

Brown University
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**On the Prospects of Escalating to De-Escalate and Limiting Nuclear War:
With a Focus on the U.S. Perspective**

A dissertation presented by

Daniel R. Post

BS, United States Naval Academy, 2001
MA, United States Naval War College, 2015
MA, Brown University, 2020

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dissertation requirement for the degree of Doctor of Philosophy

Date _____
Professor Rose McDermott, Advisor

Recommended to the Graduate Council

Date _____
Professor Rose McDermott, Chair, Reader

Date _____
Professor Tyler Jost, Reader

Date _____
Professor Reid Pauly, Reader

Approved by the Graduate Council

Date _____
Thomas A. Lewis, Dean of the Graduate School

Curriculum Vitae

Daniel Post graduated with Distinction with a BS in Mathematics (Honors) from the United States Naval Academy in 2001. In 2015 he earned an MA (with Highest Distinction) in National Security and Strategic Studies at the U.S. Naval War College. Dan has also received an MA in Political Science in 2020 from Brown University.

Dan has served honorably in the U.S. Navy for over 22 years and remains an active-duty Naval Officer. His service consists primarily of time served as a Naval Aviator flying helicopters, as well as time onboard ships and serving at U.S. Strategic Command. While completing his Ph.D. program at Brown University, Dan has been assigned to the U.S. Naval War College as a professor in the Strategy and Policy Department.

While at Brown he has been a teaching assistant for undergraduate courses in international relations and has taught graduate courses on strategy and war at the Naval War College. While teaching at Brown he received the P. Terrance Hopmann Award for Excellence in Teaching for Spring, 2021. He is also a member of the International Policy Scholars Consortium and Network cohort for 2022-2023.

Dan has work published online with the U.S. Naval Institute *Proceedings* and with *War on the Rocks* and has participated in several podcasts with the *Profiles in Strategy* Podcasts produced by the U.S. Naval War College.

Dan will remain as an active-duty Permanent Military Professor at the U.S. Naval War College where he will teach graduate courses in support of the National Security and Strategic Studies master's program.

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PAPER 1

American Nuclear Exceptionalism?

Elite U.S. perspectives on limited nuclear war and the concept of “Escalate to De-Escalate”

1.1 Abstract:

Nuclear war is horrific to contemplate, and yet nuclear-armed states routinely plan, train, and equip themselves to do just that in the name of deterrence and preventing war. But how likely is it that a nuclear war could be kept meaningfully limited if deterrence fails? Is it possible that escalating to the nuclear level could have a de-escalatory impact on a conflict? Why might we believe this is so? This essay engages with these questions by analyzing the results of elite-level interviews with members of the U.S. Strategic Community. Specifically, this essay attempts to answer two key research questions: **First, what do U.S. leaders, experts, and members of the U.S. Strategic Community, including decision-makers and operators in the nuclear command and control enterprise, think about the *feasibility of conducting limited nuclear war*? Second, what do these experts think about the strategy of “escalate to de-escalate” among nuclear powers?** The interviews demonstrate some important contradictions in nuclear strategic thinking which suggest that American exceptionalism may be directly informing the preferences of important leaders and decision-makers. Specifically, my interviews identify a belief that limited nuclear war strategies, including escalate to de-escalate strategies, may be effective or desirable for the U.S. while at the same time suggesting that limited nuclear war, and particularly escalate to de-escalate strategies, will not be successful for others. Additionally, the data here demonstrates that many members of this community are not confident in the ability to control or limit escalation in a nuclear conflict but nevertheless believe the U.S. should prepare for and plan for such a strategy. These combine to suggest that nuclear strategic thinking may be

subject to exceptional-type thinking, in which strategies deemed foolish or dangerous for others are deemed potentially successful for the United States, but without adequate understanding about why this should or would be the case.

1.2 Introduction:

With the advent of nuclear weapons came the concept of nuclear deterrence and with it important theoretical and practical implications related to preventing war and the consequences of failing to do so. The most profound of these implications was that war between states with nuclear weapons had the potential to destroy society as we know it. Therefore, the concept of *limited war* became of primary concern to scholars, leaders, and practitioners. War, if it came, had to be contained to avoid not only terrible devastation but total annihilation. This meant limiting wars to below the nuclear threshold, and if nuclear weapons were used, controlling, or preventing escalation. Scholars and policymakers have struggled throughout the nuclear era questioning the practicality of strategies of *limited nuclear war*. Within contemporary limited nuclear war debates particular concepts have emerged as especially important, around which beliefs and preferences revolve. Two of those concepts, and the focus of this essay, are: the concept of managing or controlling escalation within a limited nuclear war; and the concept of “escalate to de-escalate”, in which states may attempt to connect nuclear coercion, through actual limited nuclear employment, to war termination.

To explore these concepts, this essay reports on interviews with an important group of elite U.S. stakeholders who have direct influence on these debates and related policy decisions. Over the course of one year, I conducted 48 interviews with members of the United States Strategic Community. I define this community as experts and decision-makers who have either a

direct role in promulgating deterrence strategies and nuclear planning, policy development, or decision-making, and those who have a direct influence upon these actors. I focus particularly on members who are currently or who have previously served within the United States' nuclear command and control architecture, and those who directly advise or inform these elites.¹

I asked these important stakeholders primarily about two things: **First, what do they think about the *ability to control and limit escalation in a nuclear war*? Second, what do they think about the strategy of “escalate to de-escalate” among nuclear powers?.**² These interviews indicate that U.S. leaders, despite impressions to the contrary, are not sanguine about the prospects of limited nuclear war. Additionally, the interviews demonstrate several inconsistencies and contradictions in thinking about limiting nuclear war and controlling escalation. Two important tensions are noticeable.

First, my interviews identify a belief that limited nuclear war strategies, including escalate to de-escalate strategies, may be effective or desirable for the U.S. while at the same time suggesting that limited nuclear war, and particularly escalate to de-escalate strategies, will not be successful for others. This inconsistency – that escalate to de-escalate is bad strategic thinking and will fail for others, but the U.S. should consider pursuing such a strategy because it may be successful – is related to the pursuit of “escalation dominance” and faith in the coercive effects of nuclear superiority.³

¹ The full list of interviewees may be found in Appendix A. Some interviewees chose to remain anonymous and so only their generic descriptions are provided. Dates were between September 2021 and September 2022. A more detailed description of this group and why their views should matter follows below.

² The full list of questions is also available in Appendix B. Other key topics included whether or not adversaries possess escalate to de-escalate strategies; whether or not the U.S. should maintain or pursue capabilities and strategies of limited nuclear war; potential bias in the U.S. decision making process; and under what conditions the use of nuclear weapons might reasonably be expected to de-escalate a conflict, among others.

³ On *Escalation Dominance*, see: Kahn, H. (1968). *On escalation: metaphors and scenarios*. Rev. ed. Baltimore, Maryland: Penguin Books; and, Gray, C., & Payne, K. (1980). Victory Is Possible. *Foreign Policy*, (39), 14-27.

Second, reflecting long-standing historical conundrums regarding nuclear deterrence strategy, my research finds that the U.S. Strategic Community is not confident in the ability to control or limit escalation in a nuclear conflict but nevertheless believes the U.S. should prepare for and plan for such a strategy. Though these experts worry about escalation they often worry more about the credibility of deterrent threats and about the ability to deter actions below the level of strategic nuclear attack. There is great uncertainty about the likelihood of limited nuclear use expanding to larger, strategic nuclear use. Despite this uncertainty, however, many prefer to pursue the supposed enhanced credibility that comes with possessing a wider range of nuclear weapons capabilities. These interviews reflect a consistent theme of the nuclear era, namely, that nuclear war is both “unthinkable” or “catastrophic” and yet detailed planning, as well as the resources to conduct these plans, are devoted to doing just that. This second inconsistency – believing limited nuclear war is particularly difficult and dangerous but planning for it anyway – is not a new development, but rather indicates that strategists have yet to find a satisfactory resolution to an enduring strategic challenge.⁴ One clear example of this challenge can be found in the development of NATO nuclear strategy over the course of the Cold War. The eventual shift from a strategy of “massive retaliation”, to “no cities” approaches, to one of “flexible response”, and later “countervailing strategies” reflected a recognition that if deterrence failed, nuclear weapons “might be used on a limited scale to bring the conflict to an end without an automatic escalation.”⁵ At the same time, “there was widespread agreement that if deterrence

⁴ McGeorge Bundy lamented this fact in 1969, arguing “There is a curious and distressing paradox in all this. The same political leaders who know these terrible weapons must never be used and who do not run the foolish risks of nuclear gamesmanship abroad still do not hesitate to authorize system after system.” Bundy, M. (1969), To Cap the Volcano, *Foreign affairs* (New York, N.Y.). [Online] 48 (1), 1–20, p. 14. See also: Reid B. C. Pauly (2015) Bedeviled by a Paradox: Nitze, Bundy, and an Incipient Nuclear Norm, *The Nonproliferation Review*, 22:3-4, 441-455.

⁵ Legge, J. Michael, (1983). Rand Report R-2964-FF, Theater Nuclear Weapons and the NATO strategy of flexible response, p. 1.

failed, deliberate escalation would be extremely difficult to control once it reached the nuclear level.”⁶ Though this tension in deterrence thinking is neither new nor particularly surprising, one important observation is that these experts appear uncomfortable with the tension, but also resigned to live with it. I suggest, however, that this resignation demonstrates a reluctance to seek alternative ways of resolving this tension, perhaps by more forcefully pursuing nuclear disarmament, or investing in other capabilities which might obviate the need to rely on nuclear weapons for security.

These two core contradictions combine to suggest a potential third: in nuclear strategy and limited nuclear war, strategists believe what will not work for others may in fact work for the United States. The interviews analyzed below yield some preliminary evidence for the reasons behind this exceptionalism.

The remainder of this essay proceeds as follows. First, I briefly discuss relevant historic debates regarding limited nuclear war, credibility in deterrence, and controlling escalation. Second, I describe the methods used in my interview research, including selection, the interview process, the questions asked and the methods of aggregating and coding responses. Third I further elaborate the findings and core contradictions with which the Strategic Community continues to grapple. Lastly, I offer some conclusions and recommendations for future research.

1.3 Debates regarding limited nuclear war:

In 1984, speaking directly to the people of the Soviet Union [during a State of the Union Address], President Ronald Reagan stated that “A nuclear war cannot be won and must never be fought. The only value in our two nations possessing nuclear weapons is to make sure they will

⁶ Legge, J. Michael, (1983), p. 10.

never be used.”⁷ Bernard Brodie, an early nuclear strategist, may arguably be credited with the first enduring expression of this sentiment when he wrote that “thus far, the chief purpose of our military establishment has been to win wars. From now on its chief purpose must be to avert them. It can have almost no other useful purpose.”⁸ In January 2022, all five designated nuclear-weapon states (by the Treaty on Non-Proliferation of Nuclear weapons or NPT) signed a joint statement which affirms “that a nuclear war cannot be won and must never be fought.”⁹ Many other statements to this effect have been made by various leaders of nuclear armed countries and scholars of nuclear strategy. But how, exactly, may these weapons be used to avert war, and what happens if war comes despite the best intentions of everyone involved?

There remains a paradox in nuclear strategy in which it is often argued that perhaps the best way to deter nuclear attack and to prevent the use of nuclear weapons is to enhance one’s own capability to use nuclear weapons and to demonstrate the willingness to fight and win nuclear wars. This argument for possessing limited and tactical nuclear weapons is rooted in the idea that threats of mutually assured destruction or massive retaliation with nuclear weapons are not credible when the initiating state is likely to receive nuclear attacks in response.¹⁰ Having

⁷ President Reagan, Address Before a Joint Session of Congress on the State of the Union, (January 25th, 1984), accessed at: <https://www.presidency.ucsb.edu/documents/address-before-joint-session-the-congress-the-state-the-union-4>.

⁸ Brodie, B. (1946) *The Absolute Weapon: Atomic Power and World Order*. Yale Institute of International Studies. Edited Volume, p. 76.

⁹ The designated nuclear-weapon states are: The Peoples Republic of China, The French Republic, The Russian Federation, The United Kingdom of Great Britain and Northern Ireland, and the United States of America. The joint statement is available here: <https://www.whitehouse.gov/briefing-room/statements-releases/2022/01/03/p5-statement-on-preventing-nuclear-war-and-avoiding-arms-races/#:~:text=We%20affirm%20that%20a%20nuclear,deter%20aggression%2C%20and%20prevent%20war.>

¹⁰ For a key example of this discussion, see: Powell, R. (1990). *Nuclear Deterrence Theory: The Search for Credibility*. Cambridge: Cambridge University Press. In it, he writes “In sum, nuclear deterrence theory has approached the problem of credibility in two ways. It has generally linked force or the threat of it to states’ political objectives after the nuclear revolution through arrays of risk and punishment. By raising the risk of unlimited destruction to an intolerably high level through the array of risk, or by posing too great a danger of limited but nevertheless terrible damage through the array of punishment, a state might be able to coerce its adversary into coming to terms and in that way be able to secure its interests.” P. 24.

limited nuclear options is said to solve this credibility problem because they are smaller, less immediately destructive, more discriminate, pose less risk of collateral damage and therefore are less escalatory. By 1966, even Brodie himself had started to entertain the possibility of limited nuclear war, writing that “timely indication of a readiness to use nuclear weapons is bound to have an enormous, and very likely a guaranteed, deterrent power,” and cautioning that the U.S. not “self-deny” our tactical nuclear capabilities by an overly hyped up fear of uncontrolled escalation.¹¹ Other, more convinced nuclear optimists have argued that in some instances fighting and winning a limited nuclear war without expansion to a larger, catastrophic war is possible and maybe even desirable.¹² Depending on what it means to *win*, some have gone so far as to argue, like former U.S. Deputy Secretary of Defense Paul Nitze, that “it is quite possible that in a general [meaning massive] nuclear war one side or the other could ‘win’ decisively.”¹³ On the other hand, possessing numerous limited nuclear capabilities is said to increase the chances of nuclear war, and controlling escalation within nuclear war is assessed as extremely difficult at best.

¹¹ Brodie, B. (1966), *Escalation and the Nuclear Option*, Princeton University Press, p. 133. The entire book is devoted to questioning the supposed automatic escalation that may be caused by nuclear weapons use. When addressing fears of limited use tripping off uncontrolled escalation, he wrote it was possible but also that “The reverse may in fact be the case; a weapon which is feared and abhorred is so much the less likely to be used *automatically* in response to any kind of signal, including even the enemy’s use of it.” (p. 34, emphasis original)

¹² See, for example: Kahn, H. (1960). *On thermonuclear war*. Princeton, N.J.: Princeton University Press; Kahn, H. (1968). *On escalation: metaphors and scenarios*. Rev. ed. Baltimore, Maryland: Penguin Books; Gray, C. S. (1982). *Strategic Studies and Public Policy: the American Experience*. Lexington, KY: University Press of Kentucky; Gray, C. S. (1986). *Nuclear strategy and national style*. Lanham, MD: Hamilton Press, p. 16 and p. 286 for discussion of his preferred strategy; Gray, C., & Payne, K. (1980). Victory Is Possible. *Foreign Policy*, (39), 14-27; Nitze, P. (1977). The Relationship of Strategic and Theater Nuclear Forces. *International Security*, 2(2), 122-132; Kartchner, K. M., & Larsen, J. A. (2014). *On Limited Nuclear War in the 21st Century*. Stanford Security Studies; Asim Ahmed. (2016). Tactical Nuclear Weapons (TNWs) or Flexible Response Choosing the Right Strategy. *Policy Perspectives*, 13(1), 135-151.

¹³ Nitze, P. H. (1956). Atoms, Strategy and Policy. *Foreign Affairs*, 34(2), 187–198, p. 190. Nitze, however, eventually became an advocate of nuclear disarmament, and his experience and changing views over time aptly demonstrate the struggle leaders have with reconciling these competing ideas. See, Reid B. C. Pauly (2015) Bedeviled by a Paradox: Nitze, Bundy, and an Incipient Nuclear Norm, *The Nonproliferation Review*, 22:3-4, 441-455.

This is not a new debate.¹⁴ On one side, prominent theories of nuclear deterrence argue that in order to effectively deter conflict across all levels, nuclear states must threaten and credibly prepare to conduct a limited war, to include the threat and capability of so-called *limited* or *tactical* nuclear warfare.¹⁵ This argument espouses the belief that the ability to conduct limited nuclear warfare is *necessary* to enhance the credibility of threats at lower levels of conflict, i.e. well below the level of general strategic warfare, and to enhance the credibility of extended deterrence (especially in the case of the U.S. nuclear umbrella). Additionally, nuclear weapons are sometimes considered especially useful on the battlefield which may help *end a conflict at lower levels* should general deterrence fail because states will not be forced to use larger/strategic nuclear weapons in a nuclear response.¹⁶

Those who were relatively optimistic about limiting nuclear war argued that limited use, typically considered tactical employment on specific military targets, or in very small numbers

¹⁴ Indeed, it began immediately with the advent of nuclear weapons. See, for example: Freedman, L. (2003) *The evolution of nuclear strategy*. 3rd ed. Houndmills, Basingstoke, Hampshire; Palgrave Macmillan. For an earlier review of the debate see also: Halperin, M. H. (1961), Nuclear Weapons and Limited War, *The Journal of Conflict Resolution*, Vol. 5. (2), June 1961, pp. 146-166.

¹⁵ Theoretical work in this regard had its origins in the Cold-War and was largely motivated by concerns over the credibility of U.S. nuclear guarantees to NATO once the Soviet Union acquired the capability to strike the United States directly with nuclear weapons. For a detailed discussion of this theory and the attendant strategy of “flexible response” see: Legge, J. Michael, (1983). Rand Report R-2964-FF, Theater Nuclear Weapons and the NATO strategy of flexible response. Older theoretical work on limited nuclear war includes: Osgood, R. E. (1957). *Limited war: the challenge to American strategy*. [Chicago]: University of Chicago Press; Snyder, G. Herald. (1961). *Deterrence and Defense*. Princeton, N.J.: Princeton University Press; Kissinger, H. (1957). *Nuclear weapons and foreign policy*. [1st ed.] New York: Published for the Council on Foreign Relations by Harper; Brodie, B. (1966). *Escalation and Nuclear Option*. Princeton, N.J.: Princeton University Press; Brodie, B. (1946) *The Absolute Weapon: Atomic Power and World Order*. Yale Institute of International Studies. Edited Volume; Brodie, B. (1978) “The Development of Nuclear Strategy,” *International Security*, 2(4), 65-83; Nitze, P. H. (1956). Atoms, Strategy and Policy. *Foreign Affairs*, 34(2), 187–198; and Powell, R. (1990). *Nuclear Deterrence Theory: The Search for Credibility*. Cambridge: Cambridge University Press, among others.

¹⁶ This is also debated, and in the past the fact that nuclear weapons may not be useful or decisive has been cited as a possible explanation for why they have not been used, for example, during the Korean and Vietnam wars (See Tannenwald, Nuclear Taboo). For some discussions about the uses of nuclear weapons on the battlefield see: Biddle, S. D. & Feaver, P. D. editors, (1989), *Battlefield Nuclear Weapons: Issues and Options*, Harvard University Press; and McNamara, R. (1983). The Military Role of Nuclear Weapons: Perceptions and Misperceptions. *Foreign Affairs*, 62(1), 59-80.

and low yields, could result in either military advantages or coercive benefits.¹⁷ Additionally, the real risk of an all-out nuclear war was believed to be enough to convince powers (usually the U.S. and Soviet Union) not to escalate too far.¹⁸ For example, Henry Kissinger stressed the importance of planning for and possessing the capabilities to fight limited nuclear wars and believed if done correctly (namely by limiting objectives and applying “graduated” force) these wars could be kept meaningfully limited.¹⁹ More recently, Elbridge Colby argues strongly that “if you want peace prepare for nuclear war”, specifically suggesting: “Washington should step up its efforts to develop low-yield tactical nuclear weapons and associated strategies that could help blunt or defeat a Russian or Chinese attack on U.S. allies without provoking nuclear apocalypse.”²⁰ In short, those who believed limited nuclear war was possible relied on the fear of *massive* nuclear exchanges to keep leaders from losing control of *limited* nuclear exchanges. However, many others were unconvinced.

A key example of the pessimistic view of strategies of limited nuclear war is Robert Jervis’ work on American nuclear strategy.²¹ For him, strategies which hinge on being able to fight nuclear war at any level of conflict misunderstand the nature of deterrence. Because deterrence hinges on the ability to severely damage the opponent (on having “enough weapons to

¹⁷ Halperin, M. H. (1961), Nuclear Weapons and Limited War, *The Journal of Conflict Resolution*, Vol. 5. (2), June 1961, pp. 146-166. For example, he writes “It would be a serious mistake... to fail to explore and prepare for tactical nuclear warfare” and “There may be some situations in which the U.S. ought to initiate the use of tactical nuclear weapons”, pp. 163 and 165.

¹⁸ Cunningham and Fravel discuss this view as part of the beliefs of what they call the “proponents” of limited nuclear war. In general, they provide a clear and concise summary of the proponent vs. skeptic viewpoints on limited nuclear war. See: Cunningham, Fiona S., Fravel, M. Taylor (2019), “Dangerous Confidence? Chinese Views on Escalation”, *International Security*, Vol. 44, No. 2, pp. 61-109, on proponents, see pp. 66-70.

¹⁹ Kissinger, H. (1956), Force and Diplomacy in the Nuclear Age, *Foreign Affairs*, 34 (3), April 1956, pp. 349-366; Kissinger, H. (1957) *Nuclear weapons and foreign policy*. [1st ed.]. New York: Published for the Council on Foreign Relations by Harper.

²⁰ Colby, E. (2018). “If You Want Peace, Prepare for Nuclear War: A Strategy for the New Great-Power Rivalry,” *Foreign Affairs*, Vol. 97, No. 6 (November/December 2018), pp. 25–32;

²¹ Jervis, R. (1984). *The illogic of American nuclear strategy*. Ithaca: Cornell University Press; and Jervis, R. (1979) Why Nuclear Superiority Doesn’t Matter. *Political science quarterly*. [Online] 94 (4), 617–633.

destroy the other's cities"), deterrence is based on an absolute capability and not a relative one.²² He argues "escalation dominance - the ability to prevail at every level of military conflict below that of all-out war - is thus neither necessary nor sufficient to reach one's goals, be they to preserve the status quo or to change it."²³ Additionally, Jervis argues that pursuing these strategies may also be destabilizing, suggesting that "to develop a posture based on the assumption that limited nuclear wars are possible is to increase the chance that they will occur".²⁴ Instead, Jervis expected the risk associated with nuclear escalation which still existed without limited nuclear capabilities to keep states from engaging in aggressive behavior. He argues, "even a very small probability of escalation is sufficient to deter serious encroachments."²⁵ Jervis was not alone in these views.

Preceding Jervis, McGeorge Bundy wrote that the purpose of our nuclear systems was "...deterrence. They must not do less and they cannot do more."²⁶ Additionally, new weapons and capabilities, he argued, would provide neither more protection nor opportunity in a political sense. Bundy also suggested that it was the risk and fear of escalation that prevents nuclear use and deters states from taking aggressive action. As he wrote, "It was never the American superiority in nuclear weapons that was decisive in protecting Europe; it was simply the high probability that any large-scale use of force against a NATO country would set loose a chain of events that could lead to nuclear war."²⁷ In 1982, Bundy, George Kennan, Robert McNamara, and Gerard Smith stated the pessimistic view of limited nuclear use most simply when they

²² Jervis, R. (1979), p. 618.

²³ Jervis, R. (1979), p. 618.

²⁴ Jervis, R. (1979), p. 629.

²⁵ Jervis, R. (1979), p. 619.

²⁶ Bundy, M. (1969), To Cap the Volcano, *Foreign affairs* (New York, N.Y.). [Online] 48 (1), 1-20.

²⁷ Bundy, M. (1969), p. 17-18.

wrote “no one has ever succeeded in advancing any persuasive reason to believe that any use of nuclear weapons, even on the smallest scale, could reliably be expected to remain limited.”²⁸

Today the debate regarding the feasibility of limiting nuclear war, the desirability of tactical nuclear weapons and related nuclear war-fighting strategies, and the deterrent effects of non-strategic nuclear weapons continues. Questions regarding how to achieve the required credibility, how tight the connection is between limited nuclear use and massive nuclear exchange, and how to balance what is good for deterrence with what is good for crisis stability remain. Some scholars and nuclear pundits have suggested that the U.S. is potentially overconfident in its ability to wage a limited nuclear war.²⁹ Others worry that advances in nuclear technology amongst the U.S. and other nuclear powers (particularly Russia, and China), the breakdown or absence of nuclear arms control treaties, and potential nuclear arms races may be moving the world toward a higher risk of nuclear war.³⁰ A key concern among these groups is that limited, tactical, or low-yield nuclear weapons are more “useable” and therefore may be reached for in time of crisis more readily.³¹

²⁸ Bundy, M. et al. (1982), Nuclear Weapons and the Atlantic Alliance. *Foreign affairs* (New York, N.Y.). [Online] 60 (4), 753–768. My other research lends credibility to this argument as well.

²⁹ See for example: Cunningham, Fiona S., Fravel, M. Taylor (2019), “Dangerous Confidence? Chinese Views on Escalation”, *International Security*, Vol. 44, No. 2, pp. 61-109; and Kaptanogu, A & Prager, S, (2022), “U.S. Defense to its workforce: Nuclear war can be won”, <https://thebulletin.org/2022/02/us-defense-to-its-workforce-nuclear-war-can-be-won/>.

³⁰ Larsen, Jeffrey Arthur, and Kerry M Kartchner, (2014). *On Limited Nuclear War In the 21st Century*. California: Stanford University Press; Roberts, B. (2016), *The case for U.S. nuclear weapons in the 21st century*. California: Stanford University Press; Warden, J. K. (2018), “Limited Nuclear War: The 21st Century Challenge to the United States,” https://cgsr.llnl.gov/content/assets/docs/CGSR_LP4-FINAL.pdf; and archetypal of many others, Princeton University’s Program on Science and Global Security, <https://sgs.princeton.edu/the-lab/plan-a>, who argue “The risk of nuclear war has increased dramatically in the past two years as the United States and Russia have abandoned long-standing nuclear arms control treaties, started to develop new kinds of nuclear weapons and expanded the circumstances in which they might use nuclear weapons.”

³¹ Narang, V, (2018), “The Discrimination Problem: Why Putting Low-Yield Weapons on Nuclear Submarines Is So Dangerous”, <https://warontherocks.com/2018/02/discrimination-problem-putting-low-yield-nuclear-weapons-submarines-dangerous/>; Long, A, (2018), <https://warontherocks.com/2018/02/discrimination-details-matter-clarifying-argument-low-yield-nuclear-warheads/>; Union of Concern Scientists, (2022), “What are Tactical Nuclear Weapons?”, <https://www.ucsusa.org/resources/tactical-nuclear-weapons>; and

Today, discussions about credibility, usability, escalation, limited nuclear war, deterrence by denial or punishment, and crisis stability continue to swirl through strategic circles.

Importantly, how policy makers think about these issues drives many budgetary, force posture, doctrinal, and strategic decisions and understanding the nature of these debates is important to understanding the role of nuclear weapons in international relations.

Key questions include: what are the views about the above debates among contemporary U.S. strategic elites? Are U.S. experts overly confident that limited nuclear war with adversaries can be fought and won without escalating to larger nuclear exchanges? How much control does the U.S. think it would have over nuclear escalation in a conflict? What are the implications of these views?

1.4 Methods and Research Design:

In order to answer these questions, I conducted a total of 48 semi-structured, one-on-one interviews with members of the U.S. Strategic Community over the course of 12 months.³² Participants were selected based on their direct influence on deterrence strategy and policy, or on their roles as actual members of the nuclear command and control process (i.e. those who would actually be involved in formulating and executing a decision by the President to use nuclear weapons). I also aimed to collect interviews from as wide a time frame (as many administrations) as possible, as well as from a range of positions up and down the nuclear command, control and

³² Interviews were conducted between September, 2021 and September, 2022. My aim was to interview as many people who are or were actively involved in planning or execution of U.S. deterrence strategies and operations, at all levels, to understand views from within this small community. I also aimed to interview other policy elites who, while not having a direct role in nuclear strategy and policy nevertheless had inputs to broader policy documents such as authors of the National Security Strategy, and Policy Planning Staff at the U.S. Department of Defense. A full list of interview subjects may be found in the appendix (A).

communication (NC3) architecture. This group includes: former U.S. Strategic Command (STRATCOM) Commanders and other important members of STRATCOM; currently serving advisors and planners at STRATCOM; former cabinet level officials with responsibility for nuclear weapons; planners and policy makers at other commands with deterrence responsibilities such as U.S. Cyber Command (CYBERCOM) and U.S. Space Command (SPACECOM); former members of the Office of the Secretary of Defense with experience in nuclear matters; and warning systems controllers, emergency action officers, nuclear strike advisors and other nuclear “watch-standers” from actual nuclear operations centers, among others.

This group of stakeholders is important in discussing these concepts for several reasons. First, in many cases, these individuals regularly practice, and would perform, the process to execute nuclear use by the United States. Additionally, many of these individuals are familiar with actual war plans and procedures and are most familiar with current and past U.S. doctrine and policy. Many of them have written the policy documents which guide nuclear strategy, or advised those who did. Others design, conduct, and evaluate training and qualification of personnel to perform nuclear command and control functions (or have done so in the past). This specific group of actors, either directly or indirectly, determine training priorities and procedures; they train senior leaders who take these roles; they are among the most familiar with nuclear weapons effects and actual war plans; and in many cases have knowledge and access to information about adversaries not available to the public or to researchers. All this experience steeps these members in the realities of the nuclear realm, but additionally, it exposes them to the unique challenges, paradoxes, inconsistencies, and moral dilemmas attendant to nuclear deterrence. Therefore, this community is best suited to give an indication of how these questions are understood and incorporated into U.S. policies and doctrine and gives direct insight into how

the community views the prospects of limiting nuclear war and the other questions addressed in this essay.

It is important to understand the U.S. Strategic Community's views on these questions for several reasons. First, the U.S. was the first to invent and use nuclear weapons and is currently fielding the second largest nuclear arsenal in the world alongside the world's most powerful conventional military. Second, the U.S. is a key member of the group of five nuclear-weapon states identified by the NPT and has significant sway in the community of nuclear weapons states. What the United States does in the nuclear realm, including the strategies and capabilities it pursues, and the promises and threats it makes, have great influence on other states' strategies and policies. For example, the global nuclear non-proliferation regime hinges largely on the historic efforts of the U.S. to prevent the spread of nuclear weapons.³³ Third, understanding the beliefs and preferences of these important policy-makers and practitioners can help uncover the psychological roots of deterrence preferences and help scholars understand the dimensions around which nuclear deterrence strategy and policy preferences revolve.³⁴ Fourth, if members of the U.S. strategic community demonstrate beliefs and preferences which contain contradictions or paradoxical thinking, or which appear at odds with theoretical and empirical evidence, exposing such contradictions can direct further research to help resolve or understand them. Lastly, to my knowledge, there is no existing survey of this group of elites and their views on these subjects in the contemporary setting.

³³ Gavin, F. J. (2015) Strategies of Inhibition: U.S. Grand Strategy, the Nuclear Revolution, and Nonproliferation. *International security*. [Online] 40 (1), 9–46; Gavin, F. J. (2020) *Nuclear Weapons and American Grand Strategy*. Washington, District of Columbia: Brookings Institution Press; Burns, R. D. & Coyle, P. E. (2015) *The challenges of nuclear non-proliferation*. Lanham, Maryland: Rowman & Littlefield.

³⁴ I have forthcoming work on this with Dr. Sanne Verschuren which focuses on three particular dimensions (vulnerability, uncertainty, and exceptionality) on which we believe deterrence beliefs revolve and which can help explain variation in nuclear policy preferences.

Interviews were conducted primarily over the phone or through Zoom, while several were conducted in person either at the Naval War College or in the vicinity of Naval Station Newport, RI. Almost all interviews were recorded on audio or video, and then transcribed by me manually into word documents, all of which are available online or by request.³⁵ For those that were not recorded, I took notes manually. Interviews ranged from 30 minutes to one hour and fifteen minutes long, and on average lasted about 45 minutes. In most interviews I asked the participants the same questions in the same order, though some were more fluid based on the personalities involved.³⁶ Most questions were open ended, but some were designed to elicit binary responses. Since I asked everyone the same list of questions, I was able to aggregate data by reviewing each response and then categorizing. Additionally, several of the questions had distinct choices which were straightforward to categorize. I manually read and reviewed each interview multiple times to categorize and aggregate answers.

Among other topics, I attempted to answer the following primary research questions: **First, what do U.S. leaders, experts, and members of the U.S. Strategic Community, including decision-makers and operators in the nuclear command and control enterprise, think about the *feasibility of conducting limited nuclear war*? Second, what do these experts think about the strategy of “escalate to de-escalate” among nuclear powers?**

1.5 Brief introduction to findings:

Several important observations can be drawn from the data collected. First, members of this community demonstrated exceptionalism in their nuclear strategic thinking by clearly

³⁵ I hope to make these all publicly available for future research after ensuring all identifying information is removed from those who wished to remain anonymous or who did not grant this particular permission.

³⁶ All questions are available in the appendix (B).

expressing opinions that argue that strategies that might be foolish and dangerous for others would be potentially good strategies for the United States. However, a clear logic for why this should be the case is absent.

Secondly, my interviews demonstrate that despite impressions to the contrary the U.S. is not confident in its ability to successfully limit nuclear war. Rather there appears a form of dogged resignation that comes primarily from two things. First, there is widespread belief that the possibility for limited nuclear war is increasing and that nuclear armed states, or states aspiring to nuclear weapons may resort to nuclear use to either coerce others or to salvage an otherwise losing or hopeless situation (usually after initiating some aggression). There is broad agreement that adversaries of the United States adhere to E2DE strategies. Second, preparing for and demonstrating a willingness to conduct limited nuclear war is believed to be both good for deterrence as well as a useful and prudent exercise in planning, intellectual development, and knowledge building. As many interview subjects suggested, there is immense value, often even a “need”, to study and plan for this eventuality for states to have any hope of containing or controlling a limited nuclear war. Additionally, many interviewees expressed a morally driven belief that we must at least attempt to limit nuclear war to the lowest possible level rather than resort immediately to punishment strategies that result in massive civilian casualties and damage to whole societies. This demonstrates a reluctance to rely solely on large-scale punishment strategies.

A vast majority of those interviewed have grave worries about escalation dynamics once a war has crossed the nuclear threshold. At the same time, there is a determination and willingness to support limited nuclear war strategies and the potential first use of nuclear

weapons as a de-escalating action. Importantly, leaders appear to want a way out of this situation but have so far been unable to find one.

1.6 Core Findings:

1. What are escalation and de-escalation in the E2DE context?

I began each interview by discussing how these experts think about escalation and de-escalation, particularly in the nuclear setting. For example, what, exactly, counts as a “de-escalation” when using the phrase “escalate to de-escalate”? How do leaders conceptualize escalation in the context of managing or controlling it?

Escalation was generally discussed as a deliberate, controllable process that is dictated by decisions of the actors involved. One officer with explicit knowledge and experience with U.S. nuclear plans (i.e. the “black book”) explicitly lays this out, arguing “Escalation is a controlled increase in tensions... the concept of escalation requires understanding the concept that it can be controlled.”³⁷ However, despite the fact that this framework dominated the discussions, many were indeed worried about the ability to control escalation once it began. This was not due to fear that things would move beyond decision-makers abilities to control (i.e. that it would be entirely left to chance), but rather that adversary decision-makers might choose to escalate beyond a level our side is comfortable with or that adversary reactions might motivate our own leaders to choose to continue to escalate.³⁸ Admiral Haney, former STRATCOM Commander warned that in a nuclear setting “We don’t know what escalation control looks like and hence we

³⁷ CDR Joe Santos, College of Leadership and Ethics, USNWC, interview 8 Dec 2021.

³⁸ This is akin to Powell’s distinction between different ways an event may be out of the control of participants. The first is one in which participants do not have collective control as a result of “autonomous risk” inherent in a situation. The second, the way interview subjects here generally understood this, is one in which participants retain collective control, but neither can control the actions of the other. Powell, R. (1990), pp. 18-20.

don't want to let the genie out of the bottle. Your ability to control escalation may not be as predictable as you would hope.”³⁹ RDML Spencer, the Commander of Submarine Group 10, and former Executive Assistant to Commander, STRATCOM warned that “there is nothing historically that says we know how to adequately predict escalation and de-escalation in a war. I think that we're pretty blind, generally, to what our adversary's motivations are.”⁴⁰ None of the responses included explicit discussions of a natural tendency, or of a process that is beyond or outside of the control of the participants.⁴¹

Additionally, escalation is mostly regarded as a linear process that can proceed in relatively discrete steps. For example, one senior leader described his own conception as a 6-stage continuum, including “competition, grey-zone conflict, crisis, conventional, limited nuclear, existential nuclear conflict.”⁴² A former STRATCOM Deputy Director of Operations stated, “in my mind, from a nuclear perspective, the decision to use nuclear weapons is the beginning of escalation. So, when you cross the threshold from a conventional conflict into a nuclear one, that, in my mind, is when the escalation ladder, or the continuum begins to move from left to right.”⁴³ Escalation may also take several forms, such as in terms of casualties inflicted, yield of weapons used, number of weapons used, targets selected, or type of weapons used.⁴⁴ A concrete example of escalation given numerous times was a conflict moving from the

³⁹ Admiral Cecil D. Haney, USN (Ret), interview 28 Feb 2022.

⁴⁰ RDML John Spencer, USN, Commander SUBGRU 10, interview 4 Nov 2021.

⁴¹ None of the respondents answered this question in a way that reflects an understanding of escalation as a purely phenomenal process, or natural tendency in line with Richard Smoke's discussion on phenomenal escalation, or Clausewitz's reference to war being “by nature” violent without limit. Instead, the inclination is to think about this is a controllable and deliberate process. This does not mean subjects were not aware of accidental or inadvertent escalation, as these terms come up, but rather that the primary frame of reference is one in which deliberate choices and decisions are central to outcomes.

⁴² Flag Officer level, J5 (Policy and Plans) Directorate, Interview 20 Jan 2022.

⁴³ BGEN Greg Bowen, USA (Ret), former Deputy J3 (Operations Directorate), USSTRATCOM, interview 5 Nov 2021.

⁴⁴ Most gave examples of what would be considered “vertical” escalation: increases in intensity, types, or levels of violence.

use of conventional weapons to the use of nuclear weapons. As one interviewee remarked, “Escalation would be the use of any nuclear weapon, anywhere anyhow, and following on would be additional uses of nuclear weapons, that would be escalation and increases in escalation.”⁴⁵

Some, however, think in a less linear fashion, describing escalation as “circles like a Venn diagram” or as a process that can “jump or skip, or move around”.⁴⁶ Those who thought less linearly stressed that the concept is too complex to imagine as a process with only one way up or one way down, instead invoking analogies of “road maps” with various paths and locations a conflict may progress through or towards.⁴⁷ The complexity stems primarily from the potential for miscommunication and misperception. For example, one senior leader in the Policy and Plans Directorate (J5) at U.S. CYBERCOM stressed that “it’s a much more nuanced domain where I think you’re oftentimes not seeing all of the various factors that are impacting the decision calculus, miscalculation looms large, and misinterpretation particularly...”⁴⁸ Occasionally, responses included discussions of risk perceptions and the manipulation of risk. For example, General Kehler, former STRATCOM Commander, argues that escalation is about “risk and risk calculations” and how you can manipulate the calculations of the adversary.⁴⁹ Perceptions loom large in the discussion as well. For example, a senior leader at Headquarters Air Force, Concepts and Strategy Directorate, argued that escalation is “the result of an action perceived by the regime to be threatening in some significant way, from their perspective and so... it’s just a result of that.”⁵⁰

⁴⁵ Interviewee 14, senior civilian advisor, U.S. STRATCOM, Interview 30 Nov 2021.

⁴⁶ Interview 31, Col (Ret) Colon, USAF, 4 March 2022, and Interview 22 former STRATCOM J5 senior military leader, 20 January 2022, respectively.

⁴⁷ LCOL Zach Waterman, Nuclear Strike Advisor, interview 27 May 2022

⁴⁸ Interview 41, senior Navy Flag Officer, CYBERCOM J5, 10 Jun 2022.

⁴⁹ Interview 7, General Robert Kehler, former STRATCOM Commander, 21 OCT 2021.

⁵⁰ Interview 24, Air Force Flag Officer, Concepts and Strategy at Pentagon, 31 Jan 2022.

In sum, escalation was typically understood within the context of what is referred to as *vertical escalation*.⁵¹ It is also understood to be the result of deliberate decisions by decision-makers of both sides in a conflict. Escalation is also most often understood as a linear process but also one which may progress by uneven degrees or in directions that cannot fully be anticipated. The concepts of thresholds and red lines, particularly the line between conventional and nuclear use, are also important. The definition provided by a RAND study and cited in an important paper by the Center for Naval Analysis (CNA) aptly reflects the sentiments expressed in these interviews: “an increase in the intensity or scope of conflict that crosses the threshold(s) considered significant by one or more of the participants.”⁵²

De-escalation was often described as simply the opposite of escalation or as movement in the opposite direction. For example, “the central thing here is the scale of the costs as far as escalation is concerned. And bringing those down is de-escalation.”⁵³ Importantly, what de-escalation means in the context of escalate to de-escalate is most often understood to mean war-termination, or at least a ceasefire and pause for negotiations and not as merely the deterrence of nuclear (either first or continued) use.⁵⁴ Most agreed that this is how it is understood within the

⁵¹ *Vertical escalation* may be defined as: “Escalation that involves an increase in the intensity of armed conflict or confrontation, such as employing types of weapons not previously used in the conflict or attacking new categories of targets, in contrast to horizontal escalation, which refers to expanding the geographic scope of a conflict (for example, by conducting operations into or through territory previously treated as neutral by the combatants.” Morgan, F., Mueller, K., Medeiros, E., Pollpeter, K., & Cliff, R. (2008). *Dangerous Thresholds: Managing Escalation in the 21st Century*. RAND Corporation.

⁵² Morgan, F., Mueller, K., Medeiros, E., Pollpeter, K., & Cliff, R. (2008). *Dangerous Thresholds: Managing Escalation in the 21st Century*. RAND Corporation, p. 8; and Estes, M. A. (2020). *Prevailing Under the Nuclear Shadow: A New Framework for US Escalation Management*, p. 6.

⁵³ Interview 13, Intelligence Officer, CBRNE effects, 16 Nov 2021.

⁵⁴ Several did see this as de-escalation, however, so there is some disagreement on this. The central question is whether or not it is an E2DE success if nuclear use prevents the other side from responding (or continuing) nuclear use but they continue to fight conventionally. Some saw this as successful de-escalation (preventing or stopping nuclear use) and that was enough to call it a success. For example, “whoever uses one first, has just escalated. And then the goal would be to bring it back down to a conventional fight if able, if you can achieve your means that way.” (BGEN Bowen, G); and “De-escalation... reduction in tensions, but war might continue... Like in modern

context of E2DE. For those who answered this question, 14 expressed a belief that de-escalation refers in general to war termination or cease-fire while 12 believed it would still be successful if it merely resulted in a return to conventional use only. Others did not address this specifically but willingly accepted that for the purposes of our discussion de-escalation meant war termination. Within the logic of escalate to de-escalate, it is more often deemed unsuccessful if the military resistance of the other side continues, even if the escalation successfully deters nuclear attack or causes a nuclear conflict to return to a purely conventional one.⁵⁵

These discussions about escalation and de-escalation ensured that for the remainder of the interview we were evaluating concepts upon a shared understanding of their meaning. Specifically, this was true regarding the meaning of de-escalate within E2DE, which I discussed with participants to mean war termination when asking later questions about the potential success or failure of E2DE strategies.

2. Nuclear weapons are different and dangerous, and controlling escalation is extremely difficult vs. We should plan for limited nuclear wars and possibly attempt E2DE strategies.

The two contradictions identified above are rooted in perceptions about the unique difficulties associated with managing escalation in a nuclear war. As will be shown, the vast majority of respondents believed that controlling escalation in a nuclear war would be more difficult and nuclear use is more likely to increase rather than decrease the chances of escalation. Yet, as will also be shown, many respondents also believe the U.S. should plan for and have strategies to engage in limited nuclear wars.

times, with Iran, easing tensions is a de-escalatory thing.” (CDR Santos); and “de-escalation is the return of strategic deterrence. The conflict might continue, but the nuclear stuff stops” (Interview 17).

⁵⁵ Of course, avoiding further nuclear use is desirable, but in terms of deeming an E2DE strategy, specifically, successful, if the conflict continued it was deemed a failure.

2.a. Are nuclear conflicts different? Is managing escalation more difficult in a nuclear setting? Does the use of a nuclear weapon increase or decrease the prospects of escalation? How much control would the U.S. have over escalation in a nuclear war?

When asked if escalation management is different in a nuclear war and whether it would be more difficult, the answer was almost universally yes to both. 40 of those interviewed argued that once a conflict has crossed the nuclear threshold there were fundamental differences in escalation dynamics from a conventional only conflict, only four argued there were not. 32 stressed this would make it harder to control escalation, with 10 arguing they were not sure, and only 5 arguing it might make things easier to control. This is indicative of a strong belief that nuclear weapons are indeed considered different than non-nuclear explosives. Reasons for the difference included but were not limited to the potential consequences of nuclear war; increased passions amongst populations and leaders; increased complexity and uncertainty; temporal pressures and constraints; and other forms of political pressure. As one former STRATCOM commander observed, “I believe that the passions that would be unleashed if nuclear weapons were used, even in small numbers, would be unlike any other passions.”⁵⁶ Leaders will be under immense pressure, argues one senior civilian advisor at STRATCOM: “It increases the pressures acting on the decision-makers, so this just makes it harder to control escalation.”⁵⁷ On the consequences of nuclear war, another active duty flag officer in the cyber domain remarked that “once the nuclear war occurs the decision-making becomes almost exclusively political in terms of the response. You know... that does drive a whole different escalation dynamic because of the

⁵⁶ Interview 7, General Kehler, former STRATCOM Commander, 21 Oct 2021

⁵⁷ Interview 14, senior civilian advisor, US STRATCOM, 30 Nov 2021

permanent nature and the permanent threats that result from that.”⁵⁸ Nuclear weapons are also expected to immediately add complexity to the situation. As one expert added: “I think the circle becomes larger, meaning there are more variables you have to keep in mind now.”⁵⁹ Time constraints impose themselves, interacting with increased uncertainty and “this uncertainty makes it harder to control escalation, especially in the compressed timelines. Time is a big factor.”⁶⁰ Most simply assert that it is just more complicated, as one STRATCOM Commander remarked: “clearly having nuclear weapons makes it more complicated. Everything you do you’re trying to keep it conventional, and you have to be really careful with the signals you’re sending.”⁶¹

As a result of these differences, nuclear use is overwhelmingly expected to make controlling escalation more difficult. For example, a current Warning Systems Controller stressed that he believed “once you use one [nuclear weapon] the tendency is going to be to keep using more until you achieve the goal, and not to back down.”⁶² Other clear statements include: “Yeah, not the threat but the actual use, the threshold is crossed, from that way it’s much, much harder, in my view maybe impossible”⁶³; “to think that you can manage a nuclear war, especially between two peers, I just, it’s a nice theory and gosh I hope they’re right, but I don’t see it”⁶⁴; and “We do exercises all the time on this, and it is really tough. I can’t get into some stuff because of classification, but it is really tough. I would say it’s much worse if you end up nuclear...”⁶⁵ One former Director of Operations at STRATCOM explains: “The reason being is,

⁵⁸ Interview 41, senior Flag Officer, Cybercom J5, 10 June 2022

⁵⁹ Interview 31, Col Colon, USAF, former Battle Watch Commander, STRATCOM, 4 March 2022

⁶⁰ Interview 16, CDR Joe Santos, USN, 8 Dec 2021

⁶¹ Interview 28, ADM Cecil Haney, former STRATCOM Commander, 28 Feb 2022

⁶² Interview 4, Mr. Steve Baker, Warning Systems Controller, STRATCOM, 23 Sep 2021

⁶³ Interview 29, Cabinet Level Civilian, 3 March 2022

⁶⁴ Interview 25, Andrew Weber, former DASD for CBRN, 16 Feb 2022

⁶⁵ Interview 22, senior Flag Officer, 20 Jan 2022

once you have gone nuclear, either someone has sent the first salvo, and/or we've retaliated... I offer from the J3 [Director of Operations] perspective... De-escalation is out of the window right now.”⁶⁶

Those who suggest that escalation dynamics in nuclear war are not different argue that it is only the consequences that are different. As a former commander of USPACOM argues, “my thesis would be that it isn't different... and some of those that suggest that it is different, the conversations that I've had with people that are saying that it is different tend to focus on the consequences and not on the mechanisms of control or lack of control.”⁶⁷ Even if the mechanisms change somehow, some argue that the use of nuclear weapons might give leaders pause and cause them to consider more carefully going forward with more force. The shock of the first use, argues a very senior active-duty officer, may be enough to wake people up to the immense risks: “More uncertainty, things we don't know, does this make it harder to manage escalation?... I think a nuclear weapon will make people pause, because it will be a first-time use.”⁶⁸ Others express similar sentiments, for example: “I think we would be more cautious about escalation, I think depending on the adversary, I think we would be more... we wouldn't just go willy-nilly...”⁶⁹; and “In the nuclear realm, people are probably more hesitant. Sometimes escalation management might be easier in the nuclear realm. It instills more fear and uncertainty.”⁷⁰ Lastly, relying on the general belief that there is a universal hesitation against nuclear use, one active-duty leader suggests “that it's most likely to remain limited longer than

⁶⁶ Interview 9, RADM Fillion, former STRATCOM J3, 29 Oct 2021

⁶⁷ Interview 6, ADM Scott Swift, former PACOM Commander, 6 Oct 2021

⁶⁸ Interview 19, senior General Officer, STRATCOM and Missile Defense Commands, 12 Jan 2022

⁶⁹ Interview 2, Emergency Actions Officer Trainer/Evaluator, STRATCOM, 14 Sep 2021

⁷⁰ Interview 17, Flag Officer, NORAD/NORTHCOM, 29 Dec 2021

maybe sometimes what we imagine in our own wargames, based on the fact that leaders of all nations are more hesitant to use nuclear weapons.”⁷¹

Those who were undecided suggested there was no clear way to decide whether nuclear use will make things easier or harder to control. A representative response in this group was: “It’s going to change. It could make it easier to continue to escalate, because you’ve already broken the nuclear threshold, but it could be the opposite, where now you’ve seen the ramifications of it, so now you ask the question of do I want to continue further or am I going to stop. I think it will depend, if we ever get to the point, on who are the political players in this situation?”⁷² Still, a majority of respondents agree that a war that involves nuclear weapons poses increased risks of escalation, which in the nuclear realm, could result in massive, global nuclear exchanges.

