How States Muddle Through Deterrence Strategy

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Abstract: *There is wide agreement that the nuclear deterrence strategy pursued by the United States is irrational. Under the rational process a state should have recognized the logics of mutual kill and prioritized a strategy of deterrence by punishment with a force only capable of a secure second strike. Instead, the United States has continually prioritized a superiority strategy premised on counterforce and the logic of deterrence by denial. Despite this diagnosis, very few, if any, studies have attempted to fully interrogate the decision-making process that led to irrational policy. This study attempts to do just that by centering itself on the concept of empirical uncertainty. Empirical uncertainty means that all theories of deterrence untested in the real world. Without concrete evidence upon which to guide their policy choices, policymakers fall back on a process of muddling through where they select goals and strategies familiar to them. In the case of the United States it's initial thermonuclear deterrence strategy was formed in the first year of Eisenhower administration under a muddled process. The National Security Council and applied the familiar goal of absolute victory and superiority strategies premised on deterrence by denial to thermonuclear weapons and developed a strategy based on counterforce and a policy of massive retaliation. This overly aggressive policy instigated a security dilemma that continues to endanger the world to this day.*

Introduction

Do great powers, specifically the United States, adopt deterrence policies generally understood by theorists to be rational?[1] Put another way does the chosen deterrence strategy of the United States match with the predictions produced by a robust theory based analysis of nuclear strategy? Given the high stakes of nuclear deterrence it would be reasonable to expect

[1] Obviously, the term rational is loaded. However contentious the use of a largely undefined term may be, it is the term used in the literature this paper attempts to contribute to; used extensively by Jervis and Glaser in identifying so called irrational policies to say nothing of how Mearsheimer and Rosato use the term.

that deterrence strategy would be among the most carefully thought-out policy choices made by a state and should result in what analysts would consider to be a rational deterrence policy. The United States, however, has been identified as having adopted an irrational deterrence policy by theorists. This assessment is nearly uniform, regardless of the theoretical school interpreting the nuclear revolution. Nuclear theorists spent much of the Cold War bemoaning what they saw as an obviously irrational policy out of line with their understanding of the nuclear revolution.[2] Defensive realists such as Charles Glaser and Robert Jervis, whose theories form the theoretical core of this paper argued that the United States had irrationally and dangerously gone beyond the requirements of minimum deterrence.[3] But why?

The dominant explanation for the irrational policy of the United States is a domestic politics argument. Robert Jervis argues that political incentives encourage the party out of power to criticize the current policy as endangering America. Similarly, Jervis also argues that analysts are incentivized by their job descriptions to identify weaknesses in strategy and formulate remedies.[4] On the surface, both of these pathways can plausibly lead to a strategy of excess but Jervis does not interrogate them further. Charles Glaser, using similar reasoning to Jervis, argues that the United States has a political will for victory in nuclear war that is incompatible with a rational deterrence strategy.[5] For both Jervis and Glaser the will to victory in part stems from a political narrative focusing on returning to a perceived lost era of superiority against the Soviet Union. Because the American public believes in a return to superiority and victory in nuclear war

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[2] Kahn, *On Thermonuclear War*; Jervis, *The Meaning of the Nuclear Revolution*; Jervis, *The Illogic of American Nuclear Strategy*; Glaser, *Analyzing Strategic Nuclear Policy*.
[3] Jervis, *The Meaning of the Nuclear Revolution*; Jervis, *The Illogic of American Nuclear Strategy*; Glaser, *Analyzing Strategic Nuclear Policy*. Glaser, *Rational Theory of International Politics*.
[4] Jervis, *The Illogic of American Nuclear Strategy*, 165.
[5] Glaser, *Analyzing Strategic Nuclear Policy*, 227.

and because political leaders and analysts are incentivized to decry existing policy as weak, the United States have chosen an irrational deterrence policy.

On the surface this explanation can appear logical and does likely get some things correct. It, however, has empirical shortcomings, ignores the potential that strategy influences public perceptions, and broadly lacks theoretical depth. Empirically we can see latent popular support for a safer nuclear strategy and popular aversion to nuclear weapons.[6] There is a well-documented public interpretation of nuclear weapons as a negative whose use is ultimately unconscionable. For examples of this type of thought, see U.S. positions on and popular support of nuclear non-proliferation and disarmament. It would then stand to reason that some political entrepreneur in the United States could have proposed a radical pivot to a rational policy of a secure second strike if domestic politics were truly guiding strategic policy. Instead, political disagreements around nuclear strategy have taken place in a smaller arena defined and limited by pre-existing American strategy that has largely remained unquestioned since its formation in the early 1950s. The debates have not focused on the whole spectrum of viable deterrence strategies but have limited themselves to the area surrounding a strategy of massive retaliation premised on deterrence by punishment and the possibility of victory.[7] While, domestic political debates have focused on specific weapons programs such as SDI, they have not attempted to address the thrust of American grand strategy set down in the 1950s which has remained a constant.

Furthermore, Glaser and Jervis do not undertake a robust interrogation of how policy is formed in the real world. Their domestic political arguments are inherently weak because they are only able to briefly point to surface level causes of irrational policy. They do not develop any

[6] Tannenwald, "Stigmatizing the Bomb - Origins of the Nuclear Taboo"; Tannenwald, *The Nuclear Taboo*.
[7] Jervis, *The Illogic of American Nuclear Strategy*, 20.

thicker logical coherence of how policy was formed amid the unique characteristics of the nuclear era. Their arguments identify popular goals that may have affected minor policy choices but do not offer clear mechanisms as to how political goals have directly influenced strategy. Nor do they offer any argument as to how popular pressure directly forced the U.S. to act irrationally via detailed pathway that interrogates the actual process of state decision making. This paper attempts to bring theories of decision-making to the center of understanding irrational nuclear policy. By intentionally interrogating the gap between theory and practice, irrational deterrence policy can be understood as the product of a decision-making process characterized by muddling through amid paralyzing empirical uncertainty. Given the impossible task of fully considering the full breadth of nuclear theory with zero empirical evidence, policy makers muddle through and rely on familiar policies and strategies to achieve ill-advised but familiar goal of victory in nuclear war.

