UNITED STATES DETERRENCE POLICY: 1944 – PRESENT

Literature Review | September 2023

MESA | THE MEDIA ECOLOGY AND STRATEGIC ANALYSIS GROUP

ABOUT MESA

The Media Ecology and Strategic Analysis (MESA) is an interdisciplinary group with a broad mission to address the rising need for strategic narrative assessment as a tool for promoting cooperative assistance and creating community power. For more information on the MESA Group, visit https://mesagroup.okstate.edu.

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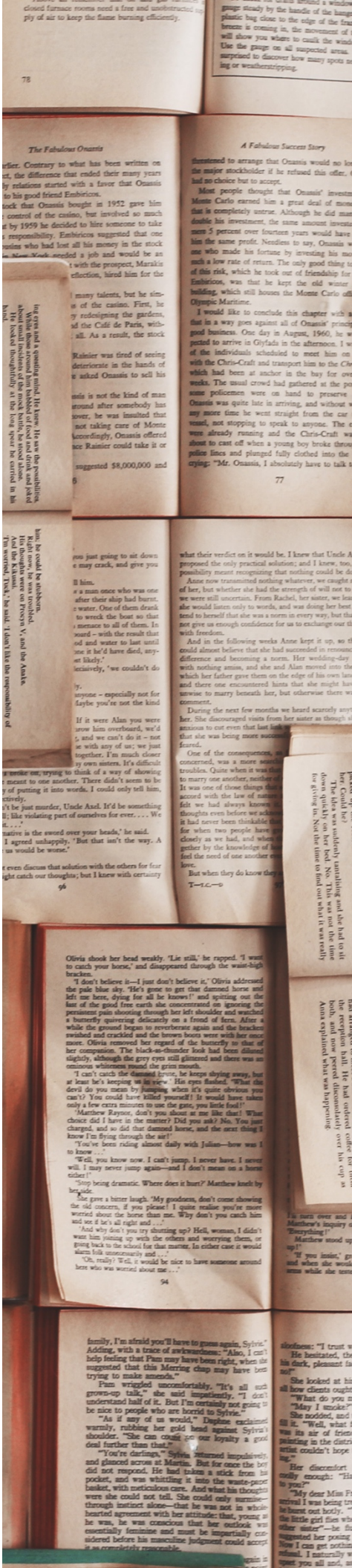
EXECUTIVE SUMMARY

This literature review analyzes the evolution of US deterrence theory and policy from 1945 to the present day. It is organized into five "waves" representing different eras:

- 🕮 Wave 1 (1945-1955): The advent of nuclear weapons led to policies of massive retaliation and brinkmanship. Game theory and ideas of nuclear optimism shaped early Cold War thinking.
- 🕮 Wave 2 (1955-1972): With rising Soviet capabilities, the US adopted flexible response doctrines like mutual assured destruction (MAD). Arms control efforts emerged but the nuclear arms race continued.
- 🕮 Wave 3 (1972-1991): Détente and increased focus on non-proliferation characterized this period. The superpowers pursued measured deterrence based on parity and proportionality.
- 🕮 Wave 4 (1991-2010): The post-Cold War period saw deterrence applied to rogue states and non-state actors like terrorist groups. Tailored deterrence became prevalent.
- 🕮 Wave 5 (2010-present): Contemporary challenges have catalyzed new concepts like integrated deterrence and hybrid deterrence to address multifaceted threats.

Each wave arose from distinct geopolitical circumstances. As technologies and global dynamics shifted, so too did deterrence frameworks. Despite adaptations, limitations persist in reactive policies and the inhibiting nature of deterrence-dominant strategies. Understanding this complex evolution of deterrence thought is vital for informing effective policy today.



Wave	Dates	Primary Approaches	Assumptions and Conditions
1	1945-1955	Massive retaliation	US dominance Nuclear optimism Game theory / rational actors Trust in allies Brinkmanship Credible first strike capability
2	1955-1972	Flexible response	Diverse weapon arsenal Deemphasis on first strike Escalation control
		Mutual assured destruction (MAD)	Mutuality Rational actors Doomsday machine Credible and sufficient stockpile
3	1972-1991	Limited retaliation	Peace through strength Proportionality Mutuality / trust
4	1991-2010	Tailored deterrence	Deep & accurate understanding of adversary Calculated ambiguity Preemption No first use
5	2010—Present	Integrated deterrence	Holistic coordination Multilevel threats Rogue actors
		Hybrid deterrence	Flexible response Diverse weapon & tactical arsenal Information warfare

CHAPTER 1 | INTRODUCTION

Background

At the request of the Deputy Commander of US Strategic Command, the US Department of Defense (DoD) Strategic Multilayer Assessment (SMA) group initiated a study to evaluate current deterrence frameworks, their shortfalls in today's environment, and potential alternative deterrence constructs to address the growing number of challenges to deterrence. These challenges include but are not limited to:

- nuclear and non-nuclear strategic threats,
- extended & hybrid deterrence,
- ambiguity in strategic deterrence,
- nuclear coercion,
- changing international norms,
- deterrence in lower-intensity and tactical conflict, and
- deterrence in a multi-peer operational environment.

The effort explores these research areas to achieve actionable conclusions in support of broad systems objectives in policy, planning, and capabilities advocacy (e.g. protecting democracies, furthering rules-based order, protecting the biosphere, etc.).

Toward these goals, the Media Ecology & Strategic Analysis Group (MESA) at Oklahoma State University has prepared a substantial literature review to identify and describe the key characteristics and assumptions of the various deterrence schools of thought that traditionally have shaped US deterrence thinking.

In this report, we explore a holistic, detailed literature review on deterrence frameworks with a comprehensive evaluation of key characteristics, assumptions, and system vantages of historical to contemporary deterrent practices. We also identify novel deterrence theories.

Deterrence Theory in Historical View

Deterrence theory has been an integral component of US defense strategy for over half a century. However, deterrence frameworks have evolved significantly from the Cold War to today's complex global landscape. Tracing the history of deterrence from its nuclear origins to contemporary approaches provides critical insight into the assumptions, limitations, and enduring challenges underpinning America's deterrence postures and policies.

This literature review undertakes an in-depth historical analysis of deterrence theory and practice in the US from 1945 to the present day. It is organized chronologically into "waves" representing distinct eras based on the framework first proposed by Robert Jervis in 1979.[i] Examining the key characteristics, innovations, and events that distinguished each wave reveals how deterrence thinking has adapted in response to an ever-changing strategic environment.

Understanding this complex evolutionary arc is essential for strategists and policymakers navigating today's multifaceted threats. By scrutinizing the philosophical shifts underlying deterrence formulations over decades, current leaders can make more informed assessments of contemporary approaches and future directions. This history highlights enduring tensions as well as precedents that still influence perspectives. An analytical look back can illuminate forward pathways for deterrence in the 21st century.

CHAPTER 2 | FIRST WAVE, 1944-1955: NUCLEAR OPTIMISM AND MASSIVE RETALIATION

"We need allies and collective security. Our purpose is to make these relations more effective, less costly. This can be done by placing more reliance on deterrent power and less dependence on local defensive power… This is accepted practice so far as local communities are concerned. We keep locks on our doors, but we do not have an armed guard in every home. We rely principally on a community security system so well equipped to punish any who break in and steal that, in fact, would be aggressors are generally deterred… What the Eisenhower administration seeks is a similar international security system. We want, for ourselves and the other free nations, a maximum deterrent at a bearable cost.

"Local defense will always be important. But there is no local defense which alone will contain the mighty land power of the Communist world. Local defenses must be reinforced by the deterrent of massive retaliatory power. A potential aggressor must know that he cannot always prescribe battle conditions that suit him… The way to deter aggression is for the free community to be willing and able to respond vigorously at places and with means of its own choosing."[ii]

— John Foster Dulles, 1954

Key Assumptions

- US nuclear superiority in the early postwar era.
- Adversaries as rational actors per game theory.
- Nuclear weapons as deterrent against conflict.
- Credible threat of disproportionate response.
- Brinkmanship as lever for dominance.

Summary

The first wave of deterrence thinking was characterized by the advent of nuclear weapons and perceptions of US strategic supremacy. Game theory and concepts like nuclear optimism and rational deterrence shaped early perspectives. Policies emphasized massive retaliation threats to deter Soviet aggression.

