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FUTURE WAR PAPER

*Strategy in the Nuclear Age:
The Continuing Relevance of the Absolute Weapon in Future War*

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF OPERATIONAL STUDIES

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ABSTRACT

The specter of nuclear war must be the dominant factor in formulating strategy in the 21st century. General nuclear war remains as unwinnable today as it was during the Cold War, and the conditions that made such a war possible, namely the existence of nuclear weapons in globally destructive quantities, remains extant. It follows then that, as during the Cold War, deterrence must be foremost in the minds of statesmen, and strategists. At present, it is not. This paper aims to reinvigorate an understanding of how nuclear weapons continue to influence strategy. The paper first reviews deterrence theory as it evolved throughout the Cold War. Specific attention is paid to the limited nuclear war debate and attempts to find conventional theories of victory. It observes that no sufficiently reliable theory of limited nuclear war exists, and that a dominant reason for the success of deterrence throughout the Cold War was latent fear of the consequences of its failure. The second section acknowledges unique complexities of the current strategic environment. The final section applies Cold War deterrence lessons to 21st century strategy. It argues that United States strategic aim must be to advance its interests while avoiding general nuclear war. Generally this aim should be advanced through socio-economic competition. In the unlikely event of conventional conflict between the United States and a great power nuclear adversary the United States cannot adopt a military strategy that seeks as its objective the unconditional surrender of its enemy. Any war against a great power nuclear adversary must be expected to end through negotiated settlement. Accordingly escalation management and war termination are considered.

The 2017 National Security Strategy, as well as the 2018 National Defense Strategy and 2018 Nuclear Posture Review, signals a return to great power competition. Discussion about great power competition leads, understandably, to questions about great power conflict in the twenty-first century and inevitably invites comparison to the great clashes of the early 20th century. Such comparisons, though perhaps useful in indicating the scale of the potential catastrophe relative to the wars of the 21st century, are fundamentally flawed. The World Wars were not fought under the specter of nuclear exchange; a great power war in the 21st century will be. Any consideration of future great power war, therefore, must consider as a first principle, the impact nuclear weapons must have on strategy.

From the beginning of the atomic age, strategists recognized nuclear weapons as fundamentally different than any previously discovered means of warfighting.¹ In 1946, Bernard Brodie succinctly articulated the new strategic reality by observing that, “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 no other useful purpose.”² Elemental to Brodie’s formulation was an understanding that general nuclear war would be, by its nature, unwinnable. The apocalyptic destructive power of nuclear weapons meant, and continues to mean, that a general nuclear war can achieve no reasonable political end.³

As Clausewitz observed, war “divorced from political life” becomes “pointless and devoid of sense.”⁴ The absurdity of continued pursuit of political-military objectives in the aftermath of a general nuclear war, is aptly highlighted by Michael Howard who contended that “the political, cultural and ideological distinctions that separate the West from the Soviet Union today would be seen, in comparison with the literally inconceivable contrast between *any* pre-atomic and *any* post-atomic society, as almost insignificant.”⁵ Deterrence of general nuclear war,

therefore, was the *sine qua non* of Cold War strategy. General nuclear war remains unwinnable today, and the conditions that made such a war possible, namely the existence of nuclear weapons in globally destructive quantities, remains extant. It follows then that, as during the Cold War, deterrence must be foremost in the minds of the statesmen and strategists. At present, it is not.

In the so-called peace dividend that emerged from the end of the Cold War strategic thinking generally and nuclear strategic thinking specifically has atrophied.⁶ Throughout the Cold War, conceptions about the best means of implementing deterrence were vigorously and publicly debated. In his final essay Brodie identified four fundamental question around which the debate revolved. They were: “What are the changing physical requirements for the continuing success of deterrence? What kind of wars does nuclear deterrence really deter? What is the role, if any, of tactical nuclear weapons?... [and] If deterrence fails, how do we fight a nuclear war and for what objectives?”⁷ One might add to Brodie’s list the question “How do we best achieve credibility?” Reinvigorating this debate is essential to regaining an intelligent understanding of the complexities of deterrence in the nuclear age.

The object of this paper is to contribute to this reinvigoration. It will do so over three parts. First, the paper will review the evolution of deterrence theory as it emerged over the Cold War and will critically examine efforts to discover conventional theories of victory against a nuclear adversary. Second, this paper considers the unique challenges of the contemporary strategic environment. The concluding section of the paper will consider how nuclear realities will impact 21st-century strategy. Specifically, the concluding section explores implications for grand strategy and military strategy and examines the critical importance of escalation management and war termination.

COLD WAR DETERRENCE THEORY

Over the course of the Cold War United States Nuclear policy underwent five distinct evolutions, beginning with NSC 68 which viewed nuclear weapons as weapons of last resort. United States strategy next evolved to massive retaliation under the Eisenhower administration and later assured destruction under Presidents Kennedy and Johnson. The final two evolutions sought first a countervailing strategy and finally, under PD 59 and NSDD 13, the ability to prevail in a protracted nuclear war. Each evolution occurred in the context of the changing physical requirements of deterrence, and reflected the unfolding deterrence debate. An overview of this progression and analysis of the viability of limited nuclear war reveal fundamental lessons of nuclear deterrence.

The Foundation of Strategic Policy – Containment.

While deterrence was the essential element of strategy throughout the Cold War, it was not (and is not) in and of itself, a strategy. Deterrence theory must, therefore, be examined in the context of strategy writ large, and United States Cold War strategy was that of containment.

George F. Kennan, the father of containment, considered the fundamental objectives of American foreign policy to be a secure and prosperous United States free from foreign interference, and a world order favorable to this end.⁸ To achieve these goals in light of the post-war situation, Kennan sought a return to a stable balance of power. Of specific concern in this balance were five centers of industrial and military power which Kennan viewed as essential to national security “The United States, Great Britain, Germany and Central Europe, the Soviet Union, and Japan.”⁹ Kennan perceived the Soviet threat to be of a socio-economic nature. Accordingly, the first component of Kennan’s strategy was “restoration of the balance of power

through the encouragement of self-confidence in nations threatened by Soviet expansionism.”¹⁰

The first official formulation of the containment strategy was articulated in NSC 68, a document which, dominated by the perceived requirements of deterrence, began a gradual departure from Kennan’s original thesis.

NSC 68 - Weapons of Last Resort - Truman

Successful Soviet testing of an atomic bomb in August of 1949 combined with Chairman Mao's victories in China created a perceived "shift in the correlation of forces" in favor of the Soviets.¹¹ In light of this shift the United States undertook a comprehensive strategy review, the result of which was NSC 68.

