
Getting Deterrence Right: The Case for Stratified Deterrence

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pp. 26-40

Recommended Citation

Talbot, Brent J.. "Getting Deterrence Right: The Case for Stratified Deterrence." *Journal of Strategic Security* 13, no. 1 (2020) : 26-40.
DOI: <https://doi.org/10.5038/1944-0472.13.1.1748>
Available at: <https://scholarcommons.usf.edu/jss/vol13/iss1/2>

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Getting Deterrence Right: The Case for Stratified Deterrence

Acknowledgements

The author would like to thank the Center for Global Security Research (CGSR) at Lawrence Livermore National Laboratory for its assistance in providing a wealth of ideas and resources related to this project.

Introduction

Cold War deterrence strategy was based on a balance of terror or mutual assured destruction, but the 21st Century contains new threats, new actors, not so easily deterred. While nuclear deterrence remains important, regional powers armed with weapons of mass destruction (WMD) and accompanying long-range delivery capabilities are a rising concern as noted by United States-North Korean relations and rhetoric of the past few years. New technological breakthroughs in the space, cyber, and unforeseen realms could also provide asymmetric means of undermining deterrence. Traditional deterrence is less certain in this environment, and policies (along with accompanying capabilities) of the Cold War era may actually be destabilizing, as additional regional powers are increasingly likely to arm themselves with WMD or asymmetric technologies. Kartchner and Gerson state that there is a greater possibility for limited nuclear war in this post-Cold War era.¹

Furthermore, the effort to achieve strategic stability has become increasingly complicated in light of the changing relationship between the great powers. The era of bipolarity ended with the Cold War and today the United States is no longer the hegemon it became by default with the collapse of the Soviet Union. Today's world has become one of security trilemmas, according to Linton Brooks and Mira Rapp-Hooper: actions one state takes to defend against another can, in-turn, make a third state feel insecure.² For example, Russian efforts to deter the United States also impact European security. Chinese actions influence the United States, Russia, and India. Therefore, the security trilemma means that actions that would have mattered only on a bilateral level, in Cold War terms, now have greater strategic consequences.

So how did we get to where we are today? Why do U.S. policymakers see the Cold War triad as the best solution to continued strategic stability? Have they considered the changed environment of the post-Cold War world? Our discussion will begin with deterrence thinking of the early Cold War, proposing the need to differentiate counter-value and counterforce targeting for a 21st Century deterrence construct, and defining strategic stability for our time with accompanying refinement of the trilemma argument introduced above. This narrative will point out flaws in the proposed triad; there is great need for both nuclear diversity (theater and

low-yield weapons) and non-nuclear elements in the deterrent force to provide strategic stability in the decades ahead. In sum, we need a deterrence construct that both deters nuclear use by the great powers and terminates nuclear use by so-called rogue states initiating nuclear wars on neighbors. This essay presents a stratified deterrence policy, which addresses deterrence needs at each potential level of conflict.

Early Deterrence Thinking

Just after World War II ended, General “Hap” Arnold who led Army Air Forces during the war, offered enduring advice about deterrence: “Our first line of defense is the ability to retaliate even after receiving the hardest blow the enemy can deliver.”³ Therefore, from its early beginnings, nuclear deterrence had to mean to an enemy that retaliation would come following nuclear weapons use. Bernard Brodie took this logic one-step further:

The first and most vital step in the American security program for the age of atomic bombs is to take measures to guarantee ourselves in case of attack the possibility of retaliation in kind...Thus far the chief purpose of a 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.⁴

Development of an assured retaliation is the best means of deterring an enemy over time. This concept came to be known as a survivable second strike capability, or the ability to survive an enemy nuclear force that strikes first. It doesn't matter whether the enemy focuses its efforts on military bases and forces or the U.S. population centers. Retaliation which disables the enemy in a way that ensures defeat, whether it be near complete loss of military forces or unacceptable damage to his polity and society, would assure the United States a second strike capability. The idea was to achieve Mutual Assured Destruction between the superpowers.