With the Hiroshima and Nagasaki bombings signaling nuclear power, the US initially held a monopoly on atomic weapons. Game theory and faith in rational decision making guided strategy. Theorists saw proliferation as stabilizing through mutual deterrence.

The "massive retaliation" doctrine under Eisenhower aimed to deter communism by

threatening a devastating nuclear response to any aggression. This relied on US nuclear supremacy and brinkmanship.

However, as the Soviets developed their own nuclear capabilities, massive retaliation became less tenable. Fears of uncontrolled escalation highlighted the need for more nuanced deterrence approaches.

Game Theory

The origins of deterrence theory predate the nuclear age, beginning with the advent of **game theory**. In 1944, mathematician John von Neumann and economist Oskar Morgenstern published the influential book Theory of Games and Economic Behavior, which established the mathematical foundations for modeling strategic decision-making. Game theory analyzed rational choices in conflict situations, assuming adversaries act to maximize gains and minimize losses based on available information.

Von Neumann directly contributed to the Manhattan Project, leading to the first nuclear weapons test detonation, Trinity, in July 1945. The US bombing of Hiroshima and Nagasaki demonstrated the immense destructive power of atomic weapons. In this new nuclear context, policymakers and academics recognized game theory as a useful framework for conceptualizing strategic interactions going forward.

Game theory's assumptions about rational actors seeking to optimize outcomes aligned with emerging ideas of deterrence through nuclear superiority. In the aftermath of WWII, scholars began assessing how game theory and nuclear weapons would transform global relations. Game theory became a key pillar underlying US nuclear doctrine and strategic thinking for decades to come. Its notion of nuclear-armed adversaries as rational players guided the evolution of deterrence theory and policy during the Cold War and beyond.

A 1946 report by Brodie, Wolfers, Corbett and Fox titled The Absolute Weapon argued that the development of nuclear weapons fundamentally changed the nature of war:

> *"On the one hand, having no bombs in existence would seem to remove any opportunity to embark on an adventure in atomic warfare. On the other hand, if no bombs are in existence, then any state which successfully evades the agreement and produces bombs would have a complete monopoly of them. Under such conditions the opportunities for world dominance would be breath-taking."*[iii]

Nuclear Optimism

In the aftermath of Hiroshima and Nagasaki, early theories on the long-term social impacts of nuclear weapons did not significantly shape government policy, which remained focused on immediate issues.[iv] However, some academics developed an optimistic perspective called **nuclear optimism**.

This misleadingly named concept held that the spread of nuclear weapons would actually make war less likely. Theorist Jacob Viner first proposed in 1946 that proliferation enhanced deterrence, as the risk of sparking conflict with a nuclear-armed adversary was intolerably high. Although not widely popularized until Kenneth Waltz revisited it in 1981,[v] nuclear optimism's central notion that the threat of mutual annihilation alone could prevent nuclear war became deeply embedded in US strategic thinking.

This faith in deterrence through assured destruction underpinned the subsequent development of nuclear policy and doctrine. The mere existence of more nuclear weapons came to be seen as backbone of deterrence frameworks, minimizing incentives for open aggression regardless of tensions. Nuclear optimism thus became a foundational belief that guided US theory and practice for decades, despite originating from untested Cold War-era assumptions.

Massive Retaliation

The Eisenhower administration's "New Look" foreign policy, beginning in 1953, relied on instilling a credible fear of first-strike capability for **massive retaliation,** in which any attack on the US or its allies would result in a full-scale nuclear response.

Massive retaliation, also known as a massive response, involves threatening a severe and overwhelming nuclear counterattack in response to aggression. This concept continued to be prominently associated with US policy throughout the Cold War era.[vi]

Massive retaliation aimed to deter potential adversaries, primarily the Soviet Union, by making them aware of the overwhelming and devastating consequences of initiating a conflict. Key assumptions of the massive retaliation doctrine include:

- **Strategic advantage**, particularly that the US possessed a significant advantage in terms of nuclear capabilities. In the early 1950s, the United States was the sole possessor of nuclear weapons, giving it a strategic advantage over the Soviet Union. The doctrine of massive retaliation was feasible because of the perceived technological and numerical superiority of the US nuclear arsenal and became less feasible with nuclear proliferation in the Soviet Union.

- **Leveraging psychological deterrence** is a necessary correspondent with military capabilities. By making it clear that any aggression would lead to a devastating nuclear response, the United States sought to discourage adversaries from initiating conflict.

- **Reliance on brinkmanship and escalation risk,** since the ever-present threat of using nuclear weapons on a massive scale could lead to unintended escalation and catastrophic consequences.

- **Disproportionality as necessary evil**, since the use of nuclear weapons is often disproportionate to a given threat. This was particularly evident where conventional forces were engaged in limited conflicts or proxy wars.

The doctrine of massive retaliation was a prominent feature of US nuclear strategy during the early Cold War, focusing on the threat of a massive and devastating nuclear response to deter aggression. While it played a role in shaping early Cold War dynamics, concerns about escalation and the changing nature of global conflicts led to the evolution of more flexible and nuanced deterrence strategies over time.

Nuclear **brinkmanship** evolved from the idea of massive retaliation. It is a strategy whereby a power allows or forces a conflict to escalate to the point of disaster in order to force another power into a specific outcome. Given its reliance on massive retaliation, the opponent must acquiesce under fear of nuclear retaliation.

Beginning in 1954, the US Strategic Air Command (SAC), established during WWII, developed a fleet of intercontinental ballistic missiles (ICBMs) and strategic bombers armed with nuclear weapons. This force was designed to provide the means for a massive nuclear counterattack. The US used its massive retaliation policy during later crises, such as the 1956 Suez Crisis and the 1958 Taiwan Strait Crisis, to signal its commitment to defending its interests and deter adversaries from escalating conflicts.

Timeline

- 1945: The US uses nuclear weapons in warfare when it drops atomic bombs on the Japanese cities of Hiroshima and Nagasaki, effectively ending World War II. This demonstrates the immense destructive power of nuclear weapons and establishes the US as a global superpower.

- 1947: The Truman Doctrine promises US support to countries threatened by communism. This policy aims to contain the spread of Soviet influence and serves as the foundation of US foreign policy throughout the Cold War.

- Late 1940s – early 1950s: The US develops a nuclear monopoly and implements a policy of nuclear deterrence against the Soviet Union, based on the belief that the threat of massive retaliation would prevent a Soviet nuclear attack on the US.

- 1949: The Soviet Union develops and tests its first nuclear weapon, ending the US monopoly on atomic weapons. This led to a significant increase in US defense spending and a renewed focus on nuclear deterrence.

- 1954: Eisenhower's Secretary of State John Foster Dulles introduces the term massive retaliation during a speech to the Council on Foreign Relations in 1954. He defines it as a "*maximum deterrent at a bearable cost*" and characterizes it as the ability of free nations to respond to aggression where and how they choose. According to Dulles, this approach contrasts with previous, traditionalist attempts by free nations to allow aggressors to select the method, place, and time of warfare and then meet the aggressors with direct, local opposition. Dulles notes that this strategy was tested in the Korean war, which he explains ended because "*the aggressor… was faced with the possibility that the fight might, to his own great peril, soon spread beyond the limits and methods which he had selected.*"[vii]

CHAPTER 3 | SECOND WAVE, 1955-1972: FLEXIBLE RESPONSE IN THE GOLDEN AGE

"By 1962, the foundations of nuclear deterrence theory included an understanding of requirements and retaliatory processes, dyadic deterrence in bipolar nuclear relations, the role of credibility, and elements of extended deterrence and deterrence stability analysis under nuclear multipolarity."[viii]

– C. Cioffi-Revilla, 2020

Key Assumptions and Developments

- 🕮 The beginning of the nuclear arms race marked a shift towards deterrence rather than use of nuclear weapons.
- 🕮 Over time, the limitations of massive retaliation became apparent, leading to the strategy of flexible response under Kennedy.
- 🕮 Mutual assured destruction (MAD) emerged as both sides achieved nuclear parity, reinforcing deterrence through the threat of mutual annihilation.
- 🕮 The US pursued calculated ambiguity about the specific circumstances under which it would use nuclear weapons.