In its socio-political conclusions, NSC 68 did not differ significantly from Kennan’s conclusions; however, it recognized that perception of the balance of power was as important as the actual balance of power.¹² This broadened US strategic focus beyond the five military-industrial bases Kennan had identified. Militarily, NSC 68 articulated the threat from the Soviets as far more acute than Kennan had viewed it and recognized a need to deter potential military aggression. At this stage, deterrence predicated on an atomic threat was deemed insufficient to achieve this end.¹³ Instead NSC 68 argued that deterrence was to be primarily based on the forward deployment of conventional forces in Europe. NSC 68 and its conclusions were approved by President Truman on 30 September 1950 (in its final form as NSC-68/2), three months after the beginning of the Korean War.¹⁴

Though NSC 68 sought to increase the conventional capability of the United States, it also authorized the pursuit for and development of thermonuclear weapons.¹⁵ While the Truman administration determined that nuclear weapons were necessary for the security of the nation, they were considered to be weapons of last resort.¹⁶ Their utility was in non-use. However, a

core dilemma of nuclear strategy is that utility in non-use is dependent on credibility that nuclear weapons will be (and can be) used.¹⁷ Accordingly, to ensure credibility, the Eisenhower Administration sought to reduce any perception of a dichotomy between nuclear and conventional weapons. As the world entered the thermonuclear age United States strategy evolved to a strategy massive retaliation.¹⁸

NSC 162/2 - Massive Retaliation - Eisenhower

NSC 162/2 sought to assess how to "meet the Soviet threat to U.S. Security" while avoiding "seriously weakening the U.S. economy or undermining [U.S.] fundamental values and institutions."¹⁹ President Eisenhower believed that a strong economy was essential to the security of the United States and the free world writ large. From such an economy derived both potential military capacity and the welfare of the American people for whom the purpose of any such military capacity would be put to use. Eisenhower, with his wartime experience, was acutely aware of the disparity of conventional forces in Europe in favor of the Soviets. Equally aware that the US economy could not reasonably sustain a reversal of this disparity, he sought deterrence through the threat of massive retaliation. As Secretary of State John Foster Dulles famously described, the United States would deter aggression by being "willing and able to respond vigorously at places *and with means* of its own choosing."²⁰ NSC 162/2 declared that "in the event of hostilities the United States will consider nuclear weapons to be as available for use as other munitions."²¹

The strategy of massive retaliation was born out of a sophisticated understanding of deterrence coupled with economic necessity. President Eisenhower held no illusions of the consequences of such a strategy. As he expressed to the South Korean President Syngman Rhee in 1954, "if war comes, it will be horrible... Atomic war will destroy civilization... There will be

millions of people dead... If the Kremlin and Washington ever lock up in a war the results are too horrible to contemplate.”²² President Eisenhower understood, however, that this was a shared reality and the Kremlin leadership, in the wake of thermonuclear testing, were equally aware of the calamitous effect of such a war. He observed of the Kremlin “The very fact that those men, by their own design, are in the Kremlin, means that they love power. They want to be there. Whenever they start a war, they are taking the great risk of losing that power... And those men in the politburo know that.”²³

By way of central deterrence,²⁴ massive retaliation was a sound doctrine. It became less sturdy in the context of extended deterrence.²⁵ Critics of the doctrine rightly questioned the extent to which the United States would risk Washington for Hamburg, or Paris, let alone a peripheral interest in the Far East. It appeared, as President Kennedy would observe, to leave the President with the option of either humiliation or suicide. This concern, combined with the realities of nuclear parity, drove the next evolution in Cold War Strategy.

Mutually Assured Destruction and Escalation Management – Kennedy / Johnson

Presidents Kennedy and Johnson reframed US strategy under a policy of Assured Destruction, while also integrating concepts of escalation. As the United States and the Soviet Union reached nuclear parity, the United States sought to ensure that it maintained “the ability to deter a deliberate nuclear attack upon the United States or its allies by maintaining at all times a clear and unmistakable ability to inflict an unacceptable degree of damage upon any aggressor, or combination of aggressors – even after absorbing a surprise first strike.”²⁶ Assured destruction offered an answer to the delicate balance of terror that defined the early Cold War. Specifically, in the nuclear age, significant advantage accrues with a first strike. The resulting fear of a surprise attack or ‘bolt from the blue’ attack thus leads strategists to consider preemptive

strikes.²⁷ As Lawrence Freedman observed, the resulting delicate balance of terror “demands hair-triggers and cool nerves offering the possibility of overwhelming victory or an equally overwhelming defeat.”²⁸ Stability can be achieved when both sides possess a secure second-strike capability. With a guarantee that, even after suffering a first strike, the ability for devastating retaliation would be retained, the advantage of a first strike is significantly negated and valuable decision-making time is gained. Therefore, so long as both sides held mutual assured destruction capabilities, the result would be long-term stability.²⁹ With a bolt from the blue attack increasingly less probable, deterrence scholarship turned to the problem of inadvertent escalation, and with it the challenge of escalation management.

Escalation as defined by Lawrence Freedman refers to “a qualitative transformation in the character of a conflict in the direction of increasing scope and intensity.”³⁰ Escalation management is the attempt to favorably control this process. Two critical theories developed during this era addressed escalation management. Herman Kahn proffered the concept of escalation dominance, while Thomas Schelling introduced the idea of “the threat that leaves something to chance.”

Kahn’s theory of escalation dominance was predicated on the concept that there are discernable levels of escalation in any conflict both before and after crossing the nuclear threshold.³¹ Critically, Kahn assessed that through escalation dominance, which is having an asymmetric advantage at each point of escalation, it would be possible to prevail in a nuclear conflict prior to a suicidal and globally catastrophic nuclear exchange.³² The somewhat obvious weakness of Kahn’s theory, has been aptly articulated by Lawrence Freedman: “To rely on a putative dominance in certain type of nuclear capability when there was no way of protecting one’s own society from the consequences of a miscalculation offered a thin reed on which to rely

for deterrence purposes or as a means of strengthening one's hand at earlier stages of conflict."³³ A different theory of escalation management was offered by Thomas Schelling.

While Khan sought escalation management through a rational understanding of relative capabilities, Schelling sought it through a rational understanding of inherent risk. He observed, "It is our sheer inability to predict the consequences of our actions and to keep things under control, and the enemy's similar inability, that can intimidate the enemy."³⁴ Deterrence is a product of both capability and credibility. When credibility is placed solely on resolve, it is less potent. Credibility is increased by "deliberately creating risk that we share with the Russians, a risk that is credible precisely because its consequences are not entirely within our own and the Soviets control."³⁵ So long as credibility is maintained, nuclear weapons achieve their value in non-use through their coercive potential.

Schelling further observed that "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."³⁶ This observation of value in latent potential implied that deterrence could and should be extended into the conflict.³⁷ Schelling applied this concept favorably to Secretary McNamara's proposed counter-force strategy.