As the 1950s unfolded, the U.S. nuclear posture consisted of a growing bomber force with sufficient numbers for retaliation against any Soviet attack. Toward the end of the decade as rumors of a bomber gap, and later, a missile gap unfolded, the United States was developing intercontinental ballistic missiles (ICBMs) as well as submarine-launched ballistic missiles

(SLBMs). Fear of the rumors, aided in the case of the missile gap by the success of Sputnik, and not discounting U.S. inter-service rivalry, resulted in eventual deployment of a triad of bombers, missiles, and submarines that would guarantee survival and ensure a second strike capability against Soviet nuclear aggression.

Still, there were two additional Cold War perspectives on deterrence. Mutual Assured Destruction (MAD), was only one such perception based upon stability. Lebow and Stein argue that many among the U.S. military establishment argued for a stronger option: strategic superiority, a decapitation strategy to destroy Soviet leadership, command, control and communications abilities associated with warfighting, and hardened targets enabling a nuclear warfighting victory over the Soviets. In essence, the goal was to go beyond MAD and have the means to eliminate a Soviet second strike should nuclear war break out. And at the opposite end of the spectrum there was a third option: finite deterrence, arguing that nuclear deterrence only required limited capabilities along the lines of other major powers nuclear inventories besides the United States and the Soviet Union.⁵ A minimal ability to retaliate with nuclear weapons was enough due to the uncertainty that some might get through defenses and strike their targets, so that even a few nuclear detonations received in retaliation would create too high of a cost for a nation contemplating a first strike.

Lebow and Stein go on to compare the strategies to the Cuban missile crisis of 1963. Despite a numerical advantage of 3500 usable nuclear weapons in the U.S. strategic inventory compared to the Soviet's 350, and further belief that only 30 or so of their weapons would likely reach targets in the United States, America was deterred. As McGeorge Bundy described, "even if one Soviet weapon landed on an American target, we would all be losers."⁶ The United States was deterred in spite of its own nuclear superiority, pointing to finite deterrence as the more rational option. Minimum deterrence, while unintentional on the part of the Soviets, worked. The authors go on to argue that other Cold War crises also occurred when the Soviet Union was weak and the United States was strong, but then the relationship stabilized when the Soviets achieved nuclear parity. In other words, the imbalance prompted Soviet posturing in each crisis. The authors add that "too much deterrence," as in MAD, fuels an arms race that makes both sides less secure, and thus, conclude that finite deterrence is the most stabilizing posture "because it prompts

mutual caution” between the superpowers.⁷ Still, finite deterrence does not fully address strategic stability per the assured destruction concept embedded within MAD. To enhance this concept further, I turn to another Cold War deterrence concept.

Counter-value vs Counterforce

In 1960, a major debate was ensuing between the Air Force and Navy over counterforce and counter value (or counter-cities) targeting strategy. The Navy maintained that its proposed Polaris submarine force could provide deterrence by having the capability to elude attack by hiding in the depths of the sea, then counter any Soviet attack by destroying all major Soviet cities. This retaliation from the sea would provide the kind of deterrence Brodie had argued for, and thus, deter a Soviet attack on the United States. The Air Force, on the other hand, believed that

effective deterrence is achievable only through possession of a striking power that threatens destruction of substantially all of an enemy’s long-range nuclear capability [countering nuclear forces]...a threat to destroy a large number of Soviet citizens does not represent effective deterrence of a Soviet attack against the United States.⁸

In addition, of greater concern to European allies, “It provides no deterrence of other forms of Soviet aggression such as an attack against another NATO country.”⁹