Summary

Writers like Herman Kahn directly shaped America's nuclear policy during this period by developing conceptual frameworks around deterrence. As the Soviet Union increased its nuclear capabilities, the potential for an unrestrained arms race became apparent.

Second wave scholars contributed directly to developing national policy and strategy, resulting in enduring conceptualizations of this period as the "golden age" of deterrence policy. However, many of the suppositions and underpinnings of these philosophies had no empirical basis.[ix] Kahn's 1960 book On Thermonuclear War promoted ideas like nuclear deterrence through the threat of assured retaliation. It also proposed a **doomsday machine** that could automatically trigger a response, reflecting growing reliance on technology for nuclear strategy. The popularity of Kahn's ideas, like the doomsday machine in Stanley Kubrick's 1964 satirical film Dr. Strangelove, highlighted their influence on official policymaking.

Flexible Response

Over time, the limitations and risks associated with the massive retaliation doctrine became apparent. Following WWII, the United States needed a more flexible and diversified nuclear arsenal and a more nuanced approach to direct when and how to use it.[x] The second wave of nuclear deterrence policy was marked by a move away from earlier policies of

massive retaliation and the emergence of **flexible response,** which aimed to match the level of force used in any attack with a proportional response.

As the nuclear balance between the US and the Soviet Union shifted, flexible response emerged in this period and matured during the Cold War. Adopted by the Kennedy administration in 1961, in part as a response to the proliferation of intercontinental ballistic missiles (ICBMs) and further developed by the North Atlantic Treaty Organization (NATO), flexible response was intended to address the limitations of relying solely on the threat of massive nuclear retaliation in the event of aggression. Flexible response aimed to provide a range of military options, including conventional forces, to counter varying levels of aggression and avoid the automatic escalation to nuclear warfare. Key features of flexible response include:

- **Graduated or tiered response** rather than automatically resorting to a massive nuclear strike, it offers a spectrum of responses that can be tailored to match the severity of the aggression. This approach is designed to deter adversaries from initiating conflicts, knowing that the response would be proportionate to their actions.

- **A recognition of the need for customized response,** since threats can vary in intensity and nature and tailoring the response to a specific threat offers a more realistic and credible deterrent effect.

- **A diverse military arsenal.** Unlike massive retaliation's predominant reliance on full-scale nuclear threats, flexible response emphasizes the importance of maintaining a diverse set of military capabilities. This includes conventional forces, tactical nuclear weapons, and strategic nuclear weapons, giving decision-makers a broader range of options.

- **De-emphasis on the need for a pre-emptive or first-strike capability,** focusing instead on options for measured and proportionate responses.

Flexible response was a strategic shift away from the all-or-nothing approach of massive retaliation. It aimed to provide decision-makers with a more nuanced set of options to counter aggression while preventing the automatic escalation to catastrophic nuclear warfare. The concept recognized the complexity of conflict scenarios and the importance of adaptable strategies in maintaining global stability during the Cold War.

Flexible response marked the beginning of a new phase in US nuclear policy which called for a range of military options, including the use of conventional weapons, in response to a nuclear attack.

Mutual Assured Destruction (MAD)

In an effort to ward off potential aggression from the Soviet Union and contain the spread of communism, the US implemented a policy of **mutual assured destruction (MAD).** This policy presupposes that both the US and the Soviet Union have achieved parity in nuclear stockpile with enough nuclear weapons to completely destroy each other. This theory is based on the belief that neither side would risk launching a nuclear attack because it would result in their own destruction.

As the Cold War progressed and the potential consequences of a full-scale nuclear exchange became more apparent, US policymakers began to recognize the limitations of a purely massive retaliation strategy. The concept of MAD gained prominence as a more nuanced and balanced approach to deterrence.

MAD differs significantly from the doctrine of massive retaliation, although it emerged as a response to some of the challenges associated with the latter. MAD is based on the principle of both sides possessing the ability to inflict unacceptable damage on the other, leading to deterrence through stalemate. MAD acknowledged the possibility of mutual annihilation and emphasized the need for both sides to avoid initiating conflict. MAD is based

on several key assumptions and conditions, including:

1.) **Mutuality in risk and benefit,** meaning that both sides of a potential conflict would suffer the same risk if initiating an attack and the same benefit from withholding force.

2.) **A continued reliance on psychological deterrence**, especially on seeding uncertainty and fear in the mind of the adversary.

3.) **Stability through balance,** that is, a balance of power in which neither side has a decisive strategic advantage, which prevents either side from considering preemptive action.

4.) **The necessity of a nuclear triad,** including land-based ICBMs, submarine-launched ballistic missiles (SLBMs), and strategic bombers, to provide redundancy and survivability to the arsenal.

MAD informed policies beginning in the early 1960s, primarily by United States Secretary of Defense Robert McNamara.

Calculated Ambiguity

Beginning with the Cold War, the US has long pursued a policy of **calculated ambiguity** regarding its potential use of nuclear weapons. This policy, sometimes referred to as "deliberate ambiguity," "nuclear ambiguity," or "nuclear opacity," is exemplified by the practice to neither confirm nor deny the specific circumstances under which the US would deploy nuclear weapons. This approach aimed to maintain uncertainty in the minds of potential adversaries, particularly the Soviet Union, about the exact circumstances that might trigger a nuclear response from the United States.

Calculated ambiguity, in the context of international relations and military strategy, refers to a deliberate and purposeful practice of intentionally maintaining uncertainty or ambiguity about certain aspects of a nation's policies, capabilities, or intentions. This strategic ambiguity is often employed to serve specific goals, enhance deterrence, and prevent adversaries from accurately predicting a country's actions or responses. By deliberately not disclosing certain information, a nation seeks to create doubt and hesitation in the minds of its adversaries, thereby influencing their decision making and behavior. Calculated ambiguity is intended to prevent preemptive strikes, provide strategic flexibility to adapt policies and strategies to changing circumstances without being tied to specific commitments or statements, and maintain negotiation leverage.

Calculated ambiguity is a strategic tool used by nations to manipulate perceptions, control narratives, and influence the behavior of adversaries, with the goal of contributing to geopolitical stability or preventing escalations. It is practiced in various aspects of international relations, such as nuclear posture, military capabilities, territorial claims, and even diplomatic intentions.

Timeline

- 1950s — 1960s: The US begins to develop strategic bombers and intercontinental ballistic missiles (ICBMs) as part of its nuclear arsenal.

- 1950: The start of the Korean War marks the first major military conflict of the Cold War. The US intervenes to prevent the spread of communism and nuclear weapons are considered as an option but ultimately not used.

- 1952: The US tests its first hydrogen bomb, significantly increasing the destructive power of its nuclear arsenal. This led to a greater emphasis on deterrence and a focus on maintaining nuclear superiority.

- 1960s — early 1970s: The US signs several arms control agreements with the Soviet Union, such as the Limited Test Ban Treaty (1963) and the Strategic Arms Limitation

Talks (SALT I) (1972). This period saw a gradual reduction in tension between the US and the Soviet Union, and later with Russia, until the onset of the New Cold War in the early 2010s.

- 1962: The Soviet Union places nuclear missiles in Cuba, a short distance from the US coast, initiating the Cuban Missile Crisis. The US responds with a naval blockade and the threat of military action. The crisis is eventually resolved peacefully, with both sides agreeing to remove their missiles, but the effects of the ordeal highlight the potential dangers of nuclear brinkmanship.