There are two components of this argument. The first is empirical uncertainty and the unique challenge it poses for nuclear strategy and theory. As John Mearsheimer and Sebastian Rosato argue, theories used in rational decision-making are generally considered valid if history has proven them correct.[8] This is impossible for the nuclear era. Theories of nuclear deterrence have, thankfully, remained untested as deterrence has never failed and no nuclear war has ever been fought.[9] There are very few other arenas, and none with as high of stakes as nuclear deterrence, where empirical uncertainty has deprived decision makers and theorists alike of empirical evidence upon which to do their jobs. Empirical uncertainty is arguably the central feature of decision making in the nuclear era and underwrites much of the compromised

[8] Mearsheimer and Rosato, *How States Think*.
[9] It could be argued that because deterrence has never failed we know what is effective but at best this is uncertain validity. This is an especially problematic assumption given the theoretical danger of a maximalist strategy.

decision-making process that leads to an irrational deterrence policy. The second key concept is the theory of muddling through which argues decisionmakers cannot ever conduct a truly robust and complete theoretical analysis. Instead, they start with a few familiar policy options and choose a few priority values which dictate the final choice while disregarding all other values.[10]

It is the dual features of empirical uncertainty and a muddled decision-making process that explain why the U.S. adopted an irrational deterrence policy. During the first few months of the Eisenhower administration in 1953 decisionmakers in the United States were tasked with solidifying U.S. strategy for the thermonuclear era. Because of empirical uncertainty nearly all strategic options were nominally valid under this test. Faced with the impossible task of fully interrogating the revolutionary logics of the thermonuclear era without empirical evidence to aid them, the Eisenhower administration fell back on a process of muddling. America's misguided deterrence strategy was formulated using the values and goals familiar to military decisionmakers; those of conventional warfare. The resulting irrational strategy prioritized numerical superiority, deterrence by denial and outright victory; values familiar to decisionmakers but utterly inappropriate for the thermonuclear world.

Theory of the Nuclear Revolution

Under the theory of the so-called nuclear revolution, it is widely assumed that nuclear weapons fundamentally changed military strategy and international relations. From this basis key theorists argue that a rational deterrence posture entails nothing more than a secure second-strike force. The first principle upon which these authors base their arguments is the impossibility of victory in war.[11] In the past wars entailed mass death on both sides but one victor was able to

[10] Lindblom, "The Science of 'Muddling' Through."
[11] Robert Jervis, *The Meaning of the Nuclear Revolution*, 4-8.

destroy or pacify the other side. With nuclear weapons both sides risk total destruction even if one clearly has the conventional advantage and is close to destroying their enemy. This is the concept of mutual kill. A secure second strike ensures that even a nation facing imminent conventional defeat can launch a nuclear strike and inflict equivalent pain on the imminent victor. The classic example is if Nazi Germany possessed a thermo-nuclear arsenal of twenty or fewer weapons at the end of WWII. The allies would have thought twice about invading if it meant the total destruction of their cities as it would have been nearly impossible to confidently destroy these few weapons to precede an invasion.[12] This is perhaps the most significant fact of the nuclear age overlooked by the United States; victory in nuclear war was always treated as possible in at least some regard.

If you cannot win a war, it is rational then to prevent one from occurring by leveraging the overwhelming consequences of a nuclear strike. This is deterrence. States should use the threat of retaliatory destruction to discourage adversaries from even contemplating an attack. Thomas Schelling said deterrence is to "to prevent from action by fear of consequences."[13] There are two broad categories of deterrence; deterrence by denial and deterrence by punishment.[14] Neither type of deterrence is wholly new, but each take on new meaning and relevance in the context of the nuclear world. Deterrence by denial is classic in strategy and holds that states are deterred by the prospect of being unsuccessful or defeated in their attack and it encourages the states to adopt a superiority strategy. In theory at least this is not so much a problem in nuclear

[12] This is obviously a hypothetical as the United States only had maybe one extra nuclear weapon by the time Japan surrendered in august 1945. It also assumes there was a chance the weapons were deliverable.
[13] Thomas C. Schelling, *Arms and Influence*, 35 and 71.
[14] Jervis, 9.

strategy as states, with secure second-strike capabilities, are incredibly unlikely to fail at a nuclear attack no matter what capabilities an adversary possess.[15]

Nonetheless, within the U.S. there have been two historic strategies for superiority and deterrence by denial; missile defense and counterforce.[16] Missile defense, most notably the so called "star wars" program of the Regan era, besides its technological infeasibility has many of the same problems as counterforce in that the certainty required for it to reap any benefits is so high as to be impossible.[17] The other, dominant, strategy for superiority in the United States has been counterforce. Counterforce represents a deterrence by denial and superiority strategy essentially dependent of the United States striking first and completing something near a splendid first strike. From a theoretical perspective counterforce, arguably as well as missile defense, operate under the logics of deterrence by denial. Counterforce strategists believe that the only way to prevent a nuclear attack is having the capability to deny it, most plausibly by destroying the entirety of an adversary's arsenal before it can be deployed against you.

Counterforce has numerous obvious issues, even beyond its theoretical impossibility. First, it is premised on the United States winning a nuclear war by striking first as there is no plausible path to victory if an adversary already launched a countervalue attack. This fact then incentives U.S. leadership to escalate to the nuclear option in a crisis and creates a dangerous and high-pressure situation where misperception could be deadly. The inverse is also true, counterforce creates an immense incentive for an adversary to escalate out of a perceived fear of a splendid first strike and strike preemptively in a crisis under the logic of use it or lose it. If and adversary lets a crisis escalate to the point where the United States attacks first, they lose.

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[15] Ibid.
[16] Ibid.
[17] Ibid among others.