Interestingly, William Kaufman, then a member of the Air Force Scientific Board and scientist employed at RAND Corporation, decided to apply RAND’s mathematical models to the problem of which type of deterrence best suited United States deterrence purposes. While much could be said about the errors of estimates they were working with at the time, Kaufman modeled three scenarios—the Navy-preferred counter-value deterrence model, the Strategic Air Command (SAC) preference for mixing the models (counterforce and counter-value), and Kaufman’s own preference for strictly a counterforce model. The minimum deterrence war gaming scenario consisted of a United States retaliatory strike against the Soviets after their own plausible first strike on American cities, resulting in 150 million Americans dead and 60 percent of United States industrial

capacity destroyed (on the Soviet side, only 40 million would die and 40 percent of industrial capacity would be lost). Secondly, using SAC's optimal mix strategy—a mix of counterforce and counter value, half the industrial base in each country would be destroyed along with 110 million Americans (and 75 million Russians). Finally, and in support of Kaufman's argument, the counterforce (targeting no cities on either side) strategy would result in only 3 million American and five million Russian deaths.¹⁰ As a result, the Air Force became sold on counterforce strategy on the eve of President Kennedy's election and would move in that direction as it developed its legs of the nuclear triad during the 1960s.

What the RAND mathematicians ignored was the pressure that would be brought to bear on any politician dealing with a few million civilian casualties during nuclear war—the revenge factor would likely require massive retaliation in all plausible nuclear scenarios. It also ignores Carl von Clausewitz' fundamental dictum concerning chance and friction—once a nuclear war starts, these elements would steer the course of events in unknown directions, which mathematical models cannot anticipate. Deterrence is an effort to prevent war, not determine whether various types will minimize the threat of failure or loss of life, as in the RAND scenarios.

Driving Kaufman's calculation was a belief that President Eisenhower's policy of massive retaliation would encourage the Soviets to engage in piecemeal aggression. "As long as each side had enough nuclear weapons to destroy the other, the threat of massive retaliation to small-scale conventional aggression lacks credibility."¹¹ Massive retaliation was based on a counter-value model. Holding enemy cities hostage was supposed to prevent nuclear war, but Kaufman asserted correctly, as demonstrated by history, that smaller scale wars can be conducted below the nuclear threshold. The Soviets had supported North Korea; they would support Cuba and North Vietnam during the 1960s and Arab States against Israel (aided by the United States) in the sixties, seventies, and eighties. In Kaufman's mind, the proper deterrent must "show a willingness and ability to intervene with great conventional power in the peripheral areas."¹²

Further insight might also be gained from Kaufman's assertions, as well as the earlier-mentioned missile crisis scenario. Consider China's philosophy

of minimum deterrence; China's simple construction of a counter-value nuclear deterrent still deters the United States with far fewer weapons than what is in the U.S. inventory.¹³ For the same reason, the United States was deterred from aggression against the Soviets during the Cuban missile crisis, despite massive nuclear superiority. Supporting this view is the Sechser and Fuhrmann study on *Nuclear Weapons and Coercive Diplomacy*. The authors conclude that nuclear weapons do not provide any coercive bargaining advantages, nor does nuclear superiority ensure coercive victories during interstate crises. However, when it comes to deterrence, nuclear forces minimize the impact of coercive threats from challengers; the Indian aggression against Pakistan from 2001 to 2002 was likely minimized by nuclear deterrence, and U.S. military assistance to Ukraine from 2014 to 2015 was reduced by Russian nuclear deterrence.¹⁴

Considering the above logic, savings could be gained by reducing plans to renew the U.S. nuclear enterprise on the proposed scale—perhaps even eliminating a leg of the triad. That savings could be directed toward developing a wider variety of both nuclear (in terms of lower yield and delivery options) and non-nuclear weapons to improve both U.S. nuclear and conventional deterrence, but more importantly, addressing the lack of coercive value of nuclear weapons. Where American foreign policy must act to prevent nuclear war or prevent impending actions by a rogue actor, conventional weapons are more likely to provide coercive bargaining power, knowing that the aggressor will more likely use them.

