a Blue problem. How Blue and Green stakes diverge and affect war termination is a valuable area for future games to explore.

Reviewing pre-workshop data also yielded several preliminary findings from AI play. First, AI players saw the conflicts as one of regime survival in Russia and North Korea and long-term competition



with the United States in China. Second, AI gameplay was dominated by the choice to persist, or even sometimes de-escalate, at each decision point in each theater. Finally, insofar as AI pursued escalation, its choice for escalation declined over the course of each decision point. The AI Red players rarely escalated, piquing the interest of some participants to ask about the training data and varying commercial models employed by AI players. CGSR materials and annotated bibliography for the workshop were the core training data for the AI players while some supplemental strategy documents round out specific international actors. Notably, how well AI players picked up on those inputs and focused on core objectives varied across gameplay. Variations in AI gameplay will continue to inform the Bestias wargaming tool and further refine it for future use.

The workshop then turned to an exploration of decision dynamics at each of the key decision points in a conflict that has already escalated somewhat but might escalate further. These are the decisions:

- To escalate further or not;
- To de-escalate; and
- To terminate a conflict on available terms.

These are discussed below as decision points A, B, and C. At each point, each actor may make any of those choices—or simply decide to sustain war effort at the existing level.

Sessions 3-6: To Escalate (Further) or Not

- At this stage of conflict, what are the national interests, stakes and strategic objectives of Blue actors (United States, NATO allies, Japan and South Korea)? Red?
- Faced with an uncertain risk of further escalation by Red/Blue, what Courses of Action (COA) should Blue/Red consider? What are the benefits, costs and risks associated with each COA?
- What would constitute a "culminating point" for Blue/Red—where costs and risks of continued conflict become unbearable?

After being randomly assigned a Blue, Green, or Red role, all workshop participants were asked to privately re-play the first decision point of the wargame hosted on Strand Analytica's Bestias platform that focused on escalation. A sub-set of participants served as panelists and played the game "open," meaning they explained their intended COA for their assigned role to the entire workshop along with a justification for their decision. The panelist discussion informed how other workshop participants chose to re-play the game and highlighted the strategic and political choices facing each player.

Throughout Decision Point A, participants assessed that Blue's interests included maintaining the credibility of its alliance commitments in Europe and in Asia. As one panelist argued, the 2026 U.S. National Defense Strategy (NDS) identifies denial of Chinese aggression as a higher priority denial of Russian aggression in Europe. However, the credibility of U.S. commitments in Asia to deter Chinese aggression depend in part on the U.S. demonstrating the credibility of its commitments around the world.



For Green players, participants felt that maintaining the existing global order and avoiding opportunistic aggression were key interests with high stakes. The stakes in maintaining open trade were particularly strong for Japan, which depends on international trade for its food supply. The Republic of Korea (ROK) prioritized deterring further Democratic People's Republic of Korea (DPRK) aggression, particularly North Korea crossing the nuclear threshold. To this end, a top South Korean objective was to secure a reaffirmation and clarification from the United States that it would employ nuclear weapons to defend South Korea. South Korea also wanted the United States to commit to a broader package of both conventional and nuclear support, but they viewed the nuclear component of the commitment as essential. More generally, South Korea wanted to show coordination with regional allies to demonstrate unity and resolve.

Red political objectives, stakes, and COAs varied. Participants interpreted Russia's national interests in this scenario as centering on preventing perceived NATO expansion and countering what the Kremlin might have viewed as threatening Western encroachment. One panelist observed that Russian aggression typically stems from a perception of loss rather than opportunistic motives. The stakes were relatively high for Russia, as backing down would mean not only losing a war but also allowing the re-establishment of U.S. credibility as a security guarantor in Europe. Russia's strategic objectives focused on responding before the situation became more disadvantageous and preventing the United States from reinforcing or sustaining the NATO alliance. However, achieving these objectives appeared unlikely unless the NATO fractured.

For the People's Republic of China (PRC), participants speculated that its national interests revolved around Taiwan reunification, which President Xi views as a major tenet of China's Rejuvenation Plan. However, Xi seemed to prioritize maintaining regional peace and stability. The PRC tends to prefer handling issues sequentially rather than simultaneously, and its strategic objectives in this scenario focused on preserving regional stability while pursuing long-term goals of eventual reunification.

Based on gameplay, participants theorized the DPRK's national interests focused on improving its situation without attempting to conquer the ROK, which would be infeasible and carry great risks. The stakes were existentially high because the scenario presented a direct threat to the Kim regime, compounded by the potential for the next ROK president to turn South Korea into a nuclear power. Operating under the assumption that U.S. capacity was overextended, participants thought the DPRK's strategic objectives most likely centered on de-escalating nuclear strikes and preventing actions that would push the United States into fighting a nuclear war.