In a 1962 commencement address to the University of Michigan, McNamara articulated a short-lived evolution in US nuclear doctrine, which sought to target military capability while avoiding the targeting of cities.³⁸ In articulating a counter-force strategy, but acknowledging the presence of sufficient reserve to conduct counter-value targeting, this strategy held the adversary's cities at risk. Cities were in effect "hostages" that could be used as leverage for bargaining and war termination.³⁹ So long as one could refrain from all-out exchange, escalation could be managed via the latent potential for more pain to come, underwritten by the uncertainty

inherent in such a strategy. Schelling's conception of coercion dominated the final evolutions in Cold War strategy.

From Countervailing to Prevailing

The final evolutions of cold war nuclear strategy occurred between 1973 and 1982, beginning with NSDM 242. Under NSDM 242 the United States would develop options in which "the level, scope, and duration of violence is limited in a manner which can be clearly and credibly communicated to the enemy. The options should (a) hold some vital enemy targets hostage to subsequent destruction by survivable nuclear forces, and (b) permit control over the timing and pace of attack execution, in order to provide the enemy opportunities to reconsider his actions."⁴⁰ NSDM 242 was described as a countervailing strategy. While it considered nuclear warfighting as a practical matter, its purpose was to *deny* the Soviet Union any reasonable theory of victory. The final evolution in nuclear policy would take this a step further, and *seek* victory in a nuclear war.

President Carter's PD 59 and Reagan's NSDD 13, indicated clearly that in the event of a nuclear war "the United States must prevail."⁴¹ As John Lewis Gaddis notes, Reagan's approach was not borne out of bellicosity; instead, it "stemmed from a long-standing conviction that relying on nuclear weapons to keep the peace was certain sooner or later to bring on a nuclear war."⁴² The United States now sought the ability to fight and win a protracted nuclear war.⁴³

Thus, at the end of the Cold War, nuclear strategy had drifted from its foundational axiom – that general nuclear war was unwinnable – to a strategy that demanded a conventional theory of victory. Lawrence Freedman has noted that there had developed "reasonable grounds for confidence that neither side would expect to open a future war with nuclear volleys or to move in this direction early on... there no longer appeared to be a presumption of inevitable

nuclear escalation.”⁴⁴ War, including nuclear war, the final Cold War strategists had concluded, could be limited and in a limited nuclear war the US could be victorious. The important question must be, was such a conclusion warranted? An examination of the limited war debate suggests it was not.

Limited Nuclear War

That no political objective can reasonably be achieved through general nuclear war, does not preclude the possibility of its occurrence.⁴⁵ On the necessity to consider limited war, Brodie observed “If total war is to be averted, we must be ready to fight limited wars with limited objectives – if for no other reason than that limited objectives are always better than unlimited disaster.”⁴⁶ Absolutist strategies of deterrence left no good answer to the problem of what to do when deterrence failed. Considerable effort was thus made to answer questions pertaining to the viability and management of limited war against a nuclear adversary.⁴⁷

The most viable theories for the execution of a limited war were those presented by Schelling and Kahn.⁴⁸ Considering the devastating consequences of failure, neither of their theories offered sufficient certainty that escalation in such a war could be acceptably managed (of course, this is intentional on Shelling’s part). Powerful criticism of the viability of escalation management is provided in Graham Allison’s *The Essence of Decision*, which aptly shows that bureaucratic inertia and malign government politics can cause a state to act against its rational self-interest. Similarly, Barry Posen’s *Inadvertent Escalation* considers the security dilemma, organizational behavior and Clausewitzian uncertainty to highlight the risk of unintended escalation.⁴⁹

More powerful than any academic critique of limited war theories, are the results of wargames that sought to put defense policies into practice. The most significant of these was

Exercise Proud Prophet conducted in June 1983. This wide-ranging wargame culminated in a massive strategic exchange between the Soviets and the United States, despite desperate efforts on both sides to avert such a conclusion.⁵⁰ The lesson, as articulated by Andrew Krepinevich and Barry Watts was that, “US Cold War defense strategy, if executed, could not prevent escalation in conventional, much less nuclear, conflicts with the Soviet Union.”⁵¹ A similar example can be found in an earlier assessment conducted by the Net Evaluations Sub-Committee in 1963 of the management and termination of war with the Soviet Union. In this instance, U.S. and Soviet escalation decision points were considered across four war scenarios. Similar to Proud Prophet, each scenario resulted in strategic nuclear exchange. The study concluded by observing that “when the means of resistance are at hand, surrender is no more congenial to the Russian character than it is to the American.”⁵² Ignoring all together the practical challenges of terminating a nuclear war, which themselves would be immense, this observation underscores the absurdity of expecting rationality to increase throughout the conduct of a war.⁵³ Granted nuclear decision making is likely to be more conservative during a real world event, major Cold War wargames appeared to indicate that a limited war was unlikely to stay limited.

McGeorge Bundy, George F. Kennan, Robert S. McNamara and Gerard Smith, all titans of Cold War strategy, concluded in 1982 that “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.”⁵⁴ Despite a natural drive to discover a plausible theory of victory in the nuclear age, no such theory emerged. If the first axiom of the nuclear era is that a general nuclear war is unwinnable, the second must be that limited war between nuclear powers is pregnant with risk of escalation to general nuclear war.

The Soviet Perspective.

Thus far this paper has considered the evolution of nuclear policy explicitly through the lens of United States theorists and strategy. It is necessary to also consider the Soviet perspective, particularly as nuclear understanding in the Soviet Union did not evolve in parallel with the United States. From the advent of the thermonuclear age the Soviet Union and the United States maintained a shared understanding of the globally catastrophic nature general nuclear war. Secretary Malenkov, following thermonuclear testing by the United States, observed of a new world war, “with modern weapons means the end of world civilization.”⁵⁵ However, while Soviet perception of the result of thermonuclear was similar to those of the United States, Soviet operationalization of nuclear weapons took a markedly different path.

In 1962, Marshal V.D. Sokolovsky made clear the Soviet belief that any world war would *inevitably* become a nuclear war, and given the speed with which such a war would occur, he argued it should immediately be prosecuted by strategic forces.⁵⁶ Notably this articulation of Soviet nuclear doctrine was published at the same time as American theorists were debating the mechanisms of escalation management. Ultimately Soviet thinking did evolve to align with the United States’ perceptions of escalation management. In 1980 Marshal N.V. Ograkov, wrote that “Soviet military strategy takes into account the possibility that a world war can begin, and be waged for a certain time, with the use of only conventional weapons.”⁵⁷ Ograkov continued “However, expansion of military operations can lead to its escalation into a general nuclear war, the chief means of which will be nuclear weapons, primarily strategic ones.”⁵⁸ Ultimately the United States and Soviet Union shared a common view of deterrence as a product of the fear of general nuclear war, but nuclear learning between the two states did not evolve in parallel, and

never achieved perfect commonality. The implications for the viability of escalation management of this conclusion are not insignificant.