However, if they attack and destroy the U.S. ability to conduct a splendid first strike the world returns to the equilibrium point of MAD.[18] However, in the process of returning to MAD a nuclear war has begun and it is unlikely, but ultimately unknown, that the escalation would stop there. Logically after a counter-counterforce strike by an adversary as U.S. leaders would not wait until the dust had settled to retaliate. Outside of a crisis the obvious risk of a counterforce based superiority strategy is that it encourages a security competition which risks destabilization and great expense for literally no gain in times of crisis. The truly revolutionary form of deterrence for the nuclear age is deterrence by punishment.

Deterrence by punishment, similar to the concept of mutual kill, hinges on the ability and implicit threat to grievously hurt an adversary. To hurt someone is to destroy something they value and a deterrence by punishment strategy is often called a countervalue strategy. For a state this is generally its cities; after all what is a state without its people? In theory a state should go to great lengths to avoid this type of harm and should not contemplate a nuclear attack on another, if the opposing state signals correctly.[19] In the case of protecting the homeland, signaling is not complicated and is often taken for granted. However, when states want to "extend" deterrence to allies, as the U.S. does, or to occupied or unrecognized territories, as Russia has attempted; the challenge is greater and requires more diplomatic skill to signal a potential you would have a nuclear respond. Arguably, it does not take a significant amount of signaling to create enough uncertainty in the mind of an adversary given the overwhelming cost of a nuclear attack. A nuclear attack will be met with a nuclear response likely to destroy what the values most, its population and territory. The challenge is for states to properly identify the sweet spot

[18] Glaser, *Analyzing Strategic Nuclear Policy,* 138-40.
[19] Schelling, *Arms and Influence,* 3.

of deterrent forces. Too small a force, if such a thing exists, and deterrence may not function. Too large a force and it signals aggressive intentions and destabilizes the international system.

Defining a Secure Second Strike

The above outline of basic nuclear deterrence theory makes one thing painfully obvious; the importance of a secure second strike to a rational state. Without one none of the predictions of the nuclear revolution can function. If an adversary can, with perfect certainty, destroy all of a state's nuclear weapons, in a so called splendid first strike, then it can then wipe out the weapons and act without fear of their own destruction. In essence the logic of mutual kill is negated, and victory becomes possible once again. Luckily for states, theorists have established that because of their immense destructive force, the uncertainty that any number of weapons survive should deter an attack. Nuclear weapons have such high costs that the certainty of a counterforce strike would need to be impossibly high for a state to consider it as perfect information and confidence are a literal impossibility. Kenneth Waltz explicates the theoretical value and functional importance of nuclear uncertainty in a secure second strike. "To have second-strike forces, states do not need large numbers of weapons. Small numbers do quite nicely… The requirements of second-strike deterrence have been widely and wildly exaggerated." and "The effectiveness of nuclear deterrence rests on uncertainty."[20] Waltz argues that while states may believe stalemate has not set in, they cannot ever be sure that they would actually be able to destroy the entirety of even a small force because they lack perfect information.[21] Even a small chance that a handful of warheads will survive should deter an adversary because the cost of even a minor counterforce

[20] Scott Sagan and Kenneth Waltz, "*The Spread of Nuclear Weapons*," 99-100. I would add I agree with the logic of Waltz's argument but would not consider arguing it means every state should be nuclear.
[21] An interesting take on this claim is that even a state with latent nuclear capabilities, Japan say, is enough of a threat to deter an attack because there is a chance that the state could still have the resources to cobble together a nuclear weapon after an attack to return fire some months later.

error is catastrophic; major population centers would be decimated almost ensuring collapse of their society and something approximating state death.

Further supporting Waltz's theoretical line of argument Charles Glaser, writing in the late 1980s says "Because the prospects for removing the Soviet assured destruction capability are so slim (and the programs so expensive), the burden of proof must lie with the advocates. They face a seemingly overwhelming challenge: the Soviet Union can afford to deploy very large numbers of nuclear weapons; cities are easily destroyed by these weapons and there are a relatively small number of U.S. cities."[22] His argument is the reality is such that the United States could not conceivably achieve any amount of viable counterforce against the Soviet Union, or likely any modern enemy, that the small number of weapons needed for assured destruction are likely to survive and there cannot be certainty that enough will be destroyed for a political leader to initiate an attack intended to destroy a state's second strike capability.

The Irrationality of the United States

Despite the strength of the rational predictions derived from the theory of the nuclear revolution, they have not been played out in reality. This paper contends that it is the United States that must be acting irrational. It would, however, be a mistake to not address the alternative claim that the theory might be incorrect. Kier A. Lieber and Daryl G. Press follow this alternative line of reasoning in their book *The Myth of the Nuclear Revolution.* They argue that theories advocating a secure second-strike strategy must themselves be incorrect. They assume that because of the immense stakes of nuclear war the U.S. must be acting rationally or close to it. From this baseline assumption they challenge the rational deterrence strategy predictions

[22] Glaser, *Analyzing Strategic Nuclear Policy*, 35.

made by defensive realists. The problem with their argument is two-fold. First, they do not factor in empirical uncertainty and assume states possess an innate understanding of the nuclear world despite evidence pointing to the fact that states are acting just as blind as any other actor. The second issue is their characterization of stalemate as difficult to achieve despite the fact that the destructive force of nuclear weapons ensure it is relatively easy, as Waltz among others have argued.