During this decision point, when faced with the scenario of Russia using four nuclear weapons against NATO, workshop participants playing as Blue and Green generally felt that they needed a forceful response that would "sober but not enrage" Russia. That is, they wanted a response that inflicted enough pain on Russia to convince them to de-escalate and not attempt aggression in the future, but not so much pain as to provoke further Russian escalation, particularly in the form of more nuclear attacks against NATO.

Disagreement existed over how forceful the Blue response against Russia would need to be to "sober but not enrage". Some felt that strategic conventional strikes deep inside of Russia were appropriate while others were concerned that such strikes would be dangerously escalatory. Proponents of a conventional strike pointed out that nuclear weapons were not necessary if NATO's goal was to inflict (moderately) more damage on Russia than Russia inflicted on NATO with its



attacks. They also warned of political obstacles to NATO using nuclear weapons against Russian targets on or near NATO territory due to concerns about radioactive fallout. Others stressed the need for the United States and NATO to use nuclear weapons in response to Russia's nuclear attack. Nuclear weapons employment had symbolic value beyond their physical effects, and some argued that NATO should use nuclear weapons to show that it had the resolve to respond to nuclear attacks in kind.

Although France was not an actor represented by players in the game, several participants voiced serious concerns that France would independently decide to retaliate against Russia with nuclear weapons after Russia used nuclear weapons to sink its aircraft carrier. Participants felt that Russia would likely see any nuclear attack from France as effectively a nuclear attack from the United States, meaning that an independent French nuclear retaliation could easily lead to broad, uncontrolled escalation. Participants therefore stressed the importance of better communication and joint planning between France and the rest of NATO regarding nuclear retaliation scenarios.

Faced with the scenario of Russia using four nuclear weapons against NATO, participants playing as Japan expected the United States to use nuclear weapons in a roughly equivalent manner. They felt that alternate approaches towards Russia, such as de-escalating or continuing to fight with only conventional weapons would not be politically viable after Russia used nuclear weapons to inflict mass casualties on NATO members. The credibility of U.S. commitments to its allies would be at stake, and the NATO members that were attacked would likely be demanding severe retribution against Russia.

Faced with the scenario of limited DPRK biological attacks, the South Korean players favored moderate escalation. They hoped that moderate escalation would be sufficient to convince the DPRK to de-escalate and not so severe that it would make the DPRK regime think that it had nothing left to lose.

When faced with uncertain risk of further escalation, participants speculated that Russia might agree to de-escalatory actions to escape the predicament of a soft retreat and the possibility of U.S. forces bolstering NATO. However, expert Red players pointed out that Russia would have utilized other grey zone options before resorting to nuclear weapons. If Russia were to use tactical nuclear weapons as the scenario suggested, it would have been for two primary reasons: signaling resolve and preventing the collapse of its conventional forces. Russia's primary concern was attacks on its territory, which would probably have involved conventional forces before nuclear strikes. Ultimately, the worst-case scenario for Russia was for the United States and NATO to continue the fight using conventional methods, as this would have steadily degraded Russian capabilities without triggering the dramatic escalation Russia might have used to divide the alliance.

The PRC would most likely have attempted to dissuade Russia from using nuclear weapons due to the scale of global economic instability such action would have caused. However, if Russia used nuclear weapons, China might have leveraged those nuclear threats to deter Western and U.S. actions in Asia. To mitigate downside risks, specialist Red players hypothesized that Xi might have attempted to stabilize the PRC economy, stockpile critical supplies, ration resources, and increase domestic informational control to prevent public panic. Xi might have also ordered the military to higher readiness levels if sensing that adversaries may consider opportunistic moves against the PRC. While Xi appeared somewhat risk-averse, participants noted their assessments carried low confidence given his unpredictability.



The PRC faced several significant risks if it were to attack Taiwan at this decision point. The global economy was already severely disrupted in this scenario, so any additional conflicts risked further damaging the broader economic system and PRC's domestic economy. Despite its military advancements by 2030, achieving successive victories in seizing and governing Taiwan remained incredibly high-risk for the PRC because the United States could mobilize its forces to a higher readiness level compared to the PRC, making PRC miscalculations highly probable.

Additionally, escalation on the Korean Peninsula might have presented additional complications. If the DPRK started a war on the Korean Peninsula, especially involving weapons of mass destruction, the PRC would have been reluctant to attack Taiwan to avoid addressing multiple conflicts simultaneously. Given the Russia-NATO conflict, the PRC would not have perceived Russia as a reliable partner if the European situation appeared disorderly, as this would indicate Russia could not provide military or economic assistance to the PRC when needed. The PRC did not view Russia as essential to a Taiwan fight, but Russian military or economic support would still be beneficial.

Participants thought the DPRK probably had three main courses of action at this stage of the gameplay. First, attempt de-escalation through a peace offensive to convince the United States and South Korea to halt their attacks. Second, wage additional conventional attacks accompanied by nuclear threats. Third, conduct nuclear attacks against military targets in response to assassination attempts against the Kim family.