- 1967: In light of the parallel Space Race, the UK, US, and Russian Federation enter into the Outer Space Treaty. Ratified on January 27, the treaty declares space reserved for peaceful use and exploration and prohibits the placement of nuclear and other weapons in space. This is an important step in reducing the risk of nuclear proliferation and conflict.[xi]

CHAPTER 4 | THIRD WAVE, 1972-1991: PEACE THROUGH STRENGTH

"Deterrence theory applies most easily, and perhaps applies only, when one side believes that the other is highly aggressive."[xii]

– Robert Jervis, 1979

"It's inconceivable to me that we can go on thinking down the future, not only for ourselves and our lifetime but for other generations, that the great nations of the world will sit here, like people facing themselves across a table, each with a cocked gun and no one knowing whether someone must tighten their finger on the trigger… To look down at an endless future with both of us sitting here with these horrible missiles aimed at each other and the only thing preventing a holocaust is just as long as no one pulls this trigger–this is unthinkable."[xiii]

– Ronald Reagan, 1983

Key Assumptions

- 🕮 The third wave of nuclear deterrence lasted from 1972-1991 and represented a critical point in the evolution of nuclear strategy.
- 🕮 Growing concerns over enemy stockpiling of WMDs led to efforts to verify the philosophical and theoretical bases of US deterrence policy.
- 🕮 This period saw changes in nuclear doctrine, technological advancements, and international arms control efforts.
- 🕮 The NPT sought to curb proliferation in non-nuclear states, though the US-Soviet arms race continued.
- 🕮 SALT I and II aimed to control growth of nuclear arsenals and reduce risk of nuclear conflict.
- 🕮 Limited retaliation addressed credibility issues with massive retaliation.
- 🕮 Concerns emerged about environmental effects of nuclear war, though data was limited.

Summary

The third wave of nuclear deterrence, lasting from 1972 to 1991, marked a pivotal point in the development of nuclear strategy. Mounting concerns over rival nations amassing weapons of mass destruction created an urgency to validate the philosophical and theoretical foundations underlying America's deterrence policies.

This transformative era saw shifts in nuclear doctrines, technological innovations, and international attempts to restrain the nuclear arms

race. Expanding nuclear stockpiles, regional tensions, and initiatives promoting stability despite the looming threat of proliferation defined this period.

The 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT) shaped third wave practices, even though it occurred late in the second wave. The NPT concentrated on non-proliferation, disarmament, and the peaceful use of nuclear power. Although the NPT did not immediately stop the US-Soviet arms race, it aimed to prevent the spread of nuclear weapons to non-nuclear countries. Due to the treaty, the US could be reasonably confident that participating non-nuclear states would not develop nuclear capabilities.

Under the NPT, nuclear-armed countries like the US, China, France, the Soviet Union, and the UK pledged to work toward disarmament. However, the US and Russia continued expanding their nuclear arsenals throughout the Cold War, owing to geopolitical tensions and new technologies like ICBMs, SLBMs, and MIRVs.

The Strategic Arms Limitation Talks (SALT) tried to restrain the growth of American and Soviet nuclear stockpiles to reduce the chance of nuclear war. SALT I, signed in 1972, limited long-range nuclear delivery systems. It complemented the Anti-Ballistic Missile Treaty signed later that year. Talks continued for SALT II, and though an agreement was reached in 1979, challenges ratifying it emerged as US-Soviet relations deteriorated over the Soviet invasion of Afghanistan. In 1991, as tensions eased, the START treaty was signed, with both sides agreeing to reduce nuclear weapons by one third.

The notion of **self-deterrence** is prominent during the Cold War. Though at times difficult to parse clearly from deterrence writ-large, the term eventually comes to represent cases in which a country is deterred by factors other than retaliation by others in their considerations of nuclear use.[xiv]

The strategy of **limited retaliation** emerged, though still aligned with MAD philosophy of deterring attacks by preserving retaliatory capability. Proliferation concerns highlighted the global impact of nuclear weapons beyond just warfare, particularly fears around the environmental consequences of nuclear war. Rouge state deterrence emerges at the close of this wave in order to deal with proliferation concerns among states like Libya, Iraq, North Korea, and Iran.

Overall, the third wave involved limiting proliferation, developing limited retaliation strategies, promoting arms control accords like SALT and NPT, and the ongoing nuclear arms race between major powers. Second-strike capability remained vital for deterrence, with MAD and limited retaliation shaping planning.

Limited Retaliation

The strategy of limited retaliation was an attempt to solve the credibility problem that became apparent in the doctrine of massive retaliation once both superpowers possessed reliable second-strike assets.[xv] Restricted retaliation was intended to address this credibility issue: By threatening to launch a proportionate nuclear assault in retaliation to a challenge to its objectives, limited retaliation allowed states to defend the full range of their interests, from the most to the least important.[xvi] Still, limited retaliation was consistent with the philosophy undergirding MAD, in which both sides aimed to dissuade aggression by preserving plausible second-strike capability.

Proliferation concerns prompted concerns about the global impact of nuclear weapons beyond their capacity in warfare. In a 1985 report, the Committee on the Atmospheric Effects of Nuclear Explosions explored concerns around the global, environmental effects of nuclear war, which came to be known as nuclear winter or nuclear twilight.[xvii] This committee determined that nuclear war would devastate the earth's atmosphere, but also admitted:

"The unfortunate but unavoidable fact is that, even though we are 40 years into the nuclear age, much of the basic information needed to assess the likelihood and extent of global atmospheric consequences of a nuclear exchange simply does not exist."[xviii]

Peace Through Strength

The phrase "**peace through strength**" became a cornerstone of President Reagan's foreign policy approach during the 1980s. It encapsulated the belief that maintaining overwhelming US military power, particularly in terms of nuclear capabilities, could deter Soviet aggression and prevent global conflict. Under Reagan, the US engaged in a major nuclear arms buildup, including modernizing existing weapons, developing new delivery systems like the MX missile and Trident submarine, and proposing missile defense programs like the Strategic Defense Initiative (SDI).

The administration justified this nuclear buildup with the peace through strength logic - that unrivaled US nuclear forces could deter the Soviets from attacking US interests and allies. As Reagan asserted in a 1984 speech, " *To keep the peace, we and our allies must be strong enough to convince any potential aggressor that war could bring no benefit only disaster.*"[xix] Critics argued the arms race exacerbated tensions, but Reagan administration officials insisted peace through strength via nuclear superiority was stabilizing. This represented a shift from late-Cold War arms control efforts back towards coercive nuclear deterrence based on maintaining nuclear overmatch against the Soviets.

Rogue State Deterrence

The concept of "rogue state deterrence" gained prominence in the 1990s as a characterization of strategies to prevent destabilizing conduct by nations deemed dangerous or hostile. It reflected growing concerns about certain states acquiring or using weapons of mass destruction (WMDs) in disregard of international law. The US and other major powers pursued various policies to deter perceived rogue states like Iran, Iraq, and North Korea from proliferating or employing nuclear, chemical, or biological weapons. These included economic sanctions, interdiction of WMD materials and technology, threats of conventional military force, and maintaining robust nuclear arsenals to deter WMD use. The US Nuclear Posture Review under George W. Bush explicitly highlighted deterring WMD use by rogue states as a core mission of US nuclear forces.

Advocates of rogue state deterrence argued only overwhelming retaliation, including nuclear weapons, could dissuade irrational rogue regimes. Critics contended the concept was too broadly applied and that harsh policies often proved counterproductive. But dealing with the nuclear and WMD threats posed by unstable or hostile states remained a major US national security focus under the umbrella of rogue state deterrence.

Timeline

- 1968: The Nuclear Non-Proliferation Treaty (NPT) includes a number of nuclear and non-nuclear powers. The goal of the agreement is for states to work together to stop the spread of nuclear technology.[xx] Although the NPT ultimately fails to stop nuclear proliferation, it is a significant victory for proponents of arms control because it establishes a precedent for international cooperation between nuclear and non-nuclear states to stop proliferation during the Cold War arms race and growing global concern about the consequences of nuclear war.

- 1969: President Nixon launched the initial round of negotiations between the United States and the Soviet Union, which would later become known as the Strategic Arms Limitation Talks (SALT I).[xxi]

- 1972: A series of bilateral meetings and multilateral agreements between the United States and the Soviet Union, known as the Strategic Arms Limitation Talks (SALT) aimed to limit the number of long-range ballistic missiles (strategic weapons) that each party might produce and own. These agreements helped to reduce tensions during the Cold War by limiting nuclear arsenals and promoting strategic stability.[xxii]

    - May 26, 1972: The first treaty, SALT I, was signed by the US and USSR,

agreeing to a set quantity of ballistic missiles and missile deployment sites. A principle of non-interference and respect for national sovereignty was also agreed upon by the two nations.

    - SALT I, signed parallel to the Anti-Ballistic Missile Treaty (ABM Treaty) between the US and the Soviet Union. This limited each country to two missile defense sites and was seen as a major step toward nuclear arms control.