In fact, a conventional counterforce deterrent, accompanied by a nuclear deterrent, which provides the means for sufficient counter-value retaliation, along with meeting theater nuclear challenges such as Russia's escalate to de-escalate doctrine,¹⁵ provides a better means of deterrence and escalation dominance. Note that the 2018 Nuclear Posture Review (NPR) calls for lower yield options for SLBMs and new nuclear-armed air and sea-launched cruise missiles (ALCMs and SLCMs).¹⁶ Moreover, conventional weapons could be the first line of defense against enemy space and cyber-attacks, as well as nuclear weapons use by rogue actors, thereby providing a counterforce deterrent. If a theater nuclear war was initiated, accidental or otherwise, the use of conventional weapons to eliminate remaining enemy nuclear forces would not be accompanied by massive civilian losses resulting amongst our enemy's pressure to retaliate with any surviving nuclear weapons. A non-nuclear counterforce enhances

bargaining power. Moreover, in the case of nuclear use by lesser powers (or even China or Russia for that matter), the United States can still threaten enemy cities if they continue nuclear use; we may save our own cities and convince an enemy to back down knowing our remaining nuclear forces are at least equal to their own.

Strategic Stability and the Trilemma

The classic definition of strategic stability from the Cold War era was spelled out by Thomas Schelling and Morton Halperin in their book *Strategy and Arms Control*. Therein the authors posit that a reduced risk of war between great powers means not only ensuring that no one has an incentive to strike first, but also that the calculation equation prevents risk from “shocks, alarms and perturbations.”¹⁷ Their definition, when compared to Arnold and Brodie’s deterrence concept, not only stipulates confidence that a means of answering a first strike with a devastating response by surviving forces is guaranteed, but a second strike capability must be accentuated by a “prevent risk” equation. Stability against a contemplated first strike by itself is not enough to guarantee strategic stability, particularly in light of opportunities for unforeseen technological advancements to create shocks and perturbations in the perceived balance of forces.

Interestingly, Elbridge Colby took on the challenge of defining strategic stability for the post-Cold War era with emphasis on the impact of President Obama’s 2010 NPR, which advocated a reduced role for nuclear weapons, supporting the concept of finite deterrence. Presuming the situation stable between Russia and the United States, Colby declared that either state would see no “need nor incentive to use nuclear weapons except to make clear to an opponent that he had crossed a most vital red line with the probability that he would suffer further—and perhaps catastrophic—loss if he continued his aggression.”¹⁸ Furthermore, “some uses of nuclear weapons must be valid for real stability to endure. In a stable situation, then, major war would only come about because one party truly sought it, not because of miscalculation.”¹⁹

It is important to note that Colby’s definition applies to all nuclear-weapons states and not just Russia and the United States. He continues:

strategic stability would definitively not be to attempt to break out of a situation of mutual vulnerability, given such an effort's toxic combination of futility and dramatic escalatory impetus, but rather to signal to an opponent that he had transgressed a most vital interest, to demonstrate one's resolve about climbing the imperfectly controllable ladder of escalation, and to inflict pain on the opponent to attempt to dissuade him from pursuing his course of action.²⁰

The crux of Colby's argument is the need to control escalation dynamics when an adversary crosses a red line regarding a state's vital interests. He adds, "the side with a greater variety of and more tailored options for limited nuclear use would be in a strong position in such a struggle, since his threats to strike would be both more credible and his strikes more damaging."²¹

While Colby's argument is applicable to the major nuclear powers (particularly Russia and China), it applies even more to the rising powers and rogues who are more likely risk-takers when considering the aforementioned security trilemma and accompanying WMD/asymmetric technologies-associated proliferation dynamics. Furthermore, Larsen warns that wars appearing as limited to great powers likely look more like total war to smaller states, in which case smaller states or non-state actors with nuclear or other weapons of mass destruction (WMD) will likely assume they have little to lose by using them.²² In other words, it would be sensible to apply Colby's logic responding to such threats in the non-nuclear realm as well. Why not ensure escalation dominance at the conventional level against the rising threat of new states and non-state actors who acquire WMD and other emerging dangerous technologies? Stability is then more likely to be established with the lesser nuclear and other WMD/asymmetric technology powers acting against U.S. interests. When deterrence fails, conventional escalation dominance can provide a denial mechanism to preempt against nuclear or other WMD threats, and where necessary defeat rogue actors without crossing the nuclear threshold, while still providing a security umbrella to U.S. allies and partners in the region.