Apparently, in their policymaking process states have miraculously recognized some feature of the nuclear revolution missed in robust theoretical analysis. Lieber and Press attack what they have identified as the key feature of the era, stalemate, and mutually assured destruction. In their view stalemate fundamentally does not function as the optimistic predictions require it to.[23] According to the authors states appreciate what many theorists do not; stalemate can be broken and when it is broken, the reward is immense.[24] In their account there is a clear logical path and obvious incentives to escape the condition of stalemate in the form of counterforce investment and development. This incentive explains the centrality of arms racing to the Cold War; both the USSR and U.S.. The stalemate that emerged between the U.S. and USSR around 1960 was, according to them, not invincible and both sides, but especially the U.S., were incentivized to break stalemate to provide a realistic strategy for victory, an already misguided goal.[25]

The claim that there is a strong incentive for states break stalemate is on the surface logical and backed up by state behavior. A state should pursue any strategic advantage available to it. However, this denies the impossibility of breaking stalemate and the political consequences

[23] Lieber and Press, *The Myth of the Nuclear Revolution*, 25.
[24] Lieber and Press, 92.
[25] Lieber and Press, 67.

of pursuing a superiority strategy aimed at breaking stalemate. As Waltz, Jervis and Glaser have argued a successful deterrence strategy only needs to focus on a counter value mission. All that is necessary for an effective counter-value mission is a secure second strike where some small but indeterminate number of weapons would potentially survive a first strike. Liber and Press, and others who argue for more than a secure or even plausible second-strike capability, cannot answer the core question of how a state will ever have the certainty of absolute one hundred percent success to even contemplate attempting a splendid first strike. The risk is simply too great. Despite Lieber and Press arguing the United States had the strategic upper hand at multiple times during the Cold War, there is no evidence that the U.S. ever even considered a splendid first strike as being a remote possibility.

Besides being ineffective, pursuing a counterforce based strategy is irrational and dangerous which makes unforgivably irrational. According to the dynamics of a classic security dilemma; anything intended to act as counterforce runs the risk of signaling malign intentions to an adversary. The malign intentions would be interpreted by the adversary as decreasing their security and begs them to respond in kind.[26] If counterforce was known to be effective maybe this signaling would be, on balance, worth it. However, it is not effective given the technical and theoretical difficulty in confidently and perfectly destroying an adversary's arsenal, outlined above. This leads Glaser, like Jervis, to argue that a secure second strike operating under a stable MAD is the best the United States can hope for.[27] Irrationally pursuing unusable counterforce capabilities destabilizes the political situation and negates the political stability nuclear weapons can offer. As Glaser argues pursuing an irrational counterforce takes a state out of a stable world

[26] Glaser, *Analyzing Strategic Nuclear Policy*, 138.
[27] Glaser, 99, 361.

without a security dilemma into a world defined by a security dilemma. This is what happened during the Cold War which was characterized by arms racing, persistent crises and general instability.[28] So why has the United States pursued such an irrational policy?

Muddling Through and Empirical Uncertainty

To satisfactorily answer this question, the decision-making process must be interrogated as there must be some breakdown between theory and the actual formation of a deterrence strategy. To answer this question, this study relies on two theories of policy formation to guide its analysis. The first is John Mearsheimer and Sebastian Rosato's book *How States Think*. If, as they argue, policy makers, in part, look to past events and outcomes to guide their policy, the nuclear revolution is a unique situation of near absolute empirical uncertainty that has remained a permanent impediment for policymakers. In short, nuclear deterrence has never been empirically tested because it has never failed.[29] The second theory of decision making is Charles Linblom's theory of muddling through. He describes a realistic policy formation process where consequences and theory are incompletely considered in favor of policymaker biases and efficiency. I argue that empirical uncertainty and muddling through explain the failure of the nuclear revolution. Decisionmakers have no certainty about the requirements for deterrence and because they do not fully consider theory, they fall back on a muddled process from which the irrational deterrence strategy of massive retaliation emerged.

Empirical Uncertainty

[28] Glaser, 361–62.
[29] Lewis and Panda, "How Much Is Enough?"

The importance of empirical uncertainty originates in the model of rationality presented by John Mearsheimer and Sebastian Rosato in *How States Think.* To them a state is rational "if its strategy is based on a credible theory and is the result of a deliberative process."[30] For a theory to be credible it "must not only rest on realistic assumption but it must also derive a logically consistent causal story from them" and "a theory must receive evidentiary support. There must be substantial evidence on which to judge the theory, and proponents of the theory must make a plausible case that the preponderance of the evidence supports it. After all, a theory that does not mesh with actual cases cannot explain events in the real world."[31] This last part of their claim is vital to this study regardless of how theoretical states actually are. Their claim points to the problem empirical uncertainty creates for rational state action who rely on empirical evidence to guide their decision making.

Empirical uncertainty exists because a nuclear war has never been fought and so states cannot develop a clear theory backed up by empirical evidence. As a nuclear war has never been fought, deterrence has never failed and so no floor of effectiveness has been established. Without a frame of reference upon which to base their thinking policymakers cannot be sure of what constitutes adequate deterrence based on empirical evidence and must rely on some other type of evidence or process to guide them. Mearsheimer and Rosato admit this problem saying "there is an exception to the foregoing discussion. Some theories address international phenomena that have never happened, so there is no evidence against which to test them. For example, substantial bodies of theory deal with nuclear escalation and nuclear war fighting but save for the two atomic bombs dropped on Japan and the end of World War II, nuclear weapons have never

[30] Mearsheimer and Rosato, *How States Think*, 7.
[31] Mearsheimer and Rosato, 45-46.

been employed in wartime. Nor has there been a large-scale conventional war between two nuclear-armed states that might have escalated to the nuclear level… In such instances, judgments about a theory's credibility rest largely on whether its assumptions are realistic, and its causal logics is sound"[32] They say nothing more on the subject, but it is clear, then, that states in the nuclear era are working blind empirically; relying on an infinite number of plausible theories and courses of action with no empirical evidence to back them up and make the winnowing process easier.[33]

A Theory of Muddling Through

According to the argument provided by Mearsheimer and Rosato policymakers should, fall back on robust theoretical analysis not unlike the ones Glazer and Jervis conducted. However, we know that this did not happen in the United States given its irrational deterrence strategy.[34] Charles Lindblom and his theory of muddling through provide a likely explanation of the process actually used by the United States to form its deterrence strategy. The theory, which was established in the 1959 article "The Science of 'Muddling' Through," was designed to be a theory of bureaucratic decision making. Muddling through has an obvious application to the present puzzle of the nuclear revolution as an obvious and fitting alternative to the comprehensive and deliberative model of rationality presented by Mearsheimer and Rosato.