Concluding Lessons

Despite the fact that no satisfactory answers were ever provided to the original questions on which the deterrent debate was said to resolve, the Cold War concluded peacefully. While the reasons for this are many, two stand out as relevant to deterrence theory. First, the consequences of nuclear war weighed heavily on senior leaders, and as a result, fear of uncontrolled escalation governed decision making. Second, and in light of the first, the United States and Soviet Union did not simultaneously share any vital national interests.

President Truman and Secretary of State Dean Acheson offer examples of the cognizance of nuclear risk among senior leaders. What is notable about Truman's thoughts on the use of nuclear weapons is their evolution. President Truman, in taking the decision to bomb Hiroshima and Nagasaki, convinced himself that the targets were "purely military ones."⁵⁹ At the end of his presidency, having brought into being the awesome power of the thermonuclear nuclear bomb, President Truman declared:

The stakes in our search for peace are immensely higher than they have ever been before... the war of the future would be one in which man could extinguish millions of lives at one blow, demolish the great cities of the world, wipe out the cultural achievements of the past – and destroy the very structure of a civilization that has been slowly and painfully built up through hundreds of generations. Such a war is not a possible policy for rational men.⁶⁰

Secretary of State Acheson, during the Berlin Crisis, offers another example of a deep understanding of the consequences of nuclear war. During the crisis he counselled President Kennedy that the best course may be to accept defeat and the loss of West Berlin should the only

alternative be starting a nuclear war.⁶¹ This represented an awareness that short term defeat left room for future gains, but nuclear war was likely to be final. Both in the public consciousness and in the minds of senior policy makers, the Cold War was defined by a cognizance of the risk of nuclear war.

In light of this it can also be said that the United States and Soviet Union shared no fighting interests throughout the Cold War. During the Cold War the Soviet Union was a status quo power. Marxist-Leninism aside, the Soviet Union, like the United States, was primarily interested in maintaining the balance of power that emerged out of the end of the Second World War. As McGeorge Bundy concluded, “The successful coexistence of these extravagantly over equipped nuclear powers has been possible because there is literally nothing at all – no place, no ally, no ‘sphere of influence’ – where dominance is a truly vital interest to both at once.”⁶² Undoubtedly this reality was in part shaped by an acute awareness of the potential escalatory consequences of a war between the two nuclear super powers.

THE CONTEMPORARY ENVIRONMENT

The brief history of Cold War deterrence recounted above provides three axioms that should govern future strategy. First, general nuclear war is unwinnable and no credible strategy for limited nuclear war has been developed. Second, that deterrence was effective in large measure because of a deep-rooted understanding of these two facts. Finally, given that limited war between nuclear powers is pregnant with risk of escalation, avoidance of nuclear war is best achieved by avoiding conventional conflict between nuclear adversaries. Before applying these axioms to contemporary strategy, it is necessary to examine three substantial differences between great power competition during the Cold War and today. First, China is now perceived as the

acing threat to the United States. Second, unlike the USSR, neither Russia nor China are status quo powers, and finally the United States' and Russian nuclear thinking has diverged since the end of the Cold War.

The Dual Challenge of Russia and China.

While China significantly influenced the prosecution of wars in the Far East throughout the Cold War, it was at the time a secondary actor as compared to the USSR. Today's strategic environment demands that China be considered in her own right. The physical and theoretical requirements for deterrence are unique to each actor, and may at times conflict. Most recently this potential divergence has manifested itself in the United States' withdrawal from the landmark Intermediate-Range Nuclear Forces (INF) agreement. While the reasons for this decision are more complicated than can be examined here, at least one may be conflicting requirements within the Asia-Pacific Theater. As Kori Schake notes, the employment of the ground-based conventional systems prohibited by the INF in the Asia-Pacific region would help resolve U.S. penetration capability deltas in that theater.⁶³ The United States must now balance deterrence requirements across two fundamentally different theaters with and against two unique great power actors.

Status Quo vs Revanchist vs Revisionist.

Unlike the Soviet Union, neither Russia nor China are Status Quo Powers. Russia, frequently referred to as a revisionist power, is perhaps best described as revanchist. It is seeking to reclaim super power status, and regain if not territory at least influence it once held. The Western alliance's post-Cold War expansion into much of this same territory makes a situation of competing vital interests far more likely than it was during the Cold War. China on the other

hand can be accurately described as a revisionist power, in so much as it seeks to change the status quo. Again, a clash of perceived vital interests is more likely. Competition between a revisionist or revanchist power and a status quo power should be expected to be far less stable than between two competing status quo powers.

Divergent Nuclear Doctrines

In the aftermath of the Cold War, U.S. conventional dominance skyrocketed. As a result, the United States has until very recently sought to downplay the role of nuclear weapons in its defense policy. Conversely, Russia has sought to compensate for a perceived conventional inferiority with an increased emphasis on nuclear weapons. Some have argued that Russia's nuclear strategy is now one of 'escalate to de-escalate', not particularly different from NATO's Cold War strategy of Flexible Response.⁶⁴ Under this strategy Russia is considered likely to deploy low-yield nuclear weapons with a view raising the stakes of a theoretical conflict beyond the point at which the United States would be able to generate the will for action. Others have argued that Russia's nuclear strategy is not obvious, and may in fact simply be intended to draw attention to itself as a nuclear power.⁶⁵ While Russia's declaratory policy may be different than its actual nuclear intentions the 2018 Nuclear Posture Review (NPR) by necessity assumes the former analysis, and seeks to adapt U.S. policy accordingly through the reintroduction of non-strategic sea-launched nuclear capabilities into the arsenal of the United States. The value of so called tactical nuclear weapons received significant attention from Cold War nuclear scholars with little consensus developed. The apparent re-emergence of low-yield weapons as critical components of both Russian and potential United States strategy deserves significant attention.

THE IMPACT OF NUCLEAR WEAPONS ON 21st CENTURY STRATEGY

The three aspects of the contemporary environment just highlighted do not negate the axioms of nuclear strategy espoused above, however they do have the combined effect of suggesting a lowering of the threshold for nuclear use. Accordingly, it is more important than ever that 21st century strategy be governed by nuclear context. Implications exist at both the level of grand strategy and military strategy. These are explored below.

Grand Strategy in a Nuclear Context

Though somewhat painful in its self-evidence the main purpose of the strategist in the nuclear age must be to advance the interests of the United States while avoiding general nuclear war. Prior to the nuclear age avoiding war was an obvious ideal, but not a necessary one. In circumstances where vital national interest was concerned, and the benefits were seen to out-way the risks. War could be seen as a rational choice (and a moral one so long as it followed *jus ad bellum* principles). This logic cannot hold for a general nuclear war, as general nuclear war can hold no reasonable prospect of advancing national interest. The best way to avoid a general nuclear war is to avoid a conventional war that risks escalation to a general nuclear war.