When asked if the actual employment of a nuclear weapon in a conflict would increase or decrease the prospects of escalation over half (25) of the interviewees stated this would increase the chances of escalation, while only three thought it might reduce the chances of escalation. The remaining respondents gave some version of “it depends”. Those who thought nuclear employment might cause a dampening of escalation thought that the nuclear use might be so shocking and affect such clear and present danger that leaders would be more careful or cautious. These comments included: “I think much more thought would go into escalation in the nuclear world”;⁷³ that the thought of nuclear use is so “abhorrent” that there is a “tendency not to use them, even when faced with catastrophically bad situations”⁷⁴; and that nuclear use is such an

⁷¹ Interview 11, RDML John Spencer, Commander SUBGRU 10, 4 Nov 2021

⁷² Interview 33, Major, USAF, Missileer, 10 March 2022

⁷³ Interview 2, Emergency Actions Officer Trainer/Evaluator, STRATCOM, 14 Sep 2021.

⁷⁴ Interview 11, RDML John Spencer, Commander, SUBGRU 10, 4 Nov 2021.

unknown and that the likelihood of escalation would decrease because of a “fear of the unknown.”⁷⁵

Those who did not take a clear position essentially argued that it was basically a “flip of a coin”⁷⁶ and “impossible to predict in advance.”⁷⁷ These answers often made mention of how much individual leaders would matter in these situations. For example, “I think again it would [be] very much important who the actor is and their perceptions of what’s next; Their concerns and fears.”⁷⁸ There was an expectation among this group that there would be competing pressures, between a strong urge to fight back and make a statement about nuclear use, and an urge to find a way to de-escalate without further use of nuclear weapons and the risk of still greater nuclear war.

The most common responses were simply to argue that the introduction of a nuclear weapon into a conflict would certainly increase the chances of further escalation, especially if it were to cause high numbers of fatalities. As one former STRATCOM Commander argues, “if tens of thousands of civilians are dead or dying, or being irradiated, I just don’t know what Politician can say I’m not going nuclear at this point, to do tit-for-tat...”⁷⁹ A former president of the U.S. Naval War College aptly demonstrates how others in this group thought:

“By its very nature it has set in motion escalation... Let’s say the U.S. uses it, our intent would be to show resolve and as a result basically escalate to de-escalate. But for all the reasons we talked about before, about irrationality, uncertainty, the lack of understanding, domestic politics, international politics...I’ve become much more skeptical that we can assume that we’re going to have the desired effect of E2DE... It’s going to be misinterpreted or someone’s

⁷⁵ CDR Joe Santos, USN, College of Leadership and Ethics, USNWC, Interview 16. 8 Dec 2021.

⁷⁶ CDR James Scott, USN (RET), U.S. STRATCOM Training Analyst, Interview 43. 30 Jun 2022.

⁷⁷ Honorable Franklin C. Miller, Scowcroft Group, Interview 36, 12 Apr 2022.

⁷⁸ Interview 24, General Officer, USAF, Concepts and Strategy in Pentagon, 31 Jan 2022.

⁷⁹ Gen Robert Kehler, USAF (Ret), former STRATCOM Commander, Interview 7, 21 Oct 2021.

going to stiffen up there back, you know, it's not going to have the desired effect.”⁸⁰

Precedent setting concerns were also important to this group and came from two different directions. First, the fear of setting a precedent that you are not willing to use your nuclear weapons, opening yourself up to further coercion. One former Deputy Director of Operations at STRATCOM puts it plainly, “We’ve been talking deterrence for decades and then when it comes down to it, when we finally get to that moment. If we do nothing, we’ve just undermined our entire ability to deter anybody from that point forward.”⁸¹ Former SECDEF Robert Gates remarked: “If you allow the threat of the use of nuclear weapons to deter you from taking action, you’ve lost the game from the get-go. In essence, you have to call the bluff, because the consequences of not calling the bluff, of allowing the bluff or allowing the threat to back you off... That’s an untenable political position.”⁸² The second is the worry that initial use that breaks tradition might set a precedent that their use will now be more acceptable. For example, one senior STRATCOM training officer and former Nuclear Strike Advisor for four Combatant Commanders states: “once somebody crosses that line maybe it becomes a lot more acceptable to use them. You set a precedent, and they’re like “well, Russia did it, why can’t we do it?”⁸³ Another current STRATCOM Nuclear Strike Advisor and Deputy Battle Watch Commander echoes this sentiment, suggesting “If anything, I think it will maybe embolden them like, ‘well, they did it first... we have no other choice but to use ours now’.”⁸⁴

⁸⁰ VADM Howe, P. Gardner, USN (Ret), Interview 10, 29 Oct 2021.

⁸¹ BGEN Bowen, Greg, USA (Ret), Interview 12, 5 Nov 2021.

⁸² Robert M. Gates, Interview 48, 30 Sep 2022.

⁸³ LCOL Waterman, Zach, USAF (Ret), Interview 40, 27 May 2022.

⁸⁴ CDR Binkley, Jeremiah, USN. Interview 3, 20 Sep 2021.

Lastly, when asked how much control the U.S. would have over nuclear escalation in a conflict, a slight majority (14/27) argued “none or not much.”⁸⁵ 11 others suggested there might be some ability to control, depending on the situation. Only two responded there would be a lot of control. This is somewhat surprising given how many respondents believed escalation was a deliberate process under the relevant actors’ collective control. However, this was mostly attributed to the fact that the U.S. will have no control over *adversary* decisions. Responses among skeptics were clear. For example, when asked what they would say to someone who suggests the U.S. is confident it could control nuclear escalation, one remarked “I’d like to have what they’re smoking!”⁸⁶ Another commented, “I think anyone who claims that the US, or who themselves thinks this, has a lot of hubris... this would be a fool’s errand to think we could control it.”⁸⁷ Several mentioned the U.S. would be able to restrain itself but that it could never count on adversaries to show similar restraint. For example, “If I’m in charge of the US arsenal, I think I have a lot of control. That is a well-designed system.”⁸⁸ Similarly, another claimed “Russia, China... they want to spread their sphere of influence... we will likely limit ourselves. We are the shining lights and they are the heathens. We use our weapons because we are morally right, so we will not be doing irresponsible actions with our weapons.”⁸⁹ Another former director of Policy and Plans at STRATCOM stressed “You have no control, the adversary controls all of it.”⁹⁰ And another who stressed the role of the other side, arguing: “Most likely to get out of control, just because the other 50% decision maker, who is not us. Potentially, both sides have an E2DE mindset, which is never going to work! Where is the off-ramp for that?”⁹¹

⁸⁵ Not everyone received this question.

⁸⁶ Interview 14, senior civilian advisor, STRATCOM, 30 Nov 2021.

⁸⁷ Interview 19, General Officer, STRATCOM and Missile Defense Commands, 12 Jan 2022.

⁸⁸ Interview 13, Intelligence Officer, Chemical and Biological Weapons and Nuclear Effects, 16 Nov 2021.

⁸⁹ Interview 3, CDR Binkley, Nuclear Strike Advisor, 20 Sep 2021.

⁹⁰ Senior Flag Officer, former director of Policy and Plans Division, U.S. STRATCOM, Interview 22, 20 Jan 2022.

⁹¹ Interview 17, Flag Officer, NORAD/NORTHCOM, 29 Dec 2021.

In sum, these experts clearly expected controlling escalation in a nuclear war to be more difficult and expected nuclear first use to increase the chances of escalation. Nuclear use is expected to put significant pressure on leaders and decision-makers to make a strong response, thereby continuing a cycle of escalation, quite contrary to the hopes of anyone attempting an E2DE strategy.

2.b. Should the U.S. plan for and have a strategy of limited nuclear war? Should the U.S. itself consider employing E2DE strategies (and nuclear first use)?

Given the above reservations about controlling escalation, one might expect support for strategies of limited nuclear use to be minimal. Support for strategies of limited nuclear war, however, is fairly robust.

First, I asked explicitly whether the U.S. needs to prepare for and have a strategy of limited nuclear war. If leaders are confident about the ability to control escalation in a nuclear conflict you would expect responses to not only advocate for such a strategy, but to do so for reasons having to do with the practicability of using nuclear weapons in conflict to achieve our aims. Indeed, I find that a clear majority (37/48, roughly 77%) of experts believed the U.S. should have such a strategy. Clear majorities, as discussed above, believed nuclear escalation would be both harder to control and that nuclear use would increase the prospects of escalation and yet a majority of respondents prefer the U.S. nevertheless prepare for and have a strategy of limited nuclear war.

Most who advocated for such a strategy did not do so because they had confidence in the ability to control a nuclear war or to employ nuclear weapons to achieve their aims. Instead, the

reasons provided were akin to something like mirror imaging and a sense of necessity. Leaders believed that because U.S. adversaries are becoming more likely to attempt this, the U.S. will be forced to confront such an eventuality. For example, a director of one of the U.S. military's wargaming centers argues "the very fact that the adversary has these capabilities and may intend to use them, requires that we have at least a plan or a strategy to respond to their use and potentially employ them."⁹² Another leader remarked, "if we don't study that problem set and have a strategy and practice it and exercise it, I think we run the risk of a conflict that may start off regional, and may involve some battlefield nukes that would then escalate. I think if we don't have a strategy in place to manage that kind of thing, the risk that we run is that it will escalate out of control very rapidly."⁹³ A third stated simply, "because it's part of adversarial doctrine for the use of tactical or small-scale nuclear weapons. And if it's part of their doctrine, we need to be prepared, trained and ready to act."⁹⁴

Not only are adversaries assessed as becoming more likely to do this, but it was also simply deemed prudent to do the planning in order to understand the process and potential adversary intentions/activities. For example, an experienced trainer and advisor attests to the value of planning: "That makes you ask and answer the questions that you come up with to determine what strategy is needed and then if you're going to go down a path, what are some of the pieces and parts that you're going to have to have to do that."⁹⁵

Additionally, many leaders suggested that demonstrating this capability (and willingness) is best for deterrence. For example, a senior civilian advisor at STRATCOM states that "for our

⁹² Interview 39, Captain, USN, Wargaming, 13 May 2022.

⁹³ Interview 12, BGEN Bowen, USA, former Deputy Director, J3, STRATCOM, 5 Nov 2021.

⁹⁴ Interview 13, Intelligence Officer, 16 Nov 2021.

⁹⁵ Interview 43, CDR James Scott, Nuclear Strike Advisor, Trainer, 30 Jun 2022.

deterrence to be credible we have to be prepared for all the different range of possibilities.”⁹⁶

Another active-duty Air Force officer added, “it’s important to have something that is equal to, at the different levels of an adversary, so if all we have is where it’s full out strategic, we’re launching everything, then are we really deterring at the level that is the lower one?”⁹⁷ Many acknowledged, however, that this could also be bad for crisis stability if deterrence fails. For example, a senior active-duty officer involved in both NC3 and Missile Defense commands stated “You can’t deter if you can’t show a capability to be limited. If everything is high and right, you can’t deter... This is why you need low yield. This is good for deterrence but maybe bad for crisis stability.”⁹⁸ Another senior professor at the Naval War College remarked, “I think as military planners, of course, you need to be prepared for those different elements of it...” but “when you have really forward leaning doctrines about nuclear use, and especially if the other side has similar doctrines, now when you’re in a crisis there is an awful lot of incentive to be the one to go first. That’s not conducive to stability.”⁹⁹

Of those who argued against such a strategy, the main line of argument suggests that planning and having a doctrine (and the associated communication of that doctrine to your adversaries) will have the perverse effect of making nuclear use more likely and essentially create a safe space for nuclear war. Andy Weber, the former DASD demonstrates the feeling of others aptly when he argues “No, I think such a strategy makes nuclear war a self-fulfilling prophecy.”¹⁰⁰ Another experienced emergency actions officer suggests “it’s like we’ve got together with our adversary and agreed. Let’s just throw softballs. I don’t think that’s good,”

⁹⁶ Interview 14, senior civilian advisor, STRATCOM, 30 Nov 2021.

⁹⁷ Interview 33, Major, USAF, Missileer, 10 Mar 2022.

⁹⁸ Interview 19, General Officer, STRATCOM and Missile Defense, 12 Jan 2022.

⁹⁹ Interview 21, Dr. Terry Roehrig, USNWC, 19 Jan 2022.

¹⁰⁰ Interview 25, Andrew Weber, former DASD for CBRN, 16 Feb 2022.

implying that the other side cannot be trusted not to take advantage of the fact that they need only fear limited reprisal.¹⁰¹

When asked if the U.S. should have a strategy akin to E2DE “that involves potentially using nuclear weapons first in order to deter further military action by the adversary and/or terminate the conflict on terms favorable to itself?”, many of these experts argued in the affirmative. 27 of those interviewed, over 56% believed that the U.S. should have such a strategy, while 16 responded no, we should not. The most common reasons for supporting such a strategy included a belief that demonstrating this capability was best for deterrence, and that we needed to do this to understand how our adversaries might employ such a strategy.

Overall, employing this type of strategy was deemed *necessary* to deter adversaries at the same level of nuclear use, i.e. limited nuclear use, particularly in protection of allies and other nations under the “nuclear umbrella”. Not having this as part of U.S. strategy was believed to potentially open the door to limited nuclear use by adversaries. As one member argued, “I think the US has purposely chosen not to have a no-first use policy because if the adversary feels that we will not go there, it ties our hands in terms of our ability not only to extend deterrence, project deterrence, but also to use our capabilities...”¹⁰². Another senior leader specifically referred to extended deterrence, stating “If we have a policy that we won’t hit first, then adversaries might target them [our allies], and we need to have this to preserve extended deterrence.”¹⁰³ A third exclaimed, “who would put together a strategy that says I never want these things to be used, and I’m going to tell you that you can wage a large conventional war, or make WWII possible... it’s just idiotic!”¹⁰⁴ Others argued equally strongly. For example, “our

¹⁰¹ Interview 2, Emergency Action Officer, Trainer, STRATCOM, 14 Sep 2021.

¹⁰² Interview 05, Captain, USAF, Emergency Actions Officer/Trainer, STRATCOM, 25 Sep 2021.

¹⁰³ Interview 22, Flag Officer, J5, STRATCOM, 20 Jan 2022.

¹⁰⁴ Interview 07, GEN Kehler, former STRATCOM Commander, 21 Oct 2021.

strategy should not embrace any ‘no first-use’, it should be considered as a viable option in certain circumstances... We won’t be first, but we won’t be second either...”¹⁰⁵ Another remarked, “Bearing in mind all of the moral and ethical baggage that comes with that, but just for a very practical and pedestrian reason, we should have that available.”¹⁰⁶ Other members suggested that the U.S. in fact already does have such a strategy. One leader claimed “Well, in some respects, we do. In the NPR we say there are some conditions where we would use nuclear weapons first.”¹⁰⁷ Another member agreed, stating “my instinct is that is the essence of US nuclear policy with regard to both RS and CH...”¹⁰⁸ Maintaining ambiguity in our stated policy and strategy was also important. For example, “We have to keep ambiguity into the eyes of other nations that think they might get away with this using a nuclear weapon or escalating to that level, whether it’s Putin or KJU.”¹⁰⁹

All of those who responded affirmatively to this question indicated that having a strategy to utilize nuclear weapons first to deter adversaries from further military action or to achieve war termination would help make deterrence stronger.

Those suggesting this strategy should not be pursued argued this from two directions. First, that we possessed other capabilities (conventional superiority) with which the U.S. could achieve its goals. Second, that the risk of escalation was too great. For example, “My gut is, it’s a no, we shouldn’t. It comes from two prongs. One, we have other options available. I mean I believe there are massive other tools, cyber, other “DIME” options available to us. And back to this idea about uncontrollability and severity, so even if it’s unlikely to go that way, the severity

¹⁰⁵ Interview 19, General Officer, STRATCOM and Missile Defense Commands, 12 Jan 2022.

¹⁰⁶ Interview 11, RDML John Spencer, Commander SUBGRU 10, 04 Nov 2021.

¹⁰⁷ Interview 21, Dr. Terry Roehrig, USNWC, 19 Jan 2022.

¹⁰⁸ Interview 36, Senior Defense Official, 12 Apr 2022.

¹⁰⁹ Interview 28, ADM Cecil Haney, former STRATCOM commander, 28 Feb 2022.

is so great... We have other, better options available.”¹¹⁰ Some simply believed it was immoral or unethical to employ nuclear weapons first. “I think no... I think that comes down to a moral aversion on that.”¹¹¹ Others were more direct, such as Mr. Weber, the former DASD, saying “Absolutely not. But we exercise that! Lots of people answer this question the other way, I’m sure.”¹¹² Lastly, a wargaming center director argues, “I don’t think this should be... a matter of policy for extended deterrence.”¹¹³

In sum, many leaders, including many who believed escalation would be difficult to control and that the use of nuclear weapons was likely to increase the prospects of escalation still maintained that the U.S. should have such a strategy as part of its nuclear doctrine. This appears to be attributed to a strong belief that it bolsters deterrence. Those who advocate not pursuing such a strategy do so mainly because the risks of escalation are too great and because the U.S. is assessed to have conventional capabilities available to use instead.¹¹⁴ Overall, members of the Strategic Community I spoke with clearly believe that the benefits of having a limited nuclear war strategy and capability, specifically to deterrence and the ability to potentially limit the destruction of a nuclear war, outweigh the risks, namely the risk of escalation to larger nuclear war and the challenges to crisis stability. This is distinctly at odds with the equally present belief that once a nuclear war begins it will be extremely difficult to limit and to keep the costs from increasing far beyond potential gains.

¹¹⁰ Interview 10, VADM Howe, USNWC, 29 Oct 2021.

¹¹¹ Interview 13, Intelligence Officer, 16 Nov 2021.

¹¹² Interview 25, Hon Andrew Weber, former DASD for CBRN, 16 Feb 2022.

¹¹³ Interview 39, Captain, USN, Wargaming, 13 May 2022.

¹¹⁴ For example, see interview 35, “I think that’s part of the issue, you can do it with conventional weapons with no problem.”; Interview 44, “We do have, I would say, conventional over-power.”; Interview 8: “I believe the US has the ability by conventional means, not to permit itself to have that type of strategic policy...”

3. E2DE is a bad idea vs. The U.S. should consider this strategy

As seen above, many of those interviewed expressed support for the U.S. possessing limited nuclear war strategies, including escalate to de-escalate approaches. As will be seen below, when asked about the prospects of this working for U.S. adversaries, the response is a resounding “no”. Strategies that are viewed as potentially successful and desirable for the U.S. are deemed highly unlikely to work for our adversaries.

3.a. Do U.S. adversaries have E2DE strategies? Is the E2DE a good or bad idea in general? Under what scenarios might E2DE be most successful? What is the likely U.S. response to an E2DE attempt?

Despite the ongoing debate in national security circles about whether E2DE is Russian (or anyone else’s) strategy, a large majority of those I spoke to believe that this is indeed part of U.S. adversaries’ nuclear plans. Seventy-Five percent (36/48) of these experts believed this was indeed part of other nuclear powers’ strategy, particularly Russia.¹¹⁵ Statements to this effect include: “I think every one of our adversaries would be willing to first use [nuclear weapons] ... to try to get us to back off”¹¹⁶; “I would think that that’s their thought process. Whether they are right or wrong, that’s a different question. I assume, why wouldn’t they?”¹¹⁷; “Absolutely. Every single one of them.”¹¹⁸; and “Right. Yes. It’s happening in space with RS right now.”¹¹⁹ A few of these experts suggested that this would only be done in self-defense, when the adversary was

¹¹⁵ 6 others said no, and 5 said they don’t know.

¹¹⁶ Interview 01, LCOL Geelan, USAF, Strike Advisor, Missileer, 13 Sep 2021.

¹¹⁷ Interview 02, Emergency Actions Officer/Trainer, STRATCOM, 14 Sep 2021.

¹¹⁸ Interview 04, Mr. Baker, Warning Systems, STRATCOM, 23 Sep 2021.

¹¹⁹ Interview 22, Navy Flag Officer, J5 related duties, STRATCOM, 20 Jan 2022.

extremely threatened, and not for coercive or aggressive purposes. For example, “I think that would be in their plans. It would have to be pretty dire for them to do it.”¹²⁰ Another states, “I think it’s about deterrence. It’s about defense, not about coercion... I think there are reasons to question whether they would go nuclear over lesser issues.”¹²¹

Others suggested that this may be so, but it is little different from what the U.S. or others have stated and practiced in the past, especially when one is the conventionally weaker power. As a former STRATCOM commander reflected, “Somebody said this to me at a hearing not so long ago, if we want to have the ability to have low yield weapons and this and that, that’s nuclear warfighting, that we would be saying that we’d be willing to go first. I would say to them, throughout the cold war we said we’d be willing to go first.”¹²² Others implied this isn’t really surprising and may simply be the natural position of the weaker power. For example, “this is inherent in the smaller nuclear state anyway. And the more the big boys talk about them, the more it reinforces their rectitude that this is a good strategy.”¹²³ One Space Force General explicitly stated this may be part of recent/current U.S. strategy, claiming “I absolutely do, 100%. Yes. Especially for this current administration. I 100% believe that RS and CH have it in their plans to use nuclear weapons. I think, the Trump administration, they may have had it in their plans, but they would have been more hesitant.”¹²⁴

It is important, then, for scholars and policy makers to recognize that there is a strong belief in this community that this strategy is being pursued by adversaries. Additionally, the strategic community in the past as well as the present has ascribed merit to the strategy. As the

¹²⁰ Interview 08, VADM Joe Sestak, former Deputy CNO, 26 Oct 2021.

¹²¹ Interview 21, Dr. Terry Roehrig, USNWC, 19 Jan 2022.

¹²² Interview 07, GEN Kehler, former STRATCOM Commander, 21 Oct 2021.

¹²³ Interview 26, RADM Gower, Naval Attache, Washington D.C., 18 Feb 2022.

¹²⁴ Interview 18, BGEN Pepper, Space Force, Deputy Director, J5, 06 Jan 2022.

ancient Chinese strategist Sun Tzu advised, the best way to achieve victory was to attack the enemy's strategy, but to do this you must accurately assess what that strategy is.¹²⁵ Those who argue that this is a poor understanding of Russian (or any other state's nuclear strategy) should take note that nevertheless many in the U.S. strategic community believe it has merit. This dominant belief likely contributes to willingness to support the United States having something akin to an E2DE strategy, and the above-mentioned support for strategies of limited nuclear war. If leaders are so confident that others will do this, they are more likely to seek capabilities to fight at the same level.

However, when asked to assess the practicality of escalate to de-escalate, a vast majority believed this was bad strategic thinking. Thirty-one experts stressed that this was an inherently bad idea, while 12 acknowledged that it could maybe work under certain conditions. This left five who argued this could be assessed as a strategy with significant possibility of success. Of those who thought the idea had merit, explanations included when a country is in an existential threat environment; when it is used in the conventional realm to drastically increase costs; when it can successfully alter risk calculations; and when nuclear weapons are used against a non-nuclear power as in WWII.¹²⁶

Those who put the strategy in a "it depends" category, suggested that it might be possible but even here it was difficult for them to envision a scenario where it does work.¹²⁷ Some simply stated it depends on the country and the leadership.¹²⁸ Others suggested you might get a pause,

¹²⁵ Sun Tzu, *The Art Of War*, (1963). Translated by Samuel B. Griffith, Oxford University Press, ISBN-13 978-0-19-501476-1. "Thus, what is of supreme importance in war is to attack the enemy's strategy;" p. 77.

¹²⁶ See interviews 1, 6, 7, 21, and 37.

¹²⁷ See interviews 5, 11, 12, 13, 14, 22, 24, 30, 36, and 40.

¹²⁸ See Interview 12, "So, this whole notion of limited use to de-escalate and/or terminate a conflict I think is possible, but it... depends. It really boils down to which country and who the leader is who is making decisions in that country."

but not the war termination you ultimately seek.¹²⁹ But others argued that even if you get this pause, the long-term consequences of having been the state to violate the nuclear non-use norm would outweigh any shorter-term gains.¹³⁰ For this group of experts it is also critical that the demands of the escalating state are limited and that it is attempted in a context of self-defense in service to regime/country survival. Also, in this group it is deemed possible that the use of a nuclear weapon is a particularly effective way to demonstrate that the stakes are of supreme and vital importance to you and therefore may work to convince the other side to back down. But this is open to question, and my other research shows that it is very unlikely that the simple fact of nuclear use operates as a resolve or stakes-identifying trump card in the way discussed here.

The majority who argued it was a bad idea were decidedly staunch in their opinions. For example, comments here included: “No such animal. It is a mythical unicorn”¹³¹; “I think it’s an exercise in madness”¹³²; “we should be doing everything possible to deter that kind of thinking”¹³³; “With near peer nuclear powers, it’s a recipe for all out nuclear exchange”¹³⁴; and “I think it is something that would require several successive miracles to really be effective.”¹³⁵ One of the rare ways in which it was deemed possible was if enough damage was done to completely defeat or overpower the adversary, but this takes the strategy away from E2DE and turns it into something else, namely pursuing military defeat and not voluntary de-escalation. For

¹²⁹ For example, see Interview 11, “The country that decided to do that, if they wanted to slow things down, regroup, resupply, they would achieve that. It’s unfortunate... I don’t know that they would ultimately win, and like we talked about, if you did it against the united states, we ultimately would respond with massive conventional response”; and “It isn’t going to work out in the long run. You might get a pause or a surprise that gives you time to regroup or retreat or something, but if you do it against the U.S., it is not going to achieve victory or war termination on your terms.”

¹³⁰ For example, Interview 44. “I think the broader implications would outweigh any short-term gains that you might get.”

¹³¹ Interview 17, Flag Officer, NORAD/NORTHCOM, 29 Dec 2021.

¹³² Interview 27, Hon Leon Panetta, former SECDEF, 25 Feb 2022.

¹³³ Interview 28, ADM Cecil Haney, STRATCOM, 28 Feb 2022.

¹³⁴ Interview 25, Hon Andrew Weber, former DASD for CBRN, 16 Feb 2022.

¹³⁵ Interview 41, Flag Officer, CYBERCOM, J5, 10 Jun 2022.

example, “I don’t personally believe that without the total destruction of the enemy, I don’t think it would de-escalate...”¹³⁶ Another put it this way, “I don’t think this is going to de-escalate. If you didn’t hit the COG [Center of Gravity], and just gave a bloody nose (or sent a signal), I don’t think it’s going to work.”¹³⁷ These are, in fact, not arguments in favor of E2DE, but merely statements that if you can militarily defeat the adversary and take away their ability to resist, you can impose de-escalation on them. In sum, E2DE strategies are generally considered a distinctly bad idea.

Furthermore, when asked to describe a situation in which E2DE is most likely to work between nuclear powers, very few experts were able to provide a likely scenario. For example, “I don’t know, nuclear, any scenarios it might work in and I think nobody does. I think if you pursued that, you would be pursuing a very uncertain end.”¹³⁸ However, some did cite factors that could potentially contribute to success. These included: if the balance of forces is in your favor; If you are the defender in the conflict (rather than the initial aggressor); and if it succeeds as a deterrent (i.e. is threatened but not actually executed).¹³⁹ For example, one leader argues “It’s most likely to work when one of the participants is larger than other participant. This might work for the side that has a lot more to back it up...”¹⁴⁰ In the end, however, it was very difficult for experts to describe with any precision a realistic scenario in which E2DE was likely to succeed. In sum, these last two questions combine to show that very few members of the U.S. Strategic Community think very highly of E2DE as a strategy. And yet, as can be seen from previous questions, this same group also supports to a very high degree the pursuit and

¹³⁶ Interview 02, Emergency Actions Officer/Trainer, STRATCOM, 14 Sep 2021.

¹³⁷ Interview 19, General Officer, STRATCOM and Missile Defense Commands, 12 Jan 2022.

¹³⁸ Interview 29, Cabinet Level DOD official, 03 Mar 2022.

¹³⁹ See interviews 5, 16, 17, 20, 21, 33, 40, 7, 9, and 22.

¹⁴⁰ Interview 40, LCOL Waterman, USAF, Nuclear Strike Advisor, 27 May 2022.

implementation of U.S. strategies of limited nuclear war and the consideration of using nuclear weapons first to de-escalate a conflict.

I also asked these experts what the likely response would be from the U.S. to the first use of a nuclear weapon by an adversary. Of course, this is an exercise in counter-factual thinking and answers depended on the most likely scenario envisioned by each respondent. I suggested a scenario of a limited nuclear attack when asking the question but did not specify much else and left it to the interviewee to decide what the most likely adversary limited use might be. It is clear from the answers that it is deemed extremely unlikely that this kind of strategy would work against the United States.

Only five of the people I spoke to even entertained the idea that the U.S. would give in to this kind of nuclear coercion, and this was only in conditions that would be extremely unlikely. For example, one Air Force planner suggests it will depend on the stakes of the conflict: “is it because of a limited war for limited aims that we don’t care a lot about, [or something] that we are willing to spend a lot of blood and treasure on. If it’s something like that, then I think that maybe we sue for peace, as quickly as possible, while being cognizant of the danger of precedent setting.”¹⁴¹ However, it is very unlikely that a conflict the United States cares so little about would escalate to nuclear conflict, and nuclear use itself may have a catalyzing effect on *what* the U.S. cares about regarding the conflict going forward.

The rest thought the idea of the U.S. simply giving up in this scenario, with all its remaining means and capability to resist, and the future of the nuclear normative order potentially on the line, was almost laughable and impossible. As one senior military officer put it, “the US would respond, and the US would respond enough that there is no further escalation.

¹⁴¹ Interview 34, Maj, USAF, Missileer, 17 Mar 2022.

It would be a very strong response. It would be a COG [center of gravity]-attacking type of response.”¹⁴² Another remarked, “Unlikely that we give up just because someone uses a nuclear weapon, absolutely. We won’t be that shocked.”¹⁴³ A third put it this way: “we have a national image that we are the best, so we would never... we would be so embarrassed by being surprised by a nuclear attack that I feel like we would have to do something, and it’s hard for me to imagine that that something would not be nuclear.”¹⁴⁴ Instead, the question centered on what the nature of the strong response would be: conventional, nuclear, or something else? 35% of those asked (13/37) thought the U.S. would respond conventionally before responding with a nuclear attack. Another 19% (7/37) thought the U.S. would respond with a nuclear weapon first, and two respondents thought the response might consist of strong political and economic measures. One former strike advisor’s response was indicative of the majority group, “I think we would respond. I think at least initially we would respond conventionally, and probably overwhelmingly conventionally. But I also think that the nuclear response would be on the table”.¹⁴⁵

The almost universal prediction that the United States would not give in to this type of nuclear coercion is strong evidence against the potential success of E2DE, at least when directed at the U.S. A question remains: if there is such confidence in the belief that the U.S. would resist such coercive attempts, why would other states not resist as well? There is little logical reason to expect that other states with the *capability to resist* [i.e. nuclear weapons] would feel any different in response to a similar limited nuclear attack. Even if the overall balance of power is against the receiver, they still have strong incentives to respond if they maintain the means to do

¹⁴² Interview 19, General Officer, STRATCOM and Missile Defense Commands, 12 Jan 2022.

¹⁴³ Interview 31, Col Colon, USAF, Battle Watch Commander, STRATCOM, 04 Mar 2022.

¹⁴⁴ Interview 15, RADM Klein, USNWC, 30 Nov 2021.

¹⁴⁵ Interview 40, LCOL Waterman, USAF, Nuclear Strike Advisor, 27 May 2022.

so. An officer in charge of wargaming suggests this is true throughout numerous wargaming exercises, stating “what we see in wargames, and when they have additional moves left in their repertoire... you know, like when they still have military options to reach for, whether conventional or nuclear, they will continue to use those in an effort to not be dominated.”¹⁴⁶ One historical example of this kind of thinking was the German resort to unrestricted submarine warfare during WWI.¹⁴⁷ The Japanese resort to Kamikaze tactics in the later years of WWII may also be seen as an example.¹⁴⁸ In the background of these answers was an implicit understanding that the U.S. had a balance of power advantage and hence could afford to continue to resist because it could continue to dominate at every level (i.e. that the U.S. would have escalation dominance in these types of scenarios). For example, one Emergency Actions Officer remarked “I don’t think right now, given my perception of the geopolitical and *international standing where the U.S. is*, I don’t think the US is just going to cave in at the moment.”¹⁴⁹ A former president of the NWC remarked similarly that “we would not back down. We would be searching for an ability to respond. This gets back to that whole *idea of American exceptionalism*. I just don’t believe as a nation that we would allow anybody to do it.”¹⁵⁰

In the end, leaders express a firm and almost universal belief that the U.S. would not back down to nuclear coercion in the form of E2DE, despite their grave concerns about escalation once nuclear weapons have been employed. The dominant belief that E2DE is a bad idea clearly

¹⁴⁶ Interview 39, Captain, USN, Wargaming, 13 May 2022.

¹⁴⁷ In the context of the debate over the utility of submarine warfare with General Falkenhayn, Captain Michaelis wrote in a memo from the Commander of the High Seas Fleet: “If this [skeptical] view were true, then it would mean we will never be able to force England to a peace according to our wishes and that sooner or later we must submit to its conditions. Can we even contemplate such an idea so long as there is a single war weapon left with which we can harm the enemy? In my view: no.” quoted in Hull, I. V. (2013) *Absolute Destruction: Military Culture and the Practices of War in Imperial Germany*. Ithaca: Cornell University Press, chapter 9, p. 222.

¹⁴⁸ Stewart, A. (2022) *Kamikaze: Japan’s last bid for victory*. Bamsley, South Yorkshire, England: Pen & Sword Aviation.

¹⁴⁹ Interview 05, Emergency Action Officer, Missileer, STRATCOM, 25 Sep 2021.

¹⁵⁰ Interview 10, VADM Howe, USN, STRATCOM, 29 Oct 2021.

conflicts with leaders' support of limited nuclear war and E2DE strategies described above and is indicative that leaders today are struggling with the same debates as past leaders regarding the utility and purpose of limited nuclear capabilities and limited nuclear war.

4. What will not work for others may work for the United States

The two core contradictions above suggest that these experts may see advantages to the U.S. adoption of certain limited nuclear war strategies that would be foolish for other states to adopt. However, if the logic of these strategies is sound for one state within a limited war context, and the other state is a nuclear armed country, then limited nuclear war, and escalate to de-escalate strategies should at least have a reasonable chance of success regardless of which state initiates them. Across these interviews, it is clear that when thought of as being attempted by U.S. adversaries, the idea of escalate to de-escalate is presented as downright foolish, and yet, this same strategy has been adopted in the past by the U.S, and is recommended by the same group of experts interviewed here. To explore this contradiction, I asked these experts how they viewed current Russian nuclear strategy compared to past and current U.S./NATO strategy. I asked this question to probe these experts' recognition that a strategy ascribed to Russia, which is deemed to be very dangerous and escalatory, was essentially NATO (and at times part of U.S.) strategy.¹⁵¹

¹⁵¹ Legge, J. Michael, (1983). Rand Report R-2964-FF, Theater Nuclear Weapons and the NATO strategy of flexible response; National Security Decision Memorandum 242, (1974), Policy for Planning the Employment of Nuclear weapons (NUWEP), <https://nsarchive.gwu.edu/document/20307-national-security-archive-doc-22-office>; and Policy Guidance for the Employment of Nuclear Weapons (NUWEP) (U), (1982), Office of the Secretary of Defense, <https://www.archives.gov/files/declassification/iscap/pdf/2013-111-doc01.pdf>.

4.a. U.S./NATO Strategy Different than Current Russian Strategy?

Of those I asked, 6 stated they did not know enough about past NATO strategy to have a firm opinion on this. 12 of those I asked stated that there were striking similarities, and in fact, current Russian Strategy and the NATO strategy of flexible response are essentially the same. For example, with statements such as: “Our Fulda gap strategy of the 70’s is the Russian Strategy today.”¹⁵²; “I don’t think there is a difference. I think what’s changed is that it’s them applying our deterrence theory to us! And they are in a position to do it, that’s a big difference.”¹⁵³; and “this is the same. In fact, that was our policy. Our forward deployment of nuclear weapons had that intent.”¹⁵⁴ Some went so far as to say the U.S. is currently mimicking Russian strategy, “In the last ten years, our strategy has moved strongly in the direction of Russia’s strategy, to the point where there is very little difference.”¹⁵⁵

Some, however, thought there were important differences. These responses included statements such as: “The difference is that NATO was many partners and RS is by itself, so you have a single decision-making source, but in NATO, you don’t.”¹⁵⁶; and “well, both involve using nuclear for a warfighting advantage... I don’t think their strategy is warfighting. I think it is to use tactical weapons to hold NATO at risk, and Strategic weapons to hold the US at risk. I think that’s significantly different than what we did back then.”¹⁵⁷ One key difference that was brought up was whether Russia views these as coercive, offensive tools, which is one of the key dimensions of the debate surround Russian nuclear strategy. For example, “I think Russia views them as an offensive tool to use and force their adversary to back down. Conversely, NATO

¹⁵² Interview 32, 4-Star General, DOD official, 04 Mar 2022.

¹⁵³ Interview 7, GEN Kehler, former STRATCOM Commander, 21 Oct 2021.

¹⁵⁴ Interview 31, Col Colon, USAF, 04 Mar 2022.

¹⁵⁵ Interview 25, Hon Andrew Weber, former DASD for CBRN, 16 Feb 2022.

¹⁵⁶ Interview 19, General Officer, STRATCOM and Missile Defense Commands, 12 Jan 2022.

¹⁵⁷ Interview 23, Mr. Lefty McManus, STRATCOM, J5 advisor, 26 Jan 2022.

seems more a defense organization; therefore, they wouldn't use nuclear weapons offensively, but would wait to get hit.”¹⁵⁸

Clearly there is a contradiction here. A strategy utilized by the U.S., arguably successfully, and espoused by the U.S. historically is deemed misguided and nonsense when looked at from the other side. Most saw no problem with this. This is likely attributed to the last quote above, namely, that respondents subconsciously or consciously believe the U.S. and NATO will be the “good guys”, and would only apply this strategy defensively, whereas Russia (as are others) is assumed to plan to use it offensively. There is an implied advantage here for the side that is defending itself from aggression, and this was sometimes bought up explicitly in our discussions. It is worth noting that many who responded understood that this was indeed our own strategy, and yet continue to view the execution of such a strategy as fraught with dangers of escalation and unlikely to succeed.

1.7 Conclusions:

In the end, I find very little confidence among interview subjects that a nuclear conflict can remain “limited” in a meaningful sense. Nuclear force posture seems to confirm these views to some degree, as we see debates on these subjects but thankfully significant hesitation on the actual procurement of increased levels of limited nuclear war capabilities. For example, Joint Publication 3-72 on Nuclear Operations refers frequently to flexible options’ ability to “engage the enemy at an appropriate level or place with the capability of escalating or de-escalating the

¹⁵⁸ Interview 37, Captain Cantor, USAF, Missileer, 25 Apr 2022.

level of conflict.”¹⁵⁹ However, it appears that current force structure is deemed flexible enough, requiring few, if any, new nuclear capabilities. This is evidenced by the cancellation of the Submarine Launched Cruise Missile - Nuclear (SLCM-N) program as well as the retirement of the B83-1 nuclear armed gravity bomb as outlined in the 2022 Nuclear Posture Review and previous budget.¹⁶⁰ This hesitation is likely due to real concerns over the risks to crisis stability if the US or other states possess large arsenals of tactical, lower-yield, and harder to detect nuclear weapons. Conventional weapons, particularly highly precise and longer-range weapons are often mentioned as a tool which can help to avoid nuclear escalation.

There is also a strong preference that the U.S. be able to match the initiators level of aggression under all circumstances, thereby demonstrating “escalation dominance”, and that possessing this kind of dominance is best for both deterrence and warfighting. However, those who study escalation mostly agree that escalation dominance is a particularly difficult status to achieve and that “escalation management” is a more useful concept.¹⁶¹ Therefore, as the authors of a leading study of escalation write, “it is more useful to treat escalation dominance as a philosophical aspiration than as a feasible policy objective.”¹⁶²

¹⁵⁹ U.S. Joint Publication 3-72, accessed at: https://irp.fas.org/doddir/dod/jp3_72.pdf. This document was briefly published on DOD public websites but then removed.

¹⁶⁰ See the budget summary here: <https://armscontrolcenter.org/summary-fiscal-year-2023-national-defense-authorization-act-h-r-7900/>; This decision has sparked debate. See, for example: <https://www.defensenews.com/congress/2022/04/01/biden-plan-to-shelve-trump-era-sea-nuke-comes-under-fire/> and <https://www.defensenews.com/pentagon/2022/04/05/us-strategic-command-chief-sea-missile-cancellation-opens-deterrence-and-assurance-gap/>. The NDS and NPR is found here: <https://media.defense.gov/2022/Oct/27/2003103845/-1/-1/2022-NATIONAL-DEFENSE-STRATEGY-NPR-MDR.PDF>

¹⁶¹ On a theoretical discussion of escalation dominance, see: Cimbala, S. J. (1991). *Clausewitz and escalation: classical perspective on nuclear strategy*. London, England: F. Cass.; see also Freedman, L. (2003), *Evolution of Nuclear Strategy*, particularly chapters 14 and 25; on the difficulty of escalation dominance: <https://warontherocks.com/2017/11/false-allure-escalation-dominance/>; Morgan, F., Mueller, K., Medeiros, E., Pollpeter, K., & Cliff, R. (2008). *Dangerous Thresholds: Managing Escalation in the 21st Century*. RAND Corporation pp. 15-17, 34-36, 83-115.

¹⁶² Morgan, F. et. al, (2008), *Dangerous Thresholds*, p. 16.

Even though limited nuclear use is expected to make controlling escalation more difficult there is a hesitance to rely solely on deterrence strategies that threaten large nuclear use in response to all nuclear aggression. Leaders necessarily grapple with the question that if tit-for-tat or in-kind type responses are likely to lead to higher levels of nuclear escalation, why risk prompting earlier use of smaller capabilities by possessing them? This is a key argument of skeptics, who advocate avoiding these capabilities because they risk or invite earlier nuclear use than would be warranted.¹⁶³ But large nuclear use is also expected to be counter-productive, especially in limited conflicts over smaller objectives, or when large exchanges result in no meaningful winner. As in the past, Leaders appear to want a way out of this conundrum but are unable to find one. As one former STRATCOM Commander stressed, despite nuclear use making escalation much more likely and “changing the dynamic completely”, the United States would be “almost derelict in our duties if we do not think and plan and exercise and game this very set of missions.” This being necessary for the sake of credible deterrence.¹⁶⁴ A current Air Force nuclear missile operator argued similarly, stressing that nuclear use makes escalation much harder and yet “we should definitely have strategies, tactics, ways of keeping it limited so that it doesn’t just automatically [put us in a situation where] the only option for us is to go to total nuclear war.”¹⁶⁵ So, in the end, leaders are stuck merely with hope that if nuclear war comes, under the right circumstances it may yet be contained.

¹⁶³ See, for example, Gower, J. (2018), “The Dangerous Illogic of 21st Century Deterrence by Planning for Nuclear Warfighting”, Carnegie Endowment for International Peace, <https://carnegieendowment.org/2018/03/06/dangerous-illogic-of-twenty-first-century-deterrence-through-planning-for-nuclear-warfighting-pub-75717>; and Facini, A. (2020), “The Low-Yield Nuclear Warhead: A Dangerous Weapon Based on Bad Strategic Thinking”, Bulletin of the Atomic Scientists, <https://thebulletin.org/2020/01/the-low-yield-nuclear-warhead-a-dangerous-weapon-based-on-bad-strategic-thinking/>.

¹⁶⁴ General Robert Kehler, USAF (Ret), Former Commander, US STRATCOM. Interview 07, 21 Oct 2021.

¹⁶⁵ Major Sterling Williams, USAF, 13N (Nuclear, Missile Operations). Interview 30, 3 March 2022.

Another conclusion I draw from these interviews is that the U.S. is relatively confident in its ability to avoid conflicts escalating to the nuclear level, but believe this *requires* a credible threat to launch limited nuclear strikes in retaliation to limited nuclear strikes. Once a conflict crosses the nuclear threshold there is much less confidence in maintaining any meaningful limitations. Despite the lack of confidence, there are strong beliefs that we must maintain a strategy of limited nuclear warfighting because this is a critical part of what helps keep wars from going nuclear. So, between the skeptics who worry about having these capabilities making nuclear war more likely, and the optimists who think this prevents nuclear war, it appears from these interviews that there is some optimism that the benefits of having them, specifically through enhanced deterrence and credibility, outweigh the risks of their increased “usability.”

Regarding the specific concept of E2DE, a vast majority believe it is simply a bad idea. Often, however, these same people suggest the U.S. adopts or maintains such a strategy, mostly because it is necessary as a response if someone tries to do it to the United States. But this type of reasoning has a clear logical pitfall. If both sides in a conflict think this way, and it appears we do in reaction to believing adversaries do, then the logical conclusion is an escalatory cycle. The question remains, why would leaders be confident that the United States can win in these cycles at acceptable costs? The answer appears to be a faith in U.S. superior force capability or some form of American exceptionalism in which the U.S. is seen inherently as the good guys. These leaders believe, at least implicitly and often explicitly, that the United States can maintain escalation dominance, and that is the key to winning these E2DE cycles. However, extant evidence arguing that superiority in nuclear forces confers coercive advantages is mixed, and on balance points to superiority being mostly irrelevant.¹⁶⁶

¹⁶⁶ For an excellent discussion of this literature and some new and interesting work on the subjective nature of “nuclear superiority” see: David C. Logan; The Nuclear Balance Is What States Make of It. *International*

The impression one gets from these interviews is that the U.S. is somewhere in between (and this is a luxury that maybe only the U.S. can afford), where limited nuclear war is seen as sort of oxymoronic, but something which must be prepared for and threatened for the sake of deterrence and for somewhat moralistic reasons. Much more work needs to be done on the doctrinal side, as well as the psychological foundations of this kind of thinking. On the policy side, what does, or should the United States say and do to demonstrate confidence or not in limited nuclear war? One approach might be to do the bare minimum, by communicating that the U.S. will fight nuclear wars with tactical or limited nuclear capabilities, but not investing heavily in the capabilities to do so. This would involve a strategy with the absolute bare minimum ability to threaten and fight a limited nuclear war with tactical or small nuclear weapons while investing in conventional technology to fill part of the gap and working on integrated deterrence to help strengthen the ability to prevent a conflict from getting there in the first place. The U.S. seems not willing to rely on an ability to fight and control limited nuclear wars. It *is* prepared, however, to respond to aggression at whatever level it deems necessary to mitigate threats and dissuade or defeat enemies. Though most would rather avoid the use of nuclear weapons few are willing to rule it out and none are willing to give up in the face of limited nuclear aggression.