The security trilemma requires the United States to involve itself globally in order to address proliferation concerns that threaten interests of allies

and partners in their respective regions. Koblentz describes the security trilemma as a “transmission belt, developments that might have mattered only at a bilateral level now have the potential to have much wider strategic consequences.”²³ The trilemma concept also implores the United States to act against nuclear proliferation to avoid cascade effects that would necessarily follow. It has often been said that Iranian proliferation would likely beget Saudi, Egyptian, Emirati, and perhaps Turkish nuclear programs to counter the Iranian threat, thus increasing tensions and the likelihood of nuclear use in an already tense and war-torn Mideast region. Moreover, Paul Bracken reminds us of the second mover proliferation advantage. Iran was a second mover, an aspiring nuclear proliferator benefitting from those who had gone before. In Iran’s case, Pakistani A.Q. Khan passed on uranium enrichment secrets making it easier for Iran to begin its own nuclear weapons program. An Iran bomb will likely result in the Saudis benefitting from the same source since they will feel threatened by Iran. The Saudis may be able to acquire ready-made nuclear weapons from Pakistan, which they helped to fund in the first place.²⁴

Strategic Stability via Stratified Deterrence

The essay argues for a new deterrence construct which accounts for the changed world of the 21st Century. We now face a multipolar world with great powers—the United States, China, Russia, and perhaps India will join the club in the future. Other regional powers with nuclear weapons (Pakistan, North Korea) as well as regional aspirants (Iran) also play an important role in the deterrence construct. Moreover, this new environment multiplies the possible outcomes of the security trilemma, where deterrence policy of one actor intended to influence another also impacts a third (or additional) player(s), and in some cases, many more. Furthermore, when one considers that United States extended deterrence applies to 30-plus allied or partner states, the United States requires the means to provide a so called nuclear umbrella to states all around the globe, along with a more complex strategy and ability to tailor deterrence to specific adversaries. Tailored deterrence, as discussed in the 2018 NPR, means “there is no ‘one size fits all’ for deterrence... the United States will apply a tailored approach to effectively deter across a spectrum of adversaries, threats, and contexts.”²⁵ Scholars have recently used the terms cross-domain or multi-domain deterrence to describe the tailored approach, and key to application of the term is mixing nuclear and non-

nuclear forces in the deterrence construct. The latest NPR includes beefed up “missile defenses” as well as a “range of conventional and nuclear capabilities” in its construct for a tailored approach.²⁶

To simplify the argument, the United States must first maintain a nuclear deterrent to great power conflict, or prevent war with Russia and China. Strategic nuclear weapons provide this deterrent, represented by the United States triad and efforts to renew all three legs—and while renewal is necessary, expanding the escalation ladder may not require all three legs of the triad. Money saved eliminating one leg could help pay for the other upgrades recommended herein and designed to provide both deterrent and coercion effects to other players beyond the great powers. This deterrent construct allows a reduced stockpile of nuclear weapons aimed at counter-value targets as earlier described by the Chinese deterrent, because survival of even one opposing weapon to a first strike is terrifying to the attacker. In this manner, the great powers are deterred from using nuclear weapons against one another. We can label this the first level or stratum of strategic nuclear deterrence.