Pursuit of the national interest in the nuclear age means reaffirming that the primary purpose of military forces, both conventional and strategic is to deter military aggression by its adversaries. It also means returning the risk of catastrophic nuclear war to public consciousness. In *War and Politics* Bernard Brodie observed "It is the curious paradox of our time that one of the foremost factors making deterrence really work and work well is the lurking fear that in some massive confrontation crisis it might fail."⁶⁶ The probability of a general nuclear war was always, and remains low. The consequences however unthinkable. In rekindling the lurking fear

that governed deterrence throughout the Cold War policy makers need not over exaggerate the threat, but they must be acutely aware of the consequences of mistake.

The world order that emerged from the Second World War is generally favorable to the United States, therefore, preserving the existing balance of power (or favorably altering it) might reasonably be seen as the fundamental purpose of United States foreign policy. With the military means of maintaining the balance of power necessarily limited by risks of nuclear escalation, socio-economic competition must be the primary mechanism through which the United States achieves its foreign policy objectives. The most effective means of protecting vulnerable partners from encroachment by adversaries is through ensuring their economic stability. Kennan considered the goal of his containment strategy to be “producing in the minds of potential adversaries, as well as potential allies and the American people, *attitudes* that would facilitate the emergence of an international order more favorable to the interests of the United States.”⁶⁷ Deterrence was a component of this, but a larger part was encouraging the self-confidence of vulnerable states via socio-economic means. Beyond economic support, Kennan came to see the most important element of this strategy as “the unglamorous devices of an informational war of indefinite duration, and a quiet old fashioned diplomatic attack on certain of the individual political problems that divide us from the Soviet world.”⁶⁸ Great power competition in the nuclear era, is a competition for influence, and it is primarily executed in the socio-economic arena.

Robert Osgood, in his treatise on limited war, has observed the difficulty in recognizing “where the search for self-defense for security sake stops and primacy for primacy’s sake takes over.”⁶⁹ So long as great power competition remains in the socio-economic arena, it is acceptable that this transition point remains grey. However, if history is a guide, there is

inevitably inflection points, where the United States has determined it necessary to apply military force for the purpose of containment. In the modern nuclear era, where these inflection points are likely to include the possibility of direct confrontation with another nuclear power, it is more important than ever that such decisions be tied directly to national survival interests. A clear analysis of the conditions that would prompt the United States to apply military force for the purpose of containment, and how this decision would be linked to United States vital interest is overdue. Such an analysis however is well beyond the scope of this paper; instead this paper will assume that at some point the National Command Authority will resort to the use of military force to achieve or safeguard United States vital interests and therefore will consider military strategy in a nuclear context.

Military Strategy in a Nuclear Context

It is not necessary to quote Clausewitz or Sun Tzu to highlight the importance of understanding the type of war you are fighting. In the nuclear era wars will, by necessity be limited. Earlier this paper suggested that limited war between nuclear powers was pregnant with risk of escalation to general nuclear war. This does not mean we should not prepare to fight them. As Bernard Brodie observed “if total war is to be averted, we must be ready to fight limited wars with limited objectives – if for no other reason than that limited objectives are always better than unlimited disaster.”⁷⁰ Before addressing the implications of limited war strategy, it is first necessary to offer brief commentary on the role of conventional deterrence in averting general nuclear war.

Senior leaders declaring the need to be ready to fight a war with China or Russia does not imply a literal expectation that such a war is on the horizon. Being ready to fight a war with China or Russia is a necessary component of deterring such a war. The best means of preventing

nuclear war is to prevent conventional war between nuclear adversaries. To do so, the United States requires the capability to credibly defeat, or impose unacceptable costs to military misadventure by her adversaries. This is the primary function of great power war rhetoric. None the less fear, honor, and interest have caused improbable events to materialize in the past, and could well again. It is necessary then to consider what form a direct war with China or Russia might take.

As is well established, general nuclear war being so devastating as to serve no political purpose, war between nuclear adversaries will necessarily have limited political objectives. Military objectives must also be limited. Successful attainment of unlimited military objectives would risk posing an existential threat to the adversary, which may in turn trigger nuclear escalation. In short, unconditional surrender of the enemy is not a viable military objective against a nuclear adversary. If it is to be survivable, war in a nuclear context must end in political settlement. Given this, of the two basic military strategies offered by Marine Corps Doctrinal Publication 1-1, annihilation (defined as “eliminating the enemy’s ability to resist, leaving him helpless to oppose the imposition of our will”) and erosion (defined as “raising the enemy’s costs so high that he will find ending the war on our terms more attractive than continuing to fight”), only a strategy of erosion is viable in a conflict with China or Russia.⁷¹

Recognition that, in a nuclear context, the necessary military strategy is one of erosion should in turn force reflection on the way the United States intends to fight. Maneuver warfare, as typically understood may not be the best aligned warfighting philosophy when executing a strategy of erosion against a nuclear adversary. For example, the Marine Corps defines maneuver warfare as a warfighting philosophy that “seeks to shatter the enemy’s cohesion through a variety of rapid, focused, and unexpected actions which create a turbulent and rapidly deteriorating

situation with which the enemy cannot hope.’⁷² While a rapidly deteriorating enemy situation has immense tactical benefits, at the operational level, as the adversary’s capacity to resist our will degrades, the threat to the state becomes increasingly existential. The risk of nuclear escalation increases proportionally to increased perceptions of existential threat. At a minimum, against a nuclear adversary concepts of maneuver warfare should align with B.H. Liddell Hart’s indirect approach (maneuver for positional advantage) as opposed to J.F.C. Fullers ‘shot to the brain.’⁷³

War between nuclear adversaries will end either at the negotiating table, or in mutual suicide. In order for deterrence to be credible, the United States must have an established framework for ensuring the success of the former. Our frame of reference should be the Korean War, not the Gulf War, or the Iraq War. At the operational level, such a framework requires that military planners be attuned to the challenges of escalation management and war termination.

Escalation Management

Conventional forces deployed in the contact zone against a nuclear adversary serve two purposes. First, in areas of vital interest, they serve the purpose of prolonging any contest to enable diplomatic negotiation under Schelling’s condition of the threat that leaves something to chance.⁷⁴ In so doing they both improve the strength of the deterrent, and should deterrence fail enable coercive bargaining. Second, they serve to signal to an adversary where such vital interests might be and our level of investment in them. In both instances, their importance lies not in the tactical outcome of any one engagement, but in their ability to signal resolve and intent to the adversary. Operational commanders must therefore be finely attuned to what the desired strategic signal in fact might be, and it requires a detailed understanding of how the adversary is likely to interpret the maneuver of forces as intent to escalate or de-escalate.