Aside from the main courses of action, the DPRK had various secondary options. DPRK could launch cyber-attacks against the ROK and United States and reinforce its 2022 nuclear doctrine by highlighting pre-existing nuclear plans that would activate if Kim were killed. The DPRK could also contribute to Russia's efforts in its European conflict to garner Russian support for future conflicts on the Korean Peninsula. The Kim regime likely welcomed Russia's nuclear use as it could have provided credibility for DPRK's own nuclear threats. However, the DPRK would have preferred if the United States and PRC enter the regional conflict first. The DPRK might also provoke the U.S.-ROK alliance into actions that would bring the PRC into the conflict because Kim views its alliances with Russia and China as mechanisms to stop U.S.-ROK efforts. Given perceptions of U.S. overextension in conflicts in other regions, the DPRK would probably avoid actions that would have caused the United States to prioritize the Korean Peninsula.

The question of what constituted a "culminating point" for Blue and Red players received only cursory attention, but players generally felt that multiple nuclear (or other weapons of mass destruction attacks) against their population centers would bring them to a culminating point. Participants noted Russia's culminating point might occur when it runs out of resources, though reaching this threshold would take time. Russia interpreted NATO's escalation options as signals without substantive damage, meaning NATO escalation had to either incur actual damage on Russian soil or inflict sufficient costs to affect Russian behavior and decision-making at this stage of the gameplay. Participants also did not identify a culminating point for the PRC because the PRC did not play a prominent role at this stage of the gameplay and had adopted a wait-and-see approach. Finally, players speculated that the DPRK did not think in terms of culminating points and perceived the conflict as endless war. However, one potential culminating point could have been threats against the Kim family line of succession, though such threats might have caused Kim to take more drastic measures.



Sessions 7-10: To De-escalate or Not

- How has Blue's/Red's stake evolved since Decision Point A?
- In the absence of further escalation but faced with an uncertainty about whether the adversary is prepared to de-escalate, what COAs should Blue/Red consider? What are the benefits, costs and risks associated with each COA?
- What would constitute a "culminating point" for Blue/Red—where costs and risks of continued conflict become unbearable?

All workshop participants again privately re-played the wargame hosted on Strand Analytica's Bestias – this time focused on the de-escalation decision point – after being randomly assigned a Blue, Green, or Red role. Once more, a sub-set of participants served as panelists and played the game “open,” their explanations and justifications for intended COAs informing how other workshop participants chose to re-play the game.

At Decision Point B, several participants argued that Blue's stakes broadened. Initially, Blue sought to preserve the status quo and manage separate deterrence problems. After Russian nuclear use in Europe and a North Korean biological attack followed by a DPRK nuclear demonstration, Blue confronted a systemic challenge rather than a single crisis. Blue increasingly focused on preserving regional stability, sustaining extended deterrence credibility, and preventing normalization of nuclear coercion while managing public opinion and alliance politics. Players increasingly felt that the U.S. president must justify why the United States is in a multi-theater war, define the scope of commitments, and clarify expected costs. Simultaneous conflicts in Europe and East Asia made extended deterrence an immediate challenge for U.S., Japanese, and South Korean cities, fueling debates over whether to double down on alliances or retrench.

Green's stakes also evolved. For Japan, North Korean biological and nuclear use increased perceived insecurity. Players saw Japan's stakes centered on restoring the nuclear threshold and credibility of the U.S. “nuclear umbrella” while worrying about Chinese opportunism, especially around Taiwan, if U.S. and allied resources are overstretched. Some participants wondered if new domestic political considerations would limit Japan's ability to take on expanded roles.

For South Korea, stakes clearly involve survival following a biological attack and DPRK nuclear demonstration. Preserving alliance cohesion and extended deterrence remained vital to South Korea. However, some participants highlighted Seoul's growing interest in independent enhanced conventional capabilities to degrade North Korea's nuclear operations without triggering regime-survival fears.

In Europe, Green's stakes evolved differently. A restrained NATO response to Russian nuclear use, short of attacking Russian territory, showcased conventional superiority and unity. However, players agreed that Russia remained dangerous and may seek to reconstitute forces under the cover of de-escalation. NATO faced a decision about whether to press its advantage or accept a hedging Russian posture that could set up future crises.

Red also saw its stakes shifting. Expert Red players warned that NATO's demonstration of unity and Russia's failed nuclear gambit created new risks for Russia. Moscow learned that it was unprepared



for sustained confrontation with NATO, and its leadership faced internal recrimination and possible purges. Its stakes increasingly centered on regime survival, preservation of nuclear leverage, and gaining time to rebuild conventional forces. Russia sought to buy time while keeping asymmetric and nuclear options available.