Robert Jervis, in one of his important works on American nuclear strategy once wrote that deterrence would be most effective when “the Russians thought control was impossible, but believed that the United States thought it was relatively easy. In that case, they would not only refrain from using or threatening limited strikes, but would also find American threats to do so in response to Soviet non-nuclear provocation quite credible...”¹⁶⁷ My interview work shows some

Security 2022; 46 (4): 172–215. doi: https://doi.org/10.1162/isec_a_00434. His work, drawing on archival and interview data from the United States and the Soviet Union during the Cold War, also shows how “states and leaders often understand and respond to the nuclear balance in inconsistent, asymmetric, and subjective ways.”

¹⁶⁷ Jervis, R. (1984) *The illogic of American nuclear strategy*. Ithaca: Cornell University Press, p. 111.

evidence that the U.S. strategic community in fact sees it the opposite way, suggesting that Russia (as well as other adversaries) believes escalation may be controlled and are therefore planning for limited nuclear attacks, while stating they find the concept of controlling nuclear escalation anything but easy. U.S. leaders must ask themselves why we believe the Russians, or anyone else, in the face of what we believe and know from the past, would believe that nuclear war may be kept limited. Jervis further went on to say that “But official spokesmen have undercut deterrence by taking the opposite position: they incorrectly impute to the Russians the belief that nuclear war could be kept limited while confessing that they themselves have grave doubts.” This was in 1984. It appears that not much has changed, at least in this regard, in the almost 40 years since. His cautions about attempting to escape what he called the nuclear revolution by acquiring the capacity for deterrence by denial as misguided, particularly through strategies of limited nuclear war, remain equally valid today.¹⁶⁸ The evidence provided above, however, suggests that even knowing the risks associated with engaging in limited nuclear war, the U.S. Strategic Community is resigned to fighting this way if adversaries attempt to escalate their way to policy aims at odds with U.S. interests.

Furthermore, confessing grave doubts about limiting nuclear war seems not to overcome a pervasive belief that leaders have no choice but to plan for and potentially engage in it, including with the first use of nuclear weapons. Modifying Jervis’s remarks, is it possible that the U.S. might believe its adversaries think control is possible, that the U.S. feels control is nearly impossible, but at the same time the U.S. be fully resigned to engaging in it? Might this be a good substitute for the Jervis’ best-case scenario above? If so, the U.S. will have to make its

¹⁶⁸ Jervis, R. (1989) *The meaning of nuclear revolution: statecraft and the prospect of Armageddon*. Ithaca: Cornell University Press.

commitment to engaging in limited nuclear war credible, despite its grave misgivings about this possibility. This appears to be at least a plausible accounting of the beliefs expressed in the interviews presented here.

Lastly, U.S. leaders should give serious consideration to why and how nuclear strategies deemed foolish for other nuclear armed states would be significantly more practical and useful from a U.S. perspective. This exceptionalism appears to be present amongst U.S. strategic elites but the logical, theoretical, and empirical support for these views has yet to be demonstrated. Arguments based on a superior balance of forces, or a status as the morally correct belligerent/defender of the status quo (“good guy”) are unlikely to hold up to scrutiny. Stronger states have lost the coercion game (and wars) in the past, and who is the “good guy” and who is defending (and what is) the status quo have also been demonstrated to be perceived quite differently by the relevant actors. Leaders should guard against American exceptionalism biasing strategic thinking. Nuclear weapons are just as dangerous for the U.S. to use as anyone else, and limited nuclear war is still a potentiality we know very little about beyond how dangerous and destructive it could be.

Appendix 1A: List of Interviews

Number	Interview Date:	Interviewee Name / Number	Interviewee position/experience	Notes:
1	13-Sep-21	LCOL (RET), Geelan, Kris, USAF.	20 Years Nuclear experience while active duty. Current (2 years) SME (Subject Matter Expert) on Nuclear Issues, US STRATCOM NC3 Enterprise Center	Former nuclear Strike Advisor; Missileer USAF (13N)
2	14-Sep-21	2	24 Years Active duty, enlisted Emergency Actions Officer (EAO), NC2 Experience, many more years as a civilian EAO. Current EAO trainer and active EAO.	Vast experience in training and evaluating Emergency Action Officers. Experience with writing the guiding documents for EA procedures and NC3 procedures
3	20-Sep-21	CDR Binkley, Jeremia, USN	23 Years Active Duty Navy Service, NAOC Team Chief, Deputy Battle Watch Commander, US STRATCOM (5 years)	Vast knowledge of "black book" and NC3 procedures. Nuclear Strike Advisor experience. J8 (Capability and Resource Integration) executive assistant experience as well.
4	23-Sep-21	Mr. Steve Baker, MSgt (Ret) USAF	24 years active duty, enlisted missile warning operations, SpaceCom, STRATCOM, 6 years additional as warning system controller, USSTRATCOM. Current Position, Trainer/Evaluator/Watch Stander Warning systems controller	Many years experience working, training and evaluating in the operations centers in SPACECOM and STRATCOM
5	25-Sep-21	5	Active duty Capt, USAF, Former Chief of Emergency Actions Training, 10 Years as Missileer (13N), USSTRATCOM trainer evaluator	Extensive experience in Global Operations Center, USSTRATCOM
6	6-Oct-21	ADM (Ret) Scott Swift, USN	Former Commander, USPACOM; J3 US PACOM, flew nuclear capable aircraft	PACOM has formal role and NC3 Responsibilities. Bio available here: https://www.usni.org/admiral-scott-swift-usn-ret .
7	21-Oct-21	GEN Robert Kehler, USAF (Ret)	Former Commander, USSTRATCOM (2011-2013)	Bio here: https://www.af.mil/About-Us/Biographies/Display/Article/1316896/robert-kehler/

8	26-Oct-21	VADM (Ret) Joe Sestak, USN	Former Deputy Chief of Naval Operations for Warfare Requirements; Director of Defense policy for NSC under President Clinton	Also a former Representative, Pennsylvania (7th district)
9	29-Oct-21	RADM Dan Fillion, USN (Ret)	Former J3 (Director of Operations), USSTRATCOM (2016-2018); J5, Director of Strategy, Policy, & Plans, U.S. Southern Command;	also a Fellow on the Chief of Naval Operations Strategic Studies Group
10	29-Oct-21	VADM (Ret) P. Gardner Howe III, USN	Former President USNWC; Last assignment Associate Director of Military Affairs at the CIA	Also, commanded numerous special warfare commands, including Special Operations Command Pacific
11	4-Nov-21	RDML John Spencer, USN	Commander, Submarine Group 10; former Executive Assistant to CDR USSTRATCOM; former Director, Nuclear Enterprise Directorate, Defense Threat Reduction Agency	Intimate knowledge of Command and Control Procedures and Decision Making process for NC3; Also an Airborne Emergency Actions Officer (AEAO)
12	5-Nov-21	BGEN (Ret) Greg Bowen, U.S. Army	Deputy Director, J3, US STRATCOM (2016-2018); Deputy commanding general for operations US Army Space and Missile Defense Command / Army Forces Strategic Command	Extensive experience with missile defense operations; NC3 Procedures, etc.
13	16-Nov-21	13	Intelligence officer for Chem/Bio incident response force. Full spectrum CBRNE response; Active duty, approximately 12 years service	studied effects of nuclear attacks and potential domestic implications. Studied where greatest chances for survivors would be, for example.
14	30-Nov-21	14	Senior Advisor to USSTRATCOM (Senior SES level / Flag Officer equivalent)	Significant Foreign Policy Experience (20+ years)
15	30-Nov-21	RADM Margaret "Peg" Klein, USN (RET)	Dean, Leadership and Ethics, US Naval War College (current); former Chief of staff Joint Staff J5 and US CYBERCOM; former commander U.S. Navy's	Over 20 years experience with nuclear airborne command post related work.

			E6 squadron and nuclear command and control wing	
16	8-Dec-21	CDR Joe Santos, USN	Instructor, U.S. Naval War College, College of Leadership and Ethics	Operational experience on Nuclear armed submarines, experience with J3 (operations) Joint Staff. Knowledge of Nuclear Decision Handbook
17	29-Dec-21	17	Flag Officer level/ Senior Leader US NORAD / NORTHCOM	Extensive experience with Plans and Policy (J5) and U.S. Naval Aviation Operations in general
18	6-Jan-22	BGEN Devin Pepper, US Space Force	Deputy Director, J5 (Strategy, Plans and Policy), U.S. Space Command	Previously, July 2015–June 2016, Chief, Global Intelligence Surveillance, and Reconnaissance Future Capabilities Branch (J841), U.S. Strategic Command, Offutt AFB, Neb
19	12-Jan-22	19	Active Duty Senior Officer with NC2 experience at STRATCOM and in Missile Defense (3-Star General)	Extensive experience in missile defense and in NC3 procedures and operations.
20	19-Jan-22	Col (Ret) Dana Struckman, USAF	Deputy Chair, National Security Affairs, USNWC	Former missileer; military advisor to SEC STATE (2001); Various ICBM related postings and commands (to include trainer/evaluator roles)
21	19-Jan-22	Dr. Terry Roehrig	Professor, National Security Affairs, USNWC	Former research fellow at Harvard project on Managing the Atom; published books on NK nuclear weapons
22	20-Jan-22	22	Flag Officer / J5 related duties, STRATCOM	Numerous command roles and director roles in Global Strike and Nuclear Operations communities.
23	26-Jan-22	Mr. Lefty McManus	Senior Technical Advisor to the J5, US STRATCOM; former active duty military (USAF)	Stood up first STRATCOM deterrence symposium and the DEGRE war game series. Stood up J55 (missile defense directorate) in Japan.
24	31-Jan-22	Flag officer, US Air Force	Assigned to Concepts and Strategy, HAF/H5S Pentagon	B2 pilot. Numerous roles in NC3.

25	16-Feb-22	Honorable Andrew C. Weber	Former DASD for CBRN; member, Council on Strategic Risks	Decades of U.S. government service included five-and-a-half years as the Assistant Secretary of Defense for Nuclear, Chemical and Biological Defense Programs. He was a driving force behind Nunn-Lugar Cooperative Threat Reduction efforts
26	18-Feb-22	RADM (Ret) John Gower, UK Ministry of Defense	Rear Admiral (RAdm) John Gower, CB OBE, is a Senior Advisor with the Janne E. Nolan Center on Strategic Weapons at the Council on Strategic Risks. RAdm Gower served, until his retirement in Dec 2014, as Assistant Chief of Defence Staff (Nuclear & Chemical, Biological) in the UK MoD.	Significant time as Naval Attache in Washington, DC.
27	25-Feb-22	Honorable Leon Panetta	Former SECDEF, 2011-2013, Chairman, Panetta Institute for Public Policy	
28	28-Feb-22	ADM (Ret) Cecil B. Haney, US Navy	Former Commander, US STRATCOM (2014-2016)	Also former PACOM commander
29	3-Mar-22	29	4- Star level equivalent civilian, Cabinet level DOD official	Significant influence over Naval priorities and policies. Personal experience handling nuclear weapons as a former officer in military
30	3-Mar-22	Maj Sterling "Duchess" Williams, USAF	Air Force Missileer, 13N. Naval War College Graduate, Advanced Strategist Program	Research on minimum deterrence, over 13 years experience in the field.
31	4-Mar-22	Col (ret) Reyes Colon, USAF	Former STRATCOM J3 Advisor / Operations / Battle Watch Commander	Many years missile strike planning, other strategic planning experience. Strategic Planning manager now at Northrop Grumman
32	4-Mar-22	32	Senior DOD Official, 4-star level, STRATCOM, Joint Staff and other directly relevant experience	Almost 40 years of military service
33	10-Mar-22	33	Major, USAF, Active Duty, Naval War College Student; Air Force Missileer, 13N.	Experience in Air Room in strike planning at STRATCOM
34	17-Mar-22	34	Major, USAF, Active Duty, Distinguished Graduate, USNWC; Air Force Missileer, 13N	Planning experience at STRATCOM, J5N5, ALCM Planning experience

35	30-Mar-22	LCOL Matthew Van Thompson, USAF	STRATCOM Emergency Actions officer experience, Missileer, National Military Command Center experience.	20 Years experience in the NC3 Field in missile wings, and in command and control positions. Trainer/evaluator
36	12-Apr-22	Senior Defense Official, Civilian.	Former Special Assistant to President George W. Bush and as Senior Director for Defense Policy and Arms Control on the National Security Council staff.	31-year career in the U.S. Government, which included two years at the Department of State and 22 years serving under seven Secretaries in a series of progressively senior positions in the U.S. Department of Defense.
37	25-Apr-22	Capt Kameron Cantor, USAF	Missileer, 13N. AFGSC 341 OSS/OSK (Fires).	Operational experience in NC3, Missile Silos, Emergency actions procedures.
38	25-Apr-22	Dr. Brad Roberts	Lawrence Livermore National Laboratory; author	From 2009 to 2013, he was deputy assistant secretary of defense for Nuclear and Missile Defense Policy. In this role, he served as policy director of the Obama administration's Nuclear Posture Review and Ballistic Missile Defense Review and led their implementation.
39	13-May-22	Capt, USN, also PhD	Wargaming expert, experience and research in deterrence strategy and policy	Directly involved in the DEGRE series and other wargaming efforts within DOD.
40	27-May-22	LCOL (ret) Zach Watermann, USAF	senior training analyst in the J7 US STRATCOM headquarters	Prior to that, retired ICBM operations officer, nuclear strike advisor for 4 COCOM commanders.
41	10-Jun-22	Flag officer (2-star), US Navy	Cybercom J5 roles and experience. Significant Cyber experience	Experience in director J5 roles, high level leader.
42	14-Jun-22	2-Star Navy Flag Officer	Experience in policy and planning roles.	Significant role in strategic priorities within military Professional Military Education (PME)
43	30-Jun-22	CDR (ret) James Scott, USN	Air Force government civilian in the Training Directorate at U.S. strategic command. Title is training analyst.	Background is in the military, a trained submarine officer. Navy for just under 28 years total. U.S. Strategic Command from 2006-2021 as active duty, worked in the Plans, inspections, operations, evaluations, and training in the NC3 Field. Former Strike Advisor, trainer evaluator as well.
44	1-Aug-22	LCOL, PhD, US Army	US Army FA-52 (nuclear weapons officer)	multiple tours at STRATCOM: war planner, speech writer, strategic planning. Consequences of execution.

45	15-Aug-22	Mr. John Stokely, U.S. Navy (Ret)	18 Years at STRATCOM, Current Deputy of the Nuclear Operations Concepts and Procedures Division,	This includes production of a suite of Emergency Action Procedures, development and production of the Nuclear Decision Handbook for national-level leaders, and maintenance of the operations order providing day-to-day force posture and generation guidance.
46	28-Aug-22	Dr. Kori Schake	AEI, Director of foreign and defense policy studies at the American Enterprise Institute	Before joining AEI, Dr. Schake was the deputy director-general of the International Institute for Strategic Studies in London. She has had a distinguished career in government, working at the US State Department, the US Department of Defense, and the National Security Council at the White House.
47	1-Sep-22	Senior Flag Officer, U.S. Space force	Experience in J5 at Stratcom, other senior positions	Specific experience in planning and exercising nuclear operations (someone I personally trained to perform NC2 duties).
48	30-Sep-22	Honorable Robert. M. Gates	Former SECDEF.	Significant Experience with NC3 and other related issues.

Appendix 1B: Interview Questions

Note: Informed consent was discussed verbally prior to beginning the interview and a consent form was provided to all for signature.

Note: I usually began by asking members to briefly describe their experience, particularly with NC3

1. How would you define escalation and de-escalation, particularly with regard to nuclear use and nuclear war?
2. Is escalation management different in a nuclear war than in a non-nuclear war? Would managing escalation be easier or harder if a war were to cross the nuclear threshold than it would be if nuclear weapons remain unused?
3. If a conflict between the United States and another nuclear country were to occur and the conflict escalated to the use of nuclear weapons, what would the most important or relevant factors be in terms of controlling, limiting, or managing escalation after nuclear use?
 - In other words, what factors or attributes of the conflict, or actions of states would be most important to escalation dynamics in a nuclear war?
4. Is the use of nuclear weapons, as in the kinetic use of nuclear weapons to achieve physical and psychological effects on the enemy, likely to increase or decrease the prospects of escalation?
5. Are there any biases within the decision-making system that push decision-making toward or away from the use of nuclear weapons in response to any attack, not just nuclear, on the U.S.?
 - Are there biases that push decision-making toward or away from escalating specifically in response to a nuclear attack on the U.S.?
 - What about attacks on Allies?
6. Does the U.S. need to prepare for and have a strategy of limited nuclear war?
 - Why?
 - In your opinion, how likely is it that a nuclear war will remain limited once it starts?

7. What do you think is the most likely response the U.S. would make in response to the first use of nuclear weapons by an adversary?
 - Does this depend on which adversary?
8. What is the difference between Russian nuclear strategy today and NATO nuclear strategy during the cold war?
9. Do you think that the United States' nuclear adversaries have, as a component of their nuclear strategy, plans to escalate to the use of nuclear weapons in order to deter the U.S. from further military action, to get the U.S. to back down, or to agree to war termination on the adversary's terms?
 - What should the U.S. response be to such a strategy?
10. Do you believe the U.S. should have a strategy that involves potentially using nuclear weapons first in order to deter further military action by the adversary and/or terminate the conflict on terms favorable to itself?
11. What do you think of the idea that the early, limited use of nuclear weapons in a conflict may be used to de-escalate and/or terminate a conflict?
12. Under what conditions, if any, is a strategy of "escalate to de-escalate" most likely to work?
13. Does it matter to escalation dynamics, and the potential success of an escalate to de-escalate strategy, which state started or initiated the hostilities, or which state has a superior balance of conventional or nuclear forces?
14. How much control do you think the U.S. would have over nuclear escalation in a conflict?
15. Is there anyone else you recommend that I reach out to with this interview survey? Who else would be good to talk to about this?

Appendix 1C: Categorization and Aggregation of Data

For each question below I describe how I categorized and aggregated the data as presented in the paper.

1. How would you define escalation and de-escalation, particularly with regard to nuclear use and nuclear war?

The answers regarding escalation were not coded in any particular way, but the discussions about escalation were synthesized to provide a summary of these answers in the paper.

With regard to de-escalation, the answers in this question were sorted into two categories. The first was categories that involved responses describing escalation as generally the opposite of escalation, meaning simply that violence was reduced in some way, or specifically that nuclear weapons were no longer used. I thought of this as the “come back down” category, where responses meant that the level of violence or the types and nature of attacks was somehow reduced but continued.

The second category was the “war termination” category, in which responses indicated that what was really meant by “de-escalation” in this context was some form of war termination. The strategy of E2DE was deemed to fail, in this understanding, if the conflict continued, even if at a reduced level of violence.

2. Is escalation management different in a nuclear war than in a non-nuclear war? Would managing escalation be easier or harder if a war were to cross the nuclear threshold than it would be if nuclear weapons remain unused?

Answers to this question were categorized in two parts. First, is it different? This was really a yes or no question, and so answers were divided as either “Yes” it is different, or “No” it is not. Everyone who answered this question fit into one of these categories.

With regard to whether it would be “easier or harder” answers were categorized as “Easier”, “Harder”, or “Neither/?? (not sure). If it was not explicitly clear, I put the response in the “Neither/??” category.

3. If a conflict between the United States and another nuclear country were to occur and the conflict escalated to the use of nuclear weapons, what would the most important or relevant factors be in terms of controlling, limiting, or managing escalation after nuclear use?
 - In other words, what factors or attributes of the conflict, or actions of states would be most important to escalation dynamics in a nuclear war?

This was an open-ended question to which a wide variety of answers and discussion was given. In general, there were some common threads which I was able to identify. These included: What was targeted; International reactions; domestic political pressures; U.S. response (if not the

U.S. who used them); why the war occurred and how the war was going for the parties so far; Location (home or on territory of ally); Scale/number of casualties; Balance of forces; was a nation's existence threatened?; level of communications with adversary; Passion/Emotion; Capability to reach U.S. with nuclear weapons; Information; and two who mentioned escalation would be determined by whether or not the initial response (so they assumed there would be one) was deemed proportional.

4. Is the use of nuclear weapons, as in the kinetic use of nuclear weapons to achieve physical and psychological effects on the enemy, likely to increase or decrease the prospects of escalation?

As the question suggests, the answers here were generally explicit, stating clearly that the introduction of nuclear weapons into a conflict would either increase or decrease the likelihood of escalation, with a third category of "either way" or no tendency in either direction. Answers that were not explicitly stated in terms of increasing or decreasing the chances were placed in this third category.

5. Are there any biases within the decision-making system that push decision-making toward or away from the use of nuclear weapons in response to any attack, not just nuclear, on the U.S.?
 - Are there biases that push decision-making toward or away from escalating specifically in response to a nuclear attack on the U.S.?
 - What about attacks on Allies?

This question was sorted into 5 categories. Those that explicitly stated that the system, as they understand it, would have a bias or create pressure toward the use of nuclear weapons in response to a nuclear attack; those that explicitly stated there was a pressure to NOT use nuclear weapons; those that said some version of "not really" or "the system is appropriately balanced; Those that suggested that there would be a bias to DO SOMETHING, but not necessarily a nuclear response, and those that did not answer this question.

6. Does the U.S. need to prepare for and have a strategy of limited nuclear war?
 - Why?
 - In your opinion, how likely is it that a nuclear war will remain limited once it starts?

This question was sorted into simple "yes" or "no" answers and then the reasoning was probed and categorized into several categories. Additionally, there were several that stated that the U.S. already does, so this was a "we do" category on top of the yes/no distinction (6 responses). The categories that emerge in these answers were labeled: Preparation (must be prepared for anything that is possible); we will be forced to do it, so we should have a plan (adversaries will initiate this); Deterrence; for flexibility; need to understand and have a plan; chance to keep the conflict limited; moral/ethical.

7. What do you think is the most likely response the U.S. would make in response to the first use of nuclear weapons by an adversary?
 - Does this depend on which adversary?

The answers in this category fell into four categories: Political responses (non-military); Conventional responses (generally “overwhelming” conventional response); Nuclear response; other/it depends. Also, 11 people did not get this question, so the answer was N/A. Answers were sorted into the categories other than “it depends” only if they explicitly stated which type of response (conventional, nuclear or political of some sort).

8. What is the difference between Russian nuclear strategy today and NATO nuclear strategy during the cold war?

Open ended question. Generally sorted into “similar” and “significant differences”. Many respondents (24) did not get this question. 6 responded they did not know enough to answer.

9. Do you think that the United States’ nuclear adversaries have, as a component of their nuclear strategy, plans to escalate to the use of nuclear weapons in order to deter the U.S. from further military action, to get the U.S. to back down, or to agree to war termination on the adversary’s terms?
 - What should the U.S. response be to such a strategy?

The first part of this question was straightforward, either they did believe our adversaries had such a strategy, or they did not. Answers were categorized into “Yes”, “no”, and “Don’t know”. The answers to what we should do in response were varied and were not categorized in any particular way for this question. Some of the answers helped inform the follow-on question (#10).

10. Do you believe the U.S. should have a strategy that involves potentially using nuclear weapons first in order to deter further military action by the adversary and/or terminate the conflict on terms favorable to itself?

This was also a yes or no question. Answers were sorted only if respondents gave explicit answers in either direction. Of note, many thought of this question as the same as asking if the U.S. should maintain a no-first use policy or not.

11. What do you think of the idea that the early, limited use of nuclear weapons in a conflict may be used to de-escalate and/or terminate a conflict?

When asking this question, I offered to them to answer in terms of “good idea” or “bad idea” or something in between... Answers were categorized this way (good; bad; other/maybe). If it was not a clear “good idea” or “bad idea” response, it was placed in the other/maybe category.

I then read these to understand what the overall impressions were and why respondents felt the way they did.

12. Under what conditions, if any, is a strategy of “escalate to de-escalate” most likely to work?

This was open ended, but many could not think of one, so those were binned in a category of no real example/hard to think of one.

13. Does it matter to escalation dynamics, and the potential success of an escalate to de-escalate strategy, which state started or initiated the hostilities, or which state has a superior balance of conventional or nuclear forces?

This was broken down into categories of Balance of Forces matters; Initiator matters; Both matter; neither matters; N/A.

14. How much control do you think the U.S. would have over nuclear escalation in a conflict?

This was separated into categories of None/Not much; Some/Depends on situation or adversary; and A lot.

15. Is there anyone else you recommend that I reach out to with this interview survey? Who else would be good to talk to about this?

N/A

PAPER 2

Investigating “Escalate to De-escalate” in Past War Games and Crisis Simulations

2.1 Abstract:

This essay utilizes previously conducted elite-level wargames and crisis simulations to examine the potential efficacy of the limited nuclear war strategy referred to as *escalate to de-escalate*. I begin by describing this strategy and its prevalence within academic and policy debates. I then discuss theoretical expectations on the potential effectiveness of such a strategy. Finally, I use the wargame and crisis simulation data to answer the following specific questions: **What are the coercive effects of these types of escalations; and, what are the coercive effects of the limited use of nuclear force?** To answer these questions, I conducted detailed examinations of available elite-level wargames and crisis simulations with nuclear armed “players” to identify games and simulations in which escalate to de-escalate strategies have been attempted. This included games and simulations in which nuclear weapons were and were not used. In line with the theoretical expectations, results from this analysis show that it is extremely rare that a strategy of escalate to de-escalate is effective. There is also little reason to believe that nuclear weapons provide any unique coercive advantages. This serves as a stark warning to states considering escalate to de-escalate strategies utilizing nuclear weapons against nuclear-armed adversaries and demonstrates the need for further investigation into the relationship between escalation and war termination.

2.2 Introduction:

Since the dawn of the nuclear era there has been debate regarding the feasibility of limiting or controlling escalation in nuclear war. Today, several of the world's nuclear powers are openly pursuing strategies of limited nuclear warfare and pursuing so-called tactical nuclear weapons.¹⁶⁹ Furthermore, a potentially dangerous concept falling under the umbrella term “limited nuclear war” has gained prominence in the contemporary debate, raising new and challenging questions. This conception of limited nuclear war has come to be known most commonly as a strategy of “escalate to de-escalate.”¹⁷⁰ In this view, limited nuclear war theorists and policymakers suggest that an *actual* limited use of nuclear weapons may yield coercive advantages within an ongoing conflict, specifically by demonstrating commitment, credibility

¹⁶⁹ Larsen, Jeffrey Arthur, and Kerry M Kartchner, (2014). *On Limited Nuclear War In the 21st Century*. California: Stanford University Press; Roberts, B. (2016), *The case for U.S. nuclear weapons in the 21st century*. California: Stanford University Press; Warden, J. K. (2018), “Limited Nuclear War: The 21st Century Challenge to the United States,” https://cgsr.llnl.gov/content/assets/docs/CGSR_LP4-FINAL.pdf; Gower, John, (2018). “The Dangerous Illogic of Twenty-First-Century Deterrence Through Planning for Nuclear Warfighting,” <https://carnegieendowment.org/2018/03/06/dangerous-illogic-of-twenty-first-century-deterrence-through-planning-for-nuclear-warfighting-pub-75717>; <https://thediomat.com/2018/04/pakistan-conducts-second-test-of-babur-3-nuclear-capable-submarine-launched-cruise-missile/>; <https://thediomat.com/2017/11/india-successfully-test-fires-indigenous-nuclear-capable-cruise-missile/>

¹⁷⁰ For discussions of “escalate to de-escalate” see: Katarzyna Zysk (2018): Escalation and Nuclear Weapons in Russia’s Military Strategy, *The RUSI Journal*, pp. 1 – 12; Iklé, F. Charles. (1991). *Every war must end*. Rev. ed. New York: Columbia University Press, esp. Ch. 3, titled “Peace through escalation?”; Kristin Ven Bruusgaard, (2017), *The Myth of Russia’s Lowered Nuclear Threshold*, <https://warontherocks.com/2017/09/the-myth-of-russias-lowered-nuclear-threshold/>; Kristin Ven Bruusgaard (2020) Russian nuclear strategy and conventional inferiority, *Journal of Strategic Studies*; Oliker, O. (2018, Nov). Moscow’s nuclear enigma. *Foreign Affairs*, 97, 52-57; “Prevailing in Limited War,” by Elbridge Colby, from *Center for a New American Security* (2016); Ross, Jay, (2018), “Time to terminate Escalate to De-escalate - It’s escalation control”, <https://warontherocks.com/2018/04/time-to-terminate-escalate-to-de-escalateits-escalation-control/>; Ryan, Kevin, 2020, “Is ‘Escalate to De-Escalate’ part of Russia’s Nuclear Toolbox?”, <https://www.russiamatters.org/analysis/escalate-deeNscalate-part-russias-nuclear-toolbox>; Speech by DIA Director, BGEN Robert P. Ashley Jr. <https://www.dia.mil/News/Speeches-and-Testimonies/Article-View/Article/1859890/russian-and-chinese-nuclear-modernization-trends/>; Comments by General Paul Selva, (2019), <https://seapowermagazine.org/u-s-must-add-low-yield-nuclear-arsenal/>; and statements made by Deputy SECDEF and VCJCS, (2015), <https://docs.house.gov/meetings/AS/AS00/20150625/103669/HHRG-114-AS00-Wstate-WorkR-20150625.pdf>

and resolve, thereby convincing adversaries to de-escalate the conflict by agreeing to terminate the war.

This strategy is somewhat counter-intuitive and puzzling, perhaps even paradoxical, given the unique destructiveness of nuclear weapons, the attendant risks of escalation accompanying their use, and the ever-lengthening tradition of their non-use in warfare - a tradition which has contributed at least somewhat to normative prohibitions against their use.¹⁷¹ Proponents of limited nuclear war, and especially proponents of escalate to de-escalate strategies, believe this risk and danger can be either managed successfully or used coercively to achieve political aims. Skeptics, on the other hand, expect nuclear war to quickly get out of control, at least by virtue of the costs exceeding potential political gains.¹⁷² Importantly, there is no way for us to know which side of this debate is correct as there are, thankfully, exactly zero instances of limited nuclear war between nuclear-armed countries. This means that if we are to assess this strategy, we must find other sources of relevant empirical data. The first major contribution of this essay is to provide this type of data by collecting and examining elite-level wargames and crisis simulations in which experts have grappled with the prospects of limited nuclear war. These wargames provide valuable empirical data from which we may assess the potential effectiveness of limited nuclear strikes and an E2DE strategy. Specifically, we may use these wargames to assess: *What are the coercive effects of these types of escalations? What are the coercive effects of a limited use of nuclear force?*

¹⁷¹ For a discussion on a tradition of non-use and the potential nuclear taboo, see: Paul, T. V. (2009). *The tradition of non-use of nuclear weapons*. Stanford, Calif.: Stanford Security Studies; and Tannenwald, N. (2007). *The nuclear taboo: The United States and the non-use of nuclear weapons since 1945*. Cambridge: Cambridge University Press. Literature questioning the taboo is also relevant, for example: Rebecca Davis Gibbons & Keir Lieber (2019), "How Durable is the Nuclear Weapons Taboo?" *Journal of Strategic Studies*, 42:1, 29-54

¹⁷² For a discussion of the historical debate between the proponents and skeptics, see: Cunningham, Fiona S., Fravel, M. Taylor (2019), "Dangerous Confidence? Chinese Views on Escalation", *International Security*, Vol. 44, No. 2, pp. 61-109.

To answer these questions, I conducted detailed examinations of available elite-level wargames and crisis simulations with nuclear-armed “players” and identified games and simulations in which escalate to de-escalate strategies have been attempted. The results of this investigation show that it is extremely rare that a strategy of escalate to de-escalate is effective in the way envisioned by proponents of the strategy. Escalation rarely leads to de-escalation and war termination. In fact, the exact opposite is true: escalation tends to beget counterattacks and further conflict escalation. There is also little reason to believe that nuclear weapons provide any unique coercive advantages.

The second major contribution of this essay is to sketch out a theory for why this is the case. The theory suggests that escalate to de-escalate strategies are unlikely to succeed for several reasons. Two of the most important are: first, the purpose of the use of force in these situations is often misperceived, insufficient, or missed altogether; and second, that compellent states assume the receiver will see the use of force as an indication of strength but instead the receiver sees the escalation as a sign of irresponsibility or the abandonment of caution or limitations.

This essay proceeds in six sections. The first section discusses the concept of “*Escalate to De-Escalate* (E2DE)” and its integral components *escalation* and *de-escalation*. The second section discusses theoretical explanations regarding why a strategy of E2DE may or may not succeed and presents this paper’s hypothesis. The third section discusses the merits and limitations of using wargaming and crisis simulation data in this investigation and gives a brief overview of the data used in this study. The fourth section presents a more detailed discussion of the wargaming data and provides evidence in support of the hypothesis presented in section two.

The fifth section briefly discusses supplemental information from the non-wargame (crisis simulation) data. The sixth section provides some concluding remarks.

2.3: Escalation, De-Escalation and the logic of “Escalate to De-Escalate”

Escalation

Escalation has long been recognized as a complicated concept with, as Richard Smoke wrote, “many meanings and many components” causing it to be “among the most complex of the ideas spawned by war.”¹⁷³ Bernard Brodie, an early nuclear theorist, referred to escalation as “the erosion or collapse of limitations.”¹⁷⁴ Others refer to escalation simply as the “expansion of military effort,”¹⁷⁵ and “the graduated increase of its scope and intensity.”¹⁷⁶ Herman Kahn described escalation as “the unpremeditated increase or spread of a limited operation.”¹⁷⁷ Morgan, et. al add the important concept of thresholds, defining escalation as “an increase in the intensity or scope of conflict that crosses threshold(s) considered significant by one or more of the participants.” Finally, Smoke defines escalation as “an action that crosses a saliency which defines the current limits of a war...”¹⁷⁸ Though specific definitions vary, an important common feature is that escalation is largely subjective. The location of current limitations, thresholds, or saliences, and the types of pressure being felt by either side are all likely to be understood differently by each party to a conflict.

¹⁷³ Smoke, R. (1977). *War: Controlling Escalation*, Harvard University Press.

¹⁷⁴ Brodie, B. (1966). *Escalation and the Nuclear Option*, Princeton University Press, p. 33.

¹⁷⁵ Mastro, O. S. (2018). “The Theory and Practice of War Termination: Assessing Patterns in China’s Historical Behavior”, *International Studies Review*, 60, 61-684.

¹⁷⁶ Osgood, R. E. (1979). *Limited war revisited*. Boulder, Colo.: Westview Press.

¹⁷⁷ Kahn, H. (1960), “On Thermonuclear War.” Princeton, N.J.: Princeton University Press. Later, he described each side taking “certain positive steps either to bring the other side to the bargaining table or to apply pressure during the negotiations.” This pressure sometimes increases and “this increasing pressure step by step is called ‘escalation’.” Khan, H. (1962). *Thinking About the Unthinkable*, Horizon Press, New York. p. 185.

¹⁷⁸ Smoke, R. (1977), p.35.

Escalation is generally understood from two different viewpoints.¹⁷⁹ The first is as an uncontrollable, *natural*, or *phenomenal* view that sees escalation as a natural, psychologically-driven phenomenon. Within this view, conflicts have an inherent tendency to rise in the levels or scope of violence. This tendency is a result of psychological factors such as a natural inclination or desire to not lose, a natural connection between an increase in the stakes of a conflict and the desire to win, connections between the length of conflict and the tendency to escalate, and the influence of emotion. The second view, which can be thought of as actor or decision-based, sees escalation as controllable and deliberate, wherein escalation or de-escalation occurs because of decisions made by people to do one or the other (or by decisions that accidentally or inadvertently cause one or the other, but nevertheless are deliberate actions).

Since escalate to de-escalate is a consciously chosen action, it is explicitly one in which the actor or decision-making view is operative.¹⁸⁰ Within the actor view there are three different mechanisms or pathways for escalation to follow.¹⁸¹ These are *deliberate*; *inadvertent*; and *accidental* paths of escalation. I bracket inadvertent and accidental escalation and focus on cases in which escalation is of the deliberate type.¹⁸² Deliberate escalation is action such that the actor is *intentionally* crossing a threshold and the decision recognizes the action as escalatory. The E2DE concept is concerned with this type of *deliberate* escalation. Furthermore, the actions that

¹⁷⁹ Smoke, R. (1977), p. 21.

¹⁸⁰ For the purposes of this project, there are no theoretically relevant distinctions to be made within the natural or phenomenal view of escalation. This is not to say that there are not interesting aspects to thinking about escalation in this way, and indeed some, for example George Smoke, argue it is necessary to think about it through both phenomenal and actor image views. The strategy of escalate to de-escalate, however, is a purposeful, decision-based strategy and as such the important distinctions are located within this view.

¹⁸¹ Morgan, Forrest E., Karl P. Mueller, Evan S. Medeiros, Kevin L. Pollpeter, and Roger Cliff, *Dangerous Thresholds: Managing Escalation in the 21st Century*, Santa Monica, Calif.: RAND Corporation, MG-614-AF, 2008. <https://www.rand.org/pubs/monographs/MG614.html>. The following discussion of deliberate escalation is drawn heavily from the work in this book.

¹⁸² Of course, inadvertent or accidental escalation may occur during any crisis or conflict and could further complicate efforts at E2DE or other deliberate strategies. However, in assessing the effectiveness of E2DE, it is necessary to focus on the deliberate escalatory actions and their consequences.

constitute deliberate escalation may be motivated by different reasons. These differing motivations may be divided into two categories, which Morgan et. al refer to as instrumental or suggestive motivations.¹⁸³ Alternatively, these may be referred to as materially focused, or signaling focused motivations, respectively. When deliberate escalation is performed for instrumental/material purposes, the action is taken primarily for the anticipated material or physical gains that may be achieved. *When deliberate escalation is performed for suggestive/signaling purposes, the action is taken primarily to send a signal to the other side.* This signal is usually meant to portray increased commitment, resolve, capability, or some combination of these. It is not meant to defeat the enemy, or even change the military balance in any significant way, but rather to convince the other side to *choose* to change their behavior.¹⁸⁴ Of course, it is possible that the action also achieves some material gains, but this is not the primary purpose of such a move.

Deliberate escalation may also take one of several forms. Morgan, et. al refer to these as *dimensions* of escalation, which are identified as vertical, horizontal, or political escalation.¹⁸⁵ Vertical escalation refers to an increase in the levels or intensity of the conflict. This includes an increase in the number of troops committed, the intensity, frequency, quantity, or size of attacks, an increase or raising of the objectives of the conflict, or a shift to more destructive weapons

¹⁸³ Morgan, Forrest E., Karl P. Mueller, Evan S. Medeiros, Kevin L. Pollpeter, and Roger Cliff, *Dangerous Thresholds: Managing Escalation in the 21st Century*, Santa Monica, Calif.: RAND Corporation, MG-614-AF, 2008. <https://www.rand.org/pubs/monographs/MG614.html>

¹⁸⁴ An example of this type of escalation would be the destruction of an urban/industrial target, such as an important, historic city or population center when the conflict had previously been confined to attacks on purely military targets only. Though the attack does not significantly change the military balance of power in favor of the attacker, it sends a signal to the other side that their cities are now considered fair game.

¹⁸⁵ To this, H. Lin adds a potential fourth dimension, which he labels *catalytic* escalation. Lin, H. (2012), Escalation Dynamics and Conflict Termination in Cyberspace. *Strategic Studies Quarterly*, 6(3), 46-70. Catalytic escalation refers to a situation where a third party purposefully takes an action that results in a conflict between two or more other parties. Again, this form of escalation is difficult to disentangle from the motivation driving it, as well as the mechanism through which it occurs.

(conventional weapons to WMD), and expansion of targets (i.e. from small, military-only to larger and non-military targets).¹⁸⁶ Horizontal escalation refers to an increase in the geographic area of the conflict or the increase in the number of countries or belligerents involved. The opening of a new theater of operations to divert enemy forces or the forming of new alliances are examples of horizontal escalation.¹⁸⁷ Political escalation refers to escalations connected to the crossing of normative or traditional thresholds. Examples might be purposefully easing restrictions on targeting civilians or easing policies meant to limit collateral damage; causing deliberate environmental damage such as polluting water supplies; assassinating important leaders; and other normative violations.¹⁸⁸

In this essay escalation refers to *deliberate escalations meant primarily for suggestive/signaling purposes and is classified as either vertical, horizontal, or both.*

De-Escalation

De-Escalation is the decrease in the scope or intensity of conflict. At the extreme it could bring about an immediate end to the fighting. This could take the form of complete surrender, cease-fire, truce, negotiated settlement or any other formalized stop to the fighting. Second, it might simply mean a reduction, but not an end, to the violence, perhaps by convincing the enemy to stop using a certain type of attack (air, chemical, biological, mines, etc...), or by convincing

¹⁸⁶ An example of such escalation would be the shift from the use of ground troops along a contested border region (such as the Line of Control in Kashmir) only, to air strikes on military targets in the homelands of either state (India or Pakistan in this case).

¹⁸⁷ As a specific example, horizontal escalation might occur in a hypothetical war between China/North Korea and US/ROK confined to the Korean Peninsula, if the US were to decide to launch interdiction strikes into mainland China.

¹⁸⁸ Though described as a type or dimension of escalation by Morgan, et. al it is difficult to identify this type of escalation from the signaling or suggestive motivation behind it. It is important, however, to understand that escalation can occur in ways that don't neatly line up with simply destroying more targets or opening new theaters.

the enemy to stop fighting in one theater but not others. Third, it might refer to the gaining of concessions or the acquiescing of the other side to certain demands, even if the conflict continues at a lower level. Within the logic of E2DE, however, it is clear that what leaders and scholars have in mind is an expectation of war termination on terms favorable to the escalating side.¹⁸⁹ As will be described below, de-escalation will be measured on two dimensions in this project. Does the action achieve war termination? And on what terms does the conflict end (did they achieve their objectives)? *De-escalation, then, implies war termination on terms set by the escalating state, no counterattacks, and no further increase in scope or intensity of fighting.* The escalating state may not achieve all their *original* objectives, but they may prevent further losses or potentially consolidate gains already made. This is indeed a high and difficult bar to achieve, but it is clear in the logic behind such a strategy that it is what decision-makers would hope to accomplish, particularly in the case of employing nuclear weapons.¹⁹⁰

Escalate to De-escalate

Within an E2DE attempt, escalation is a *deliberate* action taken primarily for the purpose of ending the conflict without any further increase in the intensity or level of fighting. The strategy aims to achieve de-escalation by *signaling* capability, commitment and resolve. The

¹⁸⁹ This understanding is further validated in my additional interview-based work, in which I ask senior U.S. defense officials and other members of the U.S. Strategic Community how they understand de-escalation in this context.

¹⁹⁰ Though it is possible that a state attempts an E2DE strategy with the goal of getting the other side simply to reduce its war aims or to deter the adversary from expanding original aims, this is generally not what is implied by this strategy. For example, in the Russo-Ukrainian conflict, if Ukraine were to attempt to escalate to de-escalate, the goal would be to stop the fighting at whatever level they demand, for example, with separatist regions in the Donbas under Russian control but all other Russian forces removed from the state. It would not be a success, nor would Ukraine ask for such, if Russia agreed not to take Kyiv, but continued killing and destroying cities in the South and East of Ukraine. Deterring expansion of, or even forcing a contraction of, Russian war aims is different than escalating to successful war termination.

strategy does not rely on instrumental purposes, such as the degradation of enemy forces to the point they can no longer resist, but on psychological responses wherein the other side comes to see the conflict as too costly to continue at the new potential level of violence. The critical distinction is that in E2DE, actors are making *deliberate* decisions to escalate, not to win or to completely disable or defeat the enemy, but rather to send a signal and convince the adversary to decide to end the conflict. At the same time, E2DE is also meant to suggest that the escalating state could do more if the escalating state chose. It's meant to be *both bold and restrained* and attempts to find a middle ground between intimidation and assurance. E2DE as such is a *compellent* strategy that hopes to gain coercive leverage by *actually* taking bold, escalatory action.¹⁹¹

Much of contemporary E2DE discussion is rooted in an assertion by experts that E2DE is an accurate interpretation of Russian strategy. The 2018 version of the United States' Nuclear Posture Review, for example, states that "Russian strategy and doctrine emphasize the potential coercive and military uses of nuclear weapons. It mistakenly assesses that the threat of nuclear escalation or actual first use of nuclear weapons would serve to "de-escalate" a conflict on terms favorable to Russia."¹⁹² Katarzyna Zysk, a Senior Fellow at the Atlantic Council, has argued that this assessment is essentially correct, arguing that "Russia reserves an option of a limited nuclear

¹⁹¹ Compellence "utilizes force – or threats of force – to propel a target to take an action, or to stop taking an action it has already started", Alexander Downes, (2018). "Step Aside or Face the Consequences: Explaining the Success and Failure of Compellent Threats to Remove Foreign Leaders," in *Coercion: The Power to Hurt in International Politics*, ed. Greenhill and Krause, 96. For the classic work on compellence as a form of coercion, see Schelling, T. C. (2008 ed., original 1966), *Arms and Influence*. New Haven. Yale University Press. More discussion on compellence follows in section III.

¹⁹² US Nuclear Posture Review (2018), Department of Defense <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF> The 2022 National Defense Strategy and NPR also express this concern, stating "Russia presents the most acute example of this problem today given its significantly larger stockpile of regional nuclear systems and the possibility it would use these forces to try to win a war on its periphery or avoid defeat if it was in danger of losing a conventional war." (p. 5 of NPR)

use at a scale that would aim to avoid escalation in order to compel the adversary to refrain from further action and back off. As authoritative Russian experts acknowledge, this basic logic is widely accepted in Russia.”¹⁹³ The primary objective of nuclear use, she continues, would be political: “The concept aims therefore to highlight ‘the asymmetry of interests’ and manipulate the enemy’s perception of risk and cost to the point where it is no longer willing to bear them and would accept the political terms of capitulation ending the conflict.” Others echo this understanding, including Eldridge Colby who describes the strategy as “an attempt to escalate to the use of nuclear weapons in the midst of a (presumably failing) conventional conflict in order to spook the (again, presumably conventionally superior) opponent to back down and concede.”¹⁹⁴ Kevin Ryan, of Harvard’s Belfer Center, writes simply: “Russia does plan for using nuclear strikes to deescalate (that is, to end) and win conflicts. So does the United States.”¹⁹⁵

Others, however, disagree with this assessment of Russian strategy. These arguments typically acknowledge Russian willingness to use nuclear weapons in a limited fashion under certain circumstances but characterize E2DE as too simple an interpretation, incomplete, or inaccurate.¹⁹⁶ Instead, Russian plans to use nuclear weapons should be considered as part of a

¹⁹³ Zysk, Katarzyna (2018): Escalation and Nuclear Weapons in Russia’s Military Strategy, *The RUSI Journal*, pp. 1 – 12. DOI: 10.1080/03071847.2018.1469267. Furthermore, the underlying assumption of this logic is that “fear of further escalation to a massive nuclear exchange would dissuade adversaries from deploying their own nuclear forces and therefore force them to back off.” pp. 2-3.

¹⁹⁴ Colby, E. (2016), “Prevailing in Limited War”, Center for a New American Security, <https://www.hsdl.org/?abstract&did=795108>

¹⁹⁵ Ryan, Kevin, 2020, “Is ‘Escalate to De-Escalate’ part of Russia’s Nuclear Toolbox?”, <https://www.russiamatters.org/analysis/escalate-deeNscalate-part-russias-nuclear-toolbox>. Additionally, he argues that “In the end, although the phrase ‘escalate to de-escalate’ is not used in openly published Russian doctrine, the Russian professional articles above and others make clear that using nuclear weapons to deescalate a conflict is most definitely part of Russia’s nuclear toolbox.”