- 1979: The second round of SALT talks led to a 1979 agreement, SALT II, but was not ratified. The treaty faced challenges due to worsening relations between the United States and the Soviet Union.

- 1980s: The Reagan administration implemented a policy of nuclear deterrence through a peace through strength strategy, which involved a significant increase in defense spending, stockpiling nuclear weapons, and developing a missile defense system. Reagan cited concerns over the influence of the Soviet Union and communist ideologies around the globe, including in regions like Central America and the Middle East. This was exemplified by fears of growing Soviet involvement in Latin American countries like Nicaragua, where the Reagan administration supported anti-communist movements to overthrow leftist governments. Reagan's broader motivation was to reassert American military power and geopolitical dominance after a period of détente. The peace through strength doctrine aimed to achieve strategic superiority over the Soviet Union in order to "win" the Cold War. Reagan expanded defense budgets, initiated new weapons programs, and adopted assertive rhetoric toward the USSR to pressure them through aggressive nuclear posturing and to cast communism as a declining ideology. Demonstrating how deterrence frameworks are often tied to broader ideological and geopolitical dynamics between competing powers.

- 1986: The Chernobyl nuclear power plant disaster ignited concerns about potential impacts of accidental radiation leakage.

- 1990s: The United States implemented a policy of rogue state deterrence, which aimed to dissuade nations deemed dangerous or destabilizing from acquiring or using weapons of mass destruction. This policy was focused heavily on preventing nuclear proliferation among countries like North Korea, Iran, Iraq, and Libya - nations that did not comply with international norms and obligations regarding nuclear technology. The US sought to deter these states from pursuing nuclear weapons capabilities through a combination of economic sanctions, diplomatic pressure, and military threats. For example, economic sanctions and the threat of force were used in an attempt to compel Iraq to give up its nuclear, chemical, and biological weapons programs after the Gulf War. The US also engaged North Korea through the Agreed Framework, trading economic incentives for a freeze on North Korea's nuclear program. However, this ultimately broke down. The rogue state deterrence policy of the 1990s had limited success, as North Korea continued its nuclear developments and Iran's program also progressed. The difficulties of preventing proliferation through coercion and sanctions revealed flaws in the traditional deterrence model when applied to these complex scenarios. But the US maintained its stance that overwhelming pressure could compel rogue states to abandon their nuclear ambitions.

CHAPTER 5 | FOURTH WAVE, 1991–2010: DECISION CALCULUS AND TAILORED DETERRENCE

"The reality of deterrence derived from the inescapable fact that a superpower nuclear conflict would have been an unprecedented catastrophe for both sides."[xxiii]

– Richard Ned Lebow & Janice Gross Stein, 1995

"Nuclear weapons, like other weapons, are more than tools of national security; they are political objects of considerable importance in domestic debates and internal bureaucratic struggles and can also serve as international normative symbols of modernity and identity."[xxiv]

— Scott Sagan, 1997

"... the White House has rejected one of the most central precepts of MAD: Nuclear weapons are good for deterrence only."[xxv]

— Robert Jervis, 2002

"In contrast to the Cold War, deterrence failure does not involve the risk of nuclear Armageddon, there is less focus on how to make deterrence foolproof and more on how to increase the marginal effectiveness of deterrence, particularly in dealing with terrorism."[xxvi]

— Jeffrey W. Knopf, 2010

Key Assumptions

- 🕮 The global environment had become more complex, with threats from both nations and non-state actors.
- 🕮 Traditional Cold War deterrence models were inadequate for new asymmetric threats.
- 🕮 Calculating rationality could not be assumed for terrorist groups.
- 🕮 Deterrence strategies needed to be customized to specific adversaries.
- 🕮 Non-military and non-nuclear tools were important for deterrence.

Summary

The fourth wave of nuclear deterrence policy emerged in the early 1990s following the end of the Cold War, marked by destabilization, including the fall of the Berlin Wall in 1989 and the dissolution of the Soviet Union in 1991. Concerns about nuclear proliferation in states like Iran and North Korea point to the opacity of much of the US's intelligence regarding nuclear threats and contribute to this wave's emphasis on non-proliferation and counterterrorism.

Tensions between the US and these states over their nuclear programs are driven by a complex array of factors, including non-proliferation priorities, regional security dynamics, ideology, and deterrence imperatives. The shifts in the nuclear landscape and deterrence thinking that defined the fourth wave stemmed from multifaceted geopolitical, technological, and ideological changes at the end of the Cold War superpower standoff. The emergence of new nuclear challenges involved interlocking factors rather than simple linear causes. While deterrence policy adapted in this era, it was not the only force shaping the new nuclear environment in the post-Cold War period.

This wave saw a shift toward a more diffuse and uncertain nuclear threat environment, characterized by growing concerns about nuclear terrorism and the proliferation of nuclear weapons. The first half of the era, referred to as the post-Cold War period, and the years following the 9/11 terrorist attacks differed in many important ways. The post-Cold War period was characterized by a shift from a bi-polar rivalry between the US and the Soviet Union to a multi-polar landscape. It involved a mix of arms control, regional deterrence, counterproliferation efforts, and crisis management strategies to address evolving threats, both from nation-states and emerging non-state actors. The terrorist attacks on September 11, 2001, marked a significant turning point that further reshaped US national security priorities and strategies and, in many ways, reverted US deterrence policy to Wave 1 reactivism.

Non-Proliferation

Extending previous policies of strategic ambiguity, the United States pursued new deterrence approaches in response to the changing global landscape. One area of renewed emphasis was **nuclear non-proliferation** and disarmament, seeking to curb the spread of nuclear, chemical, and biological weapons, especially to non-state groups.

As non-state actors like terrorist organizations gained prominence, worries emerged about potential asymmetric threats. Traditional deterrence focused on dissuading nation-states. But the rise of transnational terrorist networks sparked debate about how to effectively deter and counter these novel actors. The norms of deterring states did not necessarily translate to deterring diffuse non-state groups with different motivations and capabilities.

Counterterrorism

The fourth wave addressed the changing strategic landscape, with threats emerging not just from rival states but also non-state groups with asymmetric resources and power. [xxvii] This shift in deterrence thinking reflects evolving dynamics in international security. The focus moved beyond traditional nation-state foes, as non-state actors like terrorist networks and insurgents gained prominence.

At this wave's mid-point, the unprecedented 9/11 terrorist attacks dramatically redirected policy to address emerging threats of global terrorism, rogue states, and ideological conflicts. This instantly pushed the US into a new defensive posture, needing actionable deterrence strategies rather than just theory. In this way, post-9/11 priorities mirrored the first wave's emphasis on immediate action over long-term planning. [xxviii]

These novel postmodern terrorist realities shook the nation, driving the need for effective **counterterrorism** - policies and actions to prevent, deter, and mitigate terrorist activity. As the US launched a worldwide campaign against al-Qaeda, preemptive and preventative attack strategies gained attention. [xxix] Preemption, using anticipatory force when an attack is imminent, was adopted in George W. Bush's 2002 National Security Strategy. But his administration expanded the term to encompass preventative war without evidence of an imminent threat, seeking to halt serious threats before they escalate. [xxx]

Tailored Deterrence

Following the 9/11 terrorist attacks, the George W. Bush administration adopted an approach known as **tailored deterrence** (although the term was not used until the 2006 Quadrennial Defense Review). Tailored deterrence involves customizing deterrence

strategies to the specific capabilities, intentions, and behaviors of particular adversaries or potential aggressors. Rather than applying a one-size-fits-all approach, tailored deterrence recognizes that different actors have unique motivations and circumstances that require a nuanced and individualized approach to deterrence. This approach aims to optimize efficacy by considering the distinct factors that influence an adversary's decision-making process.[xxxi] Though some scholars argue that the roots of a tailored deterrence approach pre-date the W. Bush administration, and can be traced back to ideas like "flexible response" during the Cold War era, the tailored deterrence approach gained prominence under his administration.

Tailored deterrence considers asymmetries, expanding the trade space to include non-nuclear and non-military tools. Specifically, this form of deterrence highlights the situation-specific and actor-specific knowledge necessary to cater to the perceptions and interests of each adversary. Tailored deterrence is characterized by:

- **An adversary-centered approach,** wherein the adversary's motivations, goals, perceptions, and vulnerabilities must be thoroughly and accurately understood and monitored over time to customize, implement, and update relevant and impactful deterrence strategies.

