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The Entanglement that Leaves Something to Chance

What factors would propel a conventional war into a nuclear one? Would leaders know whether their military operations were driving the other toward a decision to use nuclear weapons? If we can identify potential escalation flashpoints in peacetime, what unilateral or cooperative steps can the United States and other countries take to minimize the risks of nuclear catastrophe? These are tough questions of increasing salience as competition between the United States and Russia and China intensifies. We cannot meaningfully reduce nuclear risks among the major powers if we do not understand them. Fortunately, a number of scholars and practitioners are tackling this set of issues.¹

James Acton's "Escalation through Entanglement" is an excellent addition to this field, one that leaves us with a better understanding of the risks of inadvertent nuclear escalation and what the United States, Russia, and

¹ For a sample, see Paul Bracken, *The Second Nuclear Age: Strategy, Danger, and the New Power Politics* (New York: Times Books, 2012); Keir A. Lieber and Daryl G. Press, *Coercive Nuclear Campaigns in the 21st Century: Understanding Adversary Incentives and Options for Nuclear Escalation*, Naval Postgraduate School, March 2013, <https://www.hsdl.org/?view&did=734062>; Elbridge Colby, "America Must Prepare for Limited War," *The National Interest*, 21 October 2015, <https://www.hsdl.org/?view&did=734062>; Brad Roberts, *The Case for U.S. Nuclear Weapons in the 21st Century* (Stanford: Stanford University Press, 2016); Caitlin Talmadge, "Would China Go Nuclear? Assessing the Risks of Chinese Nuclear Escalation in a Conventional War with the United States," *International Security* 41:4 (Spring 2017): 50-92 https://doi.org/10.1162/ISEC_a_00274; James N. Miller Jr. and Richard Fontaine, *A New Era in U.S.-Russian Strategic Stability: How Changing Geopolitics and Emerging Technologies are Reshaping Pathways to Crisis and Conflict*, Harvard Belfer Center and Center for a New American Security (September 2017), <https://www.cnas.org/publications/reports/a-new-era-in-u-s-russian-strategic-stability>; John K. Warden, *Limited Nuclear War: The 21st Century Challenge for the United States* Livermore Papers on Global Security 4, Lawrence Livermore National Laboratory Center for Global Security Research, July 2018, https://cgsr.llnl.gov/content/assets/docs/CGSR_LP4-FINAL.pdf.

China can do to manage them. Acton weaves together several topics that are too often explored separately: U.S., Russian, and Chinese doctrine for conventional or nonnuclear war, nuclear strategy, and their respective command, control, communications, and intelligence (C3I) systems. He concludes that the risks of inadvertent escalation are more severe than is commonly understood and will likely increase in the future because “Chinese, Russian, or U.S. C3I assets located outside—potentially far outside—theaters of operation could be attacked over the course of a conventional conflict...Such assets constitute key nodes in states’ nuclear C3I systems, but they are also ‘entangled’ with nonnuclear weapons...” in that they are essential to effective nonnuclear military operations and are vulnerable to attacks by conventional, counter-space, and possibly cyber weapons (57-58).

Acton posits three mechanisms that could drive inadvertent nuclear escalation. The first is “misinterpreted warning” (67-73). One country attacks the other’s dual-capable C3I assets in support of its conventional war aims, but the country under attack perceives the operation as a prelude to nuclear-use and takes steps to deter nuclear attack that, while proportionate from its perspective, will likely be viewed by its adversary as a major escalation of hostilities.

The “damage limitation window” is the second mechanism (73-76). The United States could conclude that nonnuclear attacks on its C3I assets are degrading its ability to mount an effective damage limitation attack on Russia or China’s strategic nuclear forces. Thus, regardless of the attacking country’s intent, its operations could create a dangerous decision-point for its adversary: should it launch a counterforce attack before its ability to preempt and destroy the other country’s nuclear forces, particularly its mobile systems, diminishes?

Third, Acton argues that traditional crisis instability—where a country feels pressure to use its nuclear weapons before its forces or its C3I are destroyed—could arise not only from U.S. non-nuclear operations against Russian and Chinese dual-capable C3I but also from Russian attacks on U.S. enabling assets, raising important questions about the resiliency of U.S. nuclear C3I in a conventional conflict (76-82).

There are two aspects of “Escalation through Entanglement” that are exemplary.

First, the breadth and depth of Acton’s research on the U.S. nuclear C3I system elevates the rigor of his analysis. Using a variety of official sources, Acton maps the system’s space, air and ground-based nodes to identify the key points of nuclear and conventional entanglement. Difficult as it is to get beyond abstractions when exploring inadvertent escalation risks stemming from the interplay of doctrine and technology, Acton does just that due to the granularity of his research. It enables him to apply the three escalation mechanisms to plausible conflict scenarios in an assessment that identifies what Richard Smoke described as latencies: “One of the ways in which escalation gets out of control—one that is not always apparent—is a seemingly careful step that activates some nation’s previously latent motive or interest.”² Acton uncovers U.S., Russian, and Chinese nonnuclear operations that could conceivably cross each other’s nuclear thresholds, activating latent interests that, previously, might not have been apparent to leaders on the giving or the receiving end of the attack.