In a practical sense, the challenges of escalation management can be viewed through the lens of targeting. Traditional approaches to targeting are typically driven by a center of gravity analysis. Planners determine an adversary's source of strength and then assess critical capabilities that are vulnerable to friendly targeting. Then, through targeting the enemy's critical vulnerabilities friendly forces are able to attack the enemy's center of gravity. This inside out approach to targeting, while militarily very effective is inherently escalatory. While it may be tactically preferable to attack the enemies soft center rather than his hard-outer shell, the requirements for escalation management may prohibit this approach.⁷⁵ This problem is exaggerated when the enemy is operating dual capable (conventional and nuclear) systems. For example, significant advantage can be gained by disrupting enemy command and control systems. Such systems are routinely high priority targets however targeting of enemy nuclear command and control systems signals escalation. Dual capable systems provide unique targeting challenges. Escalation management demands that commanders consider targeting not just from the perspective of the military value derived a strike, they must equally consider the escalatory consequences of the strike.

Escalation management is a complex task, and no simple axioms are likely to be of use. While the temptation is to focus on our own methods of signaling, the necessary start point for escalation management is the development of a deep understanding of the adversary's escalation pathway. Traditionally intelligent support to operational planning provides an adversary threat template that seeks to predict the enemy's most likely and most dangerous courses of action. By and large these manifest themselves as an understanding of the adversary's probable tactical maneuver in relation to our own. Commanders should in the future insist that the planning process also incorporate an adversary escalation template that seeks to understand the anticipated

enemy actions and reactions in terms of escalation / de-escalation signaling. It is worthwhile noting that current professional military education spends painfully little time developing within the U.S. force an understanding of potential enemy doctrine, and no time relating that doctrine to escalation management.

War Termination.

In the pre-atomic age it was possible (though not necessarily advisable) to begin a war and develop a theory of victory as the war developed. This delayed approach to critical thinking about war termination is not possible against a nuclear adversary.

In the event of war, rapid war termination, in a manner maximally favorable to U.S. interest but somewhere well short of mutual suicide must be the objective. As previously noted, the theory of victory against a nuclear adversary can never include unconditional surrender. As General DePuy noted in the 1976 edition of FM 100-5 future conflicts are likely to be short sharp affairs. Accordingly, prior to any potential military conflict, the United States must possess preconceived ideas about how it might be terminated, recognizing that termination will occur not through decisive military victory but as a result of diplomatic negotiations.

In a manner related to escalation management discussed above war planners must therefore develop clear de-escalatory 'off ramps' in the process of campaign development that will enable war termination. Each off-ramp will necessarily be tied to both opportunity and risk for both sides, and the implications of continuing past an off-ramp must be clearly articulated. Most importantly, off-ramps cannot be developed in isolation, but must be coordinated across all instruments of national power as their final execution will be political, not military.

The dominant challenge for operational planners once a war has begun, is ending it. On this subject Schelling again offers potential wisdom noting that what a war "was originally about

may soon be swamped by the exigencies of the war itself.” He continues “There may be very few points at which such a war could be stopped. It [is] important to identify them ahead of time.”⁷⁶

The closing moves are as important if not more so than the opening moves of a conflict between two nuclear powers. It is incumbent upon operational planners to have in their minds from the outset, and to keep in their minds, what these might be.

CONCLUSIONS

The primary purpose of military forces in the nuclear age is not winning wars, but deterring them. This is simple in its axiomatic form, but incredibly complex in practice. As the United States emerges from its strategic vacation it is crucial that strategists acknowledge and seek to understand this complexity.

The nuclear age did not disappear with the end of the Cold War. Its basic realities remain extant. Indeed, the threshold for nuclear use may well be in the process of being lowered. Meanwhile our understanding of nuclear era strategy has atrophied. A 2008 review of nuclear weapons management found "a distressing degree of inattention to the role of nuclear weapons in deterrence among many senior DoD military and civilian leaders. Many lack the foundation of experience for understanding nuclear deterrence, its psychological content, its political nature, and its military role – which is to avoid the [employment] of nuclear weapons."⁷⁷ We must recover our understanding of the complexities of strategy in a nuclear context.

This paper has limited itself to considerations of great power war; that is potential war between the United States, Russia, and China. In reality, the nuclear context extends well beyond this scenario. There are nine declared nuclear powers in the world. This combined with the trans-

regional, multi-domain, multi-functional nature of the contemporary operating environment, implies that all military operations must be considered in a nuclear context.

Edward Mead Earle, in the introduction to the original *Makers of Modern Strategy* observed “[war] grows out of things which individuals, statesman, and nations do or fail to do. It is, in short, the consequence of national policies or lack of policies. And once the nation’s destiny is submitted to the terrible arbitrament of war, victory or defeat likewise ensures from what we do or fail to do.”⁷⁸ Earle’s warning is as poignant today as it was in the midst of the Second World War. We must again think deeply about the circumstance, the way, and the ultimate end for which we might apply military force in the nuclear age.

The nuclear dilemma is abhorrent and uncomfortable to address. To be ignorant of the risks is dangerous; to willfully ignore them is the height of professional irresponsibility. As we return to an era of great power competition, it is folly to believe that great power war will look anything like the wars of the pre-atomic age. The specter of nuclear war must be the dominant factor in formulating strategy in the 21st century.

END NOTES

¹ Some outliers did exist in the early atomic era, including a several within the military who held the view that the atomic bomb, though more powerful, should be considered a weapon as any other. The thermonuclear bomb however brought most in line with this view that the nuclear era was fundamentally transformative.

² Bernard Brodie (Ed.), *The Absolute Weapon* (New York: Harcourt, brace, 1946), 76. Brodie is considered the original nuclear strategists. Between 1945 and 1951 he was a member of the Yale Institute of International Studies and between 1951 and 1966 was a member of the senior staff at the RAND Corporation.

³ For a summary of the global effects of nuclear war see Office of Technology Assessment, *The Effects of Nuclear War* (Washington DC: United States Congress) 1979. For a popular description of the impacts of nuclear war see the influential John Schell, *The Fate of the Earth* (New York: Alfred A. Knopf Incorporated, 1982). For recent analysis of the significant impact of even limited regional nuclear war see O. B. Toon, R.P. Turco, A. Robock, C. Bardeen, L. Oman, and G.L. Stenchikov, "Atmospheric effects and societal consequences of regional scale nuclear conflicts and acts of individual nuclear terrorism." *Atmos. Chem. Phys.*, no. 7, (2007): 1973-2007.

⁴ Clausewitz, Carl Von, Clausewitz, *On War*. Edited by Michael Howard and Peter Paret. (Princeton, NJ: Princeton University Press, 1976) 605.

⁵ Michael E. Howard "On Fighting Nuclear War" *International Security* 5, no 4 (Spring 1981) 14. Emphasis original. Howard goes on to observe that should the United States emerge from such a war it would likely necessarily do so with an authoritarian regime much more similar to the Soviet regime than any pre-war democratic one. President Eisenhower also described the political illogic of nuclear war to senior officers at Quantico observing "No matter how well prepared for war we may be, no matter how certain we are that within 24 hours we could destroy Kuibyshev and Moscow and Leningrad and Baku [sic] and all the other places that you would allow the Soviets to carry on war, I want you to carry this question home with you; *Gain such a victory, and what do you do with it?* Here would be a great area from the Elbe to Vladivostok and down through Southeast Asia torn up and destroyed without its communications, just an area of starvation and disaster. I ask you what would the civilized world do about it? (John Lewis Gaddis, *Strategies of Containment* 133f).