Lindblom argues that the ideal form of decision making would require decisionmakers to first create a list of all values and then order them based on desirability. The second step is to

[32] Mearsheimer and Rosato, 48.
[33] Mearsheimer and Rosato, 58.
[34] Mearsheimer and Rosato would probably counter the identification of U.S. deterrence policy as irrational on two grounds. Within their theory they would argue it is a rational strategy because nothing empirically disproves it and they would argue there was deliberation and robust theoretical analysis. This is a cop out answer and as we will see the process of choosing the irrational policy was far from ideal under their model.

evaluate every possible policy against this list of values and "determine which attains the greatest amount of values."[35] Lindblom's ideal model is not dissimilar to the model of rationality presented by Mearsheimer and Rosato. Both models expect decisionmakers to methodologically evaluate their possible policy choices in relation to their hierarchy of goals by utilizing various theories they hold to be valid.[36] Lindblom, unlike Mearsheimer and Rosato, understood the problem of this model; the sheer impossibility of a comprehensive consideration of all policy and theory that these idealized models expect, especially under empirical uncertainty.

Lindblom argues that the ideal model "assumes intellectual capacities and sources of information that [humans] simply do not possess, and it is even more absurd as an approach to policy when the time and money that can be allocated to a policy problem is limited, as is always the case."[37] In a world of scarce resources it would be naïve to assume that individuals or states evaluate all theories or policy options when making decisions as there are near infinite possible combinations and marginal variation to say nothing of the gap between simplified theory and infinitely complicated reality. Lindblom further argues that the ideal model expects people to be able to put aside their preexisting biases and preconceptions when evaluation a theory or policy which only adds to the challenge and resource intensive nature of this model. In the case of the nuclear revolution the ideal policymaking mechanism is made even more difficult by the fact that empirical uncertainty ensures that policy makers cannot accumulate any truly valid information with which to make decisions.

Mearsheimer and Rosato would counter an argument in favor of an imperfect decision-making process by arguing that the stakes of deterrence are so high states must use the perfect

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[35] Lindblom, "The Science of 'Muddling' Through," 79.
[36] Lindblom, "The Science of 'Muddling' Through"; Mearsheimer and Rosato, *How States Think*.
[37] Lindblom, "The Science of 'Muddling' Through," 80.

process and will be justified in expending resources towards this goal.[38] First, this assumption is not true in the case of U.S deterrence strategy formation, as the empirical record shows. Second, even if it might be reasonable to utilize the idealized process for a decision with such immense stakes, the reality is that remains impossible because of empirical uncertainty. Arguably historical cases function as rational shortcuts to allow policymakers to eliminate large swaths of the spectrum of potential policies. Without this vital winnowing step, the required resources to evaluate potential policies are impossible to develop. Furthermore, as Lindblom argues, decisionmakers regularly shortcut full consideration unconsciously, being unaware of the values and consequences they are ignorant of.[39]

Instead of the impossible ideal process of decision making, Lindblom argues that decision makers will undergo the imperfect process of "muddling through" which he also calls "successive limited comparisons."[40] The first step in the process is to decide on one or a small set of principal objectives or values that become the focal point for policy makers while disregarding all other values. This first step is often unconscious as policy makers wholesale exclude all other considerations in favor of what they know. In the second step, obvious policies to achieve these goals are considered. The policies are based not in robust theory, but in experience of previous policy choices and other obvious iterations on what they know. The process simplifies from the ideal process in two important ways. First policy comparisons are limited to only those that differ slightly from the policy currently in effect or what is familiar to policymakers. Second policymakers ignore important possible consequences of possible policies as well as the values associated with those consequences because they cannot practically think through all the possible

[38] Mearsheimer and Rosato, *How States Think,* 13.
[39] Lindblom, "The Science of 'Muddling' Through," 80.
[40] Lindblom, "The Science of 'Muddling' Through."

consequences.[41] It even becomes possible for a policy chosen to accomplish certain ends to actually have the opposite effect. In effect there is no consideration of values outside of the final policy decision which simultaneously selects a policy and its associated values but the decisionmaker is only cognizant of their focal point value and no others.

The muddling through argument provides an obvious answer to the puzzle of irrational nuclear deterrence strategies. It is very straightforward to outline a muddling through hypothesis for why the nuclear revolution failed. In the first step of muddling through, a limited objective is chosen and others are abandoned. Policymakers may have prioritized a familiar goal for their deterrence strategy; victory while ignoring geopolitical stability and the avoidance of a security dilemma. Victory, already an irrational goal, was defined in narrow militaristic terms familiar to policymakers used to the principles of deterrence by denial. These goals and values when incompletely considered led to the adoption of an irrational counterforce strategy premised by the familiar logic of deterrence by denial. In another sense, policymakers ignored or could not rationalize what was unique about the nuclear era and chose from a list of policies familiar to them. Because conventional military deterrence by denial calls for the strongest feasible force possible massive retaliation was selected. This policy selection flies in the face of a robust theoretical consideration of the nuclear reality but because policymakers had no empirical evidence telling them otherwise the product of their muddling through was irrational.

Lindblom argues that an advantage of the muddling through method is that it naturally incorporates iteration. He argues that because policy is re-made endlessly, policymakers can look at previous policy choices and their outcomes to establish some empirical basis for continued

[41] Lindblom.

iteration. This is an impossibility for deterrence strategy. The durability of irrational policy can only be understood amid continuing empirical uncertainty. Because deterrence has never failed policymakers have not been forced to make a course correction as Lindblom might have expected. In other words, despite the obvious dangers and risks of escalation, the objective choices made by the United States in the 1950s have never been called into question, thankfully, by a costly deterrence failure. Because the failure of deterrence strategy is generally interpreted to mean nuclear armageddon; the fact it has not occurred can be interpreted by states to means their deterrence strategy is valid despite all the negative political and security risks created by this strategy.