For the PRC, the Korean peninsula shifted from a concern to a liability. Beijing valued a divided peninsula as a buffer and feared DPRK regime collapse, loose nukes, and humanitarian crises spilling over its border. It also did not want the destruction of South Korea, an important economic partner. Specialists playing Red warned that Beijing might see a window to press maritime claims while U.S. attention was divided, though major opportunism, especially on Taiwan, was seen as overextending the PLA and risking escalation with the United States.

For North Korea, stakes were firmly existential. It had lost territory and strategic depth by this decision point, and its biological and nuclear threats did not produce desired political outcomes. Expert Red players argued that North Korean leaders might misread global reactions and believe a nuclear demonstration shot should produce political immunity, mirroring Russia's experience. The DPRK might also fear that China could attempt to remove or replace the regime while also hoping that both China and Russia might intervene to prevent the threat of nuclear escalation on their borders.

Overall, both Blue and Red players wanted to avoid further escalation but had no assurance that the other side would de-escalate. Participants outlined three Blue COAs. First, Blue could escalate with conventional or possibly nuclear strikes to impose overwhelming costs on North Korea while pressing advantages against Russia in Europe. Some described this as the "high and to the right" option, potentially including large-scale nuclear counterforce to destroy North Korean nuclear forces or the regime. This could resolve the DPRK problem, demonstrate that nuclear coercion fails, reinforce global norms, and deter copycats. Some also hoped that pressing Russia would force settlement and open negotiations on risk reduction and arms control.

However, participants recognized that this COA carried high risk of nuclear retaliation against Seoul, Tokyo, or the U.S. homeland, especially if North Korean command and control was disrupted or authority is pre-delegated. It could destabilize the region, draw in China, and create large humanitarian and political fallout. Politically, the United States might be criticized for using more nuclear force than Russia or North Korea, especially in response to a non-casualty demonstration, dividing alliances. And a large counterforce campaign might not eliminate all DPRK capabilities, leaving surviving forces with strong incentives to launch. Additionally, pressuring Russia might drive more serious nuclear escalation. Some participants doubted any U.S. president would accept the risks to U.S. cities, limiting the plausibility of this option.

A second option focused on functionally denying North Korea's ability to employ nuclear and WMD capabilities, primarily by targeting nuclear command and control (NC2) and conventional operations to reduce operational effectiveness while avoiding signaling regime decapitation. This approach would erode the strategic value of North Korea's nuclear arsenal, making use operationally ineffective and politically counterproductive. It aimed to hold down escalation risks, preserves conventional momentum, and avoids rushing to nuclear employment.

Players saw several drawbacks to this second COA, including reduced leverage for rapid conflict termination. North Korea might believe it can fight a protracted conflict while continuing nuclear



signaling, imposing sustained political, economic, and military costs on Blue and testing alliance cohesion and defense industrial capacity. In Europe, a similar denial posture that stops short of pressing into Russian territory might be viewed as allowing Moscow to rearm.

The third option, which attracted substantial support, blended denial operations with structured crisis management and negotiations. It integrated sustained pressure on North Korea's operational capabilities via formal mechanisms like the U.S.–ROK Nuclear Consultative Group and talks that communicated clear red lines and off-ramps. This COA would offer Pyongyang a path to preserve regime survival in exchange for verifiable limits on nuclear and biological use while reinforcing that further nuclear employment, especially with casualties, would mean regime change. It sought to pair military denial with credible assurances that restraint can lead to de-escalation.

Risks identified by participants included Red interpreting restraint as declining resolve and exploiting negotiations to buy time while retaining core capabilities. Domestic audiences in South Korea, Japan, and the United States might also see a negotiated return to something like the 1953 armistice as unsatisfactory, particularly if territorial gains are traded away. In Europe, allowing Russia to de-escalate without concessions may let Moscow regroup and plan future challenges.

At this decision point, expert Red players for Russia preferred a hedging strategy that used de-escalation in Europe to buy time for reconstituting conventional forces and managing internal leadership struggles. Moscow might withdraw enough to ease NATO pressure but keep asymmetric and nuclear options ready while counting on Blue's focus on North Korea to reduce Western attention to Europe. This could let Russia rebuild capacity without conceding core political goals. Risks also included Blue refocusing on Europe once the Asian crisis stabilized and confronting Russia before its reconstitution is completed. Mismanaging this hedge could also be seen as Russian weakness, inviting internal instability or bold Ukrainian action.

Expert Red players focused on China saw Beijing likely to pursuing diplomacy to encourage both Koreas and the United States to de-escalate, pressing Blue and Green to exit North Korean territory, and leaning on North Korea to halt nuclear signaling. It would also likely mobilize forces for contingencies related to DPRK regime collapse, refugee flows, or loose nukes while maintaining ambiguity about whether it would intervene and on whose side. If Blue advanced north of the 38th parallel or approached China's border, Beijing might escalate stepwise, beginning with warnings and limited measures rather than immediate kinetic action. Some participants noted that China might press maritime claims or tighten control in the South China Sea while the United States is distracted, but most saw a full-scale move on Taiwan as too risky.