¹⁹⁶ Jonson, David (2018), *Russia’s Conventional Precision Strike Capabilities, Regional Crises, and Nuclear Thresholds*, Livermore Papers on Global Security No. 3 Lawrence Livermore National Laboratory Center for Global Security Research, <https://cgsc.llnl.gov/content/assets/docs/Precision-Strike-Capabilities-report-v3-7.pdf>; Kristin Ven Bruusgaard (2020): “Russian nuclear strategy and conventional inferiority”, *Journal of Strategic Studies*, 44 (1); Ross, Jay (2018): “Time to terminate ‘Escalate to De-Escalate’ – It’s Escalation Control”, <https://warontherocks.com/2018/04/time-to-terminate-escalate-to-de-escalateits-escalation-control/>

broader strategic deterrence, counter-escalation, and warfighting strategy.¹⁹⁷ For example, Kofman and Fink argue “The simplistic view characterizing Russian strategy as ‘escalate to de-escalate’ or ‘escalate to win’ is not correct, but neither are the commonly voiced counterarguments that suggest no Russian strategy for limited nuclear use exists, or that it was simply a stopgap measure born out of conventional inferiority.”¹⁹⁸ In their view, Russian strategy is best considered an “escalation management” strategy that includes the ability to achieve de-escalation at certain key points in a conflict. An important aspect of these debates is the differing assessments of what circumstances would cause Russia to go nuclear, and whether this would be done in the service of coercive, aggressive behaviors or merely in self-defense.

Importantly, there is no reason to assume that escalate to de-escalate strategies are exclusive to Russia. Indeed, NATO strategy for much of the Cold War was exactly this strategy.¹⁹⁹ Scholars have hinted at the potential for other states to employ E2DE strategies, whether by conventional or nuclear means, for example, in a potential U.S. – China conflict,²⁰⁰ or in a conflict between North Korea and a U.S.-South Korean alliance.²⁰¹ For this reason, this project aims to explore the merits of an E2DE strategy itself and brackets the discussions surrounding who may or may not have such a strategy. As the above discussion makes clear, the concept itself is prevalent in academic and policy circles and is worthy of attention.

¹⁹⁷ Johnson, D. (2018), p. 67.

¹⁹⁸ Kofman, M. and Fink, A. L. (2020), “Escalation Management and Nuclear Employment in Russian Military Strategy”, <https://warontherocks.com/2020/06/escalation-management-and-nuclear-employment-in-russian-military-strategy/>

¹⁹⁹ Legge, J. Michael, (1983).

²⁰⁰ For mention of E2DE and China, see Cunningham, Fiona S., Fravel, M. Taylor (2019), “Dangerous Confidence? Chinese Views on Escalation”, *International Security*, Vol. 44, No. 2, pp. 61-109

²⁰¹ Ochamane, David A. and Schwartz, Lowell H., *The Challenge of Nuclear-Armed Regional Adversaries*, Santa Monica, Calif.: RAND Corporation, MG-671, 2008. <https://www.rand.org/pubs/monographs/MG671.html>

2.4: Theoretical Intuitions and Hypothesis:

In this section I sketch out a theory that explains the conditions under which E2DE may or may not succeed. I begin by discussing the concept generally (in a non-nuclear context) and then address the unique effects that nuclear weapons may have on the coercive success of E2DE. I then state the hypothesis.

This essay theorizes that E2DE strategies are unlikely to succeed in achieving war termination. The root of the explanation for high rates of failure is in understanding potential escalation outcomes among the receiving side. E2DE has the potential to achieve two broad countervailing reactions among decision-makers of the receiving side: Increased *Coercive Advantages* (*exerted against but awarded by the receiver for the benefit of the attacker*) or an impetus to *continued resistance* (*exerted by the receiver and then born by the attacker*). The receiving side must either choose to award a coercive “win” for the attacker or punish the attacker through continued (perhaps increased) resistance. In short, the incentives for imposing belligerence costs in the form of continued resistance or counter-escalation will most often outweigh the incentives to award a coercive advantage to the attacker.

Coercive Advantages:

Escalate to de-escalate may achieve *coercive advantages* in several ways. These include: by instilling fear and uncertainty amongst the receiving side leadership (or citizenry); by

increasing risk perceptions; by conveying new information to the receiving side; by adding a level of credibility not achievable through a threat alone; or by demonstrating resolve, commitment and capability more effectively. Additionally, achieving coercive advantages requires simultaneously demonstrating a certain level of restraint. In sum, if the attacker accurately conveys increased resolve, commitment, credibility, and capability as well as presents higher risks of further losses, while at the same time demonstrates the appropriate amount of restraint, the receiver may decide to concede. In this case the receiver would calculate that the price of further fighting over the current limited aims is too high, *and* that giving in now does not set them up to have to give more in the future.

First, escalation is likely to instill at least some level of fear and uncertainty amongst the receiving side leadership as well as the citizens of the receiving state. Feelings of fear are generally expected to reduce the risk tolerance of those experiencing this emotion.²⁰² Crucially, the foundation of potential success for E2DE is to use an escalatory attack to affect an increased level of fear, thereby making decision-makers more hesitant to accept the risks of continuing the fight. For example, leaders may fear continued and uncontrollable escalation or citizens might fear the same and pressure leaders to end the war. Additionally, it is generally accepted that as the intensity of a conflict increases, the chances for miscommunication, misperception, and accident increase. The heightened levels of uncertainty may serve to increase levels of fear and may convince the receiving side to concede the limited objectives now in order to avoid the risk of having suffer or concede more in the future.

²⁰² Lerner, J. S. & Keltner, D. (2001) Fear, anger, and risk. *Journal of personality and social psychology*. [Online] 81 (1), 146–159; Wake S, Wormwood J, Satpute AB. The influence of fear on risk taking: a meta-analysis. *Cognition and Emotion*, 2020 Sep; 34(6): 1143-1159, <https://pubmed.ncbi.nlm.nih.gov/32116122/>.

A second reason for success is that *actually* crossing a significant threshold, such as the nuclear one, can *drastically and immediately* increase the risk of more damage to come. The logic of E2DE relies on actually taking an aggressive, escalatory action, rather than merely threatening such action. As Schelling wrote in *Strategy and Conflict*, we can interpret enlargements, or threats of enlargement of conflict as meant to increase the risk of still larger war.²⁰³ As he explained, “It is the threat of damage, or of more damage to come, that can make someone yield or comply. It is *latent* violence that can influence someone’s choice- violence that can still be withheld or inflicted or that a victim believes can be withheld or inflicted.”²⁰⁴ Escalating to de-escalate is largely based on this idea and it is why many believe possessing nuclear weapons yields a coercive advantage.²⁰⁵ It is not the physical or material effects of the attack alone that matter, but also the risk of further escalation. Success hinges on convincing decision makers on the other side to quit by increasing the risk of escalation beyond a level that the receiver is comfortable with. As Reiter suggests in his book *How Wars End*, “a belligerent is more likely to make concessions if it believes that the costs of war promise to escalate significantly, and/or if the likelihood of combat success promises to drop significantly.”²⁰⁶ If the adversary can be convinced that they are more likely to lose, or that it will cost too much to win they may give in.

A third potential path to achieving coercive advantages is that it might convey new information to the adversary. Communication is critically important in compellence. As Tami Biddle points out, “to compel successfully, a coercer must convey specific information to the

²⁰³ Schelling, T. (1963). *The strategy of conflict*. Oxford University Press, p. 192.

²⁰⁴ Schelling, T. C. (2008 ed., original 1966), *Arms and Influence*. New Haven. Yale University Press, p. 3.

²⁰⁵ See for example, Kroenig, M. (2018) *The logic of American nuclear strategy: why strategic superiority matters*. New York, NY: Oxford University Press.

²⁰⁶ Reiter, D. (2009). *How Wars End*. Princeton: Princeton University Press, p. 18.

actor being coerced.”²⁰⁷ Escalating may either surprise, shock, or otherwise provide the receiving side with new information about the resolve and commitment of the escalating state that changes the cost-benefit calculations of decision makers on the receiving side. One example which supports this possibility comes from a report by Paul Davis prepared for the Office of the Secretary of Defense in which he used a computer modeling tool, the Rand Strategy Assessment System (RSAS), to explore the potential success of NATO’s flexible response strategy.²⁰⁸ The study found that, “for the limited range of simulations I conducted, this particular ‘Ivan’ [RED agent] quit under one principal circumstance: when NATO initiated first use immediately, indeed on or about D-Day. *Ivan’s reasoning was, essentially, that he had completely miscalculated, that the sides were now on the threshold of general nuclear war, and - importantly - that the die was not completely cast...*”²⁰⁹ As demonstrated here, if by providing new information, the attacking state drastically alters the receiver’s understanding of the nature of the conflict, the stakes, the attacker’s intent, or capabilities it might convince the receiver to back off.

A fourth reason for potential success of E2DE is that an actual escalation may add a level of credibility that no amount of posturing may lend to a mere threat. Slantchev, in his 2011 book on military threats, argues that for coercion to work, threats cannot be “token” in character.²¹⁰ He

²⁰⁷ Biddle, Tami D. (2020). “Coercion Theory: A Basic Introduction for Practitioners”, *Texas National Security Review*, Vol. 3, Issue 2, <http://dx.doi.org/10.26153/tsw/8864>. This includes information about what you want them to do or stop doing, and the ability to credibly promise to stop the pain if and when they comply.

²⁰⁸ Davis, Paul K. (1989). Some Lessons Learned from Building Red Agents in the RAND Strategy Assessment System (RSAS), RAND Corporation, N-3003-OSD. <https://www.rand.org/pubs/notes/N3003.html>. Davis found that from approximately 30 simulations, few resulted in war termination following a nuclear escalation by “Sam”, the agent representing NATO.

²⁰⁹ Davis, Paul K. (1989), p. 8. Emphasis added. Of note, the Red agents were built to be “opportunistic, but also rational and even pragmatic. Indeed, he would not even consider invading Europe if he really *believed* that NATO would use nuclear weapons”, p. 6. However, when the nuclear use did not occur almost immediately, “Ivan” did not quit after Sam’s first use of nuclear weapons. In these other cases, which were the majority of simulations conducted, “Ivan” either A. Conducted a broad, but limited, nuclear attack that resulted in intercontinental nuclear war; B. responded in kind with nuclear weapons at a tactical level; or C. “swallowed” the nuclear attack and pressed on with the conventional attack.

²¹⁰ Slantchev, B., (2011). *Military threats: the costs of coercion and the price of peace*. Cambridge University Press.

concludes, “one cannot succeed with military coercion on the cheap”²¹¹ In order to succeed, states may have to mobilize overkill capability compared to the issues at stake. “Shooting flies with an elephant gun may well be the prudent thing for them to do.”²¹² It is possible then, particularly with nuclear attacks, that E2DE can work by removing any notion of a “token” threat and giving the other side no doubt about how far you are willing to go in support of your aims. Nuclear weapons, after all, would seem to be the best “elephant gun” a state can buy.²¹³

Lastly, and partially because of or in combination with some of the above factors, states have long been theorized to gain coercive advantages if the decision-makers involved are deemed highly *committed and resolved*. Actually attacking, particularly through an action that is clearly and deliberately escalatory, may result in a perception of commitment and resolve that was absent before. Escalating comes with sunk costs and reputational concerns for those who have taken this step.²¹⁴ Receiving-side leadership may be convinced that since the attacker has crossed the line, they are committed to seeing the conflict through to the end. If the other side believes that you will do what you say because you have already done something severe and costly, the odds are higher they may give in to your demands.

If escalating in just the right way can accomplish any or all of these things, we can expect E2DE attempts to have a high probability of success. In the following analysis, evidence in favor of these explanations for E2DE success would be found in receiving teams choosing to de-escalate in response, as reflected in their next team move, and discussing their increased fear of

²¹¹ Slantchev, B., (2011), p. 256. While he is talking here about threats in crises and not during wars, and about threats specifically and not actual attacks (the model ends when the sides actually go to war), an analogy may be made to situations where war has already begun and it is escalatory attacks being used to coerce.

²¹² Slantchev, B., (2011), p. 5.

²¹³ Relatedly, on nuclear weapons as “overkill,” see Rosenberg, D. A., (1983). The Origins of Overkill: Nuclear Weapons and American Strategy, 1945-1960. *International Security*, 7(4), 3–71. <https://doi.org/10.2307/2626731>

²¹⁴ Fearon, J. D. (1997). Signaling Foreign Policy Interests: Tying Hands versus Sinking Costs. *Journal of Conflict Resolution*, 41(1), 68–90. <https://doi.org/10.1177/0022002797041001004>

escalation, their new cost/benefit calculations, and/or their new assessment of the opposing teams resolve/determination. Players would choose to de-escalate because the attacker has successfully signaled their superior commitment, strength, and resolve, as well as their responsibility and restraint.

Importantly, however, for escalation to result in war termination the receiving side must also believe that by giving in now they are not setting themselves up for further blackmail or demands in the future. The inability of states to credibly commit not to take advantage of greater relative power in the future is an enduring feature of the international system which has been addressed by numerous scholars.²¹⁵ As Biddle noted, “the enemy must believe that the coercer will actually stop the pain if the target state concedes the stake. The promise to cease coercion if the enemy gives in must be believed...”²¹⁶ This, among other concerns gives rise to numerous reasons why escalating to de-escalate may not be successful.

Continued Resistance:

Rather than gaining coercive advantages, escalation may result in the receiving state imposing *belligerence costs in the form of continued (perhaps increased) resistance* on the attacker. In an E2DE attempt the escalating state has deliberately crossed a significant threshold. Potentially, as is usually assumed in discussions surrounding E2DE, they may have even crossed the nuclear threshold. The attacker has taken this action to compel the other side to concede to war termination on the attacker’s terms. Compellence, however, is widely regarded as the more

²¹⁵ See, for example: Fearon, J. (1998). Bargaining, Enforcement, and International Cooperation. *International Organization*, 52(2), 269-305. doi:10.1162/002081898753162820

²¹⁶ Biddle, Tami D. (2020)

difficult form of coercion and several studies have found that it is often unsuccessful, even when the coercing state possesses nuclear weapons.²¹⁷ For example, Art and Greenhill find that coercive diplomacy (that is compellence in situations short of war) has a success rate range between 33 and 41 percent, while wartime compellence has a success rate of 36 to 40 percent.²¹⁸ E2DE does not solve any of the challenges to successful compellence. There are several reasons for this, including: the public nature of the attempt; multiple forms of misperception or signaling failure; the potential impact of important norm violations; increased feelings of anger rather than fear; and the heightened stakes after escalation.

First, E2DE is likely to be a public and observable compellent strategy (especially in a nuclear setting) and giving in to a compellent demand comes with higher reputational costs than does refraining from taking a certain action.²¹⁹ This exacerbates worries over reputation, precedent setting and future vulnerability. Highly visible or salient escalations followed by threats to continue if one doesn't comply are difficult to convincingly pair with promises and assurances against future coercion. Within the logic of E2DE, these commitment problems are front and center. The strategy attempts to strike this very balance, and the receiving state is

²¹⁷ See, for example, Downes, A. (2018) "Step Aside or Face the Consequences, p. 97; Sechser, T. S., & Fuhrmann, M. (2017) *Nuclear weapons and coercive diplomacy*. Cambridge, United Kingdom: Cambridge University Press; and Schelling, T. C. (1966). *Arms and Influence*, New Haven: Yale University Press; Huth, P., and Russett, B., (1984). "What Makes Deterrence Work? Cases from 1900 to 1980". *World Politics*, 36(4), 496–526; and Jervis, R. (1984). *The Illogic of American Nuclear Strategy*, Ithaca, NY: Cornell University Press; and Byman, & Waxman, M. C. (2002). *The dynamics of coercion: American foreign policy and the limits of military might*. Cambridge University Press; and Art, R. J. & Greenhill, K. M. (2018). The Power and Limits of Compellence: A Research Note: Power and Limits of Compellence. *Political Science Quarterly*, 133(1), 77–97. <https://doi.org/10.1002/polq.12738>; Art, Robert J. (1980). To What Ends Military Power? *International Security*, 4(4), 3–35.

²¹⁸ Art, R. J. & Greenhill, K. M. (2018), pp. 82-83. Six explanations have been identified by Art and Greenhill, which are: compellence requires a degree of public humiliation and reputational costs; defenders tend to be more resolved and therefore harder to compel; there are relative power costs to giving in; commitment problems; in the U.S. case, the manner in which they execute threats (casualty aversion); and finally, again for the U.S., they ask for more than states are willing to give, pp. 83-84.

²¹⁹ "If they are to be successful, compellent actions require a state to alter its behavior in a manner quite visible to all in response to an equally visible forceful initiative taken by another state." Art, Robert J. (1980), p. 10.

required to accept these promises in a public manner (by observably giving in). The nature of the strategy, especially when relying on a visible and bold escalatory action and demand, makes the concession of the receiver all the more visible to others and all the more worrisome to leaders who must consider the potential for future coercion. Especially amongst nuclear states, and even more so with the actual use of nuclear weapons, there is little likelihood that the attacker will be able to keep this event on the “back burner” and thereby preserve opportunities for leaders to save face when giving in, while simultaneously imposing the desired level of coercive pressure.²²⁰ When the strategy involves bold, highly visible action it will put the receiving side in a position where reputational and precedent setting concerns are highly relevant.

Second, the receiving state may not get the intended signal, or may misinterpret, misunderstand, mistrust, or otherwise misperceive the intended signal. In order for the receiving state to understand the purpose of the compellent action it must accurately assess the motives of the state conducting said action.²²¹ Communication and the clarity of messaging is absolutely critical. However, the words and actions of states may not be trusted or relied upon to determine motives thanks to the ever-present possibility of bluffing, misdirection, miscommunication, and other forms of deception. This is especially true if the conflict has already risen to the level of armed conflict and trust is in short supply. This sort of misperception has long been identified as a problem in international relations.²²² The receiving state may misinterpret the intended signal

²²⁰ For the desirability of keeping conflict and confrontation secret as a method of controlling escalation see: Carson, A. (2018). *Secret Wars: Covert Conflict in International Politics*. Princeton University Press. <https://doi.org/10.2307/j.ctv346p45>.

²²¹ Biddle explains that “The target state must be convinced that if it resists it will suffer, but if it concedes it will not. If it suffers either way, or if it has already suffered all it can, then it will not concede and coercion will fail.” The “coercer must be sure that language and actions are aligned, clear, and suitably tailored to create the behavior being sought. If miscommunication occurs in any of these realms — due to carelessness, mixed messaging from different groups within the coercing state, or cultural obtuseness — then coercion is likely to fail.” Biddle, T. D. (2020).

²²² Jervis, R., (1976). *Perception and Misperception*, Princeton University Press, New Jersey.

of restrained resolve as simply an expansion of war aims or a disregard or abandonment of existing agreed upon or self-imposed, explicit or implicit, limitations.

Additionally, if the escalation violates an important norm, for example, the non-use of nuclear weapons, or the targeting of civilians, this effect may be amplified. The receiving side may now view the attacking state as aggressive, uncontrollable, unrestricted, or simply as an untrustworthy norm/rule breaker. Decision-makers on the receiving side are likely to be more risk acceptant in this situation, willing to take more risk to resist and prevent further losses.²²³ They will be incentivized to make a strong stand in the face of coercion, even if it may cost more in the short run. Moreover, if the attack makes the receiving side angry, we would expect decision-makers to be more risk acceptant and also potentially vengeful in their response.²²⁴ Crossing important escalatory thresholds certainly comes with an increased risk of angering the other side. This effect may nullify or dominate the presence of fear and thereby make E2DE attempts less successful.

A third reason E2DE may result in continued resistance is that the attempt will heighten the perceived stakes. In addition to the original stakes of the conflict, once a “red line” has been crossed (particularly the nuclear threshold) the stakes may increase dramatically. This, again, exacerbates concerns over precedent and reputation. What was originally at stake may no longer be the dominant concern. Instead, it may be the future of the nuclear normative order and the potential future security of each of the nuclear states that is at stake. As Sechser noted, “Even when a challenger's threats are completely credible, the balance of capabilities is publicly known,

²²³ Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, 47(2), 263–291. <https://doi.org/10.2307/1914185>

²²⁴ Lerner, J. S. & Kelmer, D. (2001) Fear, anger, and risk. *Journal of personality and social psychology*. [Online] 81 (1), 146–159; McDermott, R and Hatemi, P. (2020). Revenge is a dish best served nuclear. US deterrence depends on it, Bulletin of Atomic Scientists, <https://thebulletin.org/2020/12/revenge-is-a-dish-best-served-nuclear-us-deterrence-depends-on-it/>

and settlements are enforceable, fears about a challenger's future intentions can motivate rational targets to fight losing wars to deter further aggression.”²²⁵ The crossing of red lines amongst nuclear states may also increase the likelihood of other nuclear armed powers getting involved in the conflict because they too have a stake in the future utility of nuclear weapons as deterrents. Additionally, states who enter into conflict with nuclear armed adversaries may have already decided they are willing to absorb this type of attack because they are aware ahead of time of entering into a conflict with a powerful nuclear-armed state.²²⁶ Escalations that were expected, or “priced in” ahead of time will likely fail to trigger any of the aforementioned mechanisms of enhancing coercive advantages.²²⁷ Finally, the fact that by definition the escalatory attack did little to change the actual balance of forces or material situation means the receiving side will retain the capability to respond. If the receiver always knew it was possible to be attacked in this way, then the escalation itself does little to change cost-benefit calculations among the receiving side.

Evidence in support of these explanations for E2DE failure would be seen in teams choosing to continue to fight or counter-escalate in response; and player discussions and game reports/summaries focusing on precedent setting concerns, misperceptions, and the increased or existing high stakes. Rather than seeing these escalations as demonstrations of strength, resolve, commitment and credibility, players may instead see the attacks as irresponsible, aggressive, expansive and a sign of worse to come.

²²⁵ Sechser, T. S. (2010), p. 629.

²²⁶ This was suggested to be the case in Vietnam, for example, Gurantz argues that “Most historians of the Vietnam War recognize that the Vietnamese Communists were willing to accept massive destruction of their country in pursuit of national unification under their control” p. 269. Gurantz, R. (2021). Was Airpower “Misapplied” in the Vietnam War? Reassessing Signaling in Operation Rolling Thunder. *Security Studies*, 30(2), 245–270. Cite Reid’s forthcoming work on this...?

²²⁷ Pauly, Reid, “Re-establishing Deterrence”, Working Paper (2015).

In sum, escalations of the type envisioned as part of an E2DE strategy will most likely inspire continued resistance. I suggest that this is true regardless of the weapons used in the attack. Deliberate escalations that cross important boundaries and which are meant primarily as signals to the other side will fail to achieve desired results due to the incentives created by reputational and precedent setting concerns, the heightened chances for misperception, and the increased stakes created by E2DE attempts. These will dominate the potential coercive advantages and E2DE attempts will rarely result in de-escalation.

The unique impact of nuclear weapons in E2DE:

Proponents of E2DE strategies expect nuclear attacks to increase the likelihood of coercive advantages because these weapons generate and heighten fear, increase the risk of escalation, and are the ultimate signal of strength, resolve, commitment, capability, and if used sparingly, restraint. However, as outlined below, it is more likely that nuclear weapons usage will not achieve any unique coercive advantages for the escalating state and instead may further incentivize continued resistance. There are several reasons for this.

First, E2DE may fail more often in a nuclear setting because a limited nuclear attack against a nuclear armed adversary will aggravate the important factors noted by Art and Greenhill which make compellence difficult, which are: compellence requires a degree of public humiliation and reputational costs; defenders tend to be more resolved and therefore harder to compel; there are relative power costs to giving in; commitment problems; in the U.S. case, the manner in which they execute threats (casualty aversion); and finally, again for the U.S., they ask for more than states are willing to give. Because the stated purpose of nuclear weapons is to deter

nuclear attack on oneself, when a nuclear state gives in to a limited nuclear attack the entire purpose of its nuclear deterrent has been negated. Nuclear states put their credibility on the line when they frequently talk about their nuclear deterrent and its purpose within their defense strategies. Giving in to a nuclear attack, then, increases the reputational costs. Nuclear use also aggravates worries over commitment problems because the other side has taken such a drastic step which raises concerns about what they might be willing to do in the future. Nuclear use may affect relative power dynamics more sharply in that giving in to such attacks weakens one's own nuclear deterrent position. Lastly, nuclear use may make the receiving state believe more is being asked of it because it is no longer only about the limited stakes of the conflict, but the state may feel as though it is being asked to give up, in effect, its own nuclear deterrent.

Secondly, escalating with nuclear weapons may not achieve any coercive advantages (but may not make things worse) if players are making decisions based on the *effects* of the attacks rather than the *means* by which they are perpetrated. In this case, it would be the fact of escalation itself that encourages continued resistance, and the outcome of attempting to escalate one's way to war termination may not be sensitive to weapon type. Nuclear weapons, however, are likely to have further negative effects as violating the important norm of nuclear non-use may trigger stronger reactions than violating other norms of armed conflict. This would be the case because these other norms are routinely violated and are not as black and white as nuclear use. States can apologize for "accidentally" killing civilians, for example, and claim they prioritize limiting collateral damage through strict rules of engagement. Ultimately, there is room to spin the story and deflect negative reactions. There will be no such room to spin an attack with nuclear weapons. States will not be able to credibly claim an accidental nuclear explosion on an

enemy target.²²⁸ So, the rarity, visibility and distinctiveness of a nuclear attack will make the violation of the norm more significant and in the direction of causing the receiving state to be more untrusting and skeptical of the intentions of the norm-breaking attacker.

Third, nuclear weapons cause effects that other types of weapons do not cause, such as radioactive fallout, electromagnetic pulse effects, and increased blast and fire effects. These capabilities add an immense amount of uncertainty into a nuclear attack. Many questions will be raised about the yield, location of radiation, location and direction of fallout, and the effects on electronics and power grids in the area. This will increase uncertainty surrounding the nature and intent of the attack. Nuclear command and control and the ability to assess the consequences of a nuclear attack are known to be difficult tasks even under the best of circumstances. If the receiving state does not clearly get the intended signal, the potential for escalation increases. The receiving state will have to make quick decisions about what happened, all the while coping with the devastating effects of a nuclear explosion. This uncertainty will increase the incentives for decision-makers to engage in worst case scenario planning as leaders will not want to seem to have underestimated the need for response actions.

Fourth, states that possess nuclear weapons are expected to be responsible users and possessors of the ultimate means to peace and security.²²⁹ This is a frequent mantra of the five nuclear weapons states as identified in the Nuclear Non-Proliferation Treaty. A 2022 joint statement, for example, opens with the following statement: “We affirm that a nuclear war

²²⁸ Though, of course it is possible to think of some scenarios which this might be plausible. For example, they could credibly claim an accidental nuclear explosion in their own territory or among their own forces, which could in theory also destroy enemy forces if they had overrun said territory. These are, however, unlikely, in this context.

²²⁹ This was discussed often, for example, during the U.S./India negotiations regarding the sale of nuclear material. See, for example: Sasikumar, K. (2007). India’s Emergence as a “Responsible” Nuclear Power. *International Journal*, 62(4), 825–844. <http://www.jstor.org/stable/40204339>; and <https://theguardian.com/pakistan-an-irresponsible-nuclear-armed-country/>; or <https://www.whitehouse.gov/briefing-room/statements-releases/2022/01/03/p5-statement-on-preventing-nuclear-war-and-avoiding-arms-races/>. Also, see: <https://www.opendemocracy.net/en/opensecurity/responsible-nucleararmed-state/>.

cannot be won and must never be fought. As nuclear use would have far-reaching consequences, we also affirm that nuclear weapons - for as long as they continue to exist - should serve defensive purposes, deter aggression, and prevent war.”²³⁰ It is also a key argument to preventing the spread of nuclear weapons put forward by Scott Sagan in his classic debate with Kenneth Waltz on the advisability of the spread of nuclear weapons. In part, Sagan’s argument hinges on the idea that the likely new nuclear powers would not be responsible holders of such weapons.²³¹ We expect nuclear states to behave rationally and ethically, knowing the power they possess. This makes it more likely for the receiving side to think that the aggressor who first uses nuclear weapons has begun to behave irrationally or has abandoned these norms.

In sum, using nuclear weapons in an E2DE strategy is unlikely to have a net positive effect on the prospects of de-escalation because nuclear weapons will increase the incentives for the nuclear-armed receiving state to continue to resist.

The above discussion yields the following hypothesis:

H1: Escalate to de-escalate attempts will fail more often than not, and nuclear attempts will fail at a higher rate than non-nuclear attempts.

²³⁰ Joint Statement of the Leaders of the Five Nuclear-Weapon States on Preventing Nuclear War and Avoiding Arms Races, available at <https://www.whitehouse.gov/briefing-room/statements-releases/2022/01/03/p5-statement-on-preventing-nuclear-war-and-avoiding-arms-races/>.

²³¹ Sagan, S. D. et al. (2013) The spread of nuclear weapons: an enduring debate. 3rd ed. New York: W.W. Norton & Co.

2.5: Using Wargames and Crisis Simulations for Research; Data Overview:

Why Wargames?

The term *wargame* has a variety of meanings but what makes a wargame is the fact that it is an interactive event “that involves human players, immersed in scenarios, bounded by rules, and motivated by consequence-based outcomes.”²³² Wargaming techniques have increasingly become a source of information for scholarly research and policy development.²³³ These techniques are particularly useful for studying concepts or issue areas for which there are no, or only a few, historical cases to explore. As a recent article points out, “Either by fielding original games as a data-generating process or by leveraging archival wargame materials, researchers can study rare events or topics where data are difficult to obtain.”²³⁴ Thankfully there have been zero wars between two nuclear powers in which nuclear weapons have been employed. To study the potential escalation dynamics in such a conflict it is necessary to turn to other types of empirical evidence. Not only are wargames an especially effective methodology for this purpose, but the elite-level games analyzed in this paper are especially useful as they were played by experts with

²³² Lin-Greenberg, Erik and Pauly, Reid and Schneider, Jacquelyn (2021). “Wargaming for Political Science Research.” Available at SSRN: <https://ssrn.com/abstract=3676665>. See page 7 for a useful table displaying game characteristics.

²³³ Some examples of recent work relying on wargame data include: Emery, John R. (2021) “Moral Choices Without Moral Language: 1950s Political-Military Wargaming at the RAND Corporation.” *Texas National Security Review*, 4 (4); Pauly, R. (2018). “Would U.S. Leaders Push the Button?” *International Security*, Vol. 43, No. 2, pp. 151-192; Schneider, J. (2017). “Cyber and Crisis Escalation: Insights from Wargaming”, Naval War College, <https://paxsims.files.wordpress.com/2017/01/paper-cyber-and-crisis-escalation-insights-from-wargaming-schneider.pdf>; Lin-Greenberg, E. (2020). “Wargame of Drones: Remotely Piloted Aircraft and Crisis Escalation” Available at SSRN: <https://ssrn.com/abstract=3288988>; and The Project on Nuclear Gaming (PoNG) based out of Berkeley University, found here: <https://pong.berkeley.edu/research/>.

²³⁴ Lin-Greenberg, Erik and Pauly, Reid and Schneider, Jacquelyn (2021). “Wargaming for Political Science Research.” Available at SSRN: <https://ssrn.com/abstract=3676665>

the relevant experience, knowledge, and positions in government to make realistic and informed decisions regarding escalate to de-escalate strategies.

Additionally, wargames have been shown to be effective at immersing players and participants in the scenarios and conflicts they are investigating, as well as engaging emotional responses that are unlikely to be fully activated in other methods, such as survey work or through computer modeling.²³⁵ A recent article on wargaming efforts at the RAND corporation demonstrates that certain types of games enabled players to “engage in a kind of emotional and ethical intuition” and allowed players to “fully immerse themselves and take on the burden of decision-making to really feel its weight...”²³⁶ Game reports from RAND in the 1960’s highlighted that wargaming also requires that players take on active roles that force players to “think in concrete and responsible ways about problems that planners may tend to discuss in abstract terms.” As the authors of one report note, “It is easy to be vague when talking about doctrine or strategy, but a war game shares with the formal scientific model the quality of concreteness.”²³⁷ Additionally, these reports highlight the competitive nature of the games, which “inspires tremendous enthusiasm in the players and is ideal for imaginative exploration of new areas” of interest.²³⁸

Wargames also create what some have referred to as “synthetic war experience.”²³⁹ As one report describes, “The records might be thought of as the more or less detailed accounts of a

²³⁵ See: Pauly, R. (2018). “Would U.S. Leaders Push the Button?” *International Security*, Vol. 43, No. 2, pp. 151-192. For example, “In a reflection on political-military wargames held at MIT, 64.9 percent of participants (n = 77) reported an “extreme” or “intense” degree of emotional involvement.”

²³⁶ Emery, John R. (2021) “Moral Choices Without Moral Language: 1950s Political-Military Wargaming at the RAND Corporation.” [Texas National Security Review](#), 4 (4).

²³⁷ Quade, E.S., *The SIERRA Near East War Games*, R-354, 1960. (RAND Corporation Archives), p. 43.

²³⁸ Quade, E.S. (1960). RAND R-354, p. 44.

²³⁹ Quade, E.S. (1960). RAND R-354, p. 5.

large number of hypothetical wars.”²⁴⁰ This “simulated war” experience is both memorable and impactful on the thought processes and decision-making calculus of the players. A later report remarks that “It is hard to work with any sequence of events in a game for several hours without its beginning to seem either real or as one that could be real.”²⁴¹ In fact, some have reported a long-lasting influence of wargaming experience. For example, a National Research Council Report from 2014 cited wargaming as having provided some of the “better lessons learned” from the Cold War, including lessons about the potential causes of nuclear war.²⁴² Paul Bracken, in his book “The Second Nuclear Age” underscores the lasting impacts of gaming on the assessment of nuclear strategies while writing about specific exercises which left a lasting impression on top U.S. officials.²⁴³

Of course, wargaming has its limitations. Wargamers are quick to highlight that the results of their games, especially single games, should not be viewed as predictions of the most likely outcomes of a hypothesized conflict. As one game director reported, “The game does not reflect reality, but merely one path that reality might take.”²⁴⁴ Wargames are therefore only probabilistic in that you could run the same game many times (with different players) and achieve different outcomes. In analyzing archival wargaming data in particular, it is important to recognize some other key limitations, including: that these games were likely not played with the

²⁴⁰ Weiner, Milton G., *Gaming Limited War*, Santa Monica, Calif.: RAND Corporation, P-2123, 1960. <https://www.rand.org/pubs/papers/P2123.html>

²⁴¹ U.S. Department of Defense, “Final Report of NU I and II-66, Two Interagency Politico-Military Games Played by Officials of the Executive Branch during 1/11–2/8/66,” February 28, 1966, doc. no. GALE|CK2349234646, U.S. Declassified Documents Online, p. D-3, comments of game director.

²⁴² National Research Council 2014. *U.S. Air Force Strategic Deterrence Analytic Capabilities: An Assessment of Tools, Methods, and Approaches for the 21st Century Security Environment*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/18622>.

²⁴³ Bracken, P. (2012). “The Second Nuclear Age,” St. Martin’s Press, New York, NY, especially pp. 84-89.

²⁴⁴ U.S. Department of Defense, “Final Report and Documentation of the Politico-Military Game Relating to Southeast Asia [SIGMA I-62],” February 26, 1962, doc. no. GALE|CK2349215564, U.S. Declassified Documents Online, p. 20. It goes on to say “But, because the game is not reality, it is a safer way to explore policies and policy decisions. The moves reflected serious consideration of the implications of political, military and psychological affects that such moves might have in real life.”

researcher's own question in mind; they may be incomplete records of the games and players' motivations or decision-making process; they may disallow certain activities; and that there is certainly some element of bias stemming from their design, the players, or omission due to classification.²⁴⁵

Crisis simulations are similar to wargames but lack the competitive nature of wargames. Rather than opposing teams, subject matter experts conduct detailed course-of-action (COA) analyses utilizing detailed planning information and scenarios. Participants are still bounded by rules and must "live" with the consequences of each path they choose. They make every effort to make "adversary" moves realistic and reflective of the scenario and the rules and capabilities provided to each side. After investigating different COA's they may then go back and try another, each time living with the consequences that would be expected given the scenario and capabilities of each side. Often, these simulations utilize real-world data and information, as do wargames, and attempt to play out what could reasonably be expected to happen in the wake of each "move" by the participants.

Games and information used for this project.

The analysis in this project relies on records from a total of 40 wargames and crisis simulations/scenario-based analyses.²⁴⁶ Of the 40 sources, 32 are elite-level wargames.²⁴⁷ There

²⁴⁵ Lin-Greenberg, Erik and Pauly, Reid and Schneider, Jacquelyn (2021), pp. 28-32.

²⁴⁶ In total, I was able to find 40 wargames, eight of which are not used in the analysis of wargames because they did not contain clear examples of escalation which fit the requirements to count as a case. I also found information on 9 actual military exercises, but have left this information out for now and use it only as background information. A complete list of all materials and whether they were utilized to provide cases can be found in the Appendix.

²⁴⁷ By "elite-level" I refer to games played by actual senior policy and decision makers, subject matter experts such as scholars and research analysts, and current or former military officers. Each game considered here may be considered elite in this relatively broad sense. None of the games utilized relied on play from non-experts such as undergraduate students or randomly selected participants.

are eight crisis simulation/scenario-based analyses.²⁴⁸ Because it is possible for games to demonstrate more than one instance of E2DE, 41 cases of E2DE were identified from the wargames. From within the crisis simulations there are a total of 14 examples of simulation and analysis of E2DE.

The strategy for locating games began by reviewing what others have done (see Pauly, 2018) and then doing exhaustive searches online and through phone calls to libraries and war gaming departments of military higher education institutions and academies, commands (Such as STRATCOM or US Global Strike Command), federally funded research centers, and other institutions that might reasonably be expected to inform the policy and decision-making apparatus involving nuclear weapons. Sources were included as cases in this project if they were run or played by elites and if they were conducted by organizations or players who have missions or positions that might reasonably be expected to inform U.S. strategic thinking. Sources were only included if enough game material was available to identify a clear incident of escalation as described above in the section on E2DE and enough information was available to determine what the receiving side did in response. For example, in the Global War Game of 1979, the Soviet team conducts a deliberate nuclear attack as both a “militarily effective attack as well *as a signal* to Blue to quit its anti-submarine campaign.”²⁴⁹ The game report goes on to show that the Blue (U.S.) team responds with its own nuclear attack on Red Naval assets. In the Beta I-67 game, the U.S. team is first to use nuclear weapons alongside a two-brigade conventional attack and accompanied by “hot line” communication.²⁵⁰ In response, the Soviet team attacks with nuclear

²⁴⁸ The crisis simulations are considered separately from the “pure” wargame examples in the analyses and provide amplifying evidence and additional information which complements the overall information gleaned from the wargames themselves.

²⁴⁹ Hay, B. and Gile, B. (1993), Global War Game: The First Five Years (Newport Paper Number 4), p. 29.

²⁵⁰ U.S. Department of Defense, “Beta I and II—67: Final Report,” May 16, 1967, doc. no. GALE|CK2349555758, U.S. Declassified Documents Online, p. A-6. “Concurrently, the US president informed the Soviet Premier, by the

weapons.²⁵¹ It is clear from these examples, as in all the others included in this essay, that there was a deliberate escalation on one side, meant as a signal, and a clear discussion of how the receiving side responded.²⁵²

This project does not include any classified documents. All games were either de-classified previously or were never classified. Many other classified games are available from these and similar sources, but de-classification was not pursued for this project.²⁵³ Documents were collected from online and in-person archival sources.²⁵⁴ Sources span numerous government and government-funded agencies as well as academic settings. These include: NATO, the U.S. Army and Air Force, the RAND Corporation, the Massachusetts Institute of Technology's (MIT) Center for International Studies, The United States' Joint War Games Control Group, the Net Evaluation Subcommittee of the National Security Council, the Joint War Games Agency, The Studies Analysis and Gaming Agency, The U.S. Naval War College, The U.S. Army's Arroyo Center, The U.S. Naval Post Graduate School, and the Center for Strategic and International Studies (CSIS).²⁵⁵ Sources span seven decades, from a NATO exercise report to the Military Committee in 1952 to a RAND Research Report from 2019. The games and studies examine scenarios in numerous real-world and hypothetical countries and from within different historical contexts. Scenarios were explored involving the United States, the USSR, Iran, China, Greece, Vietnam, North Korea, India, Pakistan and Russia. This wide

hot line, that no *further* use of nuclear weapons was contemplated at this time, but warned that the United States was prepared to use whatever force was needed to restore Berlin access."

²⁵¹ U.S. Department of Defense, "Beta I and II—67: Final Report," May 16, 1967, p. A-6, "Soviet forces employed low-yield, short range nuclear weapons to destroy both brigades."

²⁵² Of course, in the best cases there is good information regarding why the receiving side responded the way they did, not just how they responded. This was the case in the majority of the games, though not all.

²⁵³ This is something I hope to do in the future, but it was made clear during my research that it is very difficult to get this data de-classified, especially for recent activities.

²⁵⁴ Many locations conduct games in courses, end of year exercises, etc... but do not keep records of their games. This is an area where the field can gain much from keeping better records.

²⁵⁵ See appendices for complete list of game and other source materials.

range of sources as well as the combination of hypothetical and real-world situations allows me to look for trends and patterns that would not be available by studying a single region or country, or by studying only a small series of games.

This essay does not claim to present a comprehensive accounting of all wargaming or crisis simulation efforts but rather argues that this broad array of sources can tell us something useful about the concept of E2DE and its merits as a strategy for successful war termination.

2.6: The Data and Evidence from the Wargames²⁵⁶

For each of the games utilized, data was collected and coded with the following information: the game or game move; balance of forces; conflict initiator; the escalating team or “state”; type of escalation; nuclear weapons used in the escalation or not; was there an explicit compellent threat or demand; war termination (yes or no); achieved objectives (yes or no).²⁵⁷ The results are listed in a table in the appendix (Table 2.1). Of the 41 E2DE attempts, 25 were made with non-nuclear attacks and 16 utilized nuclear weapons. Only one of the nuclear attempts was successful, a rate of 6.25%. Two of the non-nuclear attempts were successful, a success rate of 8.0%. The overall success rate was 7.3%. See Table 2 below. The story told by these wargames is that successful E2DE attempts in conflicts with nuclear armed players are extremely rare.

²⁵⁶ See the appendices for a tabularized version of this information (Table 1) as well as the “codebook” used to code each variable.

²⁵⁷ See the appendix for coding/selection criteria.

Table 2.2: Success/Failure rates:

	Number of Cases of E2DE	Successful War termination	Failed War Termination	Success Objectives/Terms	Failure Objectives/Terms
Nuclear	16	1	15	0	16
Conventional	25	2	23	2	23

The Successes:

There are three examples of E2DE success in these games. In each case, escalation by one side results in at least temporary war termination. In two of the cases, both non-nuclear cases, objectives were also achieved. A brief description of each follows.

In the Space Crisis Dynamics and Uncertainty TTX (2017) each team was nuclear-armed (or allied with a nuclear armed state).²⁵⁸ This game was played by academic and policy experts in the space domain. The scenarios were based on four hypothetical states engaged in conflict and explored escalation and crisis stability in the space domain. In the third scenario, in which Blue is assisting Red with an insurgency backed by Orange, Red and Blue escalations eventually result in Orange backing down. Primarily, this occurs because Orange mistakenly believes that Blue is preparing an invasion of Orange. Blue actions (along with their Red ally) successfully, though not for the same reasons intended by Blue, convince Orange to vacate Red territory due

²⁵⁸ Center for Strategic and International Studies (CSIS), (2017), Space Crisis Dynamics and Uncertainty TTX Summary Report, available at https://swfound.org/media/205726/ttx_report_7feb2017.pdf. The players were drawn from government, industry, and academia, and had backgrounds in national security space, space policy, civil space, and diplomacy.

to *fear of further escalation*.²⁵⁹ Ironically, since many failures are due to misperceptions, this success was due largely to a misperception by the Orange team. In the end, however, the escalatory action taken by Blue was enough to convince Orange to back down by signaling the risk of further escalation.

A second success came in the Global War Game, 1980. This game was run by the Naval War College and was a massive game played by hundreds of military and academic participants. The scenario involved a war between the U.S. and Soviet Union in which the Soviets deliberately initiate an attack to gain control of Eurasia. The success here is that the game ends in a temporary cease-fire brought about by escalation to nuclear use. E2DE is eventually successful, though it fails to achieve either sides' objectives outright, and both sides viewed the cease-fire only as temporary.²⁶⁰ The game reached "*temporary termination*" when Blue, "desperately short of options" and seeking a way to achieve a cease fire, utilized the "hot line" to threaten an attack on Red at the SIOP (Single Integrated Operations Plan) level.²⁶¹ Red agrees, primarily because this was also what they aimed to achieve with their previous escalation. All this occurred in a mere five days (in-game time). As the report notes, "The only instance where negotiations were effective was in the 1980 game, where nuclear exchange had progressed considerably up the escalation chain. Blue was at a disadvantage and saw events getting out of control. As a result, it

²⁵⁹ Of note, however, a specific attempt at E2DE fails amidst the broader action. As the report notes, "In the post-scenario discussion, the Red team explained that after the Orange push on the capital, Red made the ASAT threat in an attempt to *escalate to de-escalate without using nuclear weapons*. They also recognize that it backfired, and likely provided a political opening for Yellow to launch the kinetic attacks against Blue satellites." CSIS, (2017). p. 51

²⁶⁰ Hay, B. and Gile, R. (1993), Global War Game: The First Five Years (Newport Paper Number 4), p. 7 and p. 25. It goes on to say, "Consequently GWG 1980 became, almost immediately, an exercise in the control of nuclear escalation."

²⁶¹ Hay, B. and Gile, R. (1993), p. 8.

threatened SIOP release unless an immediate cease-fire occurred. Red agreed, and both sides terminated hostilities, although Red viewed this as but a temporary suspension of the war.”²⁶²

The third success is from BETA-II in 1967, conducted by the Joint War Games Agency of the Joint Chiefs of Staff. In the scenario, the Soviets are attempting to coerce West Germany into giving up a nascent nuclear weapons program. In the first part of the game, Red attempted to coerce the Blue team into accepting its demands by detonating a nuclear weapon in the atmosphere as a demonstration. This fails to achieve the desired result, with the U.S. side commenting that “the US could scarcely apply hard pressures on the Germans when the Soviets were acting in such a provocative manner.”²⁶³ The escalation could not be rewarded, even though the US team did not necessarily object to the end of the FRG nuclear program (as demanded by Red). The Red team, having failed with this demonstration then decided to conduct *conventional* strikes on FRG nuclear facilities after informing NATO countries of the impending attacks and providing assurances that they had no objective beyond ending the West German nuclear programs. This escalation is successful and the Blue team pressures the West German leader to give up the program.²⁶⁴ As one team member put it, “The results of BETA II imply that a 'non-zero sum' game solution to conflict was achieved - that is, both sides 'won' (avoided nuclear war) by cooperation, although each might have been able to do better had it pushed harder and risked the big loss.”²⁶⁵ Successful coercive attempts based on mutual interests, however, seems like a risky proposition in situations where states are already in crisis, and particularly when nuclear weapons are employed. As one member from Blue-II remarked, “The games also impressed me

²⁶² Hay, B. and Gile, R. (1993), p. 57.

²⁶³ U.S. Department of Defense, “Beta I and II—67: Final Report,” May 16, 1967, p. A-10.

²⁶⁴ U.S. Department of Defense, “Beta I and II—67: Final Report,” May 16, 1967, p. A-13.

²⁶⁵ U.S. Department of Defense, “Beta I and II-67 Final report”, p. B-23, emphasis original.

with the fact that, once nuclear action was started, even on a low key, it would be very difficult to control or to prevent rapid escalation of the use of more nuclear weapons.”²⁶⁶

The Failures:

For each case of E2DE failure I attempted to identify a primary, and where applicable, secondary explanation. To identify these explanations, I began by collecting what the neutral observers (control team and game directors) explicitly documented as explanation for move/game outcomes. I then examined what players themselves reported (through player critiques and post-game debriefs). Lastly, where available, I examined the game moves and team discussions myself, which were written and submitted during actual game play. In this way I was able to identify not only what players and game directors said explicitly after the fact, but I could track game progress as it played out, making my own assessment of why players initiated or reacted to specific moves. The assessments below rely largely, but not exclusively on what players themselves reported in debriefs, augmented by in-game evidence and analysis. When it was clear that there were multiple key factors, I also identified a secondary factor. These secondary factors were important to game/move outcomes but were not assessed as the driving elements. These secondary explanations simply highlight additional important factors to explaining game progression and player decisions. In line with the above theoretical intuitions, I was able to classify the primary and secondary explanations for these failures into three categories: 1) *Misperception (broadly defined as above)*; 2) *Stakes (including reputational/precedent concerns)*; 3) *Absorption (a sub-category of Stakes)*.

²⁶⁶ U.S. Department of Defense, “Beta I and II-67 Final report”, p. B-12, Blue II team member.