Secondly, to prevent conventional aggression resulting in follow-on small-scale nuclear use by one great power against another, or an attempt to deescalate a conflict by escalating to theater nuclear use of low yield weapons, the United States needs a variety of theater nuclear weapons along the escalation continuum in order to match any nuclear use by a great power—or regional power for that matter—tit for tat. In the case of Europe, this also reassures our NATO allies that limited Russian aggression against a NATO member will keep the United States engaged in conflict even if Russia attempted limited nuclear use in order to prevail. Limited use could be met with limited use, taking away any perceived advantage the Russians attribute to their theater nuclear weapons, particularly their perceived ability to deescalate a conflict through theater nuclear use. American efforts to add lower yield warheads to SLBMs and reacquire nuclear armed SLCMs for the Navy, along with Air Force ALCMs and upgrades to the B-61 tactical nuclear weapon and addition of a nuclear launch capability to the F-35 fighter all fit into this escalation category, and are in response to Russian violation of the Intermediate-range Nuclear Forces Treaty.²⁷

Third, the above-mentioned theater nuclear weapons would also deter regional nuclear powers. Any effort on their part to attack a U.S. ally or partner could again be met by American theater nuclear weapons. More importantly, developing the proper array of advanced conventional weapons and ensuring rapid response capability anywhere a potential enemy might strike would supplement as well as provide greater control of escalation dynamics in regional conflicts. Kartchner and Gerson suggest that the “nuclear taboo may not be as strong among emerging nuclear powers,” that such powers are likely to use asymmetric means, including provocation of third parties to compel their assistance against the United States, and therefore, escalation dominance will be required to respond to such threats.²⁸ If a regional adversary perceived that nuclear use would result in the loss of its nuclear arsenal via escalation dominance, particularly via a more credible conventional attack, then it would be less likely to use nuclear weapons. Even conventional attack on a U.S. ally or partner would more likely be deterred by superior U.S. forces in the region, or able to rapidly deploy there. Moreover, in places where American forces cannot be made readily available, using the triad savings of eliminating one leg to develop Conventional Prompt Global Strike (CPGS) weapons would ensure we have the ability to intervene in order to deescalate conflicts around the globe.

Lastly, missile defenses are crucial to a stratified deterrence construct. Proliferation efforts are just as likely to result in crises riddled with misperceptions, the possibility of unintentional missile launches, or intentional provocations. In such instances an ability to shoot down an attacking missile and prevent its destruction of a target, whether military or civilian, saves lives and reduces the pressure for immediate and overwhelming retaliation. In addition, in an empirical study, Quackenbush determined that “national missile defense enhances deterrence stability,” countering traditional deterrence arguments about the destabilizing effects of missile defenses.²⁹

Conclusion

Achieving strategic stability in the post-Cold War and post-Superpower era has become increasingly complicated in light of the changing relationship between the great powers, nuclear proliferation by regional powers, and the rise of rogue state and non-state actors capable of taking

advantage of asymmetric means of attack. New technological breakthroughs in the space, cyber, and unforeseen realms empower asymmetries that undermine deterrence at all levels of conflict and require a new means of providing deterrence and stability in the international system. Cold War deterrence strategy no longer meets the requirements of a changed world of the 21st Century.

Early Cold War deterrence theory provides lessons on how to structure a more stable international order. Finite deterrence, while unintentional, worked for the Soviets in preventing a United States attack on Soviet missiles in Cuba, and in fact, U.S. nuclear dominance in the early Cold War did not prevent Soviet conventional wars initiated against U.S. interests. In essence, finite or minimum deterrence provides the best means of stability for great power relations. Still, a revanchist Russia now boasts of an escalate-to-deescalate strategy intended to stop a NATO conventional response to Russian aggression in Europe. This can only be countered at the theater level by responding to theater nuclear use in like manner. Moreover, Colby has demonstrated that strategic stability is more a function of escalation dominance than nuclear superiority or mutual assured destruction vis-à-vis conflict with regional powers. Such dominance must exist at the conventional level and be matched or exceeded at the theater nuclear level. Conventional weapons are more likely to provide coercive bargaining power than nuclear weapons, which have been shown to lack coercive value because regional and rogue actors do not believe great powers will use them. The great power must dominate by conventional means to keep the regional power in check, and this is especially applicable when dealing with rogue or non-state actors more likely to accept high levels of risk.