North Korea experts suggested several DPRK options. It could use nuclear strikes, including airbursts on its own territory against coalition forces to eject Blue and Green forces or impose unacceptable costs. This would demonstrate willingness to use nuclear weapons for regime defense and force China and Russia to confront nuclear war on their doorstep, potentially pushing them to intervene to freeze the conflict and preserve the regime. This COA brought real escalation risks. Alternatively, North Korea could continue conventional operations while employing additional nuclear demonstrations or limited strikes to threaten Japan or the U.S. homeland. The goal would be to eject coalition forces, reinforce nuclear credibility, split regional alliances, and gain leverage to settle the war on favorable terms. However, participants observed that Blue may view even "limited" use of nuclear weapons as warranting a regime-ending response. Finally, North Korea could push for a settlement close to the 1953 armistice line with assurances from Washington and



Seoul not to pursue regime change, potentially backed by Chinese and Russian guarantees. Pyongyang might retain a residual nuclear capability, perhaps inspected, and claim that its WMD forced favorable termination. However, Blue and Green publics may see this as rewarding nuclear coercion while within the DPRK it may be seen as weakness, threatening regime stability.

Participants assessed “culminating points” – when costs and risks outweigh further gains – for Blue and Red. Blue’s culminating point arises when three conditions converge. First, alliance cohesion would need to fracture, with South Korea, Japan, or key NATO allies losing confidence in U.S. strategy or pursuing unilateral actions that undercut coordinated planning. Additionally, domestic political support would need to erode due to economic disruption, high casualties, or perceived vulnerability of U.S. cities to nuclear attack. Finally, escalation risks would need to dominate, Blue leadership no longer seeing additional punishment or denial as viable for improving security but only as a source of increased the risk of large-scale nuclear war.

Red would see different “culminating points.” For Russia, the culminating point would arrive if a “buy time” strategy fails and Blue refocuses on Europe with greater resolve before Russia can reconstitute. Moscow would then face a choice between major political concessions and heavier reliance on nuclear options with reduced leverage. For China, the culminating point would be defined by loss of strategic choice. Escalating regime collapse, humanitarian disaster, or loose nukes on the peninsula, without Beijing shaping outcomes, may compel intervention. Similarly, if the United States ignored repeated warnings to avoid China’s borders with North Korea, this could force action to preserve security and domestic legitimacy. Finally, North Korea’s culminating point would center on regime survival. The DPRK is unlikely to accept a war’s end until the armistice line is reestablished and regime survival is assured.

Ultimately, participants emphasized that de-escalation is never neutral, it is always a signal. For Blue, stepping back could appear as lack of resolve and invite further coercion. For Red, especially Russia and North Korea, de-escalation could buy time but may be seen as weakness at home and abroad. Both sides need credible threats and credible promises of restraint. Blue must show that nuclear coercion fails without cornering adversaries into escalation. Red must avoid triggering regime-ending retaliation while convincing Blue that its interests and security concerns matter. In this context, many participants converged on a narrative in which Blue’s best realistic outcome is not decisive victory, but sustained control over escalation dynamics and political outcomes: denying adversaries strategic gains from nuclear coercion while accepting uncomfortable compromises. For Red, the best outcome often lies in hedging strategies that buy time, preserve capabilities, manage internal politics, and keep open the possibility of future challenges.

Sessions 11-14: To Terminate or Not

- How has Blue's/Red's stake evolved since Decision Point B?
- In the context of a de-escalating conflict that has not ended, what COAs should Blue/Red consider to achieve war termination? What are the benefits, costs, and risks associated with each COA?
- What is required to set the conditions for a durable peace? Is punishment necessary?



For a third time, all workshop participants privately re-played the wargame for the termination decision point after being randomly assigned a Blue, Green, or Red role. A sub-set of participants again served as panelists and played the game “open,” their explanations and justifications for intended COAs informing how other workshop participants.

Entering Decision Point C, Blue’s stakes became more volatile and multifaceted following a PRC nuclear strike on a U.S. carrier strike group in the Indo-Pacific and the commitment of the U.S. president to avoid nuclear escalation. The Indo-Pacific stakes for the United States escalated sharply following the PRC’s nuclear employment. This event was understood as a watershed moment for U.S. domestic politics and strategic credibility. The attack also raised doubts about the viability of U.S. power projection and extended deterrence, especially as Green allies such as Japan and South Korea began reconsidering their security arrangements. The ambiguity of U.S. objectives in Taiwan—whether to defend the island, protect U.S. forces, preserve the semiconductor industry, or prioritize homeland security—created tensions in decision-making between Blue and Green. And with the president committed to avoiding nuclear war over Taiwan, Blue was constrained into a narrow band of options that were neither fully escalatory nor entirely de-escalatory.