The first category, *Misperception* (the most common in this sample of games), includes games in which teams were unable to accurately communicate their intentions due to faulty assumptions or other forms of misperception, miscommunication, mistrust, or misunderstandings between players. This category includes cases in which players made worst-case assumptions about enemy intentions. The second category, *Stakes*, includes games where players on opposing teams simply understood the stakes to be high enough to continue fighting or to counter-escalate. In several of these games, the “bottom line” or minimum requirements for negotiation or peace were incompatible and players did not deviate from these minimum requirements (even though they were permitted to do so). Also common in these games, and in line with the theoretical expectations above, were concerns about *precedent setting and reputation*. The third sub-category, *Absorption*, includes games in which players were willing to absorb the types of attacks they were receiving, often explicitly or implicitly acknowledging the fact that they retained the ability to respond in kind. In these games, the escalations did not cause the receiving teams to feel as though the risk of further escalation had increased beyond what they deemed acceptable when entering the conflict.

Misperception was the most common factor contributing to failures of E2DE strategies. Of the 41 cases, 26 of them include *Misperception* as the most significant or second most significant factor (20 as the most significant/primary factor). See Table 2.3.

The second most common factor was *Stakes*, including concerns over precedent and reputation, appearing as the primary or secondary factor in 19 cases (11 primary and 8 as the secondary factor).

Lastly, *Absorption* was the primary factor in six of the cases and a significant factor in a total of 10 cases (6 primary, 4 secondary).²⁶⁷

Table 2.3: Explanations of E2DE failures in the Wargames:

Explanation / Factor	Games in which Primary	Games in which Secondary
Misperception	GWG 1979, POLEX II, SASW 1.0, SASW 2.0, DETEX I, DETEX II, MSCISA 2014, SIGMA II-1964, SIGMA II-1965, SIGMA 1-1962, BETA 1, REDWOOD War in Iran, CSIS SWF 2016	SIERRA Near East 3, SIGMA I-66, SIGMA 1-64, GWG 1984, GWG 1988
Stakes	GWG 1982-84, GWG 1985-87, GWG 1988, RAND N2910, SIGMA I-66, BETA II-67, SIERRA Near East 3,	RAND Central Front 1964, BETA I-67, POLEX II,
Absorption	GWG 1981, SIGMA I-64, RAND Central Front 1964, NU-66, MU-III	CSIS SWF 2016, SIGMA II-1964, SIGMA II-1965,

The evidence demonstrating the difficulties presented by *misperception* to strategies of E2DE is striking. In the BETA I-67 game, players explicitly attributed escalation to this factor. As one Blue team member reported, “I think our strategy failed because both sides misperceived or misunderstood the nature of the particular moves that eventually triggered escalation.”²⁶⁸ This

²⁶⁷ This accounts for 37 cases. Add 3 successes and one unknown reason (South Flank) and this accounts for all 41.

²⁶⁸ U.S. Department of Defense, “Beta I and II—67: Final Report,” May 16, 1967, p. C-30, action level member, Blue I)

occurred despite the fact that the Blue team believed its moves were quite rational and that their limited intent should have been clear to Red.²⁶⁹ In the end, “BETA-I ends in an irrational cataclysm which neither side wanted nor intended.”²⁷⁰ The report goes on to say that “in BETA-I, there was a fatal miscalculation by both sides of the others intent, culminating in a nuclear exchange which neither side wanted.”²⁷¹ It is also clear from these documents that nuclear weapons made this miscalculation more likely than would otherwise have been the case, as the U.S. decision to use nuclear weapons is what first triggers the Red team’s assessment of an “irrational” Blue team. Also relevant in the BETA-1 game were concerns over reputation, such as “prestige and reliability” in the eyes of allies, and the restoration of “image loss,” demonstrating the importance of these factors in addition to the misperceptions and miscommunication.

In GWG 1979, a misperception over the destruction of Red SSBN’s causes the Red team to retaliate with nuclear weapons. Although this sprang from a general and ongoing anti-submarine campaign conducted by Blue, Red perceived this as a grave threat to strategic forces.²⁷² In fact, throughout the Global War Game series (1979 -1988), misperception was a key factor. In post-game debriefs or “hot wash-ups”, players were able to sort through why and how things played out the way they did. As the final report of the second series notes:

“often the perceptions of what had happened and the importance of events or specific decisions varied substantially. This kind of discussion on the

²⁶⁹ “Although the Blue-I team adopted the high-risk strategy of deliberate escalation, it believed in each move that it was using the minimum force necessary to achieve a more favorable bargaining position. To some extent, Red-I misinterpreted Blue’s moves as more aggressive than they were intended to be.” Beta I and II -67: Final Report, B-16, Blue-I team member.

²⁷⁰ “Beta I and II—67: Final Report,” May 16, 1967: Final Report, p. B-6.

²⁷¹ “Beta I and II—67: Final Report,” May 16, 1967, p. B-4. And also, “The final outcome is a cogent demonstration of how swiftly nuclear escalation, abetted by cumulative errors in reading the opponents mind, can lead to catastrophe.” (B-8)

²⁷² Hay, B. and Gile, B. (1993), Global War Game: The First Five Years (Newport Paper Number 4), p. 29.

repercussions that could flow from misperceptions were often most enlightening, informative, and cautionary. This was particularly true of “signaling,” a discrete action that was designed to convey a concern or threat to the opponent. More often than not, these signals were totally missed or wildly misinterpreted by the desired recipient.”²⁷³

In POLEX II-1960, both sides attempt to E2DE. They both fail because neither side fully understands what the other is trying to do and sees the actions as more aggressive than they really are. “Perhaps the most interesting single quality of the game” the report notes, “lay in the failures on both sides to understand adequately the true intentions of one another. This was particularly true where an innovative policy clashed with a stereotyped image held by one side or the other.”²⁷⁴

During the South Asian Stability Workshops in both 2013 and 2016, as well as the Managing Crises in Southeast Asia 2014 game we see clear evidence for the misperception category. In 2013, cognitive biases were reported to have caused upward escalatory pressure throughout the game.²⁷⁵ In the game, India’s so-called limited and punitive response leads to a major counter-escalation from the Pakistani side. This was clearly due to misperceptions as is stated in the report: “Regardless of what India signaled, the Pakistan team’s *perception* was that India’s actions were disproportionate and maximal.”²⁷⁶ In the 2014 game, a limited attack is believed instead to be a premeditated attack on Indian nuclear assets.²⁷⁷ The India team then used these events to justify expanding objectives and escalating the conflict. The report clearly notes:

²⁷³ Gile, R. H., (2004). Global War Game 2nd Series, The Newport Papers (34), available at: <https://digital-commons.usnwc.edu/newport-papers/34/>, p. 11.

²⁷⁴ Political Exercise II, Final Report, p. 76. Center for International Studies, Massachusetts Institute of Technology, Archives, MC-326. “Political Exercise II,” box 9, Lincoln P. Bloomfield Papers.

²⁷⁵ Khan, F. H., French, R. W. (2013), South Asian Stability Workshop, A Crisis Simulation Exercise, available at <https://calhoun.nps.edu/handle/10945/37069>, p. 12.

²⁷⁶ Khan, F. H., French, R. W. (2013), p. 15.

²⁷⁷ Khan, F. H., Burke, E. (2014), Managing Strategic Crises in South Asia. Naval Post Graduate School, Center on Contemporary Conflict

“With no mechanism to communicate true intentions, the escalation ladder trumps the ability to signal. *Signaling gone awry* in the fog of war can have low efficacy without third party intervention or a durable strategic restraint arrangement.”²⁷⁸ In 2016, in response to what the Pakistan team refers to as a limited and “in kind” attack, the India team “concluded that Pakistan was conducting a major offensive with Chinese endorsement and that India was therefore no longer ‘constrained’ by the international boundary.”²⁷⁹ The report later remarks that “Nuclear Signaling was Ineffective: Pakistan’s attempts to establish intra-war deterrence via threats of possible nuclear use were ineffective. What signaling attempts were made failed to induce caution in India.”²⁸⁰

In the DETEX I and II games, misperception is again of primary importance. The following passage summarizes:

"A consistent factor... has been the remarkable degree to which teams misinterpret one another's messages and actions. Much of the military escalation, and many instances of collision courses, have resulted more from such failures in communication rather than deliberate intent, not only in the U.S.- Soviet but also in the U.S.-Chinese ‘confrontations.’ The fact that most of the professional participants accept these outcomes as plausible suggests that this persistent communication problem is not some mere artifact of the game situation, but may well represent an important way in which the political-military exercise accurately reproduces international crisis policy-making.”²⁸¹

Misperception was the primary factor in several of the SIGMA games as well, namely SIGMA II-64, II-65, and I-62. In SIGMA II-64, the report notes:

²⁷⁸ Khan, F. H., Burke, E. (2014), p. 20. Emphasis added.

²⁷⁹ Khan, F. H., Wueger, D., Giesey, A. and Morgan R., (2016), South Asia Stability Workshop 2.0, A Crisis Simulation Report, available at <https://calhoun.nps.edu/handle/10945/48613>, p. 26.

²⁸⁰ Khan, F. H., Wueger, D., Giesey, A. and Morgan R., (2016), p. 18.

²⁸¹ “The DETEX-EXDET Political-Military Exercises on Naval Weapons Systems During Crisis, Final Report”, (1965), box 11, Lincoln P. Bloomfield Papers, MC-326, CIS, MIT archives, p. 20.

“The problem of communicating from one team to the other a determination not to give in, or of intent to escalate the conflict, was evident in SIGMA II as it is in all games (and in real life)... Both sides felt that they were making themselves clear to the opposition in such a way that the futility of the opponent’s action should be evident. In the limited time of game play, neither seemed to “read” this message.”²⁸²

Games from RAND’s REDWOOD and SIERRA series also show the importance of misperception. In the “War in Iran, 1959” game, one player points out rather directly that “a serious underestimation of S.U. intentions got Blue into the present mess.”²⁸³ Other comments point to the failure of the U.S. to “make the proper inference” and other issues that “Blue should have realized,” but didn’t.²⁸⁴ Misperception was also an important but secondary factor in the SIERRA Near East -3 game in 1958. In this case it is mistrust that largely prevents war termination, as a cease-fire offer is rejected because it is believed to be a ruse.²⁸⁵ A summary report on ten years of the SIERRA and REDWOOD gaming emphasized that in general, “miscalculations by one or both teams were recognizable in post-game analysis, a logical consequence of the fog of war.”²⁸⁶

More recently, in a wargame exploring escalation in the space domain, attempts to conduct temporary attacks on certain space-based assets are perceived as being permanent and

²⁸² U.S. Department of Defense, “Final Report of Politico-Military Game, SIGMA II-64,” October 5, 1964, document number: GALE|CK2349220846, U.S. Declassified Documents Online archive, Gale, Farmington Hills, Michigan. Page D-17. Of note, misperception was also a secondary but important factor in the other two SIGMA games in the sample.

²⁸³ Reinhardt, George C., Goure, Leon, Hastings, Wallace H., Lockhart, R.G., Ellis Jr., John W., and George, Alexander L., AW and Limited War in Iran, 1961: A Red Wood Briefing, D-5973, 1959. (RAND Corporation Archives), p. 40.

²⁸⁴ RAND D-5973, Project REDWOOD, War in Iran, 1961, pp. 39-42.

²⁸⁵ Large, Joseph P., Project Sierra - Near East - 3, D-5284, 1958. (RAND Corporation Archives)

²⁸⁶ Reinhardt, George C., Sierra and Red Wood Revisited or Ten Years of Limited War Gaming of Southeast Asia, RM-5222, 1967. (RAND Corporation Archives), p. 3.

therefore motivate a response in-kind.²⁸⁷ “The Blue Team recognized that its attacks on Yellow were aggressive, but insisted that they were reversible and therefore perceived by the team to be less escalatory.”²⁸⁸ Yellow, however, responded in kind because it perceived these attacks as highly threatening because they could be repeated at any time.

These examples of misperception clearly demonstrate the difficulties an attacking state may face when attempting to escalate to de-escalate. The receiving team often does not receive the intended signal and, in combination with worst-case scenario planning and fears over expanding aims of the attacking state, often leads to a response in-kind or counter-escalation. The *Misperception* factor is often found in combination with the *Stakes* factor (often demonstrating concerns over reputation and precedent setting), the second most prevalent explanation in these games.

Perhaps not surprisingly given the scenarios, *Stakes* is a primary factor in E2DE failures in the Global War Game series from 1982-1988. In particular, the bottom-line negotiating position of the Blue (U.S.) team for any scenario was a return to the territorial status quo pre-conflict, a situation completely at odds with Red (Soviet) minimum objectives.²⁸⁹ In analyzing the 1988 game, for example, the report notes “The crux of the matter, however, was that the minimum conditions for war termination for both sides, or even any compromise positions that were reasonably available, were *mutually exclusive*. Given this circumstance, negotiations were essentially certain to fail.”²⁹⁰ In 1983, “There was a considerable amount of war termination

²⁸⁷ Center for Strategic and International Studies (CSIS), (2017), Space Crisis Dynamics and Uncertainty TTX Summary Report, available at https://swfound.org/media/205726/ttx_report_7feb2017.pdf.

²⁸⁸ CSIS (2017), p. 50.

²⁸⁹ In 1982, for example, the report notes that Blue maintained the position that the territorial “status quo ante bellum” in Europe was prerequisite to any cease-fire. Red refused to negotiate on this basis, and, at game’s end, it appeared that a long war was in prospect. Hay, B. and Gile, R. (1993), Global War Game: The First Five Years (Newport Paper Number 4), p. 11. <https://apps.dtic.mil/docs/citations/ADA542668>

²⁹⁰ Gile, R. H., (2004). Global War Game, Second Series 1984-1988. Naval War College, Newport Paper number 20, p. 107.

negotiation. However, Red insistence on retaining its Central Front gains, and Blue/NATO demands for a return to the ‘status quo ante bellum,’ left negotiations deadlocked.”²⁹¹ In 1984, the Blue team adopted an escalatory strategy of prolonging the war. As the report notes, while this was a valid war-fighting option for Blue and helped them avoid selecting the nuclear option, “it did have the effect of pushing Red in exactly that direction.”²⁹² For both sides, the stakes were simply too high to give in. In 1988, it is important to note that the essential and specific focus of the game was war termination.²⁹³ As already mentioned, the bottom-line positions of each side were mutually exclusive. The report notes: “In the final analysis, Blue was not seriously interested in negotiations because of the perception that the military situation had to be improved before Alliance political objectives could be successfully negotiated.”²⁹⁴

In a RAND game in 1987, both sides believed the stakes to be high enough to continue while at the same time believing the risk to nuclear escalation to be surprisingly low.²⁹⁵ For example, the Red team “believed that, if it were to make Public the Blue team’s ultimatum, public opinion in the United States and elsewhere might prevent the Blue team from carrying out the threatened attack.”²⁹⁶ In the end, “neither the blue or the red players were immediately interested in ending the war. The Blue team certainly did not desire a formal surrender, and did not feel compelled to do so.”²⁹⁷

²⁹¹ Hay, B. and Gile, R. (1993), *Global War Game: The First Five Years* (Newport Paper Number 4), p. 13.

²⁹² Gile, R. H., (2004), p. 31.

²⁹³ Gile, R. H. (2004), p. 85. More specifically, it was an effort to “identify and analyze the dynamics and leverage that military operations can bring to the war termination process,” p. 86.

²⁹⁴ Gile, R. H. (2004), p. 110.

²⁹⁵ Setear, John K., *A Political-Military Game of Protracted Conventional War in Europe*, Santa Monica, Calif.: RAND Corporation, N-2910, 1990. <https://www.rand.org/pubs/notes/N2910.html>. Of note, this game demonstrates that players are indeed free to seek peace if they desire: “The players were given free rein to modify the political and military goals and priorities ascribed to their governments in the initiating scenario; they were, for example, free to make peace proposals, conduct operations outside Central Europe, or authorize the release of chemical or nuclear weapons. The control team requested only that the players focus on strategies rather than tactical details.” P. 4

²⁹⁶ Setear, John K. (1990), p. 10.

²⁹⁷ Setear, John K. (1990), p. 13.

In the SIGMA I-66 game, the U.S. team's bottom line for negotiation was never met and combined with mistrust of the other side (rightfully so), prevented de-escalation. "Throughout SIGMA, the US team resisted proposals to reduce military pressures until they had iron clad guarantees that enemy concessions would be implemented... Furthermore, they interpreted Ho's offer to stop shooting and to begin talking for what it was, a ploy to gain respite."²⁹⁸ In Beta II-67, the stakes and precedent setting concerns over the effects of giving in to a nuclear demonstration prevent a de-escalation.²⁹⁹ In POLEX-II, the perceived stakes were identified as a secondary factor, but importantly, this case again shows the importance of reputation and precedent. As the Soviet team captain reported "We have friends abroad that are carefully watching the moves and countermoves in world power relationships. This was a challenge to our prestige that we thought, if not met, would have far-reaching ramifications."³⁰⁰

In the Sierra Near East-3 Game, cease-fire offers are rejected by both sides because the offers attempt to consolidate gains made by Red which are completely contradictory to Blue minimum requirements for the opening of negotiation. The counteroffer from Blue asks, in turn, for concessions Red is not willing to make.³⁰¹ Additionally, this game also demonstrated a focus on exploiting reputational concerns and public opinion, with the Soviet team attempting to leverage U.S. nuclear use to sway public opinion in their favor and justify aggressive retaliatory actions. In the South Flank Crisis Game of 1964, evidence shows that despite specific U.S. efforts to appear irrational and cross significant thresholds, Red refuses to back down and "calls

²⁹⁸ U.S. Department of Defense, "Final Report on Politico-Military Game, SIGMA I-66," September 1, 1966, doc. no. GALE|CK2349234872, U.S. Declassified Documents Online. Final Report, p. A-11.

²⁹⁹ U.S. Department of Defense, "Beta I and II—67: Final Report," May 16, 1967, p. A-10.

³⁰⁰ Political Exercise II, Final Report, p. 29. Center for International Studies, Massachusetts Institute of Technology, Archives, MC-326. "Political Exercise II," box 9, Lincoln P. Bloomfield Papers.

³⁰¹ Large, Joseph P., Project Sierra - Near East - 3, D-5284, 1958. (RAND Corporation Archives)

the U.S. bluff” because they believe Blue is completely unwilling to negotiate.³⁰² It is clear from these examples that E2DE, as understood above, does little to improve a situation in which states in conflict possess completely incompatible aims and objectives. These states are simply not in a bargaining mood and attempts to escalate one’s way to war termination counterproductively increase the stakes and commitment of the other side. If the issue was important before the escalation, it is likely it becomes even more important afterwards.

Lastly, *Absorption* was a factor in several games. This factor is considered a sub-category of games in which the stakes were the dominating factor. Players in these games were willing to absorb these escalations because they went into the scenarios knowing they were playing for high stakes against a nuclear armed adversary, where escalation, and potentially escalation to nuclear use, was a distinct possibility. In the GWG 1981, nuclear escalation by Blue results in a fairly large nuclear exchange which leaves both sides worse off materially than they were before. The Blue attempt at E2DE fails because Red is simply willing to keep fighting at the new level of intensity, as long as it didn’t escalate to nuclear attacks on their homeland.³⁰³ As the report notes, Blue found Red “willing to press for escalation dominance” and that the spiral turned into the “single process of ‘topping the opponent’ and ‘not backing down’”.³⁰⁴ In SIGMA I-64, the Red and Yellow teams (DRV and VC, and China respectively) “were showing no disposition to back down and felt they had a winning hand in the court of public opinion.” The Red strategy was to “*endure* and to rely on world opinion to make the US back down.”³⁰⁵ In SIGMA II-64 the

³⁰² Wildhorn, Sorrel, An Overview of the European South Flank Exercise of 1968, D-12515, 1964. (RAND Corporation Archives). As the report notes, “in view of its assessment of the situation what was needed was to convince the Soviets that the U.S. was irrational (or more irrational than the USSR) by a large escalatory move. In this way, it would indicate to the Soviets that BLUE’s escalatory pattern was not calculable.”

³⁰³ Hay, B. and Gile, R. (1993), Global War Game: The First Five Years, Newport Paper Number 4.

³⁰⁴ Hay, B. and Gile, R. (1993), p. 25.

³⁰⁵ U.S. Department of Defense, “Final Report on JCS Politico-Military Game SIGMA I-64,” n.d., doc. no. GALE|CK2349234646, U.S. Declassified Documents Online, from the Game Director, p. G-7. Additionally, the misperception of intent and signaling is also evident: “The game underlined the problem of communicating intent to

report notes the Red Strategy was in part to “hope that the U.S. would not attack mainland China, but if such raids did occur, that the damage could be *absorbed*.” Also, a Red team member wrote: “The more you attack us the less we have to lose.”³⁰⁶

In the RAND Central Front Game, Red was continually willing to absorb and match military action by Blue.³⁰⁷ “Red judged that it could always exploit its local advantages to put the burden of initiating violence on Blue.”³⁰⁸ At every turn, Red simply matches and exceeds the escalatory actions of Blue, relying on their local military superiority. In NU-66, the U.S. team is willing to tolerate escalatory action, including nuclear use, because it is not occurring on U.S. soil and an assessment that the China team would not escalate to a level high enough to impact U.S. objectives.³⁰⁹ Lastly, in the MU-III game a nuclear demonstration fails to impress the Red team because they had already determined that the Blue (U.S.) team might attempt limited nuclear weapons use, but would not escalate to general war.³¹⁰ The nuclear demonstration “caused no visible consternation to the Red team.”³¹¹ In these games, escalations failed to illicit any coercive advantages on behalf of the attackers. Because these things were already “priced in”, the attacks simply fail to inspire fear, heighten risk assessments, update information, or

an enemy in that the CPR interpreted US re-posturing of fleet and other forces as indicative of more hostile intent than the US wished to express.” SIGMA I-64 final report, Joint War Games Agency, pp. D-10 – D-11.

³⁰⁶ SIGMA II-64 final report, Joint War Games Agency, p. D-13 and G-15.

³⁰⁷ Averch, Harvey A. and Lavin, Marvin, A NATO Central Front Crisis Exercise: The Berlin Autobahn, 1967, RM-4336. (RAND Corporation Archives). This game provides another example where teams were free to seek war termination and other actions however they saw fit. As the report notes, “the moves by a playing team could be military, diplomatic, economic, psychological, covert, or even ‘pseudo-covert.’ Teams could use public announcements, diplomatic notes, and ‘hotline’ teletype messages” p. vi.

³⁰⁸ RAND RM-4336-PR, p. viii.

³⁰⁹ U.S. Department of Defense, “Final Report of NU I and II-66, Two Interagency Politico-Military Games Played by Officials of the Executive Branch during 1/11–2/8/66, Joint War Games Agency, 1966.

³¹⁰ U.S. Department of Defense, “Politico-Military Game: Olympiad I-62: Final Report,” 1962, Office of the Assistant Secretary of Defense, International Security Affairs, doc. no. GALE|CK2349262322, U.S. Declassified Documents Online, MU-III game records. “Red assessed Mid East as powder Keg of world; that West would use whatever force necessary to evict Red from Iran, up to and including tac nucs, but that neither would allow escalation to General War.” (vi, final report).

³¹¹ MU-III final report, p. v.

further demonstrate resolve, and therefore fail to cause the receiving side to consider war termination.

This section clearly illustrates that the theoretical intuitions which predict high rates of E2DE failure are prevalent in these wargames. Particularly, misperceptions, especially perceptions that the other side was behaving irrationally or more aggressively than intended, and the high stakes (including those of relevant precedents and reputational concerns) of armed conflict between nuclear adversaries appear to make de-escalation in response to E2DE unlikely. The risk of deliberately escalating a conflict that is important to both sides, combined with the ever-present possibility of misperception, as well as the fact that attacks within this logical framework are limited in such a way that the other side will retain the capability to respond, appears to be a dangerous and counter-productive proposition. Additionally, having or using nuclear weapons doesn't seem to help.

Additional evidence from Crisis Simulations and Scenario-based planning exercises further highlights these points.

2.7: Evidence from Crisis Simulation and Scenario-based planning exercises.

The materials referred to in this section are not wargames but do have some similar aspects. First, they are scenario-based. Second, the participants make choices and then play out those consequences, for good or ill, and in that sense are stuck with them. Lastly, these studies are conducted realistically where the options and courses of action explored are bounded by rules and reality. The main difference is they are not conducted by pitting two opposing teams against each other, but rather are in-depth thought experiments where experts use real-world or

realistically estimated information to play out different potential scenarios to see where they lead.

In one RAND study they used a combination of human wargaming and rough, brainstorming-level cognitive modeling, and related seminar gaming. The exercise was conducted primarily to answer the question, “What military and other outcomes would nuclear use accomplish, and what are the implications for credibly enhancing extended deterrence?”³¹² The primary insight from the study was that “NATO would lack escalation dominance, and Russian would have it.”³¹³ The report also explicitly explored the concept of E2DE.³¹⁴ In neither case did the US escalation to nuclear weapons achieve de-escalation on their terms. In essence, the study found that the balance of forces is in Russian favor in the region and therefore NATO cannot successfully E2DE without expanding the war to the risk of massive strategic exchange which is deemed incredible over the Baltics. The report concludes: “And, unfortunately, it will remain the case that if Russia’s leadership is aware of and has soberly accepted risks before invasion, a NATO escalation with NSNW [Non-Strategic Nuclear Weapons] would very likely be ineffective.”³¹⁵ This suggests Russia might be willing to absorb limited nuclear attacks believing escalation beyond NSNW is unlikely, and therefore may believe they can achieve their aims at acceptable costs.

³¹² Davis, Paul K., Gilmore, J. Michael, Frelinger, Dave, Geist, Edward, and Gilmore, Christopher K., (2019), Exploring the Role of Nuclear Weapons Could Play in Deterring Russian Threats to the Baltic States, Santa Monica, Calif.: RAND Corporation, RR-2781. https://www.rand.org/pubs/research_reports/RR2781.html

³¹³ Davis, P. K., et. al, (2019), p. x. The full quote is: “The primary insight from the wargame exercise is that, once nuclear exchanges begin in such a conflict, NATO would—from a military perspective—have much stronger incentives to seek war termination than Russia would. That is, NATO would lack escalation dominance, and Russia would have it. Although Russia might terminate the conflict anyway despite its local military advantages, it would seem unwise for NATO to count on that outcome.”

³¹⁴ Davis, P. K., et al, (2019). “It is broadly accepted that Russia has developed plans, capabilities, and doctrine for coercive use of NSNW to bring about war termination on circumstances favorable to Russia,” p. 30. Also, “Our wargame exercise explored cases in which NATO escalates and uses NSNW either (1) first (and early) in an attempt to damage and destroy Russia’s forces and blunt the Russian conventional attack or shock the Russians into halting their invasion or (2) for analogous reasons after Russia uses nuclear weapons to attack NATO targets,” p. 70.

³¹⁵ Davis, P. K., et. al, (2019), p. 88.

In a sidebar exercise during the Army After Next game in 1999, players explored a potential war against a nuclear armed opponent. The study showed that both sides expressed willingness to use nuclear weapons to stave off defeat and that limited nuclear use might be controlled. For example, “Red leaders believed that nuclear war could be limited to the theater of operations and that a nuclear strike in theater could avert a Red defeat.”³¹⁶ Players also demonstrated a concern over the precedent of allowing nuclear coercion. High level Blue decision makers were “torn between aversion to nuclear warfare and unwillingness to let Red profit from its action.”³¹⁷ Only minor consideration was given to a pause for negotiation.

Another RAND report based partially on manual gaming noted that Blue players generally responded to Red nuclear attacks using conventional weapons.³¹⁸ This was often attributed to the Blue team believing they did not need to respond with nuclear weapons to achieve their operational objectives (they could be achieved with conventional weapons). The study reports that in games supported in 1992, only 2 of 13 teams responded with nuclear weapons and in 1993, 7 of 13 teams responded with a nuclear attack. They do, however, respond in a vast majority of cases.³¹⁹ So, while teams often choose a conventional response they do not choose to give in or de-escalate in the face of enemy nuclear use. And in 9 out of 26 cases, about 35% of the time, they respond with nuclear weapons.

In the Day After Exercises in 1993, over the course of four different scenarios focused on non-proliferation questions, concerns about precedent setting and fear of escalation are

³¹⁶ Perry, Walt L., Pirnie, Bruce, and Gordon, John, *The Future of Warfare: Issues from the 1999 Army After Next Study Cycle*, Santa Monica, Calif.: RAND Corporation, MR-1183, 2001. https://www.rand.org/pubs/monograph_reports/MR1183.html, p. 31.

³¹⁷ Perry, W. L., et. al, (2001), p. 33.

³¹⁸ Bennett, Bruce W., Gardiner, Sam B., Fox, Daniel B., and Witney, Nicholas K., *Theater Analysis and Modeling in an Era of Uncertainty: The Present and Future of Warfare*, Santa Monica, Calif.: RAND Corporation, MR-380, 1994. https://www.rand.org/pubs/monograph_reports/MR380.html, p. iii.

³¹⁹ “Blue players tended to threaten a heavy nuclear response to further nuclear weapons use by the opponent and to increase the conventional campaign against opposition strategic targets.” RAND Report MR-380, (1994), p. 23.

obvious.³²⁰ During the first and second scenarios there is obvious concern over precedent concerns and letting a nuclear use go unpunished or with appeasement. For example, questions were raised as to “whether the U.S. could afford to be aloof from the most serious world crisis since WWII, and whether by standing by as two powers fought a nuclear war the U.S. would not legitimate nuclear use or encourage other nations to solve their problems in similar fashion...” In the second scenario, “Those who argued for destruction of the Iranian regime were also motivated by the belief that a strategy of containment would demonstrate the political value of nuclear weapons to potential proliferators.”³²¹ In the Korean game, “the credibility of nonproliferation and the idea of a nuclear taboo were at issue. The U.S. “had to make an example of NK”, and “the credibility of extended deterrence was at stake.” In Pakistan, the US responses were to get involved thereby horizontally escalating the conflict as well, this time over fears of escalation that might more directly involve the US or its interests.

Another important example comes from formerly Top-Secret reports generated by the Net Evaluation Sub Committee of the National Security Council (NESC). The NESC was designed to explore and understand the potential consequences of a general nuclear war with the Soviet Union. For several years this group studied the horrific possibility of such a war and how each side might come out in the end.³²² In 1963 McGeorge Bundy, the National Security Advisor wrote to President Kennedy, “The fundamental conclusion is that these wars are unacceptably

³²⁰ Millot, M. D., Molander, R. C., and Wilson, P. A., (1993), “The Day After...” Study: Nuclear Proliferation in the Post-Cold War World, MR-266-AF, https://www.rand.org/pubs/monograph_reports/MR266.html

³²¹ Millot, Marc Dean, Molander, Robert C., and Wilson, Peter A., “The Day After...” Study: Nuclear Proliferation in the Post-Cold War World, Santa Monica, Calif.: RAND Corporation, MR-266, 1993. https://www.rand.org/pubs/monograph_reports/MR266.html, Volume II, p. 54

³²² National Security Archives, Nuclear Vault, Reports of the Net Evaluation Subcommittee, 1962. Document 9A. “The President directed the Net Evaluation Subcommittee (NESC) to analyze the results of a nuclear exchange between the US and USSR based on the following assumption: A nuclear attack in mid-1965 by the USSR against the United States, following the outbreak of limited war in southeast Asia.” Found at: <https://nsarchive2.gwu.edu/nukevault/ebb480/>

destructive for both sides on all assumptions.”³²³ Probably largely due to these dismal assessments the NESC was tasked to “examine and report on the problems inherent in the concept of management and termination of war.”³²⁴

There are seven attempts at E2DE within this study, including scenarios that grow out of escalation from limited, conventional conflict. Only two are eventually successful.³²⁵ In these scenarios, the U.S. side is the first to attempt E2DE, clearly demonstrating E2DE logic. “the US, with NATO concurrence, chose to escalate by initiating the use of tactical nuclear weapons on the battlefield and against interdiction targets in the Satellites. This attack, on 17 June was accompanied by a Presidential Statement outlining the conditions of a cease-fire and of the West's objectives in subsequent armistice negotiations.”³²⁶ This fails and kicks off several rounds of nuclear back and forth. With one final attempt at E2DE the U.S. team decided to conduct a limited counterforce nuclear strike on the USSR. “The US action was designed to *increase pressure* on the Soviet leaders to accept a cease-fire based on a Soviet withdrawal of all its forces in Europe to behind Soviet frontiers and the freeing of the Satellites from Soviet domination.”³²⁷

³²³ National Security Archives, Reports of the NESC, Document 10C, letter from McGeorge Bundy, National Security Advisor, to President Kennedy.

³²⁴ National Security Archives, Reports of the NESC, Document 11A, A study of the management and termination of war with the Soviet Union (TS). One of the terms of reference given to the NESC for this was “It is the U.S. policy to develop a capability so that, in the event of war with the USSR, military force can be used in a discriminating manner, to bring about a cessation on terms acceptable to the United States, to deter Soviet anti-population attacks on the USA and its allies, and to avoid unnecessary damage in enemy countries.” (i)

³²⁵ Two of the attempts are eventually successful. An important note and limitation, there was some pushing of these scenarios to the nuclear level, however, as the purpose of the study is to see how using these weapons might facilitate war termination (or not), this exercise is still useful. As the report notes, “Though in each war there are points at which either side might have agreed to end hostilities, the conflicts were carried to the point of a limited intercontinental exchange to sketch out the kinds of situations which could be expected in a prolonged escalation. Because of the much greater variety of possible courses of action available at the lower levels of intensity, alternatives to the option selected are generally not described in these scenarios,” p. 21.

³²⁶ The logic of E2DE is clear, for example: “The Presidential decision to authorize the use of tactical nuclear weapons resulted from the belief that not only would this action reverse the local military situation *but would put serious pressure on the Soviets to close out the war*,” p. 24. Additionally, “the armistice proposal sought clearly to limit NATO objectives to the aim of permitting choice by the people of Eastern Europe and to avoid any explicit threat to the Soviet homeland. It was anticipated that in this way the Soviets would not be forced into a corner and would agree eventually to this proposal rather than escalate to the use of nuclear weapons,” p. 24.

³²⁷ National Security Archives, Reports of the Net Evaluation Sub Committee, Document 11A, p. 26.

The Soviets respond “in kind” but at the same time announce they are withdrawing back beyond USSR pre-hostility borders. Therefore, E2DE eventually works but the US had to absorb a massive nuclear attack in return which they may have been able to avoid if they had not escalated by attacking the USSR directly with nuclear weapons.

The report summary highlights several of the factors already enumerated in the section on war games. First, that what was at stake may be radically altered or changed using nuclear weapons. For example, “nuclear war is likely to bring with it changes in the domestic and international fabric which are so radical that pre-war objectives established by pre-war values will be altered or discarded in favor of new war aims.”³²⁸ Second, the potential for misperceptions and misunderstandings is considered a serious factor impeding escalation control and war termination. For example, the report stresses “it may be true that, in the future, improvements in weapons and command and control may provide the discrimination we need but it is apparent that a nuclear war, or even an incipient nuclear war, probably cannot be managed, much less terminated, unless there is continuous direct contact with the enemy authorities and an unprecedented absence of ambiguity.”³²⁹ And later, in order to successfully manage a nuclear war, “an unprecedented absence of ambiguity will be necessary.”³³⁰ So, in the end we have an expert study where E2DE eventually succeeds twice (out of seven attempts), but not until very high levels of damage, and only under the best-case scenario of uninterrupted, clear, unambiguous signaling and communication. This is hardly strong evidence in support of this strategy.

³²⁸ National Security Archives, Reports of the Net Evaluation Sub Committee, Document 11A, p. 47.

³²⁹ National Security Archives, Reports of the Net Evaluation Sub Committee, Document 11A, p. 53.

³³⁰ National Security Archives, Reports of the Net Evaluation Sub Committee, Document 11A, p. 70.

EPSILON-I, a game run in 1972 by the Studies, Analysis and Gaming Agency (SAGA) of the Joint Chiefs of Staff, demonstrates E2DE failure. One of the primary reasons for such stiff US reaction and resistance was *due to Soviet horizontal escalation*. The US team argues that in response, “we should have smeared them all over the place... they had nothing to stand on up there. They had no reason in the world for going up there.”³³¹ They also comment that “If we don’t react militarily and politically, we can kiss NATO goodbye.” At every escalation conducted by the Soviet team, the U.S. continues to fight back harder.³³² This crisis simulation shows the importance of stakes and of precedent and reputational concerns. The status quo is of the utmost importance to the U.S. team. In stating their objectives, they remark they will “do all possible to convince the USSR our goal is only re-establishment of the status quo ante.” As noted above, the desire not to kiss NATO goodbye speaks to the importance of precedent and reputation.

In sum, these crisis simulations further demonstrate the challenges with escalating one’s way to war termination. In the studies by the NESC, which utilized the most up to date real-world data and expert analysts doing what amounts to best-case planning, the only “successful” attempts occurred after large nuclear exchanges. In other simulations, whether it is due to concerns over nuclear proliferation, protracted war with a nuclear power, or horizontal escalation, the evidence shows that if the other side retains the capability to respond with nuclear weapons, they probably will. The adversary retains the capability to respond at the same level, the material conditions on the ground probably haven’t changed much, and the stakes have, if

³³¹ Studies, Analysis, and Gaming Agency, “Politico-Military Simulation Epsilon 72,” Game records, page L-17.

³³² “If our actions do not have the desired effect, the air attacks would be expanded to include GDR territory. Immediate consideration will be given to use of tactical nuclear weapons on a very controlled and selective basis to achieve both a military effect as well as to demonstrate resolve.” And, “If Soviet’s launch broader campaigns... We take appropriate measures to counter.” Epsilon I-1972, Game records, see pages G-10 and F7.

anything, gone up for both sides. Lastly, nuclear use is unlikely to be accepted or rewarded by third parties.

2.8: Conclusion

The evidence presented above tells a clear and consistent story. E2DE in wargames and crisis-simulations is rarely an effective strategy. The challenges presented by the high stakes of a conflict between nuclear powers, the potential for misperceptions, and the ability and willingness to respond to this kind of strategy with an in-kind response appear to dominate. Of course, the materials studied here are not comprehensive of all wargaming efforts, particularly the huge amount of classified wargaming material. These games may also not be fully representative. However, they do span a wide range of source, time, and scenario, and all point in the same direction.

Nuclear weapons do not appear to help, even when they are used in a limited way to send a signal. In addition, nuclear attempts, even when successful in the single wargame and few crisis simulations, were far more destructive raising serious questions about the worthiness of the costs. It is hard to imagine that the shocking and visceral experience of a nuclear attack would be somehow less de-stabilizing in the real world than it is in the controlled environment of a wargame, where entire teams of people are there to ensure clear communication between players.

Future research in this vein could explore new or additional wargame data, where available, particularly by de-classifying documents or by creating and fielding one's own games. Questions remain regarding whether different nuclear capabilities might help ameliorate some of the issues found here, whether the misperceptions and miscommunications may be overcome,

and whether the evidence found here is present in the real world. Potential follow-on research could explore actual historical cases of E2DE (in a non-nuclear setting) to see if these results are reflected there.

From the materials utilized here it is clear that escalating to de-escalate among nuclear powers is a highly doubtful proposition. This is particularly true considering that if both parties to a conflict believe that they may escalate to de-escalate, the logical conclusion is a consistently rising escalatory spiral where each side believes if they just escalate a little more, in just the right way, they might achieve their aims. If this were to happen between nuclear powers, the result could be a massive nuclear exchange which is in no one's best interest. Scholars and practitioners alike should continue to challenge especially the intuition that a limited nuclear use may be used to de-escalate a conflict. This is one of the most dangerous actions a state can take and by no means equates to a resolve "trump card". Escalating to De-escalate, even if by breaking the nuclear threshold, does not appear to yield the coercive advantage that some might hope to gain by taking this enormous risk.

Appendix 2A:
List of materials referenced for this project (in chronological order)

Exercise: (9 Total)

Crisis Simulation: (8 Total)

Wargame Case: (32 Total)

Wargame Not Used: (9 Total)

Total Materials referenced: 58 sources.

	Game / Simulation / Exercise	Year conducted	Conducted by:	Scenario / Setting	Documents Utilized	Number of Pages	Wargame / Crisis Simulation / Exercise	Used as a "case" (Y/N)
1	NATO Exercise Report, 1952, report to the Military Committee	1952	NATO standing group	Europe, SACEUR, SACLAN, Channel Command.	Report by the Standing Group to the Military Committee on 14 exercises conducted in 1952	74	Exercise	N (does demonstrate the communications challenges discovered in almost every exercise).
2	Exercise Sagebrush	1955	U.S. Army and U.S. Air Force	"Aggressor forces", Testing Army and Air Force atomic warfare tactics and operations	Newspaper reports, Air University Press article.	27	Exercise	N
3	NATO Exercise Report, 1955	1955	NATO	Europe, NATO, large scale atomic exercise included	Report of NATO Standing Group to the Military Committee	66	Exercise(s)	N
1	Thai - I: Limited War in Thailand	1956	RAND, US Air Force Project RAND	U.S. vs. Thai Liberation forces (Supported by China)	RAND -RM2027 -Game Report	68	Wargame	N
2	Formosa-Korea I, Sierra Project	1956	RAND	Taiwan crisis, China vs. U.S.	RM-2042, RAND Research Memo	28	Wargame	N
3	Near East - 2, Project Sierra	1958	RAND	Syria Invades Jordan (Syria vs. U.S.)	RAND Document	56	Wargame	N
1	Near East - 3, Project Sierra	1958	RAND	Syria vs. Jordan (and U.S.) with nuclear weapons	RAND Document	46	Wargame	Y
2	POLEX-II	1960	MIT, Center for International Studies	The U.S. and USSR in Iran	Game Records (Final Report; Player critique)	196	Wargame	Y
4	NATO FALLEX-1960	1960	NATO	Europe, NATO exercises.	Note by IPT (international Planning team)	13	Exercise	N
4	NATO Planning Conference (First Berlin Game)	1961	JWGCG	Berlin Crisis (U.S. vs. Soviet)	Participant Summaries, game scenario (3 documents)	60	Wargame	N

	"Berlin Crisis Game 1"							
5	International Security Affairs Conference (Second Berlin Game) "Berlin Crisis Game II"	1961	JWGCG	Berlin Crisis (U.S. vs. Soviet)	Game Records (Scenario; player summary, other)	65	Wargame	N
3	AW and Limited War in Iran, Project Red Wood	1961	RAND	U.S. vs. USSR in Iran (supporting indigenous forces)	RAND Document D-5973.	50	Wargame	Y
4	Olympiad I-62 (Four games: Epsilon-III Berlin; MU-III Iran; ZIP; DAFT; MU-III)	1962	Joint War Games Control Group, Joint Chiefs of Staff	U.S. vs. USSR in Mideast (Iran) crisis.	Final Report; Pre-game packet; Games Records	244	Wargame (s)	Y (MU-III, Iran)
5	NATO FALLEX -1962	1962	NATO	NATO exercises / Europe.	Military Decision, Report on FALLEX 1962	18	Exercise	N
1	Net Evaluation Sub Committee Report 1962	1962	NESC	U.S. v. USSR	NESC Reports, briefings. (Documents 09A / 09B / 09C)	142	Crisis Simulation / Scenario Based analysis	N (background reference)
5	Sigma I - 62	1962	Joint War Games Control Group (JWGCG)	U.S. in Vietnam	Final Report; Fact book	307	Wargame	Y
6	Epsilon-62	1962	JWGCG	Berlin Crisis (U.S. vs. Soviet)	Final Report	97	Wargame	N
2	Net Evaluation Sub Committee, "The management and termination of War with the Soviet Union"	1963	NESC, National Security Council	U.S. vs. USSR	Top Secret Reports. Doc 11A and 11B	81	Crisis Simulation / Scenario Based analysis	Y
6	DETEX - I	1963	MIT, Center for International Studies	U.S. vs. China, SE Asia Scenario	Game Records (Plenary Critique; Game director observations; DETEX-EXDET final report)	117	Wargame	Y
7	DETEX - II	1963	MIT, Center for International Studies	U.S. vs. USSR Berlin Scenario	Game Records (Critique; Game Director Observations; DETEX-EXDET final report)	116	Wargame	Y

3	NESC Report, 1963	1963	NESC, National Security Council	U.S. vs. USSR all-out war	NESC Reports, briefings.	33	Crisis Simulation / Scenario Based analysis	N (background only)
6	NATO FALLEX-1964	1964	NATO	Europe, NATO exercises.	Military Decision, Report on FALLEX 1964	20	Exercise	N
8	The Southern Flank Exercise of 1968	1964	RAND	Turkey vs. Greece/Bulgaria (with US / Soviets supporting)	RAND Documents Overview/Blue Moves	40	Wargame	Y
9	A NATO Central Front Exercise (set in 1967) (Berlin Crisis)	1964	RAND	Berlin Crisis (U.S. vs. Soviet)	RAND Memo	98	Wargame	Y
10	Sigma I-64	1964	Joint War Games Agency	U.S. in Vietnam	Final Report; Initial Scenario	325	Wargame	Y
11	Sigma II - 64	1964	Joint War Games Agency	U.S. in Vietnam	Final Report	195	Wargame	Y
12	Sigma II - 65	1965	Joint War Games Agency	U.S. in Vietnam	Final Report	297	Wargame	Y
13	NU-66 / NU-I	1966	Joint War Games Agency	U.S. and China involved in a conflict between India and Pakistan	Final Report (Joint Chiefs of Staff) Signed by General Wheeler, CJCS	73	Wargame	Y
14	NU-66 / NU-II	1966	Joint War Games Agency	U.S. and China involved in a conflict between India and Pakistan	Final Report (Joint Chiefs of Staff) Signed by General Wheeler, CJCS	73	Wargame	Y
7	NATO FALLEX -1966	1966	NATO	NATO exercises / Europe.	Consolidated Exercise Report	14	Exercise	N
15	Sigma I -66	1966	Joint War Games Agency	U.S. in Vietnam	Final Report	127	Wargame	Y
16	BETA I -1967	1967	JWGA	U.S. vs. USSR	Game Records (various: Final report, fact book, player critique, CIA report)	285	Wargame	Y
17	BETA II - 1967	1967	JWGA	U.S. vs. USSR	Same as BETA 1-67	285	Wargame	Y
7	MU I	1968	JWGA	Middle East / Israel	Game Records (summary)	12	Wargame	N
8	NATO FALLEX -1968	1968	NATO	NATO exercises / Europe.	Military Committee Report	17	Exercise	N
4	Epsilon-72	1972	Studies, Analysis, and Gaming agency	U.S. / Soviet	Simulation Documentation;	75	Crisis Simulation / Scenario Based analysis	Y

18-22	Global War Games, First series	1979-1983	U.S. Naval War College	U.S. / USSR	Final Report, Newport Papers, #4. "Global War Game, the first five years" Hay and Gile	77	Wargame(s)	Y
9	Able Archer	1983	NATO	NATO exercises / Europe.	Various: included senior level first impressions, 1990 document on the Soviet "War Scare" and several others (National Security Archives)	223	Exercise	N
23-27	Global War Games, Second series	1984-1988	U.S. Naval War College	U.S. / USSR	Naval War College, Newport Papers, #20, Gile	194	Wargame(s)	Y
28	N 2910; A politico military game of extended conflict in Europe	1987	RAND, Directed by Director Net Assessment, OSD	U.S. / Soviet Union	Report	32	Wargame	Y
5	The Day After Series (Four exercises)	1993	RAND, Project Air Force	Russia; Middle East; Korea; South Asia	Rand Report	386	Crisis Simulation / Scenario Based analysis	Y
6	RAND Report for Director Net Assessment, OSD "Theater analysis and Modeling in an Era of Uncertainty: The Present and Future of Warfare" (MR-380)	1994	RAND Corporation	Blue (US) vs. Red ("regional opponents"); various	Rand Monograph	126	Crisis Simulation / Scenario Based analysis	Y
8	Army After Next Winter War Game, 1997	1997	Arroyo Center, Training and Doctrine Command (TRADOC), US army, assisted by RAND corporation	hypothetical, Blue and Red teams staffed identically	Game Report "Issues from the 1997 Army After Next Winter Game	75	Wargame	N
9	Global 2000, US Naval War College	2000	U.S. Naval War College	network centric operations	Game Report article in Naval War College Review	15	Wargame	N

7	The Future Of Warfare. Issues from the 1999 Army After Next Study Cycle (MR1183)	2001	RAND Arroyo Center, Prepared for the US Army	Hypothetical, Blue Vs. Red with varying capabilities	RAND Report	120	Crisis Simulation / Scenario Based analysis	Y
29	South Asian Stability Workshop 1.0	2013	U.S. Naval Post Graduate School	India vs. Pakistan	Game report	26	Wargame	Y
30	Managing Strategic Crises in South Asia	2014	U.S. Naval Post Graduate School	India vs. Pakistan	Game Report	23	Wargame	Y
31	South Asian Stability Workshop 2.0	2016	U.S. Naval Post Graduate School	India vs. Pakistan	Crisis Simulation Report	44	Wargame	Y
32	CSIS, Secure World Foundation, Space Crisis Dynamics TTX	2016	CSIS and Secure World Foundation	Hypothetical, Space-based.	Escalation and Deterrence in the Space Age Report; academic article; Summary Report	149	Wargame (s)	Y
8	Exploring the Role Nuclear Weapons could play in Deterring Russian Threats to the Baltic States (REFLEX-N)	2019	RAND Corporation	NATO vs. Russia	Rand Research Report	152	Crisis Simulation / Scenario Based analysis	Y

Appendix 2B:
E2DE in past wargames: Table 2.1

TABLE 2.1: Wargame data summary.