Revisiting Colby's need for more tailored options for each level of conflict, this essay proposes the concept of Stratified Deterrence. The United States must first continue to deter great power conflict with strategic nuclear weapons while understanding that less is more—finite deterrence works—we can eliminate a leg of the triad to fund the additional needs of escalation dominance.³⁰ We need more theater nuclear options to counter regional powers. The newest NPR proposes such with lower yield warheads for SLBMs, reacquiring nuclear SLCMs for the naval fleet, and new ALCMs for the bomber force. Moreover, we should not ignore the dual-capable fighter aircraft and role they contribute to both the theater

nuclear and conventional construct. Finally, we must also make sure that escalation dynamics covers the conventional realm when it comes to regional powers and rogue actors. Expanded missile defenses, continued power projection via naval and air forces, and an added ability to provide CPGS would ensure we can counter any attack promptly. In this manner, the U.S. inventory will be better suited to responding to the kinds of dynamics all three types of actors might present, particularly concerning the Brooks/Rapp-Hooper security trilemma and corresponding unknowns of space, cyber and other future asymmetric capabilities that emerge in enemy inventories.

In sum, stratified deterrence will allow the United States to prevent or quickly extinguish limited nuclear wars that may break out in the uncertain environment of the world we find ourselves living in. The planned revitalization of the Cold War triad may well deter the great powers, but the rising and proliferating regional powers as well as rogue state and non-state actors are the greater concern of this era. The 2018 NPR additions of theater nuclear weapons provide the needs for theater nuclear deterrence, but the conventional realm is where the real investments are needed—additional naval and air forces along with development and fielding of new CPGS weapons are key to responding to rogue and non-state actor threats around the globe. But the strategy comes at a high price and is likely not affordable alongside replacing the entire strategic nuclear inventory; thus, this essay advocates some type of reduction in strategic nuclear weapons—providing a finite deterrent instead of the planned MAD-based triad. Savings therefrom provide a means for additional theater nuclear and conventional weapons funding.³¹