In Europe, the establishment of an armistice with Russia meant that Blue no longer faced an existential threat to NATO territory. However, the Alliance now confronted the challenge of managing deterrence and readiness in an environment where nuclear weapons had been employed. The focus shifted from regaining lost territory to shaping the postwar security architecture, ensuring restored deterrence, and preventing future aggression.

On the Korean Peninsula, a coup imprisoned Kim Jong Un, opening the door to negotiations between Blue and a new DPRK regime. This raised the prospect of denuclearization and broader regional realignment, though players were divided on the probability of these outcomes. Most participants agreed the Korean Peninsula was Blue’s least pressing challenge at this point.

Questions also arose surrounding Green’s changing stakes during this decision point. Some players doubted the effectiveness of a NATO nuclear response, the balance of conventional and nuclear capabilities in Europe, and the resilience of Allies’ defense industrial bases. Political cohesion and the ability to maintain public support and societal resilience in the face of hybrid warfare became increasingly salient. The Alliance’s core stake was to prevent renewed Russian aggression while avoiding escalation toward large-scale nuclear exchange. “Fortress Europe” emerged as shorthand for deterring further attacks rather than punishing Russia for previous nuclear employment.

Japan’s stakes had increased most dramatically during this decision point. The collapse of the Kim regime in North Korea introduced uncertainty about control of nuclear weapons and the failure of deterrence in the Taiwan Strait created an existential crisis for Japanese security. The damage inflicted by Chinese nuclear use on U.S. and Japanese forces generated major economic and social disruption. For Tokyo, preserving the credibility of the U.S.-Japan alliance was paramount, and any settlement that undermined the alliance or left Taiwan vulnerable was unacceptable.

South Korea’s stake centered on shaping a stable post-coup Korean Peninsula. With fighting halted and the Kim regime removed, Seoul faced a strategic dilemma: whether to cross the Military Demarcation Line and risk signaling intent for regime change or to exercise restraint and pursue negotiations with the new DPRK leadership. The possibility of achieving denuclearization and a



durable peace through dialogue was seen as a unique opportunity, provided that third-party intervention could be avoided and the U.S.-ROK alliance remained strong.

For Red actors, the stakes were shaped by the perceived balance of resolve and the opportunities created by Blue's ambiguity. Russia viewed NATO's limited nuclear response as evidence of Alliance restraint, potentially opening the door to a renewed large-scale offensive to overthrow the government in Ukraine. Core Russian objectives remained regime security, reassertion of influence over neighboring states, and demonstration that nuclear use could coerce NATO and constrain its response. Despite conventional setbacks, Russia saw little incentive for substantive peace talks, preferring to use negotiations to buy time, offset losses in the Baltic, and focus on Ukraine.

The PRC's stakes increased dramatically at this decision point. The failure of the PLA to execute cross-strait operations and the subsequent use of nuclear weapons against U.S. forces damaged Chinese prestige and created severe economic disruption. Conflict termination was not an option for China until some form of political victory over Taiwan could be secured, whether through military success, coercive isolation, or a negotiated settlement. Managing domestic legitimacy and public sentiment was critical to stay in the fight. China's strategy increasingly relied on sustaining pressure against Taiwan, leveraging nuclear signaling to deter further U.S. intervention, and seeking a narrative of success to present at home.

The new DPRK leadership, no longer tied to the Kim family, faced the challenge of maintaining internal control and avoiding absorption by the South. The regime's primary stakes were preserving sovereignty, leveraging nuclear capability for bargaining, and securing recognition of North-South separation. This opened space for a wider range of courses of action, from major concessions to attempts at coercive escalation aimed at driving U.S. forces off the peninsula.

Participants reached several conclusions about benefits, costs, and risks associated with different COAs for terminating an ongoing multi-theater nuclear conflict. For Blue, three broad families of options emerged: de-escalation and withdrawal; persistence with limited escalation; and selective escalation, including limited nuclear use. De-escalation involved operational withdrawal from contested theaters, ceding objectives such as Taiwan to China, and prioritizing avoiding further nuclear exchange. The benefits included reduced risk, relief from war fatigue, and the opportunity to reconstitute forces. However, the costs were significant: loss of credibility; potential proliferation among allies; and the risk of encouraging future aggression through perceived weakness.

Persistence without major escalation focused on maintaining readiness, sanctions, and deterrence, while avoiding punitive regime change or strikes on the Chinese mainland. This approach would have signaled that nuclear use had not succeeded in deterring Blue from pursuing core objectives and preserved alliance structures. The risks included prolonging a high-tension environment, political dissatisfaction at home, and the possibility of being perceived as indecisive.