	Game (or Game move)	Balance of Forces in favor of:	Initiator / Aggressor	Escalating Team / State	Type of Escalation	Nuclear weapons used?	Explicit Compellent Threat / Demand?	Success: War termination?	Success Objectives / Terms?
1	GWG 1979	Red (Soviet)	Soviet	Soviet	Vertical	Yes	Yes	No	No
2	GWG 1980	Red (Soviet)	Soviet	US (Blue)	Vertical	Yes	Yes	Yes	No
3	GWG 1981	Red (Soviet)	Soviet	US (Blue)	Vertical	Yes	No	No	No
4	GWG 1982	Red (Soviet)	Soviet	Soviet	Vertical (Chemical)	No	No	No	No
5	GWG 1983	Red (Soviet)	Soviet	Soviet	Horizontal	No	No	No	No
6	GWG 1984	?	Soviet	US (Blue)	Vertical and Horizontal	No	No	No	No
7					Vertical (chemical) and Horizontal				
	GWG 1985-87	?	Soviet	Soviet		No	Unknown	No	No
8	GWG 1985-87	?	Soviet	US (Blue)	Horizontal	No	No	No	No
9	GWG 1988 (offline "gaming")	?	Soviet	US (Blue)	Vertical	Yes	Unknown	No	No
10	GWG 1988 (offline "gaming")	?	Soviet	Soviet	Vertical	Yes	Unknown	No	No
11	Polex II	Soviet	?	US (Blue)	Vertical	No	Yes	No	No
12	Polex II	Soviet	?	Soviet	Vertical	No	Yes	No	No
13	SASW 1.0	India	India	India	Vertical and Horizontal	No	Yes	No	No
14	SASW 2.0	India	India	Pakistan	Vertical and Horizontal	No	Yes	No	No
15	SASW 2.0	India	India	India	Vertical and Horizontal	No	Yes	No	No
16	MU-III (Olympiad - 62)	?	Soviets	Blue/ U.S	Vertical and Horizontal	Yes	Yes	No	No
17	DETEX I, 1963	Red (China)	Red (China / NV)	China	Vertical	No	Yes	No	No
18	DETEX II, 1964	US	U.S.	U.S.	Vertical (objectives)	No	Unknown	No	No
19						No (but damage to nuclear forces)			
	MSCISA 2014	India	India	Pakistan	Vertical (inadvertant)		Yes	No	No
20	RAND N2910 (1987)	Soviet	Soviet	U.S.	Vertical	No	Yes	No	No
21	SIGMA I, 1964	?	NV / VC (RED)	U.S.	Vertical	No	Yes	No	No
22									
	SIGMA II, 1964	Locally, Chinese ground forces, Strategically, US.	NV / VC (RED)	U.S.	Vertical	No	Yes	No	No
23	SIGMA II, 1965	?	NV/ VC	U.S.	Vertical	No	Yes	No	No
24	SIGMA I, 1962	?	?	U.S.	Vertical / Horizontal	No	Unknown	No	No
25	SIGMA I, 1966	US	RED (NV / VC)	U.S.	Vertical	No	Yes	No	No
26	BETA I, 1967	Soviet (local) and strategic.	Soviet (RED)	U.S.	Vertical	Yes	Yes	No	No
27	BETA I, 1967	Soviet (local) and strategic.	Soviet	Soviet	Vertical	Yes	Yes	No	No

	Game (or Game move) / Exercise	Balance of Forces in favor of:	Initiator / Aggressor	Escalating Team / State	Type of Escalation	Nuclear weapons used?	Explicit Compellent Threat / Demand?	Success: War termination ?	Success Objectives / Terms ?
28	BETA I, 1967	Soviet (local) and strategic.	Soviet	Soviet	Vertical	Yes	Yes	No	No
29	BETA I, 1967	Soviet (local) and strategic.	Soviet	U.S.	Vertical and Horizontal	Yes	Yes	No	No
30	BETA I, 1967	Soviet (local) and strategic.	Soviet	Soviet	Vertical and horizontal	Yes	No	No	No
31	BETA II, 1967	U.S. (very marked strategic advantage)	Red (Soviet)	Soviet	Vertical	Yes (demonstration)	Yes	No	No
32	BETA II, 1967	U.S. (very marked strategic advantage)	Red (Soviet)	Soviet (red)	Vertical	No	Yes	Yes	Yes
33	Sierra, Near East 3, 1958 *Note, need permissions	Red (Soviet backed Syria)	Red	Blue (U.S. / Jordan, Iraq, Saudi Arabia)	Vertical	Yes	Yes	No	No
34	Red Wood (D-5973), War in Iran, 1959 Note: Need permissions	Soviet (Red)	Soviet	U.S.	Vertical	Yes	No	No	No
35	South Flank Exercise, 1964 Note: Need Permissions	?	?	U.S.	Vertical	yes	Yes	No	No
36	RAND Central Front Exercise, 1964 (Need permissions)	Soviet (Red)	Soviet	U.S.	Vertical	No	Yes	No	No
37	NU-66, 1966, NU-I	?	China (attacks India)	China	Vertical	Yes	Yes	No	No
38	NU-66, 1966, NU-I alternative	?	China (attacks India)	Pakistan	Vertical and Horizontal	No	Unknown	No	No
39	CSIS_SWF_2016_Space Based TTX_Scenario 1	Blue	Orange	Blue	Vertical	No	Yes	No	No
40	CSIS_SWF_2016_Space Based TTX_Scenario 2	Blue	Blue	Blue	Vertical	no	Yes	No	No
41	CSIS_SWF_2016_Space Based TTX_Scenario 3	Yellow/Orange (vs. Blue/Red)	Yellow/Orange	Red / Blue	Vertical	no	Yes	Yes	Yes

Appendix 2C: Crisis Simulation Summary Data

	Game (or Game move) / Exercise	Balance of Forces in favor of:	Initiator / Agressor	Escalating Team / State	Type of Escalation	Nuclear weapons used?	Explicit Compellent Threat / Demand?	Success: War termination?	Success Objectives / Terms ?
1	National Security Archives, Reports of the NESC. Doc 11A (1963) Preemptive Scenario	Rough Strategic Parity, Soviet advantage locally	U.S.	U.S.	Vertical (Preemptive Strike)	Yes	Yes	No	No
2	Doc 11A Preemptive Scenario move 2	Rough Strategic Parity, Soviet advantage locally	U.S.	Soviet	Vertical (attack on cities/urban)	Yes	Yes	No	No
3	Doc 11A Preemptive Scenario move 3	Rough Strategic Parity, Soviet advantage locally	U.S.	U.S.	Vertical (attack on cities/urban), expanded war aims	Yes	Yes	Yes (cease-fire)	No / partial
4	Doc 11A Escalation Scenario move 1	Rough Strategic Parity, Soviet advantage locally	Soviet	U.S.	Vertical and Horizontal	Yes	Yes	No	No
5	Doc 11A Escalation Scenario move 2	Rough Strategic Parity, Soviet advantage locally	Soviet	Soviet	Vertical and Horizontal	Yes	Yes	No	No
6	Doc 11A Escalation Scenario move 3	Rough Strategic Parity, Soviet advantage locally	Soviet	Soviet	Vertical	Yes	No	No	No
7	Doc 11A Escalation Scenario move 4	Rough Strategic Parity, Soviet advantage locally	Soviet	U.S.	Vertical and Horizontal	Yes	Yes	Yes	Yes / original

8	REFLEX (N) BALTICS, RAND Report	Russian	Russia	U.S.	Vertical	Yes	Yes	No	No
9	The Day After Series, 1993 (Russia)	Russia (vs. Ukraine)	Russia	Russia	Vertical	Yes	Yes	N/A	N/A
10	The Day After Series, 1993 (Greater Middle East)	Iran (vs. Neighbors Kuwait and Saudi Arabia)	Iran	Iran	Vertical	Yes	Yes	No	No
11	The Day After Series, 1993 (Korea)	?	North Korea	North Korea	Vertical	Yes	No	No	No
12	The Day after Series, 1993 (South Asia)	India	Pakistan	Pakistan	Vertical	Yes	Yes	No	No
13	Epsilon-72	?	Blue (U.S. FRG)	Red (Soviet, played by control)	Both	No	Unknown	No	No
14	RAND-MR380, "Theater analysis and Modeling in an Era of Uncertainty: The Present and Future of Warfare"	This study was a summary report on multiple games and studies and so the specific information in this table was not available for each game. However, general results and trends, as well as the reason and explanations for such trends are discussed in the report and are referred to in my essay.							

Appendix 2D: Coding Rules for Wargames:

Game or Exercise (or game/exercise move):

- Simply the name of the exercise; or a move (turn) within an exercise. For example, in the Beta I game of 1967, there were five distinct moves that represented distinct escalations within the game. Alternatively, in the RAND Central Front Exercise of 1964, there was only one distinct escalation amounting to an observation for this study.

Balance of forces:

- Refers to two separate elements of the balance of forces: First, the local/conventional balance of forces
- Second, to the nuclear/strategic balance of forces.
- Often, this variable is explicitly stated by game documents and player materials. Sometimes this can be derived from player statements, force descriptions in game scenario materials, etc...
 - o For example, in BETA II, the final report states that “the united states had a very marked strategic nuclear superiority at the beginning.”

Initiator/Aggressor:

- This is the first “state” (player/team) to take a militarized action – seizing territory, initiating military attacks or strikes, deploying troops on adversary territory - that violates or attempts to change the status quo. This usually occurs amidst a crisis of some kind.
 - o For example, in Beta I, although there were some crisis actions taking place with regard to the stopping of a US convoy at a border check point, the “initiation” was

the East German seizure of West Berlin “in a lightening move. At the same time, two U.S. photo-reconnaissance satellites were de-orbited – apparently by Soviet anti-satellite vehicles” (Beta game final report, A-5)

- This status remains for the duration of the game, regardless of who initiates follow-on actions. This is the “who threw the first punch” of the war/crisis. It does not address who may have “started it” with diplomatic or political claims or actions, or other actions below the militarized threshold.

Escalating team (state):

- For each observation, this is the side that has initiated an escalatory action as described below in types of escalation. In other words, this is the state that is attempting to escalate to de-escalate in that particular move.
 - For example, In the BETA-I game, the U.S. team escalates by conducting its first offensive operations via a division-sized offensive, air strikes, and the dropping of two airborne brigades. They also use nuclear weapons.
 - This is a vertical escalation, in that all prior U.S. efforts had been defensive in nature.
 - In response, the Soviets counter-attack with Nuclear weapons. This is also considered a vertical escalation as it is the first use of nuclear weapons from the Soviet side.

Type of Escalation:

- Vertical, Horizontal, or both.

- Because the adversary cannot know the intentions of the attacker, every escalation is potentially an “escalate to de-escalate” attempt from an observer/receiver point of view. The attacker may simply intend to win/destroy the enemy, but the receiving state must interpret the attack and its results from their own point of view. It is possible the attacking state is specifically attempting to E2DE, by signaling resolve, intent, but the receiving state misperceives the attack as something more. All combinations of this are possible.
- Therefore, in order to test the effectiveness of E2DE attempts, the relevant variable is whether an escalation has occurred that is intended primarily as a signal to the other side, and this is measured as either Vertical or Horizontal, or both.
- **Vertical:** refers to an increase in the levels or intensity of the conflict. This includes an increase in the number of troops committed, the intensity, frequency, quantity, or size of attacks, an increase or raising of the objectives of the conflict, a shift to more destructive weapons (conventional weapons to WMD), and expansion of targets (i.e. from small, military-only to larger and non-military targets). An example of such escalation would be the shift from the use of ground troops along a contested border region (such as the Line of Control in Kashmir) only, to air strikes on military targets in the homelands of either state (India or Pakistan in this case).
- **Horizontal:** refers to an increase in scope of the conflict, which is understood as an increase in the geographic area of the conflict or the increase in the number of countries or belligerents involved. The opening of a new theater of operations to divert enemy forces, or the forming of new alliances are examples of horizontal escalation. As a specific example, horizontal escalation might occur in a hypothetical war between

China/North Korea and US/ROK confined to the Korean Peninsula, if the US were to decide to launch interdiction strikes into mainland China.

- **Both:** simply refers to a combination of the above. A jump from conventional to nuclear weapons that also attacks a different geographical area than the existing boundaries of the conflict would be an example.

Nuclear weapons used? Yes or no.

- Did the escalating state (the state attempting E2DE) use nuclear weapons in the escalation or not?

Explicit compellent threat / Demand?

- Binary, Yes or No.
- Did the escalating state accompany the escalation with a clear demand informing the other state of what it expects the attacks to achieve?
 - o For example, in the BETA-I game, after the first Soviet use of nuclear weapons, the Soviet team issues an ultimatum, “giving the United States 48 hours to cease its air attacks, withdraw from East Germany, and to confer on the French proposal.” (A-6, final report)

Outcome (Success or not)?:

- Measured on two dimensions:
 - o First, Did the escalation lead directly to **war termination**?

- Second, Did the escalating state **achieve their objectives** or achieve war termination on their own terms?
 - For example, in the BETA-I game, a cyclical escalatory situation develops that results in massive strategic nuclear exchange. In no case did either side's efforts achieve either their stated objectives or war termination in their favor.

PAPER 3:

Escalate to De-Escalate in Hypothetical Future Conflict Scenarios: A Pair of Survey Experiments.

3.1 Abstract:

Within debates among scholars and strategists over the prospects of limited nuclear war an important but potentially dangerous concept has emerged. This concept is most commonly referred to as “escalate to de-escalate” (E2DE). Escalate to de-escalate is defined as a compelling strategy in which states deliberately escalate across some significant threshold (potentially the nuclear threshold) to signal credibility, commitment, and resolve and to convince the adversary to agree to terminate the conflict. It is a strategy that hopes to gain coercive leverage by *taking* bold, escalatory action. In this essay I discuss the results of a pair of survey experiments which were designed to explore the effectiveness of E2DE strategies as well as to investigate the coercive effects of nuclear weapons in such scenarios. Respondents were placed on the receiving end of E2DE attempts within hypothetical future conflict scenarios and then asked about their preferred responses. The surveys were administered to a military sample drawn from student, faculty and alumni populations of the U.S. Naval War College and other active-duty military members invited through a network sampling strategy as well as a separate representative sample of U.S. citizens over the age of 18. The results show that E2DE strategies rarely work in these hypothetical scenarios and that nuclear weapons do not produce any clear coercive advantages. Additionally, because E2DE success relies on activating fear on the receiving side, the survey experiments asked respondents how fearful or angry they would be in the given scenario and assessed these emotions’ impact on preferred responses. It is clear in these experiments that: E2DE fails much more often than it succeeds; nuclear weapons do not increase chances of

success; anger is a more frequent response than is fear; fear and anger have predictable links to preferences; and nuclear weapons do not necessarily lead to preferences for massive nuclear escalation.

3.2 Introduction:

In 1967, the NATO Military Committee approved a new overall strategic concept for the defense of the NATO Area.³³³ The concept stated that should deterrence fail and a direct defense be unsuccessful at defeating the aggression, NATO would conduct “deliberate escalation” to the use of nuclear weapons with the aim of increasing the costs and risks of escalation to unacceptable levels, thereby causing the enemy to “cease and withdraw”.³³⁴ It was explicitly stated that this did not depend solely on the ability to defeat the enemy’s aggression, but rather it would “weaken his will to continue the conflict” and cause them to “conclude that the risks involved are not commensurate with their objectives.” The logic behind this strategic concept is clear, relying on deliberate escalation across a significant threshold (the nuclear one) to convince the adversary to quit the conflict due to the fear and risk of further escalation.

Recently, numerous scholars and strategists in the United States and elsewhere attribute a very similar logic to contemporary Russian nuclear strategy. For example, the 2018 U.S. Nuclear Posture Review explicitly addresses this, concluding “Russian strategy and doctrine emphasize the potential coercive and military uses of nuclear weapons. It mistakenly assesses that the threat

³³³ NATO, (1967). Military Decision on MC 14/3, A report by the Military Committee to the Defense Planning Committee on Overall Strategic Concept for Defending the NATO Area, <https://archives.nato.int/overall-strategic-concept-for-the-defence-of-the-nato-area>

³³⁴ NATO, (1967), MC 14/3, pp. 11 and 14. See also: Legge, J. Michael, (1983), Theater Nuclear Weapons and the NATO Strategy of Flexible Response, R-2964-FF, RAND Corporation, <https://www.rand.org/content/dam/rand/pubs/reports/2007/R2964.pdf>, p. 9.

of nuclear escalation or actual first use of nuclear weapons would serve to ‘de-escalate’ a conflict on terms favorable to Russia.”³³⁵ Referred to often as “escalate to de-escalate” (E2DE), this strategy has received increased attention in recent years among nuclear strategists and policy makers.³³⁶ In this view, scholars and practitioners believe that the *actual* limited use of nuclear weapons may yield coercive advantages by demonstrating resolve and convincing adversaries to de-escalate and agree to war termination.

This essay examines the logic and potential effectiveness of E2DE strategies by questioning the coercive effects of E2DE and the role nuclear weapons may play as part of such a strategy. Theoretical explanations for why we should expect E2DE success or failure are presented, and the survey experiments help to test these theoretical intuitions.³³⁷ Specifically, I ask the following questions: First, how effective is an escalate to de-escalate strategy amongst survey respondents? When respondents are told that the adversary has crossed a significant

³³⁵ U.S. Department of Defense, Nuclear Posture Review (2018), <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF>, see p. 8. The 2022 National Defense Strategy and NPR also express this concern, stating “Russia presents the most acute example of this problem today given its significantly larger stockpile of regional nuclear systems and the possibility it would use these forces to try to win a war on its periphery or avoid defeat if it was in danger of losing a conventional war.” (p. 5 of NPR)

³³⁶ For discussions of “escalate to de-escalate” see: Katarzyna Zysk (2018): Escalation and Nuclear Weapons in Russia’s Military Strategy, *The RUSI Journal*, pp. 1 – 12; Iklé, F. Charles. (1991). *Every war must end*. Rev. ed. New York: Columbia University Press, esp. Ch. 3, titled “Peace through escalation?”; Kristin Ven Bruusgaard, (2017), *The Myth of Russia’s Lowered Nuclear Threshold*, <https://warontherocks.com/2017/09/the-myth-of-russias-lowered-nuclear-threshold/>; Kristin Ven Bruusgaard (2020) Russian nuclear strategy and conventional inferiority, *Journal of Strategic Studies*; Oliker, O. (2018, Nov). Moscow’s nuclear enigma. *Foreign Affairs*, 97, 52-57; “Prevailing in Limited War,” by Elbridge Colby, from *Center for a New American Security* (2016); Ross, Jay, (2018), “Time to terminate Escalate to De-escalate - It’s escalation control”, <https://warontherocks.com/2018/04/time-to-terminate-escalate-to-de-escalateits-escalation-control/>; Ryan, Kevin, 2020, “Is ‘Escalate to De-Escalate’ part of Russia’s Nuclear Toolbox?”, <https://www.russiamatters.org/analysis/escalate-deeNscalate-part-russias-nuclear-toolbox>; Speech by DIA Director, BGEN Robert P. Ashley Jr. <https://www.dia.mil/News/Speeches-and-Testimonies/Article-View/Article/1859890/russian-and-chinese-nuclear-modernization-trends/>; Comments by General Paul Selva, (2019), <https://seapowermagazine.org/u-s-must-add-low-yield-nuclear-arsenal/>; and statements made by Deputy SECDEF and VCJCS, (2015), <https://docs.house.gov/meetings/AS/AS00/20150625/103669/HHRG-114-AS00-Wstate-WorkR-20150625.pdf>; and <https://thebulletin.org/2022/03/russian-military-doctrine-calls-a-limited-nuclear-strike-de-escalation-heres-why/>

³³⁷ I summarize these theoretical intuitions here. For a fuller discussion see: Post, Daniel R. (2023), *Investigating Escalate to De-escalate in Past Wargames and Crisis Simulations*, Working paper (part II of dissertation).

threshold to convince them to back down, how often does it succeed in achieving war termination? Second, does crossing the nuclear threshold make attempts more or less successful than conventional attempts? Lastly, what are the relationships between how fearful or angry such scenarios would make respondents feel and their preferred response to such coercive attempts?

To answer these questions, I conducted a pair of survey experiments in which respondents were presented with hypothetical conflict scenarios involving otherwise identical nuclear or non-nuclear attacks and were then asked about their preferred response. In short, these scenarios put respondents on the receiving end of E2DE attempts and then measured preferences for different potential responses. The survey experiment was administered to two different groups. First, to a military sample acquired by fielding the survey amongst the student, faculty, and alumni populations of the U.S. Naval War College in Newport, RI, and additional military members through a snowball network sampling strategy (n=408). This included both in-resident students participating in their Joint Professional Military Education (JPME) and Master's Degree programs, as well as College of Distance Education Students who may or may not be pursuing a Master's degree but are pursuing the JPME qualifications. Additionally, the survey was sent to the active-duty military Alumni.³³⁸ The military sample includes members from the U.S. Air Force, Army, Coast Guard, Marine Corps, Navy, and civilian DOD organizations. Additionally, around twenty percent of the in-resident student body is comprised of international officers from allied and partner countries.³³⁹ This group is referred to as the "military" sample. Additionally, the survey was administered to a representative sample of U.S. citizens over the age of 18

³³⁸ The survey went out to approximately 2,600 recipients. This yielded a 15.7% completed response rate. The survey was offered to members from the USNWC's College of Distance Education, College of Naval Command and Staff, and College of Naval Warfare, and the Naval Command College (international students). For more information about all of these colleges and the programs they offer, please visit: <https://usnwc.edu/Academics-and-Programs/Colleges-and-Academies>

³³⁹ For the class reporting in August, 2019 for example, the breakdown of students in residence was as follows: USN-29%, USMC-7%, US Army-21%, USCG-1%, USAF-11%, Civilian-7%, International-23%.

acquired by the survey firm Qualtrics (n=644). These surveys were conducted in the Spring and Summer of 2022.³⁴⁰

The results of these survey experiments demonstrate that a clear majority of respondents in both populations choose not to de-escalate in these scenarios. The results also show that nuclear use within the scenarios does not produce any measurable coercive advantages. Instead, nuclear use increases the likelihood that respondents prefer the United States respond with nuclear weapons and increases respondents' support for a President's decision for a larger or massive nuclear response regardless of their own preference. Additionally, respondents in both groups reported that these hypothetical scenarios would likely generate feelings of anger more often than feelings of fear; and that fear and anger have predictable connections to rates of de-escalation.

3.3 Relevant Literature and Background:

The following section describes the specific concept of “escalate to de-escalate” and briefly identifies several other connected bodies of literature to which this project contributes.

Escalate to De-escalate

When attempting a strategy of E2DE, escalation is a *deliberate* action. The deliberate action is taken primarily for the purpose of ending the conflict without any further increase in the intensity or level of fighting. The strategy aims to achieve de-escalation through a

³⁴⁰ The civilian sample was acquired between the dates 28 April, 2022 – 10 May, 2022. The military was surveyed between the dates 10 March, 2022 – 14 June 2022.

suggestive/signaling mechanism, specifically, through signaling capability, commitment, and resolve. The strategy does not rely on instrumental purposes, such as the degradation of enemy forces to the point they can no longer resist, but on psychological responses wherein the other side fears escalation or comes to see the conflict as too costly to continue at the new potential level of violence. The critical distinction is that in E2DE, actors are making *deliberate* decisions to escalate, not to win or to completely disable or defeat the enemy, but rather to send a signal and convince the adversary to decide to end the conflict. At the same time, E2DE is also meant to suggest that the escalating state could do more if the escalating state chose. It's meant to be *both bold and restrained* and attempts to find a middle ground between intimidation and assurance. E2DE as such is a compellent strategy that hopes to gain coercive leverage by *actually* taking bold, escalatory action.³⁴¹

Much of contemporary E2DE discussion is rooted in an assertion by experts that E2DE is an accurate interpretation of Russian strategy. As quoted above, the United States' top unclassified nuclear policy document, the Nuclear Posture Review (NPR) explicitly does this. Katarzyna Zysk, a Senior Fellow at the Atlantic Council, claims that this assessment is essentially correct, arguing that "Russia reserves an option of a limited nuclear use at a scale that would aim to avoid escalation to compel the adversary to refrain from further action and back off. As authoritative Russian experts acknowledge, this basic logic is widely accepted in Russia."³⁴² The primary objective of nuclear use, she continues, would be political: "The concept

³⁴¹ Compellence "utilizes force – or threats of force – to propel a target to take an action, or to stop taking an action it has already started", Alexander Downes, (2018). "Step Aside or Face the Consequences: Explaining the Success and Failure of Compellent Threats to Remove Foreign Leaders," in *Coercion: The Power to Hurt in International Politics*, ed. Greenhill and Krause, 96. For the classic work on compellence as a form of coercion, see Schelling, T. C. (2008 ed., original 1966), *Arms and Influence*. New Haven. Yale University Press. More discussion on compellence follows in section III.

³⁴² Zysk, Katarzyna (2018): *Escalation and Nuclear Weapons in Russia's Military Strategy*, The RUSI Journal, pp. 1 – 12. DOI: 10.1080/03071847.2018.1469267. Furthermore, the underlying assumption of this logic is that "fear of

aims therefore to highlight ‘the asymmetry of interests’ and manipulate the enemy’s perception of risk and cost to the point where it is no longer willing to bear them and would accept the political terms of capitulation ending the conflict.” Others echo this understanding, including Eldridge Colby, the former Deputy Assistant Secretary of Defense, who describes the strategy as “an attempt to escalate to the use of nuclear weapons in the midst of a (presumably failing) conventional conflict in order to spook the (again, presumably conventionally superior) opponent to back down and concede.”³⁴³ Kevin Ryan, of Harvard’s Belfer Center, writes simply: “Russia does plan for using nuclear strikes to deescalate (that is, to end) and win conflicts. So does the United States.”³⁴⁴

Others, however, disagree with this assessment of Russian strategy. These arguments typically acknowledge Russian willingness to use nuclear weapons in a limited fashion under certain circumstances but characterize E2DE as too simple an interpretation, incomplete, or inaccurate.³⁴⁵ Instead, Russian plans to use nuclear weapons should be considered as part of a broader strategic deterrence, counter-escalation, and warfighting strategy.³⁴⁶ For example, Kofman and Fink argue “The simplistic view characterizing Russian strategy as ‘escalate to de-escalate’ or ‘escalate to win’ is not correct, but neither are the commonly voiced

further escalation to a massive nuclear exchange would dissuade adversaries from deploying their own nuclear forces and therefore force them to back off.” pp. 2-3.

³⁴³ Colby, E. (2016), “Prevailing in Limited War”, Center for a New American Security, <https://www.hsdl.org/?abstract&did=795108>

³⁴⁴ Ryan, Kevin, 2020, “Is ‘Escalate to De-Escalate’ part of Russia’s Nuclear Toolbox?”, <https://www.russiamatters.org/analysis/escalate-deeNscalate-part-russias-nuclear-toolbox>. Additionally, he argues that “In the end, although the phrase ‘escalate to de-escalate’ is not used in openly published Russian doctrine, the Russian professional articles above and others make clear that using nuclear weapons to deescalate a conflict is most definitely part of Russia’s nuclear toolbox.”

³⁴⁵ Jonson, David (2018), *Russia’s Conventional Precision Strike Capabilities, Regional Crises, and Nuclear Thresholds*, Livermore Papers on Global Security No. 3 Lawrence Livermore National Laboratory Center for Global Security Research, <https://cgsr.llnl.gov/content/assets/docs/Precision-Strike-Capabilities-report-v3-7.pdf>; Kristin Ven Bruusgaard (2020): “Russian nuclear strategy and conventional inferiority”, *Journal of Strategic Studies*, 44 (1); Ross, Jay (2018): “Time to terminate ‘Escalate to De-Escalate’ – It’s Escalation Control”, <https://warontherocks.com/2018/04/time-to-terminate-escalate-to-de-escalateits-escalation-control/>

³⁴⁶ Johnson, D. (2018), p. 67.

counterarguments that suggest no Russian strategy for limited nuclear use exists, or that it was simply a stopgap measure born out of conventional inferiority.”³⁴⁷ In their view, Russian strategy is best considered an “escalation management” strategy that includes the ability to achieve de-escalation at certain key points in a conflict. An important aspect of these debates is the differing assessments of what conditions or circumstances would cause Russia to go nuclear, and whether this would be done in the service of coercive, aggressive behaviors or merely in self-defense.

Importantly, there is no reason to assume that escalate to de-escalate strategies are exclusive to Russian strategists. Indeed, NATO strategy for much of the cold war was exactly this strategy.³⁴⁸ Scholars have hinted at the potential for other states to employ E2DE strategies, whether by conventional or nuclear means, for example, in a potential U.S. – China conflict,³⁴⁹ or in a conflict between North Korea and a U.S.-South Korean alliance.³⁵⁰ For this reason this essay explores the merits of an E2DE strategy itself and brackets the discussions surrounding who may or may not have such a strategy. As the above discussion makes clear, the concept itself is prevalent in academic and policy circles and is worthy of attention.³⁵¹

³⁴⁷ Kofman, M. and Fink, A. L. (2020), “Escalation Management and Nuclear Employment in Russian Military Strategy”, <https://warontherocks.com/2020/06/escalation-management-and-nuclear-employment-in-russian-military-strategy/>

³⁴⁸ Legge, J. Michael, (1983).

³⁴⁹ For mention of E2DE and China, see Cunningham, Fiona S., Fravel, M. Taylor (2019), “Dangerous Confidence? Chinese Views on Escalation”, *International Security*, Vol. 44, No. 2, pp. 61-109

³⁵⁰ Ochmanek, D. and Lowell H. Schwartz (2008), “The Challenge of Nuclear-Armed Regional Adversaries.” Santa Monica, CA: RAND Corporation. <https://www.rand.org/pubs/monographs/MG671.html>.

³⁵¹ Additionally, in my other research conducted through interviews with elite members of the U.S. Strategic Community, it is clear that a majority assess that several nuclear armed states have plans or the potential to employ E2DE strategies and many believe that the U.S. should consider such a strategy under some conditions.

Other Relevant Literature

Exploring the E2DE concept also allows me to engage with other important research related to: limited nuclear war; preferences on the use of nuclear weapons; escalation; and war termination.

Since the dawn of the nuclear era there has been debate regarding the feasibility of *limiting, or controlling escalation in, nuclear war*. Today, several of the world's nuclear powers are openly pursuing strategies of limited nuclear warfare and pursuing so-called tactical nuclear weapons.³⁵² With [REDACTED] existing nuclear powers - five *nuclear weapons states* (The United States, Russia, United Kingdom, France, and China) recognized by the Non-Proliferation Treaty (NPT) and [REDACTED] others (India, Pakistan, [REDACTED], and North Korea) - and several other states in various forms of nuclear latency, this enduring debate has a renewed importance.³⁵³ Proponents of limited nuclear war, and especially proponents of escalate to de-escalate strategies, believe this risk and danger can be either managed successfully or used coercively to achieve desired goals. Skeptics, on the other hand, expect nuclear war to quickly get out of control, at least by virtue of the costs exceeding the potential political gains.³⁵⁴ As the United States, Russia, Pakistan and

³⁵² Larsen, Jeffrey Arthur, and Kerry M Kartchner, (2014). *On Limited Nuclear War In the 21st Century*. California: Stanford University Press; Roberts, B. (2016), *The case for U.S. nuclear weapons in the 21st century*. California: Stanford University Press; Warden, J. K. (2018), "Limited Nuclear War: The 21st Century Challenge to the United States," https://cgsr.llnl.gov/content/assets/docs/CGSR_LP4-FINAL.pdf

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³⁵⁴ For a discussion of the historical debate between the proponents and skeptics, see: Cunningham, Fiona S., Fravel, M. Taylor (2019), "Dangerous Confidence? Chinese Views on Escalation", *International Security*, Vol. 44, No. 2, pp. 61-109.

other states are increasingly exploring³⁵⁵ the idea of lower-yield, shorter range, high accuracy weapons for “tactical” or “limited” use and updating their existing nuclear arsenals (in some cases considering bringing back weapons systems previously retired³⁵⁶), understanding likely escalation dynamics in a limited nuclear war is of the utmost urgency.³⁵⁷

Other previous related research includes research that questions the probability of nuclear war in the first place; research on preferences amongst various populations regarding the first-use of nuclear weapons; and research on the endurance of the so-called nuclear taboo. These efforts are most often applied to the possibility of the first use of nuclear weapons, either in assessing cases where nuclear use was considered, or by assessing beliefs of the U.S. public. This literature includes debates about the nuclear taboo; the literature on the potential causes of deterrence failure; literature on decision-making processes and psychological factors (limits to rationality, biases, misperception); and some recent literature on behavioral economics and nuclear weapons.³⁵⁸ More specifically, however, this research project is connected to and motivated by several key studies and survey experiments.

³⁵⁵ See: Hans M. Kristensen & Matt Korda (2019) Tactical nuclear weapons, 2019, Bulletin of the Atomic Scientists, 75:5, 252-261; Speech by DIA Director, BGEN Robert P. Ashley Jr. <https://www.dia.mil/News/Speeches-and-Testimonies/Article-View/Article/1859890/russian-and-chinese-nuclear-modernization-trends/>; and Mansoor Ahmed, <https://carnegieendowment.org/2016/06/30/pakistan-s-tactical-nuclear-weapons-and-their-impact-on-stability-pub-63911>

³⁵⁶ <https://www.defensenews.com/smr/nuclear-arsenal/2020/02/21/the-navys-new-nuclear-cruise-missile-starts-getting-real-next-year/>

³⁵⁷ Elbridge Colby, “Prevailing in Limited War,” from Center for a New American Security (2016); Morgan, F., Mueller, K., Medeiros, E., Pollpeter, K., & Cliff, R. (2008). Dangerous Thresholds: Managing Escalation in the 21st Century. RAND Corporation; Colby, E. (2018, Nov). If you want peace, prepare for nuclear war. Foreign Affairs, 97, 25-32; and Vince A. Manzo & John K. Warden (2018), “After Nuclear First Use, What?”, *Survival*, 60:3, 133-160.

³⁵⁸ Tannenwald, N. (2007). *The nuclear taboo: the United States and the non-use of nuclear weapons since 1945*. Cambridge: Cambridge University Press. Chapter 6, p. 227-240; Jervis, R. (1976). *Perception and misperception in international politics*. Princeton, N.J.: Princeton University Press; George, A. L, & Smoke, R. (1974). *Deterrence in American foreign policy: theory and practice*. New York: Columbia University Press; George, A., & Smoke, R. (1989). Deterrence and Foreign Policy. *World Politics*, 41(2), as well as the rest of this issue which is focused on the rational deterrence debate; Jervis, R., Lebow, R. Ned, & Stein, J. Gross. (1985). *Psychology and deterrence*. Baltimore, Md.: Johns Hopkins University Press; Anne I. Harrington, and Jeffrey W. Knopf. *Behavioral Economics and Nuclear Weapons*. University of Georgia Press, 2019.

First among these is a study by Press, Sagan and Valentino, in which the authors conduct a survey experiment to assess the strength of normative prohibitions and the “nuclear taboo,” on state behavior.³⁵⁹ Their results suggest that, at least among the U.S. public, nuclear weapons are not seen as particularly exceptional and “inhibitions against using them are relatively weak and decidedly not subject to a taboo.”³⁶⁰ Secondly, my essay engages with another by Sagan and Valentino in which they assess U.S. citizens willingness to use or support using nuclear weapons against a non-nuclear adversary with the express purpose of killing non-combatants. In this study they find that a majority of Americans are willing to use nuclear weapons first in a conflict even when the purpose is to kill a large number of enemy civilians.³⁶¹ A third related article is an assessment of the durability of the nuclear taboo by Gibbons and Lieber. The paper suggests the norm of nuclear non-use is much more fragile than most analysts understand.³⁶² Gibbons and Lieber’s research implies that the norm of non-use may break down more easily than we would like in the face of a violation of the norm, and therefore it is of the utmost importance to prevent nuclear use in the first place. My survey experiments: add empirical evidence on preferences in the wake of a nuclear attack (a norm violation); contribute to discussions about the likelihood of limiting nuclear war; and, probe the durability of nuclear restraint.

Additionally, theoretical debate remains regarding the escalatory nature of nuclear weapons. Much of the literature on the relationship of escalation and nuclear war focuses on the risk of escalation to nuclear war, with the occurrence of nuclear war seen as essentially

³⁵⁹ Press, Daryl G., et al. “Atomic Aversion: Experimental Evidence on Taboos, Traditions, and the Non-Use of Nuclear Weapons.” *The American Political Science Review*, vol. 107, no. 1, 2013, pp. 188–206.

³⁶⁰ Sagan, Scott D. and Benjamin A. Valentino. “Revisiting Hiroshima in Iran: What Americans Really Think about Using Nuclear Weapons and Killing Noncombatants.” *International Security*, vol. 42 no. 1, 2017, p. 41-79.

³⁶¹ Sagan and Valentino, (2017).

³⁶² Rebecca Davis Gibbons & Keir Lieber (2019), “How Durable is the Nuclear Weapons Taboo?” *Journal of Strategic Studies*, 42:1, 29-54, DOI: [10.1080/01402390.2018.1529568](https://doi.org/10.1080/01402390.2018.1529568)

catastrophic and mutually undesirable.³⁶³ Other literature argues the need to be prepared (and demonstrate the capability) *to fight* a limited nuclear war, either for the sake of deterrence, or to be able to win one should it occur.³⁶⁴ Much less has been written about how a nuclear war might be kept limited, or what limits, exactly, are meaningful *within* a nuclear conflict.³⁶⁵ Some notable exceptions to this, however, are arguments based on the rationality of leaders and decision-makers combined with the fear of mutually assured destruction (MAD). The fear of this escalation is supposed to result in extreme caution and either the prevention or limitation of conflict. This is, in fact, the logic behind the theory of the nuclear revolution most thoroughly presented by Robert Jervis.³⁶⁶ In the contemporary nuclear setting, however, the concept of MAD is not relevant to relationships between all of the nuclear powers.³⁶⁷ Additionally, the

³⁶³ For example, Powell, Robert. (2003), *Nuclear Deterrence Theory, Nuclear Proliferation, and National Missile Defense*, International Security, Vol. 27, No. 4, pp. 86-118; Matthew Kroenig. (2013), *Nuclear Superiority and the Balance of Resolve: Explaining Nuclear Crisis Outcomes*. International Organization, 67(1), 141–171. Talmadge, C. (2017). Would China Go Nuclear?: Assessing the Risk of Chinese Nuclear Escalation in a Conventional War with the United States. International Security 41(4), 50-92. <https://www.muse.jhu.edu/article/657918>; Warden, J. K., (2018), *Livermore Papers on Global Security No. 4, Limited Nuclear War: the 21st Century Challenge for the United States*;

³⁶⁴ See also: Brodie, B. (1966), *Escalation and the Nuclear Option*, Princeton University Press; Snyder, G. Herald. (1961). *Deterrence and Defense*. Princeton, N.J.: Princeton University Press (as a deterrent, p. 139); Gray, C., & Payne, K. (1980). Victory Is Possible. *Foreign Policy*, (39), 14-27, (fight and win one, not necessarily an argument based on deterrence only); Colby, E. (2018, Nov). If you want peace, prepare for nuclear war, *Foreign Affairs*, 97, 25-32; Heuser, B., & Stoddart, K. (2017). Difficult Europeans: NATO and Tactical/Non-strategic Nuclear Weapons in the Cold War. *Diplomacy & Statecraft*, 28(3), 454–476; Roberts, Brad. *The Case for U. S. Nuclear Weapons in the 21st Century*, Stanford University Press, 2015.

³⁶⁵ An important exception is Kahn and his discussion of an escalation ladder. See, Kahn, H. (1968). *On escalation: metaphors and scenarios*. Rev. ed. Baltimore, Maryland: Penguin Books

³⁶⁶ For some examples that consider this, see: Schelling, T. C. (1963). *The strategy of conflict*. New York: Oxford University Press; Schelling, T. C. (2008). *Arms and Influence*. [2008 ed.] New Haven: Yale University Press; Jervis, R. (1989). *The meaning of nuclear revolution: statecraft and the prospect of Armageddon*. Ithaca: Cornell University Press; and Jervis, R. (1984). *The illogic of American nuclear strategy*. Ithaca: Cornell University Press. As an example, this is essentially the argument Brodie makes in *Escalation and the Nuclear Option*. Brodie, B. (1966), *Escalation and the Nuclear Option*, Princeton University Press; especially Chapter XI.

³⁶⁷ For example, the risk of MAD cannot limit a nuclear conflict between the U.S. and North Korea because, at least for the time being, the U.S. does not need to fear complete assured destruction (though it must fear major destruction to itself or its allies and interests) from N.K.

assumption of rationality as a requirement for stable deterrence both before and within war is questionable, as has been recently argued by scholars in international relations.³⁶⁸

Other relevant exceptions include literature that warns of the increasing possibilities that the U.S. will find itself in a limited nuclear war and therefore the need to think about how to deter, and if necessary, win these conflicts.³⁶⁹ Larson's edited volume, *On Limited Nuclear War in the 21st Century*, explicitly argues that while the threat of an all-out nuclear war is decreasing, the potential use of nuclear weapons in a limited war is increasing.³⁷⁰ The authors also argue that "the theory of limited nuclear war is one of the few major subfields of strategic thinking during the Cold War that has not been revisited in the generation since the fall of the Soviet Union."³⁷¹ Eldridge Colby has written about not only the desirability, but of the necessity for the U.S. to pursue nuclear war-fighting and tactical nuclear weapons capabilities with which to conduct limited nuclear war.³⁷²

Outside the U.S. context, Taylor Fravel and Fionna Cunningham take on similar questions on escalation and nuclear weapons, but with a focus on China's perspective. They find confidence amongst Chinese experts in the ability to keep a war from going nuclear, but the opposite with regard to controlling a nuclear war once it has begun.³⁷³ Additionally, the authors cite evidence from U.S. doctrinal publications which supports the idea that "the United States does not share China's skepticism and, moreover, assumes that nuclear escalation could be

³⁶⁸ McDermott, R and Hatemi, P. (2020). Revenge is a dish best served nuclear. US deterrence depends on it, Bulletin of Atomic Scientists, <https://thebulletin.org/2020/12/revenge-is-a-dish-best-served-nuclear-us-deterrence-depends-on-it/>

³⁶⁹ Vince A. Manzo & John K. Warden (2018), "After Nuclear First Use, What?", *Survival*, 60:3, 133-160.

³⁷⁰ Larsen, Jeffrey Arthur, and Kerry M Kartchner, (2014). *On Limited Nuclear War In the 21st Century*. California: Stanford University Press.

³⁷¹ IBID, p. xx.

³⁷² Colby, E, (2018). "If You Want Peace, Prepare for Nuclear War: A Strategy for the New Great-Power Rivalry," *Foreign Affairs*, Vol. 97, No. 6 (November/December 2018), pp. 25-32;

³⁷³ Cunningham, Fiona S., Fravel, M. Taylor (2019), "Dangerous Confidence? Chinese Views on Escalation", *International Security*, Vol. 44, No. 2, pp. 61-109.

controlled in its planning for nuclear operations.”³⁷⁴ Questions remain, however, about whether nuclear weapons really are different in either the minds of decision-makers or in the prospects for controlling escalation. Few studies have attempted to gain purchase on these questions. In one important study, Reid Pauly uses evidence from past wargames to ask whether or not U.S. leaders would “push the button?”³⁷⁵ Pauly examines the different logics behind what he describes as a “strong aversion to employing nuclear weapons in simulations against both nuclear-armed and nonnuclear-armed adversaries.”³⁷⁶ His study offers compelling evidence that among elite decision-makers in the U.S., nuclear weapons were indeed considered “different.”

An additional relevant project is an enlightening essay on escalation firebreaks which finds that the *means* of an attack will matter to escalation dynamics.³⁷⁷ By employing a survey experiment to members of the U.S. public, Kreps and Schneider show that support for escalation is sensitive to how an attack is made against them, and not merely the effects of the attack. Cyberattacks elicited lower response rates and less severe escalation than did both conventional and nuclear attacks. Their results show that “the perpetration by either a conventional or nuclear weapon - controlling for the same average effects – makes individuals less inclined toward the more modest retaliatory measures such as diplomatic or cyber response. It makes them far more willing to use aggressive measures...”³⁷⁸ My essay contributes to understanding escalation firebreaks in a nuclear as compared to a conventional weapon setting. I specifically investigate whether escalation dynamics are sensitive to the *means* employed by the adversary.

³⁷⁴ IBID, p. 64.

³⁷⁵ Pauly, R. (2018), "Would U.S. Leaders Push the Button? Wargames and the Sources of Nuclear Restraint," *International Security*, Volume 43, No. 2, Fall 2018, pp. 151-192

³⁷⁶ Pauly, R. (2018), p. 152

³⁷⁷ Kreps, S. and Schneider, J., (2019), “Escalation firebreaks in the cyber, conventional, and nuclear domains: moving beyond effects-based logics,” *Journal of Cybersecurity*, 2019, pp. 1-11.

³⁷⁸ Kreps and Schneider, (2019), p. 5.

Lastly, this essay engages with previous work on war termination. Studies have explored several fundamental questions regarding war termination, including when, why, and how war termination is achieved, as well as some studies that comment on the relationship of escalation to war termination.³⁷⁹ The escalate to de-escalate strategy is one that attempts to connect escalation directly to war termination. Previous work finds this proposition to be highly nuanced and difficult at best. Iklé, in his book on war termination, writes that it is difficult to end wars and they often go on “long past the point where a ‘rational’ calculation would indicate that the war should be ended – ended, perhaps, even at the price of major concession”.³⁸⁰ He does, however, suggest that escalating to de-escalate is not always wrong and may succeed under certain circumstances. Namely, when it either crushes the enemy’s forces or brings about a change in the adversary government favorable to a settlement. This change may be achieved when “it has consisted of an extraordinarily powerful move,” as was the case with the Atomic Bombings of Japan by the United States at the end of WWII.³⁸¹

Ikle’s remarks about the potential success hinging on a distinctly powerful move is illustrative of a theme regarding escalation and war termination, which is that if this is to succeed

³⁷⁹ See, for example: Carroll, B. A. (1969). How Wars End: An Analysis of Some Current Hypotheses. *Journal of Peace Research*, 6(4), 295–321. <http://www.jstor.org/stable/422747>, on how wars end; Iklé, F. Charles. (1991). *Every war must end*. Rev. ed. New York: Columbia University Press; Downs, G., & Rocke, D. (1994). Conflict, Agency, and Gambling for Resurrection: The Principal-Agent Problem Goes to War. *American Journal of Political Science*, 38(2), 362-380; Bennett, D., & Stam, A. (1996). The Duration of Interstate Wars, 1816-1985. *The American Political Science Review*, 90(2), 239-257 on war duration; Tansa George Massoud. (1996). War Termination. *Journal of Peace Research*, 33(4), 491–496. <http://www.jstor.org/stable/424572>; Sorfleet, K. R. (2001). Conflict Termination: Implications for Military Officers. *Defence Studies*, 1(1), 49. <https://doi-org.revproxy.brown.edu/10.1080/714000019>; Bartos, O. J., & Wehr, P. Ernest. (2002). *Using conflict theory*. Cambridge: Cambridge University Press; Chan, S. (2003). Explaining War Termination: A Boolean Analysis of Causes. *Journal of Peace Research*, 40(1), 49-66, <http://www.jstor.org/stable/3648311>; Lin, H. (2012). Escalation Dynamics and Conflict Termination in Cyberspace. *Strategic Studies Quarterly*, 6(3), 46-70. Retrieved November 26, 2020, from <http://www.jstor.org/stable/26267261> for a discussion of escalation and war termination in cyberspace; Mastro, O. S. (2018). The Theory and Practice of War Termination: Assessing Patterns in China’s Historical Behavior. *International Studies Review*, 20(4), 661–684. <https://doi-org.revproxy.brown.edu/10.1093/isr/vix061>;

³⁸⁰ Iklé, F. Charles. (1991), p. 16.