Endnotes

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- ² Linton Brooks, and Mira Rapp-Hooper, "Extended Deterrence, Assurance, and Reassurance in the Pacific during the Second Nuclear Age," in *Strategic Asia 2013-14: Asia in the Second Nuclear Age*, eds., Ashley J. Tellis, Abrahm M. Denmark, and Travis Tanner (Washington, DC: National Bureau of Asia Research, 2013), 292-93, <https://www.nbr.org/publication/extended-deterrence-assurance-and-reassurance-in-the-pacific-during-the-second-nuclear-age/>.
- ³ Lawrence Freedman, *The Evolution of Nuclear Strategy* (New York: Palgrave Macmillan, 2003), 39.
- ⁴ Bernard Brodie, *The Absolute Weapon: Atomic Power and World Order* (New Haven, CT: Yale Institute of International Studies, 1946), 62.
- ⁵ Richard N. Lebow and Janice G. Stein, "Deterrence and the Cold War," *Political Science Quarterly*, 110, no. 2 (1995): 168-69.
- ⁶ Lebow and Stein, "Deterrence and the Cold War," 169-70.
- ⁷ Lebow and Stein, "Deterrence and the Cold War," 181.
- ⁸ Fred Kaplan, *The Wizards of Armageddon* (New York: Simon and Shuster, 1983), 245. Note Navy Polaris systems were not accurate enough to target enemy forces. Later generation SLBMs would eliminate this shortfall.
- ⁹ Kaplan, *The Wizards of Armageddon*, 245.
- ¹⁰ Kaplan, *The Wizards of Armageddon*, 240-43.
- ¹¹ Kaplan, *The Wizards of Armageddon*, 192. The Korean War seemed to substantiate Kaufman's warning about piecemeal aggression in defiance of a nuclear deterrent.
- ¹² Kaplan, *The Wizards of Armageddon*, 192. The Cuban Missile Crisis substantiates this latter claim that willingness to intervene conventionally (with non-nuclear means) in peripheral areas is also key to deterrence.
- ¹³ Note that China now has a functioning triad; the newest additions to its nuclear arsenal fall short of any ability beyond finite deterrence, and updates are driven by U.S. missile defense developments rather than any effort to achieve a counterforce or second strike targeting construct. Erik Slavin, "On Land and Sea, China's Nuclear Capability Growing," *Stars and Stripes*, August 27, 2014, <https://www.stripes.com/news/on-land-and-sea-china-s-nuclear-capability-growing-1.299381>.
- ¹⁴ Todd S. Sechser and Matthew Fuhrmann, *Nuclear Weapons and Coercive Diplomacy* (Cambridge: Cambridge University Press, 2017), 254-56.
- ¹⁵ James Mattis, *Nuclear Posture Review*, Government Document (Washington, DC: Office of the Secretary of Defense, 2018), 30, <https://dod.defense.gov/News/SpecialReports/2018NuclearPostureReview.aspx>.
- ¹⁶ Mattis, *Nuclear Posture Review*, 50, 54.
- ¹⁷ Thomas C. Schelling, and Morton H. Halperin, *Strategy and Arms Control* (New York: Twentieth Century Fund, 1961), 50.
- ¹⁸ Elbridge A. Colby, and Michael S. Gerson, *Strategic Stability: Contending Interpretations* (Carlisle Barracks, PA: US Army War College Press, 2013), 55, <https://publications.armywarcollege.edu/pubs/2216.pdf>.
- ¹⁹ Colby and Gerson, *Strategic Stability: Contending Interpretations*, 57.
- ²⁰ Colby and Gerson, *Strategic Stability: Contending Interpretations*, 57.
- ²¹ Colby and Gerson, *Strategic Stability: Contending Interpretations*, 59.
- ²² Jeffrey A. Larsen, "Limited War and the Advent of Nuclear Weapons," in *On Limited Nuclear War in the 21st Century*, 14.
- ²³ Gregory D. Koblentz, *Strategic Stability in the Second Nuclear Age*, Council Special Report No. 71 (New York: Council on Foreign Relations, 2014), 20-21, <https://www.cfr.org/report/strategic-stability-second-nuclear-age>.
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- ²⁶ Mattis, *Nuclear Posture Review*, 33.
- ²⁷ James Mattis, *Nuclear Posture Review*, XII.
- ²⁸ Kerry M. Kartchner and Michael S. Gerson, “Escalation to Limited Nuclear War,” in *On Limited Nuclear War in the 21st Century*, 163-65.
- ²⁹ Stephen L. Quackenbush, “General Deterrence and International Conflict: Testing Perfect Deterrence Theory,” *International Interactions* Vol. 36 (2010): 81.
- ³⁰ There are other triad modification possibilities besides eliminating one leg. For examples which include cost-savings arguments, see Caroline Dorminey, “Buying the Bang for Fewer Bucks: Managing Nuclear Modernization Costs,” in *America’s Nuclear Crossroads: A Forward Looking Anthology*, eds., Caroline Dorminey and Eric Gomez (CATO Institute, 2019), 1-15.
- ³¹ While I have chosen not to pursue the triad elimination argument in more detail herein, wanting instead to focus on the strategy proposal, I have recommended elsewhere elimination of ICBMs. Brent J. Talbot, “Eliminating ICBMs—As Part of a 21st Century Deterrence Strategy,” *Bulletin of Atomic Scientists* 74, no. 1 (2018): 52-59, <https://thebulletin.org/2018/01/eliminating-icbms-as-part-of-a-21st-century-deterrence-strategy/>.