Selective escalation, including limited nuclear use, was advocated by some as a means of reasserting deterrence and shaping war termination. Options included sinking a PRC carrier, conducting demonstrative theater nuclear strikes, or increasing nuclear signaling in Europe. The benefits were the demonstration of resolve to deter further Red nuclear use. However, the risks were high: misperception of thresholds; normalization of nuclear use; and unpredictable reactions from domestic and allied audiences. Blue's options were ultimately constrained by internal political dynamics, especially the U.S. president's aversion to risking nuclear war over Taiwan countered by



the likely public demand for retaliation after the carrier strike. This forced Blue into a narrow band of “persistence” options that satisfied neither maximalists nor minimalists.

Red’s strategic calculus was shaped by the desire to secure war termination on favorable terms. Russia considered renewed conventional offensives in Ukraine, exploiting perceived Western restraint and relying on nuclear signaling to constrain NATO. The risks included overestimating Russian capabilities and the possibility of triggering a stronger NATO response. China’s preferred approach involved sustained missile and artillery strikes to isolate Taiwan, limited territorial gains, and strategic signaling through vertical escalation threats against the U.S. homeland. This approach appeared to preclude the need for another risky amphibious assault and kept Taiwan under pressure, potentially enabling a political settlement. The risks included prolonged conflict, economic devastation, and the possibility that nuclear signaling might fail to deter U.S. and allied responses. The new DPRK leadership showed an openness to pursuing major concessions, including denuclearization and removal of U.S. forces, to secure regime survival and recognition of North-South separation. The risks included internal regime cohesion and the possibility of reverting to coercive escalation if negotiations stalled.

A central theme of the panel discussion was the difficulty of achieving a durable peace following limited nuclear war. Participants agreed that stable war termination requires more than the cessation of hostilities: all sides must perceive the settlement as reflecting the underlying balance of power, including nuclear, conventional, and economic dimensions. Trust would also be a vital yet scarce commodity, making robust deterrence and defense architectures critical to any durable peace. On the question of punishment, participants expressed skepticism that traditional notions of punitive victory were feasible against nuclear-armed adversaries. Historical models of durable peace through unconditional surrender were deemed potentially inapplicable. Some suggested that calibrated, non-military forms of punishment could be considered, but that excessive punishment would risk destabilizing adversary regimes and prompting renewed aggression.

In Europe, Blue concluded that the challenge of further Russian aggression could not be “solved,” only managed. Durable peace would therefore require containment, strengthened NATO deterrence, and economic constraints, rather than punitive regime change or territorial rollback. In the Indo-Pacific, the PLA’s operational failure was seen as a form of punishment, and many considered further military punishment of China unnecessary and potentially counterproductive. Economic decoupling and long-term trade re-orientation were framed as powerful punitive tools. On the Korean Peninsula, regime change occurred without external intervention, creating space for a settlement centered on denuclearization and normalization that many wanted to explore.

Participants acknowledged significant gaps in collective knowledge about key factors driving war termination. They identified a dearth of shared, detailed understandings of the operational impact of limited nuclear use by major powers, making discussions of intrawar deterrence highly speculative. Domestic pressures, especially public opinion, demands for revenge, and risks of leadership change, were also salient factors that could drive outcomes. The interplay among U.S., European, and Asian allies in managing escalation and burden-sharing was also deemed underexplored, especially as allies consider nuclear proliferation. These gaps underscore the conclusion that one of the hardest problems of war termination with nuclear-armed adversaries consists of framing expectations about what victory can realistically mean.



The panel discussion underscored the inherent difficulty of achieving stable war termination when nuclear coercion has been normalized and punishment options are constrained. Participants recognized the need to further reflect on the decisions and tradeoffs in crafting a path to durable peace that reflects the balance of power, maintains deterrence, and avoids the pitfalls of excessive or insufficient punishment.

Sessions 15: Synthesis and Conclusions

- How did collective play at the workshop differ from the preceding individual play? Why?
- Where did human and AI play diverge and converge?
- What is the most viable Blue theory of victory?
- What lessons on intra-war deterrence follow for the US and its allies and partners?
- How can we continue to advance cumulative learning?

Participants comprehensively answered none of the final panel's motivating questions. Instead, a consensus emerged that grappling with the challenge of simultaneity, especially in cases where China moves first in East Asia, requires more work. And while wargames play an important role in helping develop theories of victory for addressing such challenges, they need to be continually improved with lessons from past iterations to make them most useful.

Several observations in the closing session addressed escalation dynamics. Participants agreed that the traditional Blue toolkit for checking adversaries in multiple theaters needs to be revised. Key to this effort will be getting more precise about ways escalating, sustaining operations, and de-escalating may interact across multiple conflicts. Many participants focused on the importance of considering how vertical, horizontal, and asymmetric escalation may span all diplomatic, informational, military, and economic (DIME) tools of national power. However, in gameplay, no actor pursued escalation dominance in all theaters, and few comprehensively considered all tools of national power. A consensus still emerged that taking risk early in a crisis may help deter opportunistic or coordinated aggression by a third-party. But many ceded that this COA is great in theory but is difficult to execute, especially if nuclear weapons threaten allied territory.