³⁸¹ Iklé, F. Charles. (1991), p. 55.

it hinges on early and/or drastic escalations which prompt significant changes in the adversary's decision-making process. For example, Chan, drawing from the literature on bargaining and the revealing of information through conflict, argues that a "sharp and massive" initiation of hostilities is a necessary but not sufficient condition for shorter wars.³⁸² This is because, as Chan argues, "it conveys critical evidence that enables the opposing sides to reconcile their inconsistent estimates of war prospects." Sorfleet agrees with Ikle, arguing that "the level of escalation usually has to be sufficiently dramatic and convincing to enable a peace faction within the opposition's leadership to dislodge those leaders who are committed to fight on."³⁸³ As Clausewitz suggested, and Chan reminds us, one of the reasons fighting stops is because leaders determine that costs exceed the potential benefits, but Chan urges that this is likely to require an "overwhelming amount of evidence to overcome reasons to keep fighting and misperceptions."³⁸⁴ The "overwhelming evidence" in his case being a large and drastic escalation that sends a significantly strong and clear signal to the other side. Bartos and Wehr, in asking what causes conflicts to escalate and de-escalate, similarly argue that sometimes escalation is rational and that "in many cases, it suffices for one of the adversaries *suddenly* to become much stronger. This was the case when the United States developed an atomic bomb and dropped it on Japan" (emphasis added).³⁸⁵ In their view, the use of force may have two different consequences: "when it is relatively weak, it tends to provoke retaliation; when it is overpowering, it tends to induce submission."³⁸⁶ As this last quote suggests, however, escalation, even if early, sudden and

³⁸² Chan, S. (2003), see pp 60-64. See also: Fearon, J. D. (1995). Rationalist Explanations for War. *International Organization*, 49(3), 379-414. <http://www.jstor.org/stable/2706903>.

³⁸³ Sorfleet, K. R. (2001), p. 55.

³⁸⁴ Chan, S. (2003).

³⁸⁵ Bartos, O. J., & Wehr, P. Ernest. (2002), p. 113.

³⁸⁶ Bartos, O. J., & Wehr, P. Ernest. (2002), p. 101. The quote continues, however to say "But we must always remember that the use of extreme force may backfire in the long run."

drastic may not result in war termination and instead prompt reciprocation and a potential spiral of escalation.

Alternatively, Mastro, while assessing escalation and war termination in a Chinese context, suggests that de-escalation hinges not on sudden and sharp escalation as described above, but rather on a willingness to talk, to favor actual de-escalation, and to include third party mediation.³⁸⁷ She argues that escalation management becomes “most difficult with heavy escalation, in which aggression rapidly becomes more intense and lasts longer.” Mastro analyzes the Chinese wars in Korea (1950-1952), in India (Sino-Indian War, 1962), and in Vietnam (1979) and finds that in each case, China pursued a strategy of attempting to escalate in order to coerce the adversary to settle on terms favorable to China. In each case she finds this strategy fails.³⁸⁸ Sorfleet, quoting Codner, warns that “In attempting to terminate conflicts through escalation, one must be aware of what Codner describes as the escalation paradox: in the face of escalation, an opponent may respond by escalating and hence a subsequent spiral of escalation may ensue.”³⁸⁹ My project connects to this literature by directly testing the effect of escalation on the prospects for war termination.

3.4 Theoretical explanations for E2DE success and failure:

In my complementary study of E2DE in wargames and crisis simulations I previously sketched out a theory that helps explain the probability of E2DE success.³⁹⁰ In this section I will

³⁸⁷ Mastro, O. S. (2018).

³⁸⁸ Mastro, O. S. (2018), p. 676. She writes: “this strategy can arguably be considered a failure because none of China’s adversaries were compelled to talk—and in the two later cases, India and Vietnam even refused to engage in talks after China reversed this policy with unilateral withdrawals.”

³⁸⁹ Sorfleet, K. R. (2001), p. 56.

³⁹⁰ Post, Daniel R. (2023), Investigating Escalate to De-Escalate in Past Wargames and Crisis Simulations, Working paper.

briefly review those theoretical intuitions by first summarizing the logic for why E2DE might succeed followed by the more dominant reasons for why E2DE is more likely to fail.

Overall, the theory expects that E2DE is unlikely to succeed as a war termination strategy. I suggest that E2DE has the potential to achieve two broad countervailing reactions among decision-makers of the receiving side: Increased *Coercive Advantages* (*exerted against but awarded by the receiver for the benefit of the attacker*) or an impetus to *continued resistance* (*exerted by the receiver and then born by the attacker*). The receiving side must either choose to award a coercive “win” for the attacker, or punish the attacker through continued (perhaps increased) resistance. There are logically consistent reasons to expect some success in achieving war termination through an E2DE strategy, which explains the attractiveness of this idea to some decision makers. At the same time, however, there are dominant reasons for why E2DE is much more likely to fail in achieving war termination. In short, the reasons and incentives for imposing belligerence costs in the form of continued resistance or counter-escalation will most often outweigh the incentives to award a coercive advantage to the attacker. See *Model 1* and *Table 1* below for a summary depiction.

Coercive Advantages:

Escalate to de-escalate may achieve *coercive advantages* in several ways. These include: by instilling fear and uncertainty amongst the receiving side leadership (or citizenry); by increasing risk perceptions; by conveying new information to the receiving side; by adding a level of credibility not achievable through a threat alone; or by demonstrating resolve, commitment and capability more effectively. Additionally, achieving coercive advantages

requires simultaneously demonstrating a certain level of restraint. In sum, if the attacker accurately conveys increased resolve, commitment, credibility, and capability as well as presents higher risks of further losses, while at the same time demonstrates the appropriate amount of restraint, the receiver may decide to concede.

First, escalation is likely to instill at least some level of fear and uncertainty amongst the receiving side leadership as well as the citizens of the receiving state. Feelings of fear are generally expected to reduce the risk tolerance of those experiencing this emotion.³⁹¹ Crucially, the foundation of potential success for E2DE is to use an escalatory attack to affect an increased level of fear, thereby making decision-makers more hesitant to accept the risks of continuing the fight.

A second reason for success might be that *actually* crossing a significant threshold, such as the nuclear one, can *drastically and immediately* increase the risk of more damage to come. The logic of E2DE relies on actually taking an aggressive, escalatory action, rather than merely threatening such action. If the adversary can be convinced that they are more likely to lose, or that it will cost too much to win they may give in.

A third potential path to achieving coercive advantages is that it might convey new information to the adversary. Communication is critically important in compellence. As Tami Biddle points out, “to compel successfully, a coercer must convey specific information to the actor being coerced.”³⁹² Escalating may either surprise, shock, or otherwise provide the receiving side with new information about the resolve and commitment of the escalating state. If by

³⁹¹ Lerner, J. S. & Keltner, D. (2001) Fear, anger, and risk. *Journal of personality and social psychology*. [Online] 81 (1), 146–159; Wake S, Wormwood J, Satpute AB. The influence of fear on risk taking: a meta-analysis. *Cognition and Emotion*, 2020 Sep; 34(6): 1143-1159, <https://pubmed.ncbi.nlm.nih.gov/32116122/>.

³⁹² Biddle, Tami D. (2020). “Coercion Theory: A Basic Introduction for Practitioners”, *Texas National Security Review*, Vol. 3, Issue 2, <http://dx.doi.org/10.26153/tsw/8864>. This includes information about what you want them to do or stop doing, and the ability to credibly promise to stop the pain if and when they comply.

providing new information the attacking state drastically alters the receiver's understanding of the nature of the conflict, the stakes, the attacker's intent, or capabilities it might convince the receiver to back off.

A fourth reason for potential success of E2DE is that an actual escalation may add a level of credibility that no amount of posturing may lend to a mere threat. Slantchev, in his 2011 book on military threats, argues that "one cannot succeed with military coercion on the cheap"³⁹³ In order to succeed, states may have to mobilize overkill capability compared to the issues at stake. "Shooting flies with an elephant gun may well be the prudent thing for them to do."³⁹⁴ It is possible then, particularly with nuclear attacks, that E2DE can work by removing any notion of a "token" threat. Nuclear weapons, after all, would seem to be the best "elephant gun" a state can buy.³⁹⁵

Lastly, and partially because of or in combination with some of the above factors, states have long been theorized to gain coercive advantages if the decision-makers involved are deemed highly *committed and resolved*. Actually attacking, particularly through an action that is clearly and deliberately escalatory, may result in a perception of commitment and resolve that was absent before. If the other side believes that you will do what you say because you have already done something severe and costly, the odds are higher they may give in to your demands.

If escalating in just the right way can accomplish any or all of these things, we might expect E2DE attempts to be successful. Evidence in favor of these explanations for E2DE success would be found in respondents choosing to de-escalate, and also attributing their choice

³⁹³ Slantchev, B., (2011), p. 256. While he is talking here about threats in crises and not during wars, and about threats specifically and not actual attacks (the model ends when the sides actually go to war), an analogy may be made to situations where war has already begun and it is escalatory attacks being used to coerce.

³⁹⁴ Slantchev, B., (2011), p. 5.

³⁹⁵ Relatedly, on nuclear weapons as "overkill," see Rosenberg, D. A., (1983). The Origins of Overkill: Nuclear Weapons and American Strategy, 1945-1960. *International Security*, 7(4), 3–71. <https://doi.org/10.2307/2626731>

to increased fear of escalation, new cost/benefit calculations, and/or their new assessment of the opposing teams resolve/determination. Respondents would choose to de-escalate because the attacker has successfully signaled their superior commitment, strength and resolve, as well as their responsibility and restraint.

Importantly, however, for escalation to result in war termination the receiving side must also believe that by giving in now they are not setting themselves up for further blackmail or demands in the future. The inability of states to credibly commit not to take advantage of greater relative power in the future is an enduring feature of the international system which has been addressed by numerous scholars.³⁹⁶ As Biddle noted, “the enemy must believe that the coercer will actually stop the pain if the target state concedes the stake. The promise to cease coercion if the enemy gives in must be believed...”³⁹⁷ This, among other concerns gives rise to numerous reasons why escalating to de-escalate may not be successful.

Continued Resistance:

Rather than gaining coercive advantages, escalation may result in the receiving state imposing *belligerence costs in the form of continued (perhaps increased) resistance* on the attacker. In an E2DE attempt the escalating state has deliberately crossed a significant threshold. The attacker has taken this action to compel the other side to concede to war termination on the attacker’s terms. Compellence, however, is widely regarded as the more difficult form of coercion and several studies have found that it is often unsuccessful, even when the coercing

³⁹⁶ See, for example: Fearon, J. (1998). Bargaining, Enforcement, and International Cooperation. *International Organization*, 52(2), 269-305. doi:10.1162/002081898753162820

³⁹⁷ Biddle, Tami D. (2020)

state possesses nuclear weapons.³⁹⁸ E2DE does not solve any of the challenges to successful compellence. There are several reasons for this, including: the public nature of the attempt; multiple forms of misperception or signaling failure; the potential impact of important norm violations; increased feelings of anger rather than fear; and the heightened stakes after escalation.

First, E2DE is likely to be a public and observable compellent strategy (especially in a nuclear setting) and giving in to a compellent demand comes with higher reputational costs than does refraining from taking a certain action.³⁹⁹ This exacerbates worries over reputation, precedent setting, and future vulnerability. Highly visible or salient escalations followed by threats to continue if one doesn't comply are difficult to convincingly pair with promises and assurances against future coercion. Within the logic of E2DE, these commitment problems are front and center. When the strategy involves bold, highly visible action it will put the receiving side in a position where reputational and precedent setting concerns are highly relevant.

Second, the receiving state may not get the intended signal, or may misinterpret, misunderstand, mistrust, or misperceive the intended signal. For the receiving state to understand the purpose of the compellent action it must accurately assess the motives of the state conducting said action.⁴⁰⁰ However, the words and actions of states may not be trusted or relied upon to

³⁹⁸ See, for example, Downes, A. (2018) "Step Aside or Face the Consequences, p. 97; Sechser, T. S., & Fuhrmann, M. (2017) *Nuclear weapons and coercive diplomacy*. Cambridge, United Kingdom: Cambridge University Press; and Schelling, T. C. (1966). *Arms and Influence*, New Haven: Yale University Press; Huth, P., and Russett, B., (1984). "What Makes Deterrence Work? Cases from 1900 to 1980". *World Politics*, 36(4), 496–526; and Jervis, R. (1984). *The Illogic of American Nuclear Strategy*, Ithaca, NY: Cornell University Press; and Byman, & Waxman, M. C. (2002). *The dynamics of coercion: American foreign policy and the limits of military might*. Cambridge University Press; and Art, & Greenhill, K. M. (2018). The Power and Limits of Compellence: A Research Note: Power and Limits of Compellence. *Political Science Quarterly*, 133(1), 77–97. <https://doi.org/10.1002/polq.12738>; Art, Robert J. (1980). To What Ends Military Power? *International Security*, 4(4), 3–35; Jervis, R. (1984) "The Illogic of American Nuclear Strategy", Ithaca, Cornell University Press.

³⁹⁹ "If they are to be successful, compellent actions require a state to alter its behavior in a manner quite visible to all in response to an equally visible forceful initiative taken by another state." Art, Robert J. (1980), p. 10.

⁴⁰⁰ Biddle explains that "The target state must be convinced that if it resists it will suffer, but if it concedes it will not. If it suffers either way, or if it has already suffered all it can, then it will not concede and coercion will fail." The "coercer must be sure that language and actions are aligned, clear, and suitably tailored to create the behavior

determine motives thanks to the ever-present possibility of bluffing, misdirection, miscommunication and other forms of deception. This sort of misperception has long been identified as a problem in international relations.⁴⁰¹ The receiving state may misinterpret the intended signal of restrained resolve as simply an expansion of war aims or a disregard or abandonment of existing agreed upon or self-imposed, explicit or implicit, limitations.

Additionally, if the escalation violates an important norm, for example, the non-use of nuclear weapons, or the targeting of civilians, this effect may be amplified. The receiving side may now view the attacking state as aggressive, uncontrollable, unrestricted, or simply as an untrustworthy norm/rule breaker. Decision-makers on the receiving side are likely to be more risk acceptant in this situation, willing to take more risk in order to resist and prevent further losses.⁴⁰² Moreover, if the attack makes the receiving side angry, we would expect decision-makers to be more risk acceptant and also potentially vengeful in their response.⁴⁰³ This effect may nullify or dominate the presence of fear and thereby make E2DE attempts less successful.

A third reason E2DE may result in continued resistance is that the attempt will heighten the perceived stakes. In addition to the original stakes of the conflict, once a “red line” has been crossed (particularly the nuclear threshold) the stakes may increase dramatically. This again exacerbates concerns over precedent and reputation. Additionally, states who enter into conflict with nuclear armed adversaries may have already decided they are willing to absorb this type of

being sought. If miscommunication occurs in any of these realms — due to carelessness, mixed messaging from different groups within the coercing state, or cultural obtuseness — then coercion is likely to fail.” Biddle, T. D. (2020).

⁴⁰¹ Jervis, R., (1976). *Perception and Misperception*, Princeton University Press, New Jersey.

⁴⁰² Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, 47(2), 263–291. <https://doi.org/10.2307/1914185>

⁴⁰³ Lerner, J. S. & Keltner, D. (2001) Fear, anger, and risk. *Journal of personality and social psychology*. [Online] 81 (1), 146–159; McDermott, R and Hatemi, P. (2020). Revenge is a dish best served nuclear. US deterrence depends on it, *Bulletin of Atomic Scientists*, <https://thebulletin.org/2020/12/revenge-is-a-dish-best-served-nuclear-us-deterrence-depends-on-it/>

attack because they are aware ahead of time of entering into a conflict with a powerful nuclear-armed state.⁴⁰⁴ Escalations that were expected, or “priced in” ahead of time will likely fail to trigger any of the aforementioned mechanisms of enhancing coercive advantages.⁴⁰⁵ Additionally, the fact that by definition the escalatory attack did little to change the actual balance of forces or material situation means the receiving side will retain the capability to respond.

Evidence in support of these explanations for E2DE failure would be respondents choosing to continue to fight or counter-escalate in response; and explanations focusing on precedent setting concerns, misperceptions, and the increased or existing high stakes. Rather than seeing the escalation as a demonstration of strength, resolve, commitment and credibility, respondents may instead see the attacks as irresponsible, aggressive, expansive, or a sign of worse to come.

In sum, I theorize that escalations of the type envisioned as part of an E2DE strategy will most likely inspire continued resistance. I suggest that this is true regardless of the weapons used in the attack. Deliberate escalations that cross important boundaries and which are meant primarily as signals to the other side will fail to achieve desired results due to the incentives created by reputational and precedent setting concerns, the heightened chances for misperception, and the increased stakes created by E2DE attempts. These will dominate the

⁴⁰⁴ This was suggested to be the case in Vietnam, for example, Gurantz argues that “Most historians of the Vietnam War recognize that the Vietnamese Communists were willing to accept massive destruction of their country in pursuit of national unification under their control” p. 269. Gurantz, R. (2021). Was Airpower “Misapplied” in the Vietnam War? Reassessing Signaling in Operation Rolling Thunder. *Security Studies*, 30(2), 245–270. Cite Reid’s forthcoming work on this...?

⁴⁰⁵ Pauly, Reid, “Re-establishing Deterrence”, Working Paper (2015).

potential coercive advantages and E2DE attempts will rarely result in de-escalation. See *Model 3.1* and *Table 3.1* below.

The unique impact of nuclear weapons in E2DE:

Proponents of E2DE strategies expect nuclear weapons usage to increase the likelihood of coercive advantages because these weapons are expected to generate fear, increase the risk of escalation, and are the ultimate signal of strength, resolve, commitment, capability, and if used sparingly, restraint. However, as outlined below, nuclear weapons usage is unlikely to achieve unique coercive advantages for the state attempting E2DE and instead will likely increase the belligerence costs imposed on the attacker. This is true for several reasons.

First, E2DE may fail more often in a nuclear setting because a limited nuclear attack against a nuclear armed adversary will aggravate several of the important factors which make compellence difficult. Because the stated purpose of nuclear weapons is to deter nuclear attack on oneself, when a nuclear state gives in to a limited nuclear attack the entire purpose of its nuclear deterrent has been negated. Giving in to a nuclear attack, then, increases the reputational costs. Nuclear use also aggravates worries over commitment problems because the other side has taken such a drastic step which raises concerns about what they might be willing to do in the future. Nuclear use may affect relative power dynamics more sharply in that giving in to such attacks weakens one's own nuclear deterrent position. Lastly, nuclear use may make the receiving state believe more is being asked of it because it is no longer only about the limited stakes of the conflict, but the state may feel as though it is being asked to give up, in effect, its own nuclear deterrent.

Second, escalating with nuclear weapons may not achieve any coercive advantages (but may not make things worse) if players are making decisions based on the *effects* of the attacks rather than the *means* by which they are perpetrated. Nuclear weapons, however, are likely to have further negative effects as violating the important norm of nuclear non-use may trigger stronger reactions than violating other norms of armed conflict. This would be the case because these other norms are routinely violated and are not as black and white as nuclear use. The rarity, visibility and distinctiveness of a nuclear attack will make the violation of the norm more significant and in the direction of causing the receiving state to be more untrusting and skeptical of the intentions of the norm-breaking attacker.

Third, nuclear weapons cause effects that other types of weapons do not cause, such as radioactive fallout, electromagnetic pulse effects, and increased blast and fire effects. These capabilities add an immense amount of uncertainty into a nuclear attack. This uncertainty will increase the incentives for decision-makers to engage in worst case scenario planning as leaders will not want to seem to have underestimated the need for response actions.

Fourth, states that possess nuclear weapons are expected to be responsible users and possessors of the ultimate means to peace and security.⁴⁰⁶ This is a frequent mantra of the five nuclear weapons states as identified in the Nuclear Non-Proliferation Treaty. We expect nuclear states to behave rationally and ethically, knowing the power they possess. This makes it more likely for the receiving side to think that the aggressor who first uses nuclear weapons has begun to behave irrationally or has abandoned these norms.

⁴⁰⁶ This was discussed often, for example, during the U.S./India negotiations regarding the sale of nuclear material. See, for example: Sasikumar, K. (2007). India's Emergence as a "Responsible" Nuclear Power. *International Journal*, 62(4), 825–844. <http://www.jstor.org/stable/40204339>; and <https://theguardian.com/pakistan-an-irresponsible-nuclear-armed-country/>; or <https://www.whitehouse.gov/briefing-room/statements-releases/2022/01/03/p5-statement-on-preventing-nuclear-war-and-avoiding-arms-races/>. Also, see: <https://www.opendemocracy.net/en/opensecurity/responsible-nucleararmed-state/>.

In sum, using nuclear weapons in an E2DE strategy is unlikely to have a net positive effect on the prospects of de-escalation because nuclear weapons will increase the incentives for the nuclear-armed receiving state to continue to resist the attacker (see *Table 3.1* below).

Model 3.1

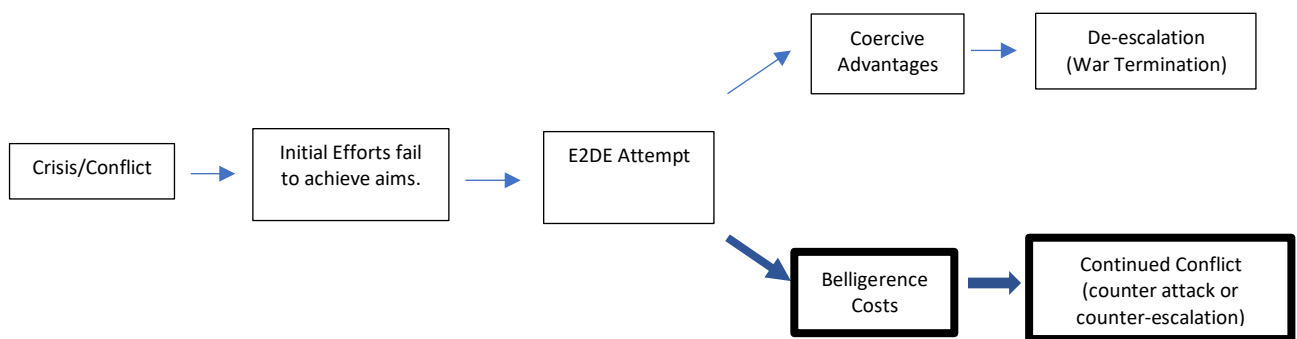


Table 3.1

Factors potentially contributing to:	
Coercive Advantages:	Continued Resistance / Counter Escalation
- Fear - Increase in risk perception - Conveys new information - Increases credibility - Demonstrates increased resolve/commitment/ capability - Demonstrates Strength - Demonstrates restraint / reasonableness - Defender bias	- Anger - Increases risk tolerance / Heightens Loss-aversion - Misperceived (not received, misinterpreted, misunderstood) - Reputational concerns - Precedent Setting Concerns - Public nature of compellent threat - Commitment problems - Increased stakes - Violates important norm - Seen as reckless, aggressive, unreasonable or unrestrained
Potential exacerbating effects of nuclear weapons:	
- Demonstrates high level of commitment / resolve - Increases fear - Shows high risk tolerance	- Demonstrates increase in aims, aggressive nature of attacker - Increases anger - Increases reputational / precedent setting concerns - Heightens commitment problems - "Brighter" norm violation - Increases uncertainty due to unique effects of nuclear weapons

3.5 Hypotheses:

In line with the theory summarized above, this paper explores the following hypotheses:

Since the incentives to continue to resist are theorized to dominate the potential coercive advantages, E2DE is predicted to fail more often than not. This yields the first hypothesis:

H1 [E2DE success?]: E2DE attempts will likely result in counter-attacks or counter-escalation.

Nuclear weapons are expected to have a negative effect on the prospects of de-escalation as compared to conventional weapons attacks. This leads to the second hypothesis:

H2 [nuclear weapons effects]: E2DE attempts that are made with nuclear weapons will be *more likely* to illicit counterattacks than equivalent attacks made with conventional weapons.

The theory predicts that nuclear use will likely result in higher incidence of nuclear response because of an increase in the reputational concerns and concerns of precedent setting with specific regard to nuclear deterrence. If an attacker uses nuclear weapons, incentives exist for the receiving state to respond with nuclear weapons lest they invalidate the effectiveness of their nuclear deterrent. This leads to the third hypothesis:

H3 [type of response]: Nuclear responses will be more common in the nuclear scenarios than in the conventional scenarios.

Critically, so much of the potential for E2DE success rests on causing fear and heightened risk perceptions among the receiving side, thereby increasing the chances that leaders will choose to de-escalate. These feelings of fear are expected to decrease risk acceptance and therefore are expected to increase the level of de-escalation. Conversely, high levels of anger are expected to decrease the frequency of de-escalation across the board.⁴⁰⁷ This leads to the following two hypotheses:

H4a [fear]: Reported increased levels of fear will be directly correlated with increased frequency of de-escalation.

H4b [anger]: Reported increased levels of anger will be directly correlated with increased frequency of counter-attacks.

Lastly, it may matter in E2DE scenarios which state perceives themselves to be the defender or aggressor. States might feel more justified in imposing belligerence costs upon an attacker when they perceive themselves to be the defender in the conflict. Also, if the state attempting E2DE also initiated the conflict in the first place, the receiving state may also expect to receive more external support from third parties for strong responses. Conversely, if the

⁴⁰⁷ Lerner, J. S. & Keltner, D. (2001) Fear, anger, and risk. *Journal of personality and social psychology*. [Online] 81 (1), 146–159. From the abstract, "...fear and anger have opposite effects on risk perception. Whereas fearful people expressed pessimistic risk estimates and risk-averse choices, angry people expressed optimistic risk estimates and risk-seeking choices."

receiving state initiated the conflict and knows it was the aggressor, there may be a sense that the higher risks and destruction were brought upon it by itself and maybe it should discontinue its efforts before things get out of hand. This leads to the following hypothesis:

H5 [aggressor / defender]: When respondents perceive their country to be the defender (i.e. in scenarios where they are told Country X initiated the conflict) they will be less likely to de-escalate than when they perceive their country to be the aggressor (cases where the U.S. initiated the conflict).

3.6 Survey Experimental Design:

In the survey experiments respondents are presented with brief background information followed by a hypothetical scenario. They are then asked several questions related to the above hypotheses.

Each of the scenarios involved the U.S. and “Country X” engaged in what begins as a minor conflict in the region of Country X sparked by failed negotiations over nuclear arms control agreements. Each scenario then describes a brief progression of the conflict up to a point where Country X attempts to E2DE by conducting a significant military attack on U.S. bases and assets in the region of the conflict and follows these attacks with demands for war termination.⁴⁰⁸ The attack by Country X was specifically designed to be a significant “jump” in the level of intensity of the conflict in order to present a clear case of escalation. The initial description and background information was identical for all participants and may be found in the appendix.

⁴⁰⁸ Respondents read the demands from Country X as part of the scenario text.

Respondents were then immediately asked a comprehension check question, which asked: “Which country has more nuclear weapons? (You may go back as necessary)”. This was to ensure that respondents were made as aware as possible of the balance of nuclear forces between the two countries and to disqualify anyone who missed this information.⁴⁰⁹ Respondents were then randomly presented with one of the five scenarios. These scenarios were identical aside from variations in two key variables.⁴¹⁰ These two variables are: 1) who initiated the actual military hostilities in the conflict; and 2) what type of weapons were used in the E2DE attempt by Country X. In the control scenario, there is no information provided about who initiated the war or what type of weapons were used.⁴¹¹

The first variation (initiator of conflict) makes clear which state initiated the military conflict and presents the information twice. In the Country X-initiated scenarios, the conflict begins with Country X attacking U.S. Naval Vessels first. In the U.S. initiated scenarios, it is made clear that the U.S. is first to attack and seize naval vessels.

The second variation occurs further in the scenario, and alters what type of weapons are used by Country X in an attempt to escalate to de-escalate. This is either conventional (non-nuclear), or nuclear. All other aspects of the scenario are identical in all treatments.

The scenario was designed to be plausible while also not mirroring too closely any particular real-world setting. Additionally, the discussions surrounding E2DE strategy often describe or refer to hypothetical scenarios such as the one in this experiment to describe when

⁴⁰⁹ The U.S. has more nuclear weapons and this information is presented in bold and underlined type. Getting this question wrong is a clear indication that participants were not paying attention.

⁴¹⁰ All versions of the scenario and all questions may be found in the attached appendices.

⁴¹¹ In all versions it is country X that attempts E2DE against the United States, and respondents are asked what they prefer the U.S. to do in response.

and how Russia, or any other nuclear state, may attempt to employ such a strategy.⁴¹² In contrast to a “bolt out of the blue” type of strategic exchange, E2DE is associated with limited wars in which states are not necessarily playing for unlimited aims or objectives. The scenario in this project thus describes a conflict that grows out of a limited war in a regional setting. The scenarios also represent a conflict between two states that are unevenly matched in terms of strategic and conventional forces. This was the case when NATO employed this strategy and it is the case now, supposedly, in the case of Russian strategy. Since this is how the E2DE concept is most often applied, the scenarios presented here construct a similar dynamic in a hypothetical setting.

The attacks described in these scenarios are also in line with known capabilities and the potential effects of nuclear weapons. Simulations on the well-known NUKEMAP simulator created by Alex Wellerstein can create these types of casualties and injuries utilizing low-yield weapons over or on moderately inhabited areas.⁴¹³ Of course, casualties and other effects in the simulations conducted on this site are based on historical population numbers and are only

⁴¹² For discussions of “escalate to de-escalate” see: Katarzyna Zysk (2018): Escalation and Nuclear Weapons in Russia’s Military Strategy, *The RUSI Journal*, pp. 1 – 12; Iklé, F. Charles. (1991). *Every war must end*. Rev. ed. New York: Columbia University Press, esp. Ch. 3, titled “Peace through escalation?”; Kristin Ven Bruusgaard, (2017), *The Myth of Russia’s Lowered Nuclear Threshold*, <https://warontherocks.com/2017/09/the-myth-of-russias-lowered-nuclear-threshold/>; Kristin Ven Bruusgaard (2020) *Russian nuclear strategy and conventional inferiority*, *Journal of Strategic Studies*; Oliker, O. (2018, Nov). *Moscow’s nuclear enigma*. *Foreign Affairs*, 97, 52-57; “Prevailing in Limited War,” by Elbridge Colby, from *Center for a New American Security* (2016); Ross, Jay, (2018), “Time to terminate Escalate to De-escalate - It’s escalation control”, <https://warontherocks.com/2018/04/time-to-terminate-escalate-to-de-escalateits-escalation-control/>; Ryan, Kevin, 2020, “Is ‘Escalate to De-Escalate’ part of Russia’s Nuclear Toolbox?”, <https://www.russiamatters.org/analysis/escalate-de-escalate-part-russias-nuclear-toolbox>; Speech by DIA Director, BGEN Robert P. Ashley Jr.

<https://www.dia.mil/News/Speeches-and-Testimonies/Article-View/Article/1859890/russian-and-chinese-nuclear-modernization-trends/>; Comments by General Paul Selva, (2019), <https://seapowermagazine.org/u-s-must-add-low-yield-nuclear-arsenal/>; and statements made by Deputy SECDEF and VCJCS, (2015), <https://docs.house.gov/meetings/AS/AS00/20150625/103669/HHRG-114-AS00-Wstate-WorkR-20150625.pdf>

⁴¹³ <https://nuclearsecrecy.com/nukemap/>; For example, a 10 kt weapon detonated with a surface burst in Portsmouth, RI, and with a 10-knot wind from the Southwest results in approximately 900 prompt fatalities and 1840 injuries and does not include fatalities or injuries from fallout (an airburst at 10km high is estimated to produce 1,560 fatalities and 4,320 injuries).

approximations meant to be evocative and not definitive. Casualty numbers were chosen to reflect realistic possibilities for both a conventional attack and a nuclear attack as applied to the same target set (a fairly large military base located in a moderately populated area). The attack is designed to be on the high end of conventional attack capabilities and the low end of a nuclear strike to be reasonable under either condition.⁴¹⁴

Each scenario is followed by two attention-focusing questions which ask respondents which country initiated the hostilities, and what type of weapons Country X used to attack the U.S. bases. These questions were inserted to draw attention to the key variables of interest. I did not use these two questions to rule out respondents.⁴¹⁵ The full text of the control scenario is presented below for reference. Variations can be found in the appendix.

The Scenario (Control Group, no information on initiator or type of weapons used in attack):

Sparked by a growing crisis arising over failed negotiations between the U.S. and Country X over Country X's nuclear weapons programs, a series of maritime incidents between the two countries has been ongoing.

A broader war centered in the region surrounding Country X has ensued between the U.S. and Country X.

⁴¹⁴ These figures are not based on any specific capability or weapons system in the world today.

⁴¹⁵ Some recent research supports this decision not to rule out respondents at this point. For example, see: Aronow, P., Baron, J., & Pinson, L. (2019). A Note on Dropping Experimental Subjects who Fail a Manipulation Check. *Political Analysis*, 27(4), 572-589. doi:10.1017/pan.2019.5. As stated, these questions were inserted to remind respondents of these important factors after reading a relatively long treatment.

Country X made early gains, both at sea and on land in U.S. allies' territory in the region, but after several weeks of limited fighting the U.S. began to make steady progress at reversing these gains. In response, Country X has made several threats, including that if the U.S. does not stop offensive military operations, Country X will take "unprecedented and drastic action, with the full military power available to the leader of Country X", and specifically, "they will not allow any U.S. forces on current Country X controlled territory."

The U.S., however, has continued to score small victories and the U.S. demands that Country X agree to cease all military operations and return all forces back beyond pre-hostility territorial borders.

*In response to the U.S. demands, **Country X responded by:***

Country X launched a large military attack on three U.S. military bases located in the region.

The attacks resulted in significant physical damage to all bases, including damage on two Navy destroyers, and significant damage to aircraft and runways at the U.S. bases. Reports from the U.S. Military spokesperson indicate that military fatalities are approximately 3,000 personnel; civilian fatalities are approximately 500; and an additional 1500 military and approximately 1000 civilians were injured.

Immediately following the attack, the Leader of Country X made a widely publicized television appearance and demanded that "the U.S. ceases all offensive operations, recognizes the current situation on the ground as the new territorial status quo, and immediately withdraws all forces

from the region.” The Leader also threatened that “if the U.S. does not immediately take visible and measurable actions to comply with these demands, Country X will continue attacks against U.S. assets and will not hesitate to use all weapons at its disposal to defend its territorial rights and national sovereignty.”

[END OF SCENARIO]

After reading their randomly assigned scenario, respondents were asked the following question (the primary outcome of interest): *“The Chairman of the Joint Chiefs of Staff (CJCS), the National Security Council (NSC) and other military advisors to the President have recommend the following options. Which of these options would you most prefer?”* There are seven choices for this mandatory question, ranging from agreeing to the demands of country X and negotiating for U.S. objectives, to conducting a massive nuclear attack in response.⁴¹⁶ They were also asked an open-ended question (optional): *“If you were in charge, are there other options you would consider? If so, please describe it/them.”*

Echoing previous surveys on preferences for nuclear use, respondents were also asked to select the likelihood they would support the larger and massive conventional and nuclear responses (the two most severe conventional and the two most severe nuclear responses available), regardless of their own preference, if any of these were to be the choice of the President. This was to examine both a “rally around the flag” effect as well as the willingness to support, but not necessarily prefer, a nuclear response. Respondents were then asked to explain

⁴¹⁶ All questions in the survey were required questions to move forward except the open text box offering respondents a chance to outline additional options they might consider. See the appendices for a list of all questions in the survey.

the reasons why they chose the options they did and what factors were important to their decision-making process.

Lastly, questions were asked about how fearful and angry the scenario would make respondents feel, as well as a list of demographic questions.

3.7 Results:

H1 [E2DE success?]: E2DE attempts will likely result in counterattacks or counter-escalation.

To test **H1**, I measured the proportion of de-escalatory responses across all treatment scenarios. In all versions of the survey a vast majority of respondents preferred to respond with a counterattack (see Table 3.1) and in many cases a counter-escalation (see Table 3.2). In the civilian sample, only 30.6% of respondents chose to de-escalate in response to Country X's attempt at E2DE. In the military sample the results were even more extreme as only 6.9% of respondents chose to de-escalate. The proportion of respondents who chose to counter-escalate (in terms of inflicting more casualties on Country X) were significantly higher among the military sample.

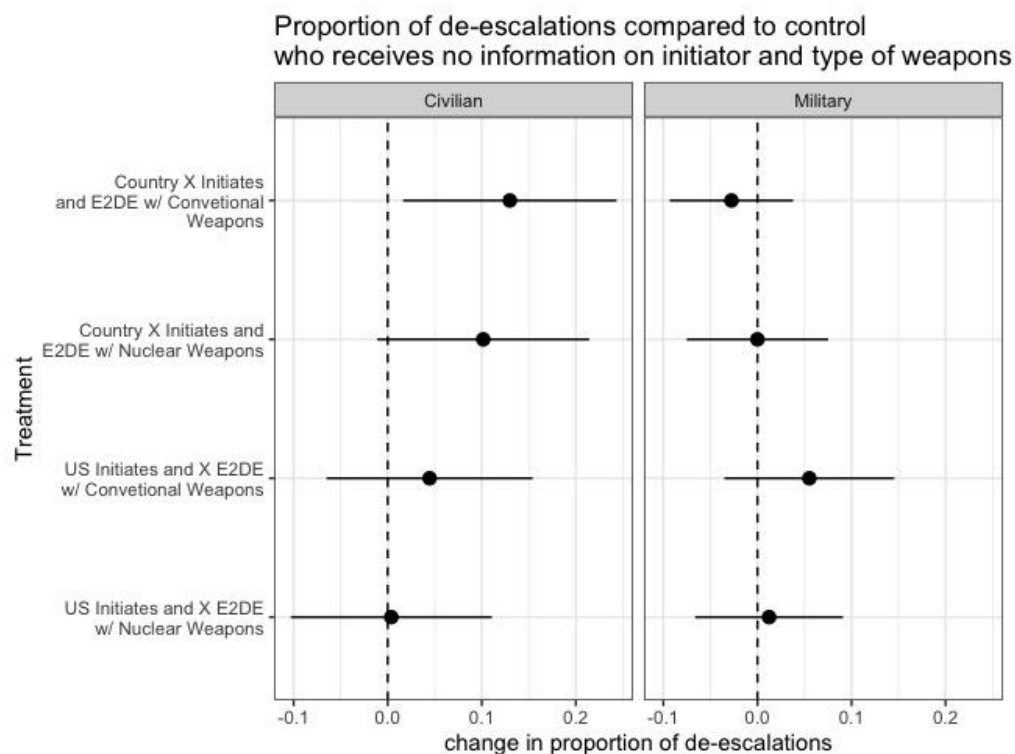
Table 3.2								
E2DE “success” for Country X (De-Escalations) by treatment:								
Scenario	De-escalations		Counterattacks		Total Responses		Proportion of De-escalations	
	Civilian	Military	Civilian	Military	Civilian	Military	Civilian	Military
Control	32	5	96	76	128	81	25%	6.2%
X initiates, E2DE w/ Conv	49	3	80	85	129	88	38%	3.4%
X initiates, E2DE w/ Nuclear	45	5	83	76	128	81	35.2%	6.2%
U.S. initiates, X E2DE w/ Conv	38	9	91	68	129	77	29.5%	11.7%
U.S. initiates, X E2DE w/Nuclear	33	6	97	75	130	81	25.4 %	7.4%
TOTAL	197	28	447	380	644	408	30.6%	6.9%

Table 3.3						
Counter-Escalations (more than an “in kind response”, in terms of casualties inflicted) by treatment						
Scenario	Agree to demands or in-kind response:		Counter-Escalations		Proportion of Counter-escalations	
	Civilian	Military	Civilian	Military	Civilian	Military
Control	74	33	54	48	42.2%	59.3%
X initiates, E2DE w/ Conv	78	44	51	44	39.5%	50.0%
X initiates, E2DE w/ Nuclear	73	27	55	54	43.0%	66.7%
U.S. initiates, X E2DE w/ Conv	72	33	57	44	44.2%	57.1%
U.S. initiates, X E2DE w/Nuclear	73	38	57	43	44.5%	53.1%
TOTAL	370	175	274	233	42.5%	57.1%

These results varied slightly with the different scenarios within and across samples. First, in the civilian sample, scenarios which included more information (i.e. all groups other than the control) had higher rates of de-escalation than the control group. In some cases, this difference was statistically significant. In the military sample, there was no significant trend (see *Figure 3.1*). The variation between treatments and the control group in rates of de-escalation is perhaps of only marginal interest, however, given that it is highly unlikely that decision-makers or citizens will be making these kinds of decisions without information on who initiated the conflict

and what types of weapons were used by Country X in the attack. It is possible, however, that leaders experience uncertainty over these questions or conflicting information from different sources, in which case the results below suggest that preferences for de-escalation would be less likely in the face of increased uncertainty or paucity of information. This is also important because in the current global information environment, competing narratives about what occurred, how it occurred, and what were the effects are likely to emerge. The results here suggest that a lack of accurate information may have a negative effect on the prospects of de-escalation under some conflict scenarios.

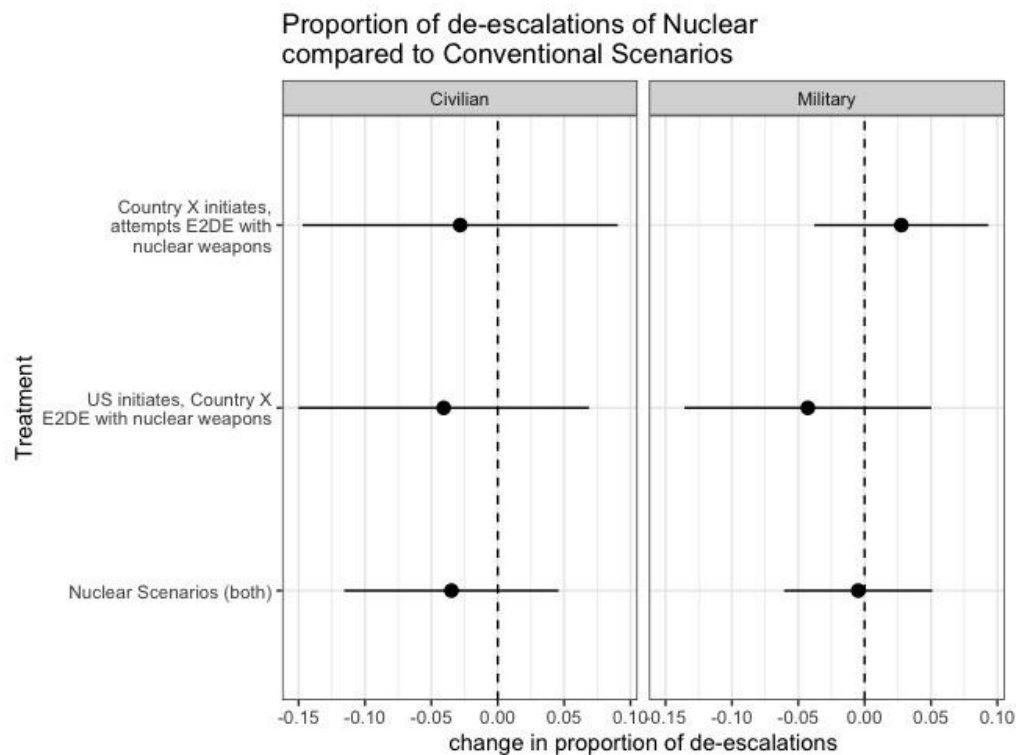
Figure 3.1



H2 [nuclear weapons effects]: E2DE attempts that are made with nuclear weapons will be *more likely* to illicit counterattacks than equivalent attacks made with conventional weapons.

As can be seen by the above tables and *Figure 3.2* below, nuclear scenarios have only a marginal effect. In the civilian sample, moving from a conventional to a nuclear scenario (holding the initiator constant, and when combined overall) increases the number of counterattacks (decreases the number of E2DE successes), though not at statistically significant levels. In the military sample the results are conflicting and are also not statistically significant. This is both good and bad news. The good news is that a nuclear attack may not *drastically* or *automatically* increase the odds of counter-escalation between nuclear powers compared to similar conventional attacks as some nuclear pessimists might expect. Going nuclear doesn't seem to inspire uncontrolled or massive increases in counter-escalation. The bad news is that it does appear, at least marginally, to increase the chances of counterattack (decreases the chances of de-escalation). States attempting to achieve war termination through an E2DE strategy are unlikely to gain any coercive advantage by doing so with nuclear weapons as compared to using conventional weapons. Additionally, as will be shown below, responses to nuclear attacks are more likely to be nuclear than in response to identical conventional attacks.

Figure 3.2

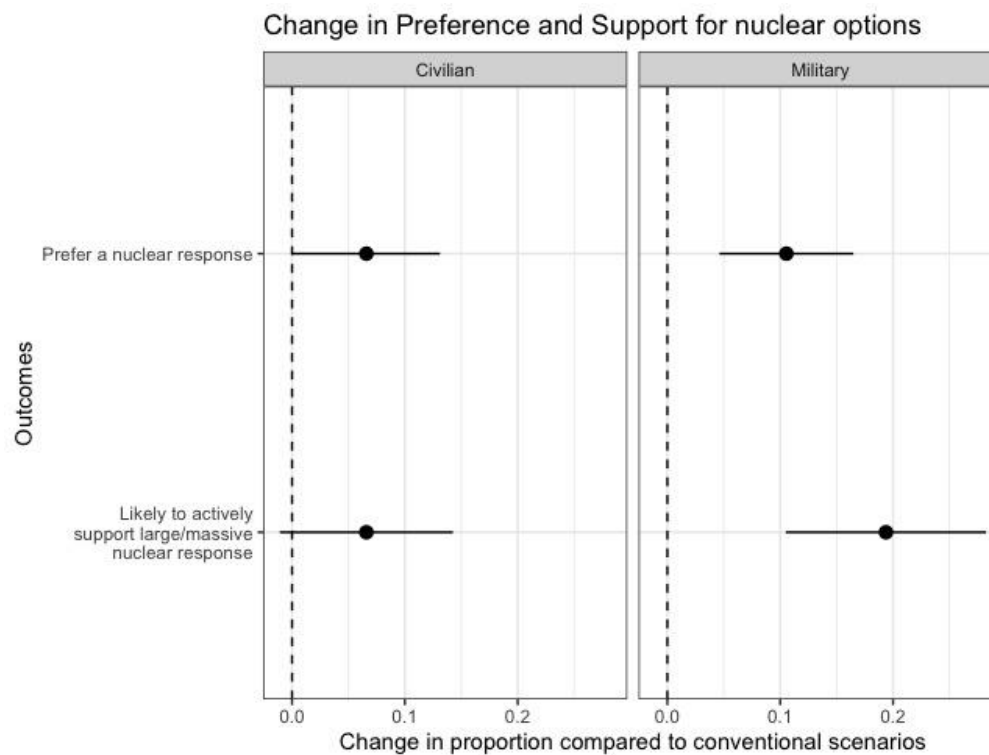


H3 [type of response]: Nuclear responses will be more common in the nuclear scenarios than in the conventional scenarios.

The damage received by the U.S. in all scenarios is identical, but the responses are nuclear more often in nuclear scenarios than in the non-nuclear scenarios and this is true in both populations. This is noteworthy, given that respondents are not told anything else about the potential response options other than what type of weapons and the specified number of casualties and fatalities. This suggests that respondents are making their decisions based at least partially on the type of weapon and not merely on the effects (since they could just as well have achieved the same effects with the conventional weapons). As can be seen in *Figure 3.3* below, nuclear scenarios increase the chances of nuclear responses as well as increase the likelihood that

respondents are willing to positively support (somewhat or extremely likely) the President if they chose to respond with a “larger” or “massive” nuclear response by approximately 6.6% in the civilian sample and by 10.6% for prefer and 19.4% for willingness to support the President in the military sample.

Figure 3.3



H4a [fear]: Reported increased levels of fear will be directly correlated with increased frequency of de-escalation.