- **Differentiated responses** calibrated to match the specific behaviors and psychologies of each adversary, rather than uniform threats or actions. Tailored responses may vary from diplomatic and economic measures to military displays of force.

- **Both deterrence by denial and deterrence by punishment**. The former aims to make an adversary believe it will not succeed due to the defending state's capabilities. The latter involves making the adversary believe the costs of their actions will outweigh any potential benefits.

- **Maintaining credibility and communication** with the adversary, as the defending state must communicate its resolve and the potential consequences clearly to ensure that the adversary perceives the deterrent threat as credible.

- **Strategic patience,** as influencing an adversary's behavior might take months or years of consistency in signaling and responses to demonstrating commitment.

Tailored deterrence seeks to enhance the effectiveness of deterrence strategies by recognizing that adversaries require tailored approaches to deterrence. This approach acknowledges the complexity of international relations and the importance of understanding and addressing the unique characteristics of each potential threat.

No First Use and Emergent Post-Cold War Deterrence Theories

In the late 1940s and 1950s, scientists like Robert Oppenheimer, Enrico Fermi, and James Franck, who were involved in the Manhattan Project, urged the adoption of a no-first-use policy (NFU) to reduce nuclear risks. In the 1960s, advisors like McGeorge Bundy argued for NFU as part of arms control with the Soviet Union. Throughout the Cold War, various advocates called for a NFU pledge. In the 1990s and 2000s, analysts like Jan Lodal and Bruce Blair made detailed NFU proposals.

China was the first nuclear power to pledge NFU upon acquiring weapons in 1964. It remains the only state fully committed to NFU under any circumstance. India adopted NFU in 1999, vowing no first use and only nuclear retaliation if deterrence fails. Unlike China and India, the US has not explicitly disavowed first-strike nuclear use, preferring strategic ambiguity.

In the fourth wave, Scott Sagan was an influential NFU proponent. As he stated:

"The role of US nuclear weapons is to deter nuclear weapons use by other nuclear-weapons states against the United States,

our allies, and our armed forces, and to be able respond, with an appropriate range of nuclear retaliation options, if necessary, in the event that deterrence fails."[xxxii]

Sagan claimed the George W. Bush administration's threats to use force to deter use of chemical and biological weapons continued the **calculated ambiguity** of the Clinton era. Per Secretary of Defense William Cohen in 1998:

"[Calculated ambiguity] involved in the issue of nuclear weapons contributes to our own security, keeping any potential adversary who might use chemical or biological [weapons] unsure of what our strategy would be."[xxxiii]

After 9/11, a related strategy called **dissuasion** emerged, aiming to deter states from pursuing threatening capabilities. Dissuasion was defined in G.W. Bush administration's national security doctrine documents as "*keeping such a significant military advantage over another state that it would be deterred from even pursuing weaponry to counter that advantage.*"[xxxiv] While closely related to deterrence, this policy effectively defied US nuclear disarmament goals.

Post-Cold War, the concept of deterrence took on broader multinational dimensions as the spread of nuclear technology continued beyond the US and Russia. The baseline for evolving US policy on deterrence is outlined in the 1995 document *Essentials of Post-Cold War Deterrence* by the Policy Subcommittee of the Strategic Advisory Group of the United States Strategic Command (now called USSTRATCOM).[xxxv] This document, meant to be a "*baseline for the other subcommittees to use in expanding the concept of Deterrence of the Use of Weapons of Mass Destruction,*"[xxxvi] explains that deterrence is "*a process that goes beyond the rational.*" The document emphasizes that deterrence policy cannot assume that enemies are rational and instead should focus efforts on "*value-based targeting,*" that is, understanding what the enemy values and producing a credible threat to those values. Moreover, the document puts forth the importance of continued calculated ambiguity, stating: "*We must communicate, specifically, what we want to deter without saying what is permitted.*"[xxxvii]

The document explains that while relations with Russia continue to follow the traditional characteristics of MAD, US deterrence toward nations with minor nuclear capabilities must ensure that they do not threaten the US, its interests, or allies through threats of immense retaliation or even pre-emptive action. The document also emphasizes the importance of preventing nations without nuclear technology from developing nuclear weapons and promoting a universal ban on chemical and biological weapons.

The events following the 9/11 attacks raised doubts and concerns about the continued effectiveness and necessity of deterrence theory. Some even argued that terrorist organizations and leaders cannot be deterred.[xxxviii] Kilgour & Zagare argued that effective deterrents must be capable of inflicting harm to the target as well as being cost efficient to carry out. [xxxix]

Responding to the ambiguities of terrorist threats, Zagare and Kilgour's 2000 theory of **perfect deterrence**[xl] explored the theoretical implications of various strategic environments, including those where the credibility of deterrent threats are uncertain, where the capability or harmfulness of deterrent threats are inconsistent, and where the dissatisfaction of states with the existing order can not be automatically assumed.

Another influential scholar from the fourth wave, Paul K. Huth, theorized that military threats can reduce the attacker's expected utility for using force by persuading the attacker that the outcome of a military confrontation will be both costly and unsuccessful.[xli] This concept, **rational deterrence theory**, was originally posited by Snyder & Diesing in their 1977 book, *Conflict Among Nations*,[xlii] based on the assumption that states act rationally and will weigh the costs and benefits of their actions before deciding on a course of action.

Evolving Safety Concerns: Chernobyl and Los Alamos

In addition to shifting geopolitical landscapes, evolving safety concerns in relation to nuclear storage

and environmental safety influenced developing policies in this period.

On April 26, 1986, an accident at the Chernobyl nuclear power plant in Pripyat, Ukrainian SSR (then part of the Soviet Union) resulted in a massive release of radioactive materials into the atmosphere, causing widespread contamination, health impacts, and a significant environmental disaster. The Chernobyl disaster had a profound impact on global public perception of nuclear energy. The scale of the disaster and its subsequent health and environmental consequences highlighted the potential risks associated with nuclear power, leading to increased concerns about the safety of nuclear facilities worldwide. Additionally, the disaster prompted a reevaluation of nuclear safety practices and protocols in many countries, including the US.

The release of radioactive materials from the Chernobyl accident raised international awareness about the long term environmental and health consequences of nuclear disasters. This further fueled discussions about the risks and benefits of nuclear technology.

The Chernobyl disaster, while not directly related to military nuclear capabilities, highlighted the potential catastrophic consequences of nuclear accidents. This, in turn, contributed to discussions about the potential risks of nuclear weapons and the importance of arms control and disarmament.

In terms of US deterrence policy, the Chernobyl disaster did not directly influence the core principles of US nuclear deterrence, which were more focused on deterring adversarial nations through threats of overwhelming retaliation. It did, however, contribute to global concerns about nuclear safety and transparency and prompted renewed disarmament and non-proliferation discussions.

Events at Los Alamos National Laboratory, the site of the Manhattan Project and a continuing nuclear research site, brought these issues closer to home for US citizens. In 1999, a Taiwanese-American scientist working at the lab was erroneously indicted on 59 counts for stealing nuclear codes for the People's Republic of China; media coverage of this case contributed to growing national concerns regarding the security of the US's nuclear stockpile. On May 10, 2000, New Mexico's largest-ever wildfire entered Los Alamos Canyon, and the laboratory was evacuated; the event contributed to growing fears of the risk of radiation leakage.

Scott Sagan's 1995 *The Limits of Safety: Organizations, Accidents, and Nuclear Weapons*[xliii] examined the role of organizational culture and human error in nuclear safety, reflecting broader growing concerns about the impact of nuclear technologies in contexts outside of war.

The fourth wave was a turning point in security studies, altering the US's conventional view of deterrence. Yet, attempts to validate fourth-wave ideas empirically have been limited since the attacks on US soil have not been repeated post 9/11. Instead, just as evolving policies in this wave were largely reactive, theoretical work remained policy-oriented and preemptive.