Another discussion theme was Blue's need to get serious about deterrence in Europe and Asia to avoid simultaneous conflicts in the first place. Gameplay suggested that nuclear weapons usage may be good for Russia and China, though perhaps not North Korea, and Blue and Green need to do more to change this dynamic. Participants generally agreed that once nuclear weapons are used against Blue, reestablishing nuclear deterrence will be essential. Several suggested developing more diverse defeat and prevention options for responding to WMD usage along the escalation ladder, thereby strengthening deterrence. These options will need to strike balance between resolve and restraint. At times this may mean holding back militarily to disincentivize Red from using nuclear weapons to salvage a disastrous defeat.

As part of getting serious about deterrence, other participants focused on the need to be clear in advance of a crisis about Blue political objectives and associated stakes. Such clarity may help mitigate the need to abandon or revise objectives when challenged. Other participants wondered about Blue's "commitments to its overseas commitments". Blue should fight more for something as stakes go up, but as crises escalated in gameplay, Blue's willingness to escalate seemed to go



down while interest in termination went up. Other comments focused on how public and domestic political considerations frequently mentioned by participants will inform changing political objectives. Many wondered how discontent or fear in public will transmit to decisionmakers and how this dynamic can be captured in future gaming. Ultimately, consensus appeared to emerge around the idea that simultaneous crisis will exhaust political, military, and managerial capacity, making advance planning for war with multiple adversaries even more important.

Alliance concerns also captured the comments of many participants. Gameplay reenforced for many the importance of maintaining alliance cohesion through consultation, burden-sharing, alignment, and sensitivity to domestic political concerns to address multiple crises. One observation centered on how after regional nuclear weapons usage, many Green allies may be greatly incentivized to pursue their own bomb regardless of Blue actions.

Separately, war termination preoccupied several participants, especially the political challenge of potentially not realizing “victory” under the shadow of nuclear-armed adversaries. Many participants concluded that in a nuclearized, multi-theater conflict, managing alliances, escalation, and termination matter most; however, termination may be especially difficult after Red nuclear usage spurs desires for punishment. War termination may ultimately require difficult, distasteful compromises and look little like “victory”. Notably, many participants in this panel conceptualized victory in very different ways, some willing to entertain regime change to “solve” a problem once and others focused on the details of negotiations. Some participants held that a negotiated termination may be the best outcome for war in the nuclear era, provided the settlement considers how to disincentivize adversaries from launching future aggression.

Several participants also highlighted areas of confusion or disagreement among participants. Most importantly, many participants agreed on the need for more precise understandings of intra-war deterrence and nuclear warfighting in the context of the simultaneity problem. Participants seemed to conceptualize these issues differently. Additionally, some participants were bullish about AI, hoping it could soon help map escalatory pathways, act as assistant, and identify underexplored war termination options, while others were decidedly skeptical of AI applications to political-strategic decision making. Finally, the term “stake” was used in many ways, leading participants to talk past one another about the importance of certain political objectives.

Significant conversation focused on topics overlooked by participants during the two-day workshop. For instance, none of the participants considered India, Pakistan, or other potentially important global players like the UN when making or justifying their choices at each decision point. A discussion of the defense industrial base was also highlighted as a missing piece. Others pointed out that the U.S. homeland was largely a sanctuary and no players really tested the possibilities and limitations of Golden Dome, which would have serious implications for Blue and Green. Finally, despite a biological attack playing a role in one theater of the game, little conversation during the workshop considered the second and third-order effects of that attack.

Improving wargame utility for developing and testing ToVs was another topic of conversation. Players generally wanted more detailed gameplay that included feedback on the operational specifics informing strategic decisions. To improve wargames examining ToVs, several participants stressed more clearly defining escalation, sustaining operations, de-escalation, and termination. Some also recommended changing game design to avoid anticipating specific Blue ToVs, instead offering more open-ended options. In contrast, other suggestions focused creating more rigid



gameplay to gather data on specific alternative pathways. Some also questioned whether a viable ToV against nuclear-armed adversaries can be generated in single move games, underscoring that some ToVs require multiple moves to affect war termination. Separately, others emphasized the value of asking Blue players more about their intentions and comparing these with Green and Red perceptions. One participant advocated for using data from historical crises to inform game AI models. Ultimately, most players recognized AI's potential in wargaming while a minority wondered if human-AI gameplay is a good proxy for "real world" human-human strategic interactions.

Organizers shared that they intend to vary wargaming methodology and compare across different modes of empirical inquiry in future games. Bestias will also increasingly use AI simulations to supplement gameplay. Participants were invited to collaborate with Strand Analytica to explore designing AI strategists and other games.