Empirical Section

The task facing U.S. policy makers in the early stages of the nuclear era is not enviable. As thermonuclear weapons developed and the Soviet Union gained a retaliatory capability over the course of the 1950s, tough decisions had to be made. Highly qualified individuals, fresh off winning the Second World War, had to adapt their conceptions of national security and defense to the new logics of the nuclear era. Unlike in previous technological transitions there was no real precedent for thermonuclear weapons and there was no quick development of empirical evidence upon which to guide their strategic decisions. And so, it is not surprising a muddling process emerged that favored conventional logics of superiority and victory when faced with insurmountable empirical uncertainty. The basic concepts of the nuclear revolution were foreign, untested and a radical departure from the concepts that had won the United States the Second World War and so an irrational policy emerged premised on victory and deterrence by denial.

Arguably the first eight years of the nuclear era should not showcase decision-making in agreement with the predictions of the nuclear revolution. This is because the core logic of mutual

kill could not function until the development of thermonuclear weapons by both the United States and the Soviet Union. Conventional atomic weapons like those dropped by the United States on Japan are immensely powerful with the explosive equivalent of 20 kilotons of TNT, their destructive force was not enough to rule out the importance of precise targeting and their number.[42] The United States, the only state with an appreciable atomic arsenal from 1945-50, could not have relied on the delivery of a just a few nuclear bombs to defeat an enemy like the Soviet Union, instead a nuclear attack would have resembled a version of the strategic bombing campaigns of World War Two just with more powerful bombs.

Thermonuclear weapons are what made the logic of mutual kill and principle of deterrence by punishment function which should have made the nuclear revolution a reality, at least in theory. These weapons use a regular fission bomb to set off a much higher energy fusion reaction and have yields of one or more megatons of TNT, with the first test of a thermonuclear weapons in 1952, Ivy Mike, having a yield of 10 MT.[43] For reference the Killian report claims that all high explosives dropped on Nazi Germany during World War Two added up to three megatons. So, at the latest by August 1953, when the Soviet Union tested its first thermonuclear weapon, the writing was on the wall; mutual kill was the new reality. This fact was not lost on strategists within the United States who, nonetheless, struggled to reconcile conventional military logics and concepts of limited war with the reality of mutual kill.

It was then the first year of the Eisenhower administration during 1953 and 1954 that the United States created its baseline national security policy in consideration of these weapons developments. The new administration entered office with the explicit goal of reorienting U.S.

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[42] Trachtenberg, *History and Strategy*, 4–6.
[43] *Foreign Relations of The United States, 1955-1957, National Security Policy, Volume XIX,* Document 9.

national security policy under the "new look" program at the very same time that new and revolutionary weapons became available and required integration into strategic planning. Furthermore, their chosen strategy would, as was argued by Jervis, come to form the baseline of all U.S. policy contrary to the predictions of the nuclear revolution.[44] The field within which U.S. nuclear strategy has continued to be defined through the present was set in 1953. While the term "massive retaliation" quickly faded from the lexicon of U.S. strategy; the core values of American strategy did not change from the baseline set by the Eisenhower administration. The strategy has retained a focus on superiority via deterrence by denial and on hypothetical victory in nuclear war. Once they were set, the United States has not seriously questioned them despite their seeming irrationality. It would then make sense to focus on the key moment when these choices were first made in the thermonuclear world; the first year of the Eisenhower administration and specifically the summer of 1953 as NSC 162/2, the document that established the foundation of U.S. strategy for the Cold War, was finalized under Project Solarium.[45]

The body at the core of this strategic policy making process was the National Security Council (NSC). It is composed of key political and military leaders of the U.S. government including the President and could be seen to approximate a deliberative decision-making body as predicted by Mearsheimer and Rosato in structure only. The policy documents passed by the NSC form the baseline of U.S. security strategy and the records of its meetings provide an easy and accessible venue to look into the policy formation process. The key documents of the NSC from the Eisenhower administration, with some exceptions for classified material, are readily available both in the Foreign Relations of the United States (FRUS) series and in a dedicated

[44] Jervis, *The Illogic of American Nuclear Strategy*, 14.
[45] Trachtenberg, "A 'Wasting Asset.'"

archive of documents released at the end of the Cold War. During its first year in office the Eisenhower administration formulated NSC 162 which would form the basis of American Cold War strategy. NSC 162 evidenced the thinking that would dominate the national security apparatus and lead to decades of what Jervis and Glaser identified as irrational strategy.[46]

NSC 68, agreed upon by the NSC April 15, 1950, during the Truman administration, represents the key strategic policy document in place at the beginning of the Eisenhower administration. It was the basis of American grand strategy from 1950-53 and had an important influence as the baseline from which the strategy documents produced by the Eisenhower administration evolved from. The document positions itself as a response to Soviet acquisition of an Atomic weapon in 1949 and as at least anticipatory of thermonuclear weapons, which it directs the United States to accelerate the development of.[47] NSC 68 outlines Soviet domination as the greatest threat to the United States and argues that the only way for the United States to stop, i.e. contain, the Soviets is via military, economic, moral and material strength.[48] When it comes to nuclear weapons, the policymakers were clearly alarmed by the Soviet acquisition of the bomb and the loss of the American nuclear monopoly years earlier than expected. They explicitly fear the possibility of "a decisive initial [atomic] attack" and argue that the only way to prevent one at the United States pursues its global policy is "overwhelming atomic superiority."[49] The overall atomic strategy outlined in the document is very much reminiscent of conventional strategic bombing with its focus on retaining a superior to destroy an adversary's capability

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[46] Jervis, *The Illogic of American Nuclear Strategy*, 14.
[47] NSC 68. The concept of a hydrogen bomb had been theorized and loosely worked on by physicists under the Manhattan project since 1941. The design and testing program of a real weapon began the following month with the first proof of concept explosion being completed the following May.
[48] NSC 68, in Kesaris et al. ed., *Microfilm Edition of Documents of the National Security Council. Seventh Supplement*.
[49] NSC 68, in Kesaris et al. ed., *Microfilm Edition of Documents of the National Security Council. Seventh Supplement*.

under the logic of deterrence by denial. The policy of NSC 68 makes sense given the purely atomic nature of weapons at the time but set the tone for future policy that acknowledge thermonuclear weapons as a reality but retain similar logics of superiority and deterrence by denial.