⁶ For commentary on the decline in nuclear thinking in the post-Cold War era see Paul Bracken, *The Second Nuclear Age: Strategy, Danger, and the New Power Politics* (New York: St Martin's Press, 2013) 217.

⁷ Bernard Brodie "The Development of Nuclear Strategy." *International Security* 2, no. 4 (Spring 1978), 66

⁸ John Lewis Gaddis, *Strategy of Containment: A Critical Appraisal of American National Security Policy During the Cold War* (New York: Oxford University Press, 1985) 26

⁹ John Lewis Gaddis, *Strategies of Containment* 35.

¹⁰ Two additional elements of Kennan's strategy included "reduction, by exploiting tension between Moscow and the international communist movement, of the Soviet Union's inability to project influence beyond its borders; and 3) modification, over time, of the Soviet concept of international relations with a view to bringing about a negotiated settlement of outstanding differences." John Lewis Gaddis, *Strategies of Containment* 36.

¹¹ Paul Nitze, "The Grand Strategy of NSC-68" in *NSC 68 Forging The Strategy of Containment* ed. S. Nelson Drew (Washington DC: National Defense University Press, 1994), 10.

¹² NSC 68 described the perceived world crisis as "On the one hand, the people of the world yearn for relief from the anxiety arising from the risk of atomic war. On the other hand, any substantial further extension of the area under the domination of the Kremlin would raise the possibility that no coalition adequate to confront the Kremlin with greater strength could be assembled. It is in this context that this Republic and its citizens in the ascendancy of their strength stand in their deepest peril" The White House. *National Security Council 68*. Washington, DC, April 14, 1949. Pg 4 https://www.trumanlibrary.org/whistlestop/study_collections/coldwar/documents/pdf/10-1.pdf

¹³ No appreciable stockpile of nuclear weapons existed at this point in history.

¹⁴ The Korean War having suddenly made the costs associated with the conventional force build up demanded by NSC 68 more politically palatable.

¹⁵ This decision to develop and stockpile thermonuclear weapons was not based on any particularly favorable assessment of nuclear deterrence, but instead was driven the expectation of Soviet development of the weapon. While a somewhat obvious conclusion, NSC 68 offers a useful case study as the US considers the development of future non-nuclear but potentially strategically destabilizing weapon systems. Equally relevant would be a careful study of the minority report submitted by Enrico Fermi and I.I. Rabi.

¹⁶ Ultimately President Truman authorized the expansion of production facilities on a scale sufficient to meet all future demands.

¹⁷ While the term non-use is commonly accepted and will be used throughout this paper, it is perhaps more accurate to say that the utility of nuclear weapons is predominantly found pre-employment. .

¹⁸ The US detonated its first thermonuclear weapon in on Nov 1 1952. The USSR followed on August 12th 1953. The relative destructive power between an atomic bomb and the hydrogen bomb is exponential. The shift between the atomic era and the thermonuclear era was a fundamental one.

¹⁹ The White House. *National Security Council 162/2*. Washington, DC, October 30, 1953. 1

<https://fas.org/irp/offdocs/nsc-hst/nsc-162-2.pdf>

²⁰ John Foster Dulles, "The Evolution of Foreign Policy," Before the Council of Foreign Relations, New York, N.Y., *Department of State, Press Release No. 81* (January 12, 1954).

https://web.archive.org/web/20080514020511/http://www.nuclearfiles.org/menu/key-issues/nuclear-weapons/history/cold-war/strategy/article-dulles-retaliation_1962-01-25.htm emphases added.

²¹ The White House. *National Security Council 162/2*. Washington, DC, October 30, 1953. Pg 22

<https://fas.org/irp/offdocs/nsc-hst/nsc-162-2.pdf>.

²² John Lewis Gaddis, *Strategies of Containment* 171-172.

²³ Dwight D. Eisenhower as quoted Bundy *Danger and Survival*. 259.

²⁴ Deterrence against attack on the continental United States.

²⁵ Deterrence against attack on an ally.

²⁶ Lawrence Freedman "Nuclear Strategists" *Makers of Modern Strategy* (Princeton NJ: Princeton University Press, 1986) 758.

²⁷ Though not a new idea, Albert Wohlstetter brought the concept to public attention in his article *The Delicate Balance of Terror*.

²⁸ Lawrence Freedman *The Evolution of Nuclear Strategy*. 3rd ed. (New York: Plgrave, Macmillan, 2003) 130

²⁹ Robert S. McNamara *The Essence of Security: Reflections In Office*. (New York: Harper & Row, 1986) 160.

³⁰ Freedman, *Nuclear Strategists*, 761.

³¹ Kahn's model observed 44 discernable levels of escalation, the most important of which were six clear fire-breaks. The most obvious of these was escalation above the nuclear threshold, but importantly fire-breaks theoretically existed past and below this point that allowed for clear opportunity for de-escalation.

³² As Khan described "escalation dominance requires that Soviet leaders always consider conciliation to be preferable to continued conflict and escalation." Herman Khan, *Thinking About the Unthinkable in the 1980s* (New York: Simon and Shuster, 1984), 79. For a succinct summary of Khan's work see Lawrence Freedman in *Evolution of Nuclear Strategy* 204-207.

³³ Freedman, *Nuclear Strategists* 765

³⁴ Thomas Schelling "Nuclear Strategy in Europe" *World Politics* 14 no 3 (Apr 1962) 423.

³⁵ Thomas Schelling *Nuclear Strategy in Europe* 424.

³⁶ Thomas Schelling *Arms and Influence*. (New Haven Ct: Yale University Press, 2008) 3.

³⁷ As Schelling observed "We usually think of deterrence as having failed if a major war ever occurs. And so it has; but it could fail worse if no effort were made to extend deterrence into war itself."

³⁸ The relevant part of the speech dealt with targeting "...Principal military objectives, in the event of a nuclear war stemming from a major attack on the Alliance, should be the destruction of the enemy's forces, not his civilian population. The very strength and nature of the Alliance forces make it possible for us to retain, even in the face of a massive surprise attack, sufficient reserve striking power to destroy an enemy society if driven to it. In other words, we are giving a possible opponent the strongest imaginable incentive to refrain from striking our own cities. Robert McNamara, Commencement address, Ann Arbor <http://www.atomicarchive.com/Docs/Deterrence/Nocities.shtml>

³⁹ See Schelling *Arms and Influence* 190-205.