The potential for Russia or China to unintentionally compromise the United States’ dual phenomenology requirement for assessing potential ballistic missile attacks is one such example. U.S. policy requires the

² Richard Smoke, *War: Controlling Escalation* (Cambridge: Harvard University Press, 1977), 245.

characterization of potential ballistic missile attacks to be informed by two separate types of sensors, infrared satellites and ground-based radars. Dual phenomenology underpins the United States' option of enabling the president to launch intercontinental-ballistic missiles before an incoming strike destroys them by ensuring that a launch decision is not based on warning information from only one type of sensor (commonly referred to as launch under attack).³ In a war, however, dual phenomenology would serve a broader purpose, giving U.S. decision-makers confidence that they would know if Russia or China launched ballistic missiles toward U.S. territory and would be able to assess the scope and purpose of the attack. Acton identifies plausible reasons as to why Russia or China might attack U.S. early warning satellites and ground-based radars that have nothing to do with blinding the United States to a strategic missile attack on North America. For example, Russia might go after U.S. satellites to obstruct U.S. monitoring of Russian naval forces (84-89).

The sheer survivability of U.S. ballistic missile submarines at sea and generated nuclear bombers ensures that the United States does not rely on launch under attack to meet nuclear employment objectives.⁴ This deliberate feature of the United States' nuclear posture lowers the likelihood that a U.S. president would launch a nuclear strike as a result of losing dual phenomenology.

But it does not eliminate the risk because nobody knows how a president would interpret and react to attacks on these assets. We can be confident, however, that the president's advisors would inform him/her if Russian operations were degrading the United States' ability to provide accurate and timely warning of an incoming missile salvo. In other words, under these conditions nuclear risks would come into play in the president's deliberations. Even if nuclear restraint held, the conflict would have crossed an important threshold and, as Acton notes, the United States might take potentially provocative steps such as generating additional nuclear forces.

The same logic applies to Acton's damage limitation window. Given the magnitude of damage caused by a handful for Russian or Chinese nuclear weapons on U.S. soil, there is reason to be skeptical that the United States would ever seriously consider a large-scale counterforce attack against Russia or China, particularly in a limited regional conflict where its adversary had not yet crossed the nuclear threshold. But if damage limitation is a U.S. option, and Chinese operations are degrading the C3I assets on which it depends, the president would almost certainly be informed about it, and it is impossible to predict how he or she would react.

Should Russian or Chinese officials be aware that their operations would have such an effect on U.S. nuclear C3I as they weigh risks and benefits before authorizing these types of attacks? Should U.S. officials consider how the United States might respond under these conditions? Should they explore options for increasing the resiliency of U.S. nuclear C3I? Of course the answer to each question is a resounding yes, and herein lies the importance of identifying latent thresholds before they are crossed. Policymakers will have different views on the strategic implications of entanglement, but they cannot have these debates and select policy solutions unless they know where and how nuclear and nonnuclear assets and operations would overlap. Acton provides

³ United States Department of State Fact Sheet, "U.S. Nuclear Force Posture and De-Alerting," 14 December 2015, <https://2009-2017.state.gov/t/avc/rls/250644.htm>.

⁴ United States Department of State Fact Sheet, "U.S. Nuclear Force Posture and De-Alerting."

a roadmap for a journey which every U.S, Russian, and Chinese leader hopes never to embark upon but must nonetheless prepare for.

The second exemplary aspect of “Escalation through Entanglement” is Acton’s actionable policy recommendation. He argues that the “first-order task for Washington, Beijing, and Moscow, therefore, is to conduct their own analyses...of the potential benefits and risks of entanglement” (93), because these efforts would improve each countries’ understanding of risks and decision-points in crises, and help senior officials review and perhaps mitigate the escalation risks associated with emerging war plans and acquisition decisions in peacetime.

This recommendation comes at a favorable time. The United States’ 2018 Nuclear Posture Review called for modernizing the nuclear C3I system and adapting it to twenty-first century threats, and the Department of Defense more recently consolidated responsibility for it under U.S. Strategic Command.⁵ Centralizing responsibility for nuclear C3I will not automatically lead to a thorough review of entanglement and how Russian and Chinese operations in a conventional war could impact the U.S. nuclear posture. It does, however, create an opportunity for one, and crosswalking “Escalation through Entanglement” with internal Department of Defense data would be a good starting point.

Combing U.S. vulnerabilities is only one third of the problem. The United States needs to explore how its conventional military operations might affect Russian and Chinese nuclear C3I assets as well. Acton’s concept of risk reduction teams is the right approach. This type of analysis will require looking across potential U.S. conventional, space, and cyber operations to assess the cumulative effect on Russian and Chinese strategic capabilities and perceptions in prospective conflict scenarios. Forming an interagency team with an explicit mandate is the best way to keep the bureaucracy focused amid all the other important issues that require attention.