The key takeaway from NSC 68 is the baseline it sets for U.S. priorities against the Soviet Union. It established a nuclear strategy of superiority with the goal of victory rooted in conventional military logics. The strategy prioritized building a delivery force capable of waging a devastating air based nuclear campaign against the USSR. The goal was to deliver enough atomic bombs to decisively hinder the Soviet ability to wage war and maintain its economic productivity. The defense strategy outlined in NSC 68 was designed to prevent the USSR from conducting a similar campaign against the U.S. and its allies through conventional air defense and, importantly, U.S. superiority which was believed to leave the most room open for action.[50] At the time this was not an entirely misguided strategy as atomic weapons did not, at least with the capabilities of the time, make mutual kill truly inevitable. As such the United States could not be blamed for pursuing a strategy of victory, as it was still at least more feasible than it would quickly become.

The Eisenhower administration, inaugurated January 20, 1953, quickly began drafting a new basic national security policy cognizant of the change in strategy needed with the advent of thermonuclear weapons. The NSC files from the first month of the Eisenhower administration indicate that there was an immediate concern that along the current trajectory of increasing arsenal sizes, enhanced delivery capabilities and thermonuclear weapons an “unbearable

[50] NSC 68, in Kesaris et al. ed., *Microfilm Edition of Documents of the National Security Council. Seventh Supplement*.

stalemate" would set in between the United States and the Soviet Union once both had a secure retaliatory force.[51] The characterization of stalemate as unbearable is the first evidence of the Eisenhower NSC continuing to rely on increasingly inappropriate conventional military understandings of warfare and force structure that prioritized superiority.

Decisionmakers who were operating under Lindblom's ideal model or under an ideal model of rationality would have fully considered the policy and theoretical implications of the coming stalemate. They should have embraced stalemate as the best possible outcome and realized the preferable strategy was one of restraint and strategic stability operating under new logics of mutual kill and vulnerability. Instead, the Eisenhower administration began its policy planning process muddling and conducted an incomplete analysis using inappropriate logics which viewed stalemate as a negative outcome that strategy needed to overcome.

This muddling process continued throughout the spring and early summer of 1953 with NSC documents evidencing a continued desire for superiority and victory via forces capable of deterrence by denial.[52] In analyzing the threat the Soviet Union posed to the United States through the middle of 1955 the NSC interpreted the threat based on how it would affect force numbers and the ability for the United States achieve absolute victory.[53] In reading this report President Eisenhower raised concerns about having adequate capabilities for counterforce, and conventional defense against nuclear forces. He generally appears to have approached defending the United States from nuclear attack from a deterrence by denial perspective without

[51] *Foreign Relations of the United States, 1952-1954, National Security Affairs, Volume II, Part 1.*
[52] Foreign Relations of the United States, 1952-1954, National Security Affairs, Volume II, Part 1, Documents: 61, 53, 46, 70.
[53] Foreign Relations of the United States, 1952-1954, National Security Affairs, Volume II, Part 1, Document: 66.

considering a countervalue strategy, not unsurprising of a career military officer who had long operated under a deterrence by denial mindset.[54]

NSC 153/1, published June 1st in response to the preceding threat estimate and focused on the coming threat of thermonuclear weapons, argued the United States needed to maintain its "superiority in quantity and quality" of nuclear weapons with the aim of inflicting massive damage on the war making ability of the Soviet Union.[55] The outright goal of this policy was to deter the Soviet Union by denial rather than explicit punishment with the expectation that United States would somehow win a thermonuclear war against the Soviet Union.[56] Once again we can see the results of a muddling process; the NSC focused itself not on unearthing and utilizing the new logics of the post-thermonuclear revolution world but instead on incorporating these revolutionary weapons into their previous understandings of warfare. The goal remained victory over the USSR by the destruction of its military forces and industrial capacity rather than the preferable and rational alternative of a countervalue strategy under the logic of deterrence by punishment that appears to never have occurred to the NSC.

By mid-summer 1953 it had become clear that the Soviet Union was approaching the testing of their first thermonuclear weapon and the Eisenhower administration began to develop a new national security policy in earnest under the guise of "Project Solarium". Solarium created three different task forces, each assigned to formulate a different strategy in relation to the Soviet Union.[57] The first group was to formulate a strategy that represented the continuation of present policy, best represented by NSC 68. The second group was to focus on a strategy that drew a

[54] Foreign Relations of the United States, 1952-1954, National Security Affairs, Volume II, Part 1, Document: 70.
[55] Foreign Relations of the United States, 1952-1954, National Security Affairs, Volume II, Part 1, Document: 74.
[56] Ibid.
[57] Foreign Relations of the United States, 1952-1954, National Security Affairs, Volume II, Part 1, Document: 69.

boundary line around the Soviet Bloc with a plan to defend the line and contain "communism." The final group was tasked with formulating a strategy that was aggressive and more likely to erode "global communism."[58] In addition to needing to recalculate national security strategy for a post-parity and post-thermonuclear world, the Eisenhower administration placed significant additional emphasis on reducing the financial costs of security in the Solarium process and the formulation of what would eventually become NSC 162/2.