⁴⁰ The White House. *National Security Decision Memorandum 242*. Washington, DC, January 17, 1974. Pg 2

https://fas.org/irp/offdocs/nsdm-nixon/nsdm_242.pdf

⁴¹ The White House. *National Security Decision Directive 13*. Washington, DC, October 19, 1981. Pg 1

<https://www.archives.gov/files/declassification/iscap/pdf/2013-104-doc01.pdf>

⁴² John Lewis Gaddis, *Strategies of Containment* 357.

⁴³ The comprehensive attempt to return to conventional thinking about theories of victory in the nuclear age is Collin S. Gray and Keith Payne's *Victory is Possible*. A powerful rebuttal to Gray and Payne can be found in Michael Howard's *On Fighting A Nuclear War*.

⁴⁴ Freedman *Evolution of Nuclear Strategy* 403

⁴⁵ As President Kennedy observed “For an imperfect world where human folly has been the rule and not the exception, the surest way to bring on the war that can never happen is to sit back and assure ourselves it will not happen” Bundy *Danger and Survival* 323.

⁴⁶ Bernard Brodie, “Unlimited Weapons and Limited War” *The Reporter* (Nov 18 1954) 19.

⁴⁷ The seminal work in providing the foundations for this debate is Henry Kissinger’s *Nuclear Weapons and Foreign Policy*, an early attempt to return politics to nuclear war. The practical solutions offered (relating primary to changes from conventional tactics and relying on battlefield dispersion) proved of limited value. See particularly chapters 5, 6, and 7.

⁴⁸ See the section on mutually assured destruction and escalation management.

⁴⁹ See Graham Allison and P. Zelikow, *The Essence of Decision: Explaining the Cuban Missile Crisis*. 2nd Ed, (London: Longman, 1999) and Barry Posen *Inadvertent Escalation*, (Ithaca NY: Cornell University Press, 1991) particularly chapter 1 for the theory of inadvertent escalation.

⁵⁰ The game included the Joint Chiefs of Staff, and Defense Secretary Weinberger acting as the president Andrew Krepinevich and Barry Watts, *The Last Warrior* (New York NY: Basic Books, 2015) 164.

⁵¹ Andrew Krepinevich *The Last Warrior* 165.

⁵² The White House. *The Management and Termination of War with the Soviet Union*. Washington, DC: National Security Council, 15 November 1963.

<https://nsarchive2.gwu.edu/nukevault/ebb480/docs/doc%2011A%20war%20termination.pdf>

⁵³ As Desmond Ball put it, “if both adversaries are going to be sufficiently rational to agree at some point in a nuclear exchange that a fair and acceptable impasse has been reached, then it is difficult to see why they would have initiated the exchange at the outset.” (Ball, *Strategic Nuclear Targeting*, 31)

⁵⁴ Bundy McGeorge, George F. Kennan, Robert S. McNamara, and Gerard Smith. “Nuclear Weapons and the Atlantic Alliance.” *Foreign Affairs* 60 no. 4 (Spring 1982): 757.

⁵⁵ David Holloway, *Stalin and the Bomb: The Soviet Union and Atomic Energy 1939-1956*, ((New Haven Ct: Yale University Press, 1994), 336.

⁵⁶ V.D. Sokolovsky “The Nature of Modern War (1962)” *Nuclear Strategy, Arms Control, and the Future*. Eds Haley, P. Edward, David M. Keithly, and Jack Merritt. (Boulder Co: Westview Press, 1985) 140.

⁵⁷ N.V. “Military Strategy (1980)” *Nuclear Strategy, Arms Control, and the Future*. Eds Haley, P. Edward, David M. Keithly, and Jack Merritt. (Boulder Co: Westview Press, 1985) 155.

⁵⁸ Ibid.

⁵⁹ McGeorge Bundy, *Danger and Survival*. (New York: Random House, 1988) 79.

⁶⁰ Bundy, *Danger and Survival*. 233-234.

⁶¹ Bundy, *Danger and Survival* 375.

⁶² Bundy, *Danger and Survival*, 598.

⁶³ Kori Schake, “Trumps Defensible Decision to Withdraw from a Nuclear Treaty” *The Atlantic*, October 23, 2018. <https://www.theatlantic.com/ideas/archive/2018/10/trump-right-about-intermediate-nukes/573655/>. As the Deterrence Operations Joint Operating Concept clearly identifies, different adversaries will require different deterrence means. (Deterrence JOC page 16).

⁶⁴ See for example Mark B. Schneider “Escalate to Deescalate” *Proceedings* 143 (Feb 2017). <https://www.usni.org/magazines/proceedings/2017/february/escalate-de-escalate>

⁶⁵ See for example Olga Oliker, “Russia’s Nuclear Doctrine: What We Know, What We Don’t and What that Means.” *Center for Strategic and International Studies* May 2016.

⁶⁶ Bernard Brodie, *War and Politics*. (New York: MacMillan Publishing Co, 1973) 431.

⁶⁷ John Lewis Gaddis, *Strategies of Containment*, 35.

⁶⁸ George F Kennan “The Soviet Mind and World Realities” *BBC Reith Lectures 1957: Russia, the Atom and the West*. Transcript, http://downloads.bbc.co.uk/rmhttp/radio4/transcripts/1957_reith2.pdf

⁶⁹ Robert E. Osgood, *Limited War Revisited*, (Boulder Co: Westview press, 1979) 103.

⁷⁰ Bernard Brodie, “Unlimited Weapons and Limited War” *The Reporter* (Nov 18 1954) 19.

⁷¹ Headquarters US Marine Corps, *Strategy*, MCDP 1-1 (Washington, DC: Headquarters US Marines Corps, June 30, 1991), 54-57.

⁷² Headquarters US Marine Corps, *Warfighting*, MCDP 1 (Washington, DC: Headquarters US Marines Corps, June 30, 1991), 73.

⁷³ See, B.H. Liddell Hart, *Strategy*, 2nd Ed. (New York: Meridian, 1991), 319-333 and J.F.C. Fuller, *The Foundations of the Science of War*, (Fort Leavenworth: CGSC Reprint, 1972), 93-113, and 291-292.

⁷⁴ Schelling notes “[conventional] forces that might seem to be quite “inadequate” by ordinary standards can serve a purpose, particularly if they can threaten to keep the situation in turmoil for some period of time.” (See Schelling *Nuclear Strategy in Europe*, 426)

⁷⁵ The author is grateful to LTC Christopher Conant for discussions on the escalation implications of the ‘inside out approach’.

⁷⁶ Schelling, *Arms and Influence* 206.

⁷⁷ Secretary of Defense Task Force on DOD Nuclear Weapons Management, December 2008, pg IV.
<https://dod.defense.gov/Portals/1/Documents/pubs/PhaseIIReportFinal.pdf>

⁷⁸ Edward Mead Earle *Makers of Modern Strategy*, (Princeton, NJ: Princeton University Press, 1943) VII.

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