To measure this relationship, I collapsed the fear question across all treatments to a binary variable where those who reported the scenario would make them either very fearful or as afraid as they can imagine being were coded as one, and the other three choices coded as a zero. The results in the civilian sample show that those who report that they would be more fearful, are

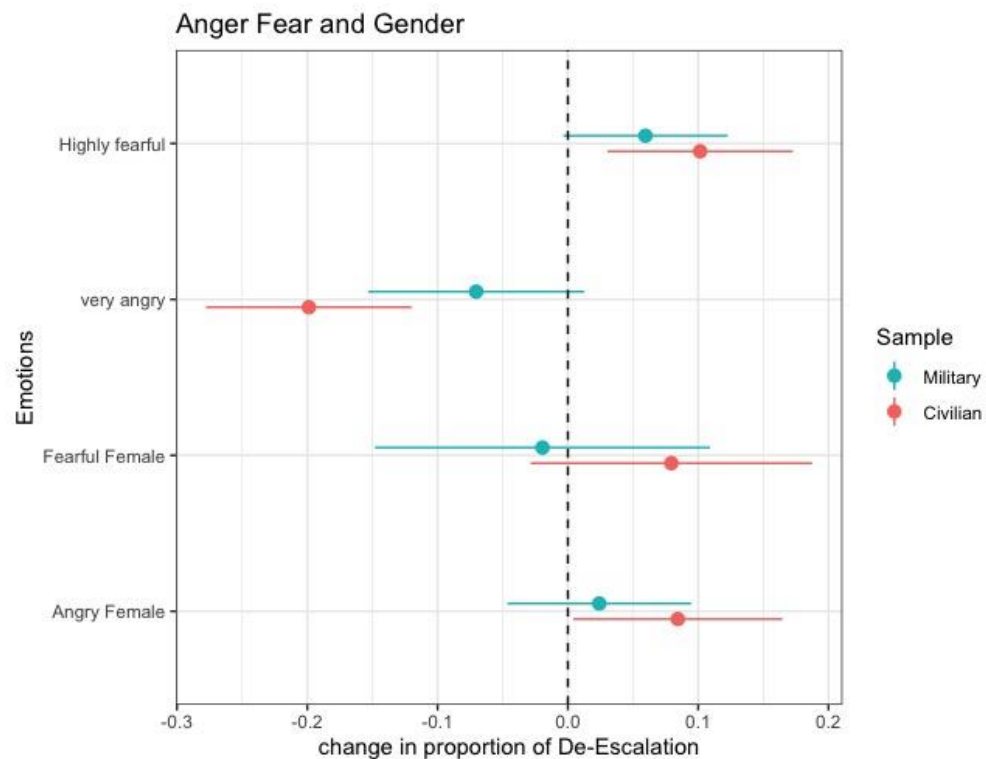
about 10% more likely to de-escalate than other respondents. This result is statistically significant to the $p < .01$ level. In the military sample, the result is in the same direction, but weaker, showing an increase in de-escalations of approximately 6.0% but only marginally significant at $p < .063$. (See *Figure 3.4*)

H4b [anger]: Reported increased levels of anger will be directly correlated with increased frequency of counterattacks.

Results in both samples unsurprisingly go in the opposite direction of the fear results.⁴¹⁷ In the civilian sample, those who reported that the given scenario would make them very angry chose to de-escalate approximately 20% less often than the other respondents. This result is also statistically significant ($p < .001$). In the military sample, angry respondents show a decrease in de-escalations of about 7.0%, but this is only significant to the $p < .095$ level. See *Figure 3.4* below.

⁴¹⁷ To measure this, I collapsed the anger question into a binary variable in the same way as I did for the fear variable and compared groups.

Figure 3.4



Of note, in both samples the proportion of respondents who reported the scenario would make them highly angry are significantly higher than those who reported they would be fearful. In the civilian sample, 49% reported high levels of fear while 68% reported high levels of anger. In the military sample, only 29 % reported high levels of fear while 83% reported high levels of anger. Since E2DE success relies heavily on fear (of further escalation, of more pain to come, or of high costs in future), this information does not bode well for E2DE success.

In both samples there are differences across gender in the fear and anger results (see Figure 3.4a). First, in the civilian sample the rate at which respondents report that the scenarios would cause them to be highly fearful differs significantly. The proportion of males who report that the scenario would make them highly fearful is only 38.1% whereas for female respondents

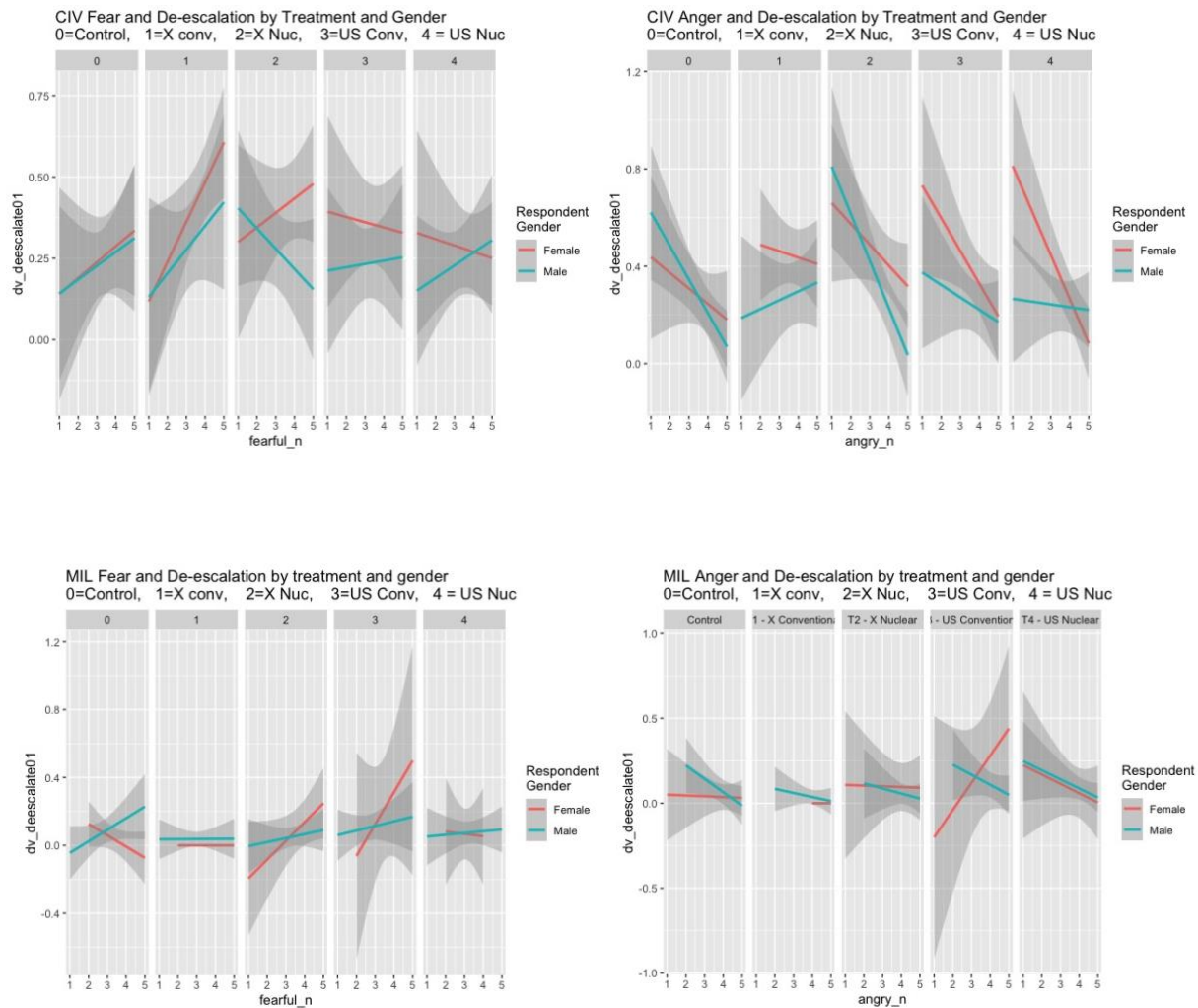
it is 59.6%. The proportion who reports the scenario would make them highly angry, however, is very similar for males and females, at 67.3% and 67.8% respectively. Secondly, across all treatments, the proportion of male and non-male respondents who de-escalate differs, with females choosing to de-escalate approximately 11% more often.⁴¹⁸ Additionally, in a linear model modeling the binary de-escalation variable on the fear, anger and gender variables (and their interaction terms), the anger and gender variables both remain statistically significant, though the gender variable only at the $p < .1$ level (.061). The effect of moving from male to female when controlling for these other variables is an increase in de-escalations of approximately 13.5%. For the anger variable, the effect is a decrease in de-escalations amongst the highly angry of approximately 22.2% and is highly significant. Lastly, when comparing females who reported they would be highly fearful or highly angry to males who selected the same, we see an increase in de-escalations, though for the fearful measure the result is not statistically significant ($p = 0.14$).

In the military sample there are no significant differences in the rate of de-escalation between males and females. 6.8 percent of males choose to de-escalate while 7.3 percent of females would prefer to do so. As in the civilian sample, the rate at which they report they would feel fearful and angry differs with males reporting they would be fearful 26.4% of the time and females 37.8%. The anger measure is also very similar between male and female, with 83.1% of males and 80.5% of females reporting they would feel high levels of anger in this situation. Lastly, when comparing females who reported they would be highly fearful or highly angry to males who selected the same, we see very little difference, and none rising to the level of statistical significance.

⁴¹⁸ In the civilian sample of 644 people, only 6 selected non-binary or other response to the gender question so I will adopt the male/female wording here.

We can see that anger is a more commonly reported reaction than fear. Grouping by gender it is also clear that it is significantly more common for females to report that these scenarios would make them fearful than for males. Given the demographics of the military in the United States where women represent only approximately 16% of the enlisted force and 19% of the Officer corps, this means that the groups least likely to be fearful (males) are the most relevant demographic to escalation outcomes. Additionally, in both males and females, anger is a much more common reported reaction than fear. Angry respondents (both male and female) and males (who are not likely to be fearful) are the least likely groups to choose to de-escalate. Given that the leaders of nuclear armed countries are men, this again does not bode well for E2DE success. Especially in the civilian sample, having a female respondent increases the likelihood of de-escalation significantly. It is reasonable to suggest, then, that male dominated and led militaries are much less likely to consider de-escalation in these scenarios than militaries dominated or led by women might be.

Figure 3.4a

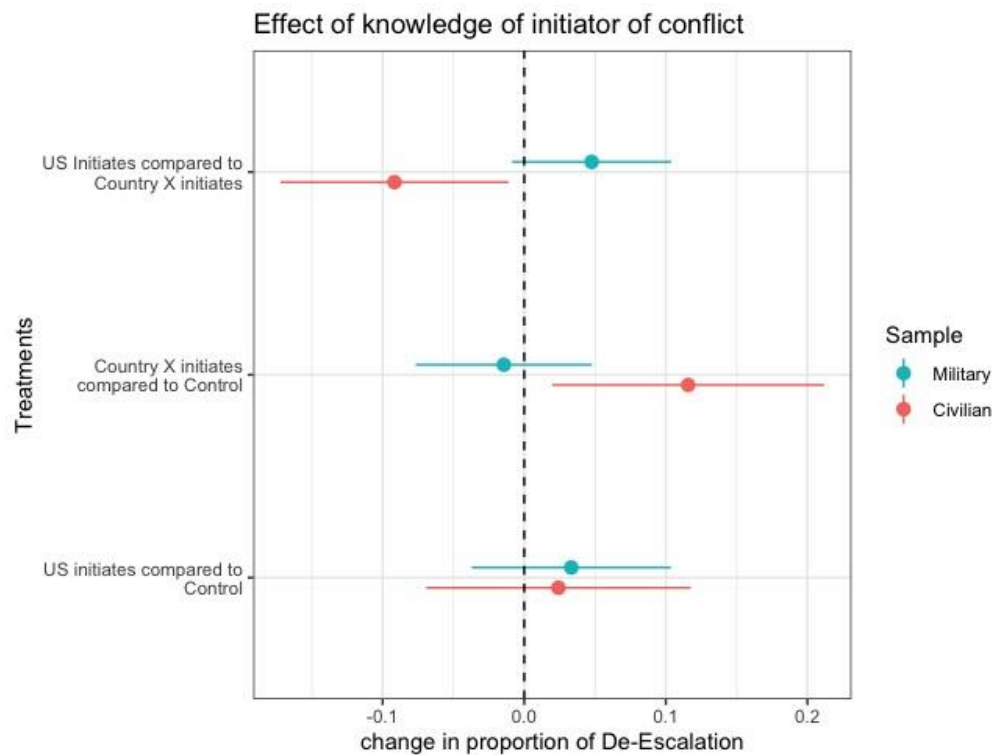


H5 [aggressor / defender]: When respondents perceive their country to be the defender (i.e. in scenarios where they are told Country X initiated the conflict) they will be less likely to de-escalate than when they perceive their country to be the aggressor (cases where the U.S. initiated the conflict).

To test this hypothesis, I compared the rates of de-escalation between groups for those who received scenarios initiated by Country X to those who received scenarios initiated by the U.S. Additionally I compared each of these groups to the Control group, who received no

information about who initiated the military action. The results are mixed. In the civilian sample, scenarios in which respondents are told the U.S. initiated the conflict are less likely to de-escalate than the Country X-initiated conflicts (see *Figure 3.5*). In the military sample, there are no statistically significant differences in who initiates the conflict.

Figure 3.5



In the civilian sample, the change is modest and is a decrease in de-escalations of approximately 9.2%. The military sample shows movement in the opposite direction but it is very small (4.8%) and only marginally significant ($p < .097$). Additionally, and related to the above observations about the rate of de-escalations between control and other treatments, there is a significant increase in the civilian sample (of about 11.6%) in the preference for de-escalation by respondents who were told Country X initiated the conflict compared to the control group.

The difference is not significant between the US initiated conflicts and the control group in either sample.

3.8 Analysis/Explanations of results (open text responses)

Respondents were asked the following question after choosing their preferred response and answering questions about supporting the President: “In a few words, please describe why you made the choices you did. What factors were important to your decision-making process?”⁴¹⁹ I systematically reviewed these responses and looked for explanatory evidence regarding decision-making.

In the civilian sample I do indeed find evidence that those who choose to *de-escalate* do so for reasons much in line with those hypothesized above, namely fear of escalation and increased risk perceptions. Additionally, I identified another line of reasoning that I did not specifically suggest which I refer to as normative reasoning which argues that war or nuclear weapons (or both) are simply bad or wrong. Of those who chose to give in to Country X’s demands, 20 made specific mention of a normative prohibition against war. For example, responses included: “I don’t believe in war”, “I am not one to agree with war or violence”, “Because violence is never the answer”, “I am against war”, and “because war is unnecessary”. Sixteen responses made specific mention of a normative concern over the use of or possession of nuclear weapons. For example, these responses included: “we need to abolish nuclear weapons”,

⁴¹⁹ The order of these questions presented somewhat of a problem. Some respondents answered this open text response question specifically about only the two previous questions (support the POTUS). Others answered this question based on their responses overall, and especially (as was intended), the primary question about their preferred response. This somewhat limited my ability to glean information about the primary question of interest (respondent preferred response).

“I am against the use of nuclear weapons”, “NUCLEAR IS BAD”, and “War is waged by mad men and anyone who uses a nuclear weapon is a mad man”. There is some element of a heightened sense of risk in these responses citing the undesirability of nuclear use, however, as they imply that it is the risk of nuclear war (which they oppose) that is driving their decision-making even though the conflict could feasibly remain conventional (i.e. they are not choosing conventional responses and then arguing against nuclear use, instead they are choosing to completely de-escalate for fear and risk of nuclear use).⁴²⁰

Risk and fear were clearly important in explaining the de-escalatory responses in the Civilian sample. Of those who chose to de-escalate, 41 responses specifically mentioned or alluded to fear, increased risk of escalation, or both. For example, these responses included: “Nuclear war terrifies me”, “Nuclear war is a horrifying concept”, “I am afraid of nuclear war”, and “nuclear would mean the end of the world”. In all, it is clear that a majority of the responses among this group made their choices based on some combination of fear of the consequences of a war and the risk attendant in responding to Country X’s escalation with further military action. As one respondent clearly states, “I made my choices based on casualties and how far each could escalate the situation and make it even worse.” This accounts for a majority of the open text responses in the civilian de-escalatory group.

There is no evidence in this group that respondents are making this decision to de-escalate based on a perception of increased commitment, increased credibility, resolve or that Country X has demonstrated restraint and can be trusted to honor a war termination agreement. In no response was any of this mentioned. This does not mean it was not a factor in respondents’ decision making, but rather that if it was it was likely a subconscious or secondary concern to

⁴²⁰ Additionally, two other responses stated that both war and nuclear weapons were both wrong, this makes a total of 38 responses that made some normative reference to war (killing) and nuclear use being wrong or unacceptable.

either their general disposition towards war and nuclear weapons, or their feelings of fear and increased risk perceptions.⁴²¹

In the military sample, very few respondents chose to de-escalate. Of the 28 respondents who chose to de-escalate, half of them (14) clearly reference fear and/or risk. These responses include: “It is hard to envision a scenario in which the limited use of nuclear weapons does not escalate into a larger nuclear exchange”, “The only way to win a nuclear war is to not play the game”, “Country X’s rhetoric makes me fear nuclear attacks against our country”, “Once you open Pandora’s box of nuclear war, there is no going back”, and “It is an unprecedented step to use nuclear weapons now which would likely spiral out of control.” The next most popular answer to this question in the military sample was some reference to normative concerns. In all, 5 of these respondents referenced normative prohibitions, including: “The massive use of nuclear weapons is disproportionate and immoral”, “nuclear weapons are necessarily immoral in function and design”, “There exists a taboo against escalating force to a nuclear response”, and “I’m of the impression that nuclear weapons should never be used.” In sum, of the few who chose to de-escalate within the military sample, fear, increased risk perceptions and normative concerns over the potential use of nuclear weapons are the dominant logics invoked as explanations for their preferences. Again, there is no mention of updated information, increased perceptions of resolve, commitment, credibility, or a belief that Country X may be safely appeased.

What explanations did respondents give for not de-escalating? There are two key themes in these responses. First, respondents were concerned about paying reputational costs, setting

⁴²¹ In the remaining responses that were not specifically referenced here, the answers to this question were too vague or short to garner any clear indication of their decision making, for example, responses not classified above included: “Well, our opinion doesn’t really matter...”, “I made the choices because in my head that was the best possible outcome”, and “I prefer peace”.

precedents, and felt that nuclear attacks required a response. Additionally, there is a strong preference to avoid nuclear use, even when coupled with strong desires to counterattack.

In the civilian sample, for those who chose the in-kind (in terms of casualties) conventional response, a clear pattern emerges. A vast majority of respondents in this group express grave concerns over nuclear escalation. It appears the presence of nuclear weapons is enough to limit the preference for specifically nuclear responses for fear of the consequences and the risk of nuclear escalation, but not enough to prevent a preference for a military response with conventional weapons. Some examples include: “I’m all about winning a battle but nuclear options are [extremely] risky for both sides”⁴²², “Using conventional military seems the right way to go, I do not condone using nuclear weapons”, “I’d rather choose a conventional way to counteract than to use a nuclear”, and “no nuclear response should ever happen, as for the massive conventional attack, this might be the only solution”. In addition, several respondents specifically argue for the need to avoid giving in to the other side due to concern over precedent setting and reputational concerns. For example, “I think the last thing you do is give them power”, “The U.S. has to show that it will fight fire with fire”, “we have to fight back”, “we can’t let them get away with their actions”, and “the U.S. has to show that it is a strong nation but doesn’t want to resort to nuclear actions”.

The same clear pattern emerges amongst this group of respondents in the military sample. They have chosen to respond but express deep concerns over utilizing nuclear weapons. Several responses also allude to the need to respond to avoid reputational costs, but also to stay conventional in the response to avoid different reputational costs. Some examples include: “the U.S. cannot start acquiescing to hostile countries demands... we have to be careful about using

⁴²² This respondent felt so strongly about nuclear risks that they resorted to even stronger, potentially offensive language here which I have edited out and replaced with “extremely”.

the nuclear option, it has too many negative repercussions to be tossed around as an idea”, “by initiating nuclear attacks we lose the moral high ground”, “escalating on a nuclear attack with another nuclear attack sets a dangerous precedent”, “A show of resolve must be made, however a nuclear attack would likely lead to further escalation”, and “Need to respond in kind. No need for nuclear as this has global effects that cannot be undone”. It is interesting to note that in both samples, for respondents in the *in-kind conventional response* group, the risk of nuclear escalation induced caution towards nuclear responses but did not induce enough caution to avoid responding or supporting larger conventional responses against a nuclear-armed opponent. This could be indicative of confidence that it is possible to limit escalation to only conventional conflict, but more difficult to limit escalation once beyond the nuclear threshold.

For those who chose to respond in-kind with nuclear weapons there is little to garner from the responses in the civilian sample. In the military sample only 11 respondents chose this option. However, the responses are illuminating. There is, as above, some hesitation to resort to nuclear weapons (demonstrated more fully by the low number of those selecting this option). However, many of these 11 identified crossing the nuclear threshold as desirable and important for demonstrating resolve and preserving the utility of a nuclear deterrent. For example, some argued that “If the U.S. backs down from an adversary using nuclear weapons, then the deterrence effect of our arsenal will be destroyed” and “The U.S. should break the nuclear threshold first in a limited way as a means to demonstrate resolve and to force Country X to de-escalate”⁴²³, “We would have to be willing to demonstrate that our response would be substantial and equal, not giving way to an aggressive nation”⁴²⁴. Lastly, one respondent specifically

⁴²³ This is clearly E2DE logic.

⁴²⁴ This was in response to one of the nuclear E2DE attempts. Another clear example: “We can't send the message that nuking US forces goes unchecked without a nuclear response.”

recommended E2DE in response, stating “Escalate to De-Escalate, but without unlimited warfare”.⁴²⁵

Beyond the in-kind responses, respondents could have chosen to counter-escalate by degrees, and with conventional or nuclear weapons. The lowest level of counter-escalation available was to retaliate to achieve 50% greater casualties, either with conventional or nuclear weapons. In the civilian sample those who chose to do so with conventional weapons expressed similar concerns to those who responded in kind. There is a reluctance to responding with nuclear weapons as they are deemed particularly risky and more likely to result in catastrophic death and destruction. Again, these fears of escalation did not prevent these respondents from choosing a counter-escalatory and large conventional response.⁴²⁶ The desire to maintain reputation and avoid any dangerous precedents is again present. For example, “to let them [know] that the US will not be bullied”, “need to show force and power”, “have the USA maintain power by using conventional weaponry”, “prevent others from acting similarly”, and “The US does not back down to someone that is clearly in the wrong”.

In the military sample, the trends are the same and the reference to precedent and reputation is even more frequent. There are also frequent concerns over the difference between nuclear and conventional weapons. Nuclear weapons are seen as different in this group, both materially and psychologically, and for this reason should be avoided. Clearly for these respondents, however, a response is required to the deliberate escalation due to a perceived need to demonstrate resolve and prevent future coercion. For example, “A nuclear response is not proportionate, but I would prefer any response versus appeasement”, “A conventional response,

⁴²⁵ This last response was in response to the U.S initiated, country X attempts nuclear E2DE treatment.

⁴²⁶ Of note, 48 of these respondents received treatments where the United States was attacked with nuclear weapons (out of 140).

even if escalated, maintains more ‘high ground’ than a nuclear response”, “a show of resolve... must occur”, “Backing down would damage US credibility”, and “If direct response to a nuclear attack is not grounds for employment, you lose credibility. A massive conventional attack should come IN ADDITION to a measured nuclear response”. The underlying theme in these counter-escalatory response explanations is that the coercion cannot be rewarded, but nuclear weapons come with special risks that should be avoided unless as a last resort.⁴²⁷ The means of attack, and counterattack, seems to matter to a large portion of respondents.

In the next group, respondents chose to respond with larger nuclear responses. In this group the concern about reputation and precedent setting is also present. In the military sample, each respondent in this group received a nuclear treatment. All five of these responses referred to a need to preserve either reputation or avoid a precedent. Phrases used include: “We cannot let a country get away with nuclear coercion. Our nuclear deterrent is too important...”, “some aggressors require significant convincing that America doesn’t back down from a fight...”, “Nuclear option is necessary to support deterrent posture and prevent future nuclear conflict”, and “Any nuclear strike must be met with severe and deliberate force, especially since the US has established itself as a ‘second-strike’ user of nuclear weapons”.⁴²⁸ It is clear, particularly in the military sample, that those who are responding with this level of response are doing so for reasons of preserving reputation and avoiding precedent setting, particularly in reaction to nuclear attack.

Lastly, respondents may have chosen to respond with “massive” conventional or nuclear responses resulting in 150% more casualties in Country X. It is clear again in this group in both

⁴²⁷ The phrase “last resort” is used often in the responses.

⁴²⁸ In the civilian sample, this group consisted of 22 respondents, most of whom did not give detailed answers to this question. Four of the 24 responses make mention of reputational or precedent related concerns.

civilian and military samples that respondents believe the U.S. cannot back down but that nuclear attack is particularly dangerous.

In sum, those who choose to counter-attack generally express hesitation to make the response at the nuclear level for worries over escalation and precedent setting but nevertheless do respond, and half the time, respond more strongly than the attacker.⁴²⁹

3.9 Conclusions/Future Research:

The results detailed above demonstrate that escalate to de-escalate attempts rarely succeed. It appears that this type of bold but restrained escalation does little to provide coercive advantages to the attacker. It is also clear that nuclear weapons do little to increase the chances of coercive advantage and instead have a slightly negative effect, resulting in slightly increased belligerence costs imposed by the receiving state on the attacking state. Nuclear use appears to increase the chance that a response will be made with nuclear weapons in comparison to conventional scenarios. Nuclear use also significantly increases the likelihood that respondents will support stronger responses ordered by the President. These results combined suggest that escalate to de-escalate strategies may not play out as proponents would hope.

Additionally, the results above suggest that nuclear use may not be as immediately catastrophic or detrimental to the chances for de-escalation as nuclear pessimists might expect. The respondents here appear to be hesitant to support escalatory nuclear responses, even in response to nuclear attacks, due to worries over continued escalation. This implies some

⁴²⁹ In the military sample, nuclear scenarios resulted in higher incidences of reference to reputational and precedent setting concerns than conventional scenarios. In the nuclear treatments, 51 respondents made some mention or statement about precedent, reputation or a need to punish the other side. In the conventional treatments, this number was only 33.

optimism that remaining at the conventional level in the response may increase the chances of limiting dangerous escalation cycles. This conclusion, however, should be taken with a healthy dose of salt. The results above do suggest that nuclear use will result in continued conflict. This is not something to take much comfort in. Continued conflict means continued cycles of action and re-action in which escalation dynamics are at work. Once in a nuclear war it is not at all clear how many cycles states may hope to endure before catastrophe ensues.⁴³⁰

Naturally, as with all survey experiments, there are limitations to how far one can take these results. Future research should explore how unique these preferences are to U.S. respondents. U.S. citizens and military members may have vastly different assessments of risk and escalation potential than respondents in states that occupy a different role in the international order. Other questions include whether the same results would appear in a similar experiment in which powers are more evenly balanced in conventional or nuclear weapons? Are there cultural or geographic considerations that might appear if different adversaries, such as India and Pakistan (who share a border) are considered? Would respondents from much smaller and less militarily powerful states feel differently in these hypothetical situations? What if the hypothesized conflict included attacks on the U.S. homeland directly? These and many other questions are natural and expected in reaction to the above analysis and no answers can be provided here without additional research and analysis. In the end, the above research suggests that escalate to de-escalate strategies are likely ineffective and further thought should be given to the relationship between escalation and war termination.

⁴³⁰ Arguably, a nuclear war that extends past a single “cycle” of nuclear exchange will already have exceeded any sense of being “limited”, especially if the conflict grew out of a war of limited aims, given the immense power and destructive capability of even a few nuclear weapons.

States that might hope to escalate their way out of unpleasant conflict scenarios should give serious thought to how, exactly, they expect such escalations to lead decision makers of the other side to give in. Also, states expecting the limited use of nuclear weapons to yield large coercive advantages should do more than think twice. Nuclear weapons use does not appear to do this, and in fact increases the likelihood of nuclear counterattacks. No one really knows what would happen in the wake of the first nuclear use in almost a century, but the evidence above suggests it is not likely to end a conflict and any extended conflict among nuclear powers is something the entire world should hope to avoid.

Appendix 3A: Online Survey Experiment Design:

The script of the scenario and treatments, as well as the questions posed in the online experiment, are detailed below.

There are five treatment conditions:

1. Control: NO information about who was first to initiate armed conflict and NO information about what types of weapons are used in the attempt at “escalation to de-escalate” (E2DE)
2. Treatment 1: Country X initiates the conflict; the E2DE attack is made (by “X”) with conventional weapons.
3. Treatment 2: Country X initiates the conflict; the E2DE attack is made (by “X”) with nuclear weapons.
4. Treatment 3: U.S. initiates the conflict; the E2DE attack is made (by “X”) with conventional weapons.
5. Treatment 4: U.S. initiates the conflict; the E2DE attack is made (by “X”) with nuclear weapons.

Initial description and background information:

After reading and agreeing to the consent form, respondents received the following information in this format:

“The following scenario and questions ask you to consider a **hypothetical** scenario involving a conflict between the United States and another nuclear weapons-armed country. Imagine this scenario to take place roughly **20 years in the future and that the scenario does not have any particular country in mind**. Please consider the details and information within the scenario carefully prior to moving on and formulating your answers to each question.

In this scenario, The United States is equipped with a nuclear arsenal with the same capabilities as exist in the real world today. “Country X” has a nuclear arsenal capable of delivering nuclear weapons by aircraft (via gravity bombs), nuclear tipped short, medium, and intermediate-range ballistic missiles, and a small number of intercontinental ballistic missiles capable of reaching the continental United States. Country X’s nuclear arsenal is much smaller than that of the U.S. but has grown significantly in recent years. The U.S. maintains a large conventional (non-nuclear) force advantage overall.”

Respondents then received this question:

Q3: Comprehension check 1: Which country has more nuclear weapons? (You may go back if necessary) – U.S. or Country X?

Respondents then received one of the 5 scenarios below:

[Scenario Presentations were randomly assigned by Qualtrics with a setting to achieve an equal distribution of the 5 Scenarios.]

[Scenario Presentation 1 \(Control\):](#)

The Scenario:

Sparked by a growing crisis arising over failed negotiations between the U.S. and Country X over Country X’s nuclear weapons programs, a series of maritime incidents between the two countries has been ongoing.

A broader war **centered in the region surrounding Country X** has ensued between the U.S. and Country X.

Country X made early gains, both at sea and on land in U.S. allies' territory in the region, but after several weeks of limited fighting the U.S. began to make steady progress at reversing these gains. In response, Country X has made several threats, including that if the U.S. does not stop offensive military operations, Country X will take “unprecedented and drastic action, with the full military power available to the leader of Country X”, and specifically, “they will not allow any U.S. forces on current Country X controlled territory.”

The U.S., however, has continued to score small victories and the U.S. demands that Country X agree to cease all military operations and return all forces back beyond pre-hostility territorial borders.

In response to the U.S. demands, **Country X responded by:**

Country X launched a large military attack on three U.S. military bases located in the region. The attacks resulted in significant physical damage to all bases, including damage on two Navy destroyers, and significant damage to aircraft and runways at the U.S. bases. Reports from the U.S. Military spokesperson indicate that military fatalities are approximately 3,000 personnel; civilian fatalities are approximately 500; and an additional 1500 military and approximately 1000 civilians were injured.

Immediately following the attack, the Leader of Country X made a widely publicized television appearance and demanded that “the U.S. ceases all offensive operations, recognizes the current situation on the ground as the new territorial status quo, and immediately withdraws all forces from the region.” The Leader also threatened that “if the U.S. does not immediately take visible

and measurable actions to comply with these demands, Country X will continue attacks against U.S. assets and will not hesitate to use all weapons at its disposal to defend its territorial rights and national sovereignty.”

[Scenario Presentation 2 \(Treatment 1, Country X starts / Conventional Weapons\):](#)

The Scenario:

After bi-lateral negotiations over nuclear arms control agreements between the U.S. and Country X failed last month, **Country X, claiming that U.S. hostility presents a grave danger, began attacking U.S. Naval Vessels** in the region that were said to be “ready and able to attack Country X”.

As a result, **a broader war initiated by Country X and centered in the region surrounding Country X** has ensued between the U.S. and Country X.

Country X made early gains, both at sea and on land in U.S. allies’ territory in the region, but after several weeks of limited fighting the U.S. began to make steady progress at reversing these gains. In response, Country X has made several threats, including that if the U.S. does not stop offensive military operations, Country X will take “unprecedented and drastic action, with the full military power available to the leader of Country X”, and specifically, “they will not allow any U.S. forces on current Country X controlled territory.”

The U.S., however, has continued to score small victories and the U.S. demands that Country X

agree to cease all military operations and return all forces back beyond pre-hostility territorial borders.

In response to the U.S. demands, **Country X responded by:**

Country X launched a large salvo (several dozens) of medium range ballistic missiles armed with conventional (NON NUCLEAR) warheads at three U.S. military bases located in the region. The attacks resulted in significant physical damage to all bases, including damage on two Navy destroyers, and significant damage to aircraft and runways at the U.S. bases. Reports from the U.S. Military spokesperson indicate that military fatalities are approximately 3,000 personnel; civilian fatalities are approximately 500; and an additional 1500 military and approximately 1000 civilians were injured.

Immediately following the attack, the Leader of Country X made a widely publicized television appearance and demanded that “the U.S. ceases all offensive operations, recognizes the current situation on the ground as the new territorial status quo, and immediately withdraws all forces from the region.” The Leader also threatened that “if the U.S. does not immediately take visible and measurable actions to comply with these demands, Country X will continue attacks against U.S. assets and will not hesitate to use all weapons at its disposal to defend its territorial rights and national sovereignty.”

[Scenario Presentation 3 \(Treatment 2, Country X starts / Nuclear weapons\):](#)

The Scenario:

After bi-lateral negotiations over nuclear arms control agreements between the U.S. and Country X failed last month, **Country X, claiming that U.S. hostility presents a grave danger, began attacking U.S. Naval Vessels** in the region that were said to be “ready and able to attack Country X.

As a result, **a broader war initiated by Country X and centered in the region surrounding Country X** has ensued between the U.S. and Country X.

Country X made early gains, both at sea and on land in U.S. allies’ territory in the region, but after several weeks of limited fighting the U.S. began to make steady progress at reversing these gains. In response, Country X has made several threats, including that if the U.S. does not stop offensive military operations, Country X will take “unprecedented and drastic action, with the full military power available to the leader of Country X”, and specifically, “they will not allow any U.S. forces on current Country X controlled territory.”

The U.S., however, has continued to score small victories and the U.S. demands that Country X agree to cease all military operations and return all forces back beyond pre-hostility territorial borders.

In response to the U.S. demands, **Country X responded by:**

Country X launched a salvo of 6 medium range ballistic missiles armed with NUCLEAR WARHEADS at three U.S. military bases located in the region. The attacks resulted in significant physical damage to all bases, including damage on two Navy destroyers, and

significant damage to aircraft and runways at the U.S. bases. Reports from the U.S. Military spokesperson indicate that military fatalities are approximately 3,000 personnel; civilian fatalities are approximately 500; and an additional 1500 military and approximately 1000 civilians were injured.

Immediately following the attack, the Leader of Country X made a widely publicized television appearance and demanded that “the U.S. ceases all offensive operations, recognizes the current situation on the ground as the new territorial status quo, and immediately withdraws all forces from the region.” The Leader also threatened that “if the U.S. does not immediately take visible and measurable actions to comply with these demands, Country X will continue attacks against U.S. assets and will not hesitate to use all weapons at its disposal to defend its territorial rights and national sovereignty.”

Scenario Presentation 4 (Treatment 3, U.S. Starts / Conventional weapons):

The Scenario:

After bi-lateral negotiations over nuclear arms control agreements between the U.S. and Country X failed last month, the U.S. President, declaring that the nuclear issue in Country X of vital national interest, ordered the U.S. military to begin attacking and seizing naval shipments said to be bringing nuclear related technology to Country X.

As a result, **a broader war initiated by the U.S. and centered in the region surrounding Country X** has ensued between the U.S. and Country X.

Country X made early gains, both at sea and on land in U.S. allies' territory in the region, but after several weeks of limited fighting the U.S. began to make steady progress at reversing these gains. In response, Country X has made several threats, including that if the U.S. does not stop offensive military operations, Country X will take “unprecedented and drastic action, with the full military power available to the leader of Country X”, and specifically, “they will not allow any U.S. forces on current Country X controlled territory.”

The U.S., however, has continued to score small victories and the U.S. demands that Country X agree to cease all military operations and return all forces back beyond pre-hostility territorial borders.

In response to the U.S. demands, **Country X responded by:**

Country X launched a large salvo (several dozens) of medium range ballistic missiles armed with conventional (NON-Nuclear) warheads at three U.S. military bases located in the region. The attacks resulted in significant physical damage to all bases, including damage on two Navy destroyers, and significant damage to aircraft and runways at the U.S. bases. Reports from the U.S. Military spokesperson indicate that military fatalities are approximately 3,000 personnel; civilian fatalities are approximately 500; and an additional 1500 military and approximately 1000 civilians were injured.

Immediately following the attack, the Leader of Country X made a widely publicized television appearance and demanded that “the U.S. ceases all offensive operations, recognizes the current

situation on the ground as the new territorial status quo, and immediately withdraws all forces from the region.” The Leader also threatened that “if the U.S. does not immediately take visible and measurable actions to comply with these demands, Country X will continue attacks against U.S. assets and will not hesitate to use all weapons at its disposal to defend its territorial rights and national sovereignty.”

[Scenario Presentation 5 \(Treatment 4, U.S. starts / Nuclear weapons\):](#)

The Scenario:

After bi-lateral negotiations over nuclear arms control agreements between the U.S. and Country X failed last month, the U.S. President, declaring that the nuclear issue in Country X of vital national interest, ordered the U.S. military to begin attacking and seizing naval shipments said to be bringing nuclear related technology to Country X.

As a result, **a broader war initiated by the U.S. and centered in the region surrounding country X** has ensued between the U.S. and Country X.

Country X made early gains, both at sea and on land in U.S. allies’ territory in the region, but after several weeks of limited fighting the U.S. began to make steady progress at reversing these gains. In response, Country X has made several threats, including that if the U.S. does not stop offensive military operations, Country X will take “unprecedented and drastic action, with the full military power available to the leader of Country X”, and specifically, “they will not allow any U.S. forces on current Country X controlled territory.”

The U.S., however, has continued to score small victories and the U.S. demands that Country X agree to cease all military operations and return all forces back beyond pre-hostility territorial borders.

In response to the U.S. demands, **Country X responded by:**

Country X launched a salvo of 6 medium range ballistic missiles armed with NUCLEAR WARHEADS at three U.S. military bases located in the region. The attacks resulted in significant physical damage to all bases, including damage on two Navy destroyers, and significant damage to aircraft and runways at the U.S. bases. Reports from the U.S. Military spokesperson indicate that military fatalities are approximately 3,000 personnel; civilian fatalities are approximately 500; and an additional 1500 military and approximately 1000 civilians were injured.

Immediately following the attack, the Leader of Country X made a widely publicized television appearance and demanded that “the U.S. ceases all offensive operations, recognizes the current situation on the ground as the new territorial status quo, and immediately withdraws all forces from the region.” The Leader also threatened that “if the U.S. does not immediately take visible and measurable actions to comply with these demands, Country X will continue attacks against U.S. assets and will not hesitate to use all weapons at its disposal to defend its territorial rights and national sovereignty.”

Respondents then received the following two questions in a separate block:

----- New Block -----

Q9: Comprehension check 2: In the scenario, which country initiated the hostilities by attacking naval assets first, the U.S. or Country X? (you may go back if necessary)

Q10: Comprehension Check 3: In the scenario, what type of weapons, conventional or nuclear, did Country X use to attack the U.S. bases? (you may go back if necessary)

[These questions were not used to disqualify responses.]

----- New Block -----

Online Experiment Questions (all participants):

Q11 [Primary DV]: The Chairman of the Joint Chiefs of Staff (CJCS), the National Security Council (NSC) and other military advisors to the President have recommend the following options. Which of these options would you most prefer?

- Agree to demands of Country X by **ceasing offensive operations**, pulling back U.S. forces, and attempt to negotiate for U.S. demands
- Counter-**attack with conventional missiles resulting in the same casualties** suffered by the United States; Re-issue U.S. demands
- Counter-attack with a **limited nuclear attack resulting in the same casualties** suffered by the United States; Re-issue U.S. demands

- Counter-attack with a **larger conventional attack** using more weapons which will create 50% more casualties in Country X than suffered in the U.S.; Re-issue U.S. demands
- Counter-attack with a **larger nuclear attack** designed to create 50% more casualties in Country X than suffered in the U.S.; Re-issue U.S. demands
- Counter with a **massive conventional attack**, resulting in 150% more casualties in Country X; Re-issue U.S. demands
- **Massive nuclear attack resulting** in 150% more casualties in Country X; Re-issue U.S. demands

The next question, Q12, is same question and asks respondents to place the options in rank order.

Q13: If you were in charge, are there other options you would consider? If so, please describe it/them.

----- page break in Qualtrics -----

Q14: If the president chose to escalate to the *larger* or *massive* conventional response, how likely would you be to support that decision regardless of your personal preference?

Q15: If the president chose to escalate to the *larger* or *massive* nuclear response, how likely would you be to support that decision regardless of your personal preference?

Q16: In a few words, please describe why you made the choices you did. What factors were important to your decision-making process?

- Open ended question again, no limit to text box.

----- page break in Qualtrics -----

Q17: If the scenario described in this study, where U.S. bases were attacked in this way, were to really occur, how angry would it make you feel?

- a. Not angry at all, somewhat or very little anger, moderately angry, very angry, as angry as I can imagine being. (5-point Likert)

Q18: If the scenario described in this study, where U.S. bases were attacked in this way, were to really occur, how fearful would it make you feel?

- b. Not fearful at all, somewhat or very little fear, moderately fearful, very fearful, as afraid as I can imagine being. (5-point Likert)

Q19: If an attack on U.S. bases like the one described in this study were to really occur, how confident would you be that your chosen option would get the opponent to back down?

- c. Percent slider, from 1 % to 100 %.

Q20: How likely do you think it is that in the future the U.S. may find itself in the situation described in the scenario you read?

- d. Extremely unlikely, unlikely, neither likely or unlikely, likely, extremely likely

Demographic Questions:

1. What is your year of birth? (In the civilian Sample, it was “What is your Age”)
2. What is the highest level of school you have completed or the highest degree you have received?
3. Gender “Please select a Gender” (Male; Female; non-binary/third gender; prefer not to say)
4. Race/Ethnicity
5. Marital status: Married/widowed, divorced, separated, never married
6. How many children do you have?
7. Generally speaking, are you a Republican, democrat, independent, other?
8. 5-point political view scale, conservative to liberal (very liberal to very conservative)
9. Have you ever served on active duty in the U.S Armed Forces?
 - a. When? (Current, or year ranges, from – to)
10. Are you a government contractor / DOD employee?
11. Military Branch
12. Rate / Rank
13. Years of government / military service (Round down to nearest year)
14. Do you have any experience working in the fields of nuclear command, control and communication, or within nuclear policy planning or development?
15. If yes, how many years of this experience do you have?
16. What was the nature of that experience (NC3 or Policy planning/development)?

Appendix 3B: E2DE in Experiments Supplemental material

Military Sample:

Total: 408

Naval War College (NWC) Student, Faculty and Alumni = 355

NWC Students = 307

NWC Faculty = 17

NWC other (Alumni) = 30

Other military members (Snowball/Networking) = 54

Civilian Sample:

Total: 644

Demographic information:

Demographic	Military Sample	Civilian	U.S. Census (if applicable) ⁱ
Age in years (mean)	39	33.3	
Age in years (median)	37	30.5	38.8
Highest Education: H.S. Some College Associates Bachelors Masters PhD	0 1 (> 1%) 1 (> 1%) 132 (32.4%) 220 (53.9%) 54 (13.2%)	154 (23.9%) 159 (24.7%) 83 (12.9%) 155 (24.1%) 69 (10.7%) 24 (3.7%)	26.3% 19.3% 8.8% 21.2% 13.8% (Any Graduate degree)
Gender: Male Female Non-binary/Other Prefer not to say	326 (79.9%) 71 (17.4%) 1 (.25%) 10 (2.5%)	315 (48.9%) 323 (50.2 %) 5 (.78%) 1 (.16%)	49.2% 50.8%
Race: - Hispanic/Latino - Black/African American(non-hispanic) - White (non-hispanic) - American Indian or Alaska Native - Asian - Native Hawaiian or Pacific Islander - Two or More Races	22 (5.4%) 9 (2.2%) 309 (75.7%) 2 (.5%) 14 (3.4%)	77 (11.96%) 76 (11.8%) 424 (65.8%) 9 (1.4%) 28 (4.3%)	18.8% 12.1% 61.2% 1% 5.8%

- Race/Ethnicity - Unknown - Prefer not to say.	0 21 (5.1%) 1 (.25%) 30 (7.4%)	4 (.6%) 20 (3.1%) 0 6 (.9%)	.2% 12.6%
Marriage Status: Never Separated Divorced Widowed Married	79 (19.4%) 6 (1.5%) 20 (4.9%) 0 303 (74.3%)	249 (38.7%) 27 (4.2%) 72 (11.2%) 26 (4.0%) 270 (41.9%)	34.2% 1.7% 10.6% 5.5% 48% (over age 15)
Children: None 1 2 3 More than 3	169 (41.4%) 57 (14.0%) 100 (24.5%) 50 (12.25%) 31 (7.6%)	279 (43.3%) 124 (19.3%) 140 (21.7%) 66 (10.2%) 35 (5.4%)	
Political Party: Republican Democrat Independent Something Else	126 (30.9%) 97 (23.8%) 148 (36.3%) 36 (8.8%)	203 (31.5%) 236 (36.6%) 179 (27.8%) 26 (4.0%)	(Gallup Jan 2023) ⁱⁱ 27% 30% 40%
5 Point Ideological: Very Liberal Liberal Moderate Conservative Very Conservative	12 (2.9%) 70 (17.2%) 200 (49.0%) 111 (27.2%) 14 (3.4%)	89 (13.8%) 109 (16.9%) 253 (39.3%) 134 (20.8%) 59 (9.2%)	
Mil Statusⁱⁱⁱ: Active Duty (No) Active Duty (Yes)	47 (11.5%) 361 (88.5%)	570 (88.5%) 74 (11.5%)	
Military Branch: Air Force Army Coast Guard Marine Corps Navy Space Force Other	30 (7.4%) 18 (4.4%) 18 (4.4%) 22 (5.4%) 271 (66.4%) 0 1 (.25%)		
Rank: Enlisted (E1-E9) Warrant Officer O1-O3 O4 O5 O6	11 (2.7%) 1 (.25%) 150 (36.8%) 120 (29.4%) 53 (13%) 23 (5.6%)		
Years of Service: Mean Median	11.4 years 10 years		
Nuclear Experience? Yes No	74 (18.1%) 285 (70 %)		
Years of Nuclear experience: Average Years	4.5 years		

Fear Anger and Gender and De-escalation		
	DV: De-escalatoin or Not	
	dv_deescalate01	
	Civilian	Military
	(1)	(2)
Fearful	0.084 (0.083)	0.094 (0.086)
Angry	-0.222*** (0.059)	-0.104*** (0.040)
Female	0.135** (0.065)	-0.084 (0.073)
Interaction: Fear/Anger	0.080 (0.083)	-0.017 (0.089)
Fear/Female	0.029 (0.076)	-0.043 (0.066)
Anger/Female	-0.111 (0.081)	0.116 (0.081)
Constant	0.343*** (0.047)	0.133*** (0.036)
Observations	644	408
R ²	0.082	0.032
Adjusted R ²	0.074	0.017
Residual Std. Error	0.444 (df = 637)	0.251 (df = 401)
F Statistic	9.513*** (df = 6; 637)	2.175** (df = 6; 401)
Significance Levels	* p ** p *** p<0.01	

ⁱ <https://www.census.gov/data.html>

ⁱⁱ <https://news.gallup.com/poll/15370/party-affiliation.aspx>

ⁱⁱⁱ The question was: “Have you ever served on Active Duty in the U.S. armed forces?”