Last, Acton is correct that unilateral analysis of escalation risks has the potential to blossom into bilateral or multilateral cooperation on risk reduction between the United States, Russia, and China: “the process of designing unilateral risk-reduction measures might stimulate and facilitate thinking about cooperative risks reduction by creating enhanced understanding of the risks associated with entanglement as well as the expertise to manage them” (99).

After all, the concept of stability through mutual possession of survivable strategic nuclear forces among peer competitors stemmed from strategists studying the operational attributes of nuclear weapons and delivery vehicles and the difficulties of effective defenses. It was not obvious from the outset that the vulnerability of one side’s forces could, under the right conditions, undermine the other’s security, and this insight has influenced U.S.-Russian strategic nuclear forces and arms control.⁶ The United States, Russia, and China are

⁵ United States Department of Defense, The Nuclear Posture Review, 2018, 56-58, <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF> and Sandra Erwin, “U.S. STRATCOM to take over responsibility for nuclear command, control and communications,” 23 July 2018, <https://spacenews.com/u-s-stratcom-to-take-over-responsibility-for-nuclear-command-control-and-communications/>.

⁶ See Michael S. Gerson, “The Origins of Strategic Stability: The United States and the Threat of Surprise Attack,” in Elbridge A. Colby and Michael S. Gerson, *Strategic Stability: Contending Interpretations* (Carlisle: U.S. Army War College Press, 2013), 1-46 and The White House, Soviet-United States Joint Statement on Future Negotiations on

all beginning to grapple with the technologies and trends that underlie entanglement. We should not be surprised that an updated set of cooperative practices has yet to emerge, and we should not expect such insights without further analysis.

There is one topic for which Acton's analysis does not, in my view, align with his recommendations: U.S. nuclear declaratory policy. The 2018 Nuclear Posture Review states the United States would consider responding with nuclear weapons after "non-nuclear strategic attacks," which could include "attacks on U.S. or allied nuclear forces, their command and control, or warning and attack assessment capabilities."⁷

Acton interprets this statement as "an attempt to warn" potential adversaries about the escalatory risks attacking assets that support U.S. nuclear C3I, and he concludes that the "disproportionate nature of this threat, however, risks its being dismissed by Beijing and Moscow as bluster" (95). As an alternative, he proposes a "vaguer" message: "Washington could state that it considers dual-use communication and early-warning assets an integral part of its nuclear C3I system and would respond to attacks on them accordingly" (95). Yet if attacks on dual-use C3I could lead to nuclear war, why would the United States' declaratory statement lack credibility?

A U.S. nuclear response to attacks on dual-use C3I systems in a conventional war would be a profoundly dangerous decision and in all likelihood a bad decision. But Acton demonstrates that it would not always be an illogical decision, nor would nuclear escalation always be disproportionate, given the situation that U.S. policymakers perceive (an action can be both proportionate and ill conceived). In light of the entanglement Acton identifies, making it crystal clear that these types of attacks *might* elicit a nuclear response seems both prudent and consistent with his call for educating Russian and Chinese leaders about entanglement risks. His analysis points toward a declaratory policy that is blunt rather than oblique.

As for credibility, it depends on how one reads the declaratory policy. Acton is probably correct that Russian and Chinese strategists and leaders are unlikely to perceive a high-probability of U.S. nuclear first-use in response to C3I attacks. But when taken as a Thomas Schelling "threat that leaves something to chance," the 2018 Nuclear Posture Review statement is far more compelling. Though commonly understood as a strategy of brinkmanship, Schelling's concept also functions as an insightful explanation of why the risks of war under the nuclear shadow are incalculable. It would entail a "process that is not entirely foreseen...decisions that are not wholly deliberate...events that are not fully under control (94-95)."⁸ Acton's analysis illuminates how this fundamental assessment continues to apply today. There are multiple avenues for nonnuclear operations to cross latent nuclear thresholds. U.S. policymakers cannot credibly guarantee that an escalating conventional war would stay below the nuclear threshold once the United States lost important dual-use systems any more than Russian or Chinese policymakers can.

Nuclear and Space Arms and Further Enhancing Strategic Stability, 1 June 1990; available at <http://www.presidency.ucsb.edu/ws/?pid=18541>.

⁷ 2018 Nuclear Posture Review, 21.

⁸ Thomas C. Schelling, *Arms and Influence* (New Haven: Yale University Press, 1966), 94-95.

In this sense, there is a paradoxical quality to Acton's "Escalation through Entanglement," and this is meant as high praise. It is a first-rate piece of analysis that truly can help the United States, Russia, and China lower the risks of inadvertent escalation. Simultaneously, it is a reminder that leaders in all three countries would have a precarious grip on events in a major power war, and that the only way to truly avoid the chance of nuclear escalation is to avoid armed-conflict in the first place.

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