After 9/11, many questioned the effectiveness of traditional deterrence models against terrorist threats, catalyzing new debates. Deterrence began to wane from a term associated solely with nuclear retaliation to a description of a multifaceted, comprehensive environment. Fourth wave researchers emphasized the need for the security studies field to expand its perception of deterrence beyond military retaliation, whether nuclear or conventional.[xliv] Moving into the fifth wave, most scholars agreed that deterrence remains relevant and useful against contemporary threats, although the dimensions of deterrence continue to expand.[xlv]

In 2001, John Mearsheimer argued that the international system is by nature competitive and conflict-prone. His theory of **offensive realism** stipulates that the international system is inherently anarchic, its great powers possess military capabilities, states exist in a state of uncertainty regarding whether other states will use these powers against them, their primary goals are survival, and therefore states are rational, unitary actors and create strategic plans to achieve their primary goal.[xlvi] The

global context in which these stipulations are true is inevitably conflict-ridden and bound to ongoing competition.

Timeline

- 1991: The collapse of the Soviet Union marks the end of the Cold War and a significant shift in US defense policy toward arms control and reducing the risk of nuclear conflict through diplomacy. The US also reduces its nuclear arsenal and signs the Strategic Arms Reduction Treaty (START 1) with the Soviet Union.

- 1986: The Chernobyl nuclear power plant disaster highlighted growing awareness and concern about nuclear safety.

- 2000s: The US implements a policy of proliferation deterrence, which aims to prevent the spread of nuclear weapons to non-state actors such as terrorist organizations. The US also develops a new generation of nuclear weapons and modernizes its nuclear arsenal.

- 2001: The September 11, 2001 terrorist attacks heightened concerns about rogue states and WMD proliferation.

- 2002: The Bush doctrine put forward a controversial "preemption" approach that went beyond traditional preemption against imminent threats. Observers debated whether preemption represented fully abandoning deterrence under Bush. There was no consensus it completely displaced deterrence, which still factored into strategic thinking.

- 2002: The US withdraws from the ABM Treaty, citing the need for more advanced missile defense systems to protect against potential threats from rogue states.

- 2010s: The US continues to implement a policy of proliferation deterrence and maintains a nuclear triad consisting of strategic bombers, ICBMs, and SLBMs. The US also engages in arms control negotiations with Russia, such as the New START treaty signed in 2010, and uses economic and diplomatic measures to deter nuclear proliferation.

CHAPTER 6 | FIFTH WAVE, 2010–PRESENT: WORKING THROUGH INTEGRATED, HYBRID MODELS

"We mean, integrated across domains, so conventional, nuclear, cyber, space, informational. [It I also] integrated across theaters of competition and potential conflict [and] integrated across the spectrum of conflict from high-intensity warfare to the gray zone... integrated across our allies and partners, which are the real asymmetric advantage that the United States has over any other competition or potential adversary. [Integrated deterrence] will inform almost everything that we do."[xlvii]

– Colin Kahl, 2002

"The idea of integrated deterrence means that you are integrating across your domains. So as I'm looking at a challenge, how does cyber play into it? How does space play into it? … How do you integrate across domains? How do you integrate across the whole of government?"[xlviii]

– Mara Karlin, 2002

Key Assumptions

- Modern conflicts transcend just military domains and involve a mix of conventional and asymmetric tactics.
- Effective deterrence requires going beyond military threats to include diplomatic, economic, technological, cyber and informational capabilities.
- Adaptability to evolving threats and close monitoring of the strategic environment are crucial.
- Coordination across government and non-government groups is essential for coherent deterrence.
- Building societal and institutional resilience is key to withstand hybrid attacks.
- Information warfare and psychological operations can help counter adversary propaganda and disinformation.
- There is a blurring between peace and conflict, requiring flexible response.
- Comprehensive strategies are needed to deter evolving threats in the 21st century environment.

Summary

As the US and global environment undergoes major technological, ideological and sociological shifts, policy and practice must adapt, leading to the advent

of a new wave. However, this wave is in flux and poorly defined; as with previous eras, these tend to be defined in retrospect based on shared characteristics and trajectories. Integration, hybridity, and resilience appear to be emerging themes of the fifth wave. Integrated deterrence and hybrid deterrence are evolving approaches that move beyond solely military threats and recognize the multifaceted nature of modern conflicts.

Integrated deterrence emphasizes synchronizing military, diplomatic, economic, technological, and informational tools to deter potential adversaries. It relies on adaptability to the strategic environment and coordination across groups. **Hybrid deterrence** focuses on countering foes using both conventional and irregular tactics. It stresses flexible response, societal resilience, and information warfare. While differing in emphasis, both concepts acknowledge the blend of kinetic and non-kinetic factors in modern conflicts and need for comprehensive strategies.

Integrated Deterrence

Secretary of Defense Lloyd J. Austin III introduced the concept of **integrated deterrence**, which he has spoken about since taking office in January 2021. Integrated deterrence emphasizes the synchronization and coordination of different tools and capabilities to dissuade aggression effectively. This approach recognizes that modern conflicts often transcend traditional military domains and involve a combination of conventional and unconventional tactics. Integrated deterrence relies on:

- **A multidimensional approach** to deterring not only aggression but other unwanted actions from other state actors. Integrated deterrence goes beyond the mere threat of military force. It integrates diplomatic efforts, economic sanctions, technological superiority, cyber capabilities, credible threat of military force, and strategic communication to create a formidable deterrent posture.

- **Adaptability to and close monitoring of the strategic environment,** including evolving threats and changing geopolitical circumstances. They emphasize the ability to respond effectively to both conventional and non-conventional challenges.

- **Holistic coordination across all relevant groups,** including government agencies, military branches, and non-governmental actors, who must continually collaborate to create, implement, and monitor a coherent deterrence strategy. This coordination ensures that all available tools are employed in a synergistic manner and is, perhaps, the most challenging aspect of true integration of deterrence approaches.

Hybrid Deterrence

Another evolving approach to aggression deterrence, **hybrid deterrence,** focuses on countering adversaries that employ any combination of conventional military tactics, irregular warfare, cyber operations, propaganda, and other asymmetric methods. Hybridity acknowledges that modern conflicts often involve a blend of kinetic and non-kinetic elements, and the traditional demarcation between peace and conflict is blurred. Key features of hybrid deterrence include:

- **A continued reliance on flexible response,** which recognizes the need for a responsive and appropriate approach to adversaries who employ a mix of tactics. It involves being able to counter both conventional military threats and unconventional forms of aggression effectively.

- **Building societal and institutional resilience** to withstand and recover from various types of hybrid attacks, such as cyberattacks, disinformation campaigns, and economic manipulation.

- **Engaging in information warfare and monitoring strategic communication** to counter propaganda and disinformation, promote US narratives internationally, and conduct deep psychological operations to undermine adversaries' own stability and strategies.

While they share many similarities, integrated deterrence and hybrid deterrence are primarily differentiated by their focal priorities. Integrated deterrence focuses on the US and its allies optioning and coordinating a wide range of tools and capabilities across various domains. Hybrid deterrence, on the other hand, specifically addresses adversaries who employ a combination of conventional and non-conventional tactics, emphasizing flexibility and resilience in response. Both concepts recognize the evolving nature of modern conflicts and the need for comprehensive strategies to deter adversaries effectively.

Evolving geopolitical, environmental, and cultural factors continue to shape the fifth wave of deterrence policy.

Timeline

- 2010: New START Treaty - US and Russia sign this treaty to reduce deployed strategic nuclear warheads and launchers by roughly 30%. Builds on earlier post-Cold War arms control efforts.

- 2018: US Nuclear Posture Review - Reaffirms role of nuclear deterrence against Russia, China, North Korea, and introduces concept of "tailored deterrence" against regional threats.

- 2019: US Withdrawal from INF Treaty - The US withdraws from this 1987 treaty banning intermediate range ground-launched missiles, citing Russian violations. Led to renewed missile development.

- 2020: Extension of New START - Just before expiration, US and Russia extend New START by 5 years to 2026. Maintains caps on strategic nuclear forces.

- 2022: Russia's nuclear threats during its invasion of Ukraine - Russia engages in nuclear saber rattling as part of its assault on Ukraine, threatening consequences to the West if it intervenes. Reinforces deterrence risks.

CHAPTER 7 | CONCLUSIONS

This analysis of the evolution of US deterrence theory reveals critical insights into how frames of reference have shaped America's nuclear posture. Tracing the progression through distinct waves makes clear that deterrence approaches arose from particular geopolitical circumstances and strategic priorities. As conditions changed, so too did concepts of deterrence.

Several major ideological shifts catalyzed transitions between eras of deterrence thinking:

- 🕮 The emergence of game theory and ideas of nuclear optimism drove early Cold War massive retaliation policies and brinkmanship strategies, grounded in notions of US supremacy and rational actors.
- 🕮 Growing concerns about uncontrolled nuclear escalation led to later adoption of flexible response doctrines like MAD, based on mutuality and balance between superpowers.
- 🕮 The push for arms control and stability shifted focus to parity, proportionality, and measured escalation in the détente period.
- 🕮 Post-Cold War uncertainty increased attention on rogue states and non-state actors, requiring more tailored deterrence formulations.
- 🕮 Contemporary integration and hybridity efforts try to address multifaceted, interconnected threats through wider frameworks.

However, some limitations have endured across waves, including the reactive nature of deterrence policymaking and the potential for deterrence dominance to inhibit comprehensive strategic planning.

This analysis reveals no easy formulas for deterrence, but rather context-dependent frameworks rooted in particular perspectives. By scrutinizing the foundations underlying each wave, today's leaders can make more thoughtful assessments about the applicability of inherited deterrence ideas to current challenges. An appreciation of this conceptual evolution is vital for informed strategy moving forward.

CHAPTER 8 | GLOSSARY OF KEY CONCEPTS

brinkmanship: a strategy whereby a national power allows or forces a conflict to escalate to the point of impending disaster in order to orchestrate a particular outcome; this may be achieved through actual maneuvering, calculated ambiguity, or deception.

Term introduced: The term was introduced by Adlai Stevenson in his 1956 presidential campaign critiquing John Foster Dulles' "massive retaliation" approach under Eisenhower. [xlix]

calculated ambiguity: current US policy of keeping aspects of nuclear capabilities or strategies deliberately unclear to create adversary uncertainty; official US policy declares that the country will only pursue nuclear options under "extreme circumstances" but intentionally does not define what counts as extreme.

Term introduced: The term was introduced by Clinton administration Secretary of Defense William Cohen in a November 1998 press briefing.

coercion: the use or threat of force or punishment to compel adversaries to take or avoid particular actions; this term has been used throughout the history of warfare but takes on new meaning in the context of massive retaliation and nuclear brinkmanship.

Term introduced: The term coercion has long historical roots, but took on new resonance in relation to nuclear deterrence strategies like massive retaliation.

dissuasion: maintaining a significant military advantage over another state in order to deter it from pursuing weaponry or other attempts to gain strategic advantages.

Term introduced: The origins of dissuasion trace back to Cold War deterrence theory, but it gained renewed prominence in post-Cold War discussions of deterring rogue states and terrorists from obtaining WMDs. The 2018 US Nuclear Posture Review contains a definition.

doomsday machine: a hypothetical device that would automatically trigger nuclear retaliation in response to an attack.

Term introduced: Herman Kahn discussed the concept extensively in his 1960 book On Thermonuclear War. It was further popularized by the 1964 satirical film Dr. Strangelove.

extended deterrence: threat of nuclear response to aggression directed at an ally power and/or assurance of protection for allies as a deterrence for nuclear and other aggression.

Term introduced: Extended deterrence emerged as a term in the 1950s in relation to America's strategy of deterring Soviet attacks

against NATO allies by threatening nuclear retaliation.

flexible response: foreign policy that allows a proportional and measured response to aggression in an attempt to account for emerging technologies of warfare.

Term introduced: Flexible response was introduced by John F. Kennedy's administration in 1961 as an alternative to Eisenhower's massive retaliation approach.

game theory: mathematical strategy in a two-party, zero-sum game; in application to nuclear deterrence, used to refer to the process of rational decision making in warfare.

Term introduced: Game theory was introduced in the 1944 book Theory of Games and Economic Behavior by mathematicians John von Neumann and Oskar Morgenstern.

hybrid deterrence: a combination of conventional, nuclear, and new approaches to deterring aggression; this contemporary approach attempts to account for a complex, interconnected security environment.

Term introduced: Hybrid deterrence emerged as a term in the late 1990s and early 2000s in response to new threats in the post-Cold War security landscape. The term seems to have origins in the late 1990s writings of scholars like Sean Kay and Kalypso Nicolaidis, who discussed the need for a coordinated EU deterrence strategy mixing hard and soft power.

integrated deterrence: Emphasizes the need for various elements of national power in deterrence posturing, including economic, diplomatic, and cyber capabilities. These elements of deterrence capital work together to deter potential adversaries.

Term introduced: The term was introduced by Undersecretary of Defense Colin Kahl in 2022.

limited retaliation: a component of a flexible response policy that involves responding to an attack with a proportionate, limited use of force to signal resolve and credibility without escalating to massive retaliation.

Term introduced: The concept of limited retaliation gained prominence after a 1989 article by nuclear deterrence scholar Robert Powell titled, *Nuclear Deterrence and the Strategy of Limited Retaliation.*[1]

massive retaliation: Aggression is best deterred when our enemy believes we will respond vigorously in places and with means of our own choosing. Over time, this term has come to refer to the threat of disproportionate nuclear retaliation.

Term introduced: John Foster Dulles first used the term in a 1954 speech while serving as Secretary of State under Eisenhower. [li]

mutual assured destruction: tactic used to deter nuclear warfare by suggesting that if two nuclear powers engage in a full-scale conflict, both sides will incur catastrophic, disproportionate destruction. This concept derives from the mathematical concept known as Nash equilibrium which suggests that nuclear powers have no incentive to disarm or to initiate nuclear conflict.

Term introduced: Military analyst Donald Brennan coined the term MAD in a 1971 New York Times article. Brennan himself was opposed to the MAD philosophy and critiqued it heavily in the aforementioned article.

no first use: an official pledge or policy stating that a country will not use nuclear force except in retaliation to nuclear force.

Term introduced: China first declared its no first use policy when it obtained nuclear weapons in 1964.

nonproliferation: actions and strategies used to stop the creation or transfer of nuclear weapons and associated technologies to non-nuclear nations or non-state actors.

Term introduced: Nonproliferation gained prominence through the work of scholar George Perkovich in the 1990s.

non-interference: the concept of refraining from intervening in the internal affairs of other sovereign states; in the context of nuclear deterrence.

Term introduced: Non-interference has long historical roots, but was referenced in clarifying US non-intervention before WWII and became part of the UN Charter.

nuclear optimism: Nuclear proliferation makes war less likely because of the massive risk of initiating conflict with nuclear-bearing powers.

Term introduced: First articulated in Jacob Viner's 1946 presentation to the American Philosophical Society[lii]; later popularized by Waltz (1981).[liii]

offensive realism: theoretical perspective suggesting that states are primarily motivated to increase their own power and security and will pursue aggressive policies, including nuclear proliferation, to these ends.

Term introduced: Outlined by scholar John Mearsheimer in his 2001 book The Tragedy of Great Power Politics. [liv]

peace through strength: the notion that keeping a robust and credible military force, particularly in terms of nuclear weapons, might help ward off possible foes and advance world peace and stability.

Term introduced: The phrase has ancient origins, [lv] but gained renewed prominence in the 1980s associated with Reagan's foreign policy.

preemption: taking preventative action against an adversary to counter an imminent threat or anticipated attack; intended to neutralize the threat.

Term introduced: Preemption came into focus during the 1967 Six-Day War between Israel and neighboring Arab states.

rogue state deterrence: Deterring rogue states, also known as rogue state deterrence, refers to the strategic initiatives taken by the international community, particularly great powers, to stop hostile or destabilizing behavior by nations that are referred to as "rogue states."

Term introduced: Rogue state deterrence emerged as a phrase in the 1990s in response to worries about WMD acquisition by certain states.

self-deterrence: in the context of nonproliferation, refers to a nation's decision not to pursue nuclear weapons development.

Term introduced: Proposed by scholar Donald W. Snow in a 1986 paper on nuclear dynamics and deterrence theory. [lvi]

tailored deterrence: the approach of customizing deterrence strategies to aggressors based upon their capabilities, culture, circumstances or other factors that may be unique to them.

Term introduced: Tailored deterrence entered the lexicon with the George W. Bush administration's post-9/11 foreign policy approach.

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