The final presentations of the Solarium project were delivered to the President and rest of the NSC on July 22, 1953. Study group A, the status quo group, concluded that the risk of war with the Soviet Union was low and that American military posture should be based explicitly countering Soviet capabilities, i.e. maintaining superiority as conventionally understood.[59] Study group B, focused on containing Soviets/Communism at their then current borders, argued that because preventative war was inconceivable for the U.S., the United States needed to do two things. First a boundary line needed to be clearly defined in absolute terms around the world, a politically difficult task.[60] Second the United States needed to be constantly prepared to fight and, most importantly, win a general war against the Soviets to defend any "breach" of the line.[61] Task force C, tasked to craft an aggressive strategy, delivered a radical policy of aggression towards the Soviets and the preparation for undefined, but reasonably assumed to be nuclear,

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[58] Ibid. The guidelines for taskforce C remain classified or otherwise obscured by the federal government, a frustrating but common occurrence.
[59] Foreign Relations of the United States, 1952-1954, National Security Affairs, Volume II, Part 1, Document: 80.
[60] The council raised two interesting objections to the need to strictly define a boundary. First they struggled to create a definition of the line in the hard cases of Vietnam (Indochina) and Afghanistan. Second, they could not resolve the question of if a country electing a communist government would cross the line and demand action.
[61] Foreign Relations of the United States, 1952-1954, National Security Affairs, Volume II, Part 1, Document: 80.

military action to secure western military superiority over the USSR and Communist China with the goal of ending Communism sometime around of after 1965.[62]

While the three Solarium reports were supposed to represent a spectrum of national security options, their formulation was clearly muddled and they do not, obviously, represent the full spectrum of options available to the United States in 1953. All three of them have components, when it comes to nuclear strategy, considered to be irrational under the interpretation of the nuclear revolution presented in this paper. All three of them prioritized superiority and victory in a "general," nuclear, war. All three of the proposed strategies that would have implemented policies focused on arms racing and misguided counterforce missions. The tamest proposal, A, presented itself as a continuation of NSC 68 which centered itself on maintaining nuclear superiority, as conventionally understood via deterrence by denial. Group A continued this line of reasoning that adequacy on our deterrent posture could only be determined in relation to absolute Soviet capabilities. Defining security in relation to the capabilities of the likely adversary is conventionally sound policy but in the thermonuclear era it is, as argued above, dangerous and counterproductive and continual reliance on it is strong evidence of a muddled policy. Policy options B and C relied on this same strategic assumption but took it even further away from the rational policy. This outcome makes perfect sense under a muddling model. Instead of implementing empirically uncertain and completely foreign logics that would have required immense effort to incorporate, policy makers incorporated the new weapons into their familiar values, logics and goals.

[62] Ibid. Without explicitly saying so, report C indicated that the war in Korea should be resumed, and nuclear weapons utilized in China to "destroy its industrial base."

The policy planning process after the conclusion of Project Solarium began to crystallize around the strategy of massive retaliation. In the NSC meeting records for the rest of July the conversations centered once again on the fear of an era of nuclear parity, stalemate, thermonuclear weapons and the need for the United States to maintain the perceived freedom of action it had enjoyed since the end of WWII.[63] By September the NSC approved a report as NSC 159/3 entitled "Continental Defense" that focused on defending the United States homeland from thermonuclear attack by the Soviet Union.[64] The document purported to support deterring a nuclear exchange with the USSR, an admirable goal that appears to be in line with the prediction of the rational revolution argument. There are two obvious issue, however. First is how the document clearly is relying on primarily deterring a Soviet attack by denial and counterforce while not relying on a simple secure second-strike capability to create deterrence by punishment. Secondly the document claims that the deterring force should also try to secure "war objectives." In other words, the national security council was still trying to win a nuclear war and achieve more than deterrence with America's nuclear arsenal, an argument not backed up in the theory. Again, this is obvious evidence of a muddled process.

The month of October saw the NSC draft what would eventually become NSC 162. The council and President Eisenhower reiterated their two goals for the policy; to maximally meet the challenge of the renewed Soviet threat represented by parity and thermonuclear weapons and to reduce defense costs.[65] A clear consensus emerged that only through absolute strength and superiority could the United States be secure from the Soviets and communist expansion. Along these lines the emphasis of U.S. strategy came to increasingly favor the use of the nuclear arsenal

[63] Foreign Relations of the United States, 1952-1954, National Security Affairs, Volume II, Part 1, Documents: 81, 82, 87.
[64] Foreign Relations of the United States, 1952-1954, National Security Affairs, Volume II, Part 1, Document: 92.
[65] Foreign Relations of the United States, 1952-1954, National Security Affairs, Volume II, Part 1, Document: 94.

to cover force reductions in the rest of the defense department.[66] It could be argued that the dual goals of the New Look policy, countering the Soviet threat and more efficiently utilizing a defense budget, are examples of domestic pressured guiding an irrational strategy. This line of arguing is only partially correct and misses the key steps of policy formation to enact these goals that led to the irrational policy. First it is inevitable that the goals of national security policy serve domestic public interests in a democracy. Second these broadly stated strategic goals do not lock the United States into an irrational strategy. Only because a muddled process was used to achieve these goals was an irrational policy enacted. Under a rational process a much cheaper secure second-strike force would have been established, which perversely would have greatly freed up the defense budget. As Lindblom argued ignoring obvious or counterintuitive alternatives is not surprising under a muddled process.

NSC 162/2 was adopted by the national security council on October 30, 1953. While in a number of ways it represented a departure from previous American national security policy documents in some arenas; in the nuclear realm it represented an continuation of the muddled strategy. It's nuclear policy was based in conventional military logics of deterrence by denial, missile counting, retention of the goal of winning a nuclear war and a focus on quasi-conventionalization.[67] Within the document there is a recognition of stalemate, that did not exist in NSC 68, but like much of the planning process that led to NSC 162 the focus is preventing or escaping stalemate by starting a security dilemma cycle. Instead of fully thinking out the implications of the thermonuclear revolution and the consequences of stalemate like nuclear revolution theorists and rationalist scholars might expect, NSC 162/2 is the outcome of a

[66] Foreign Relations of the United States, 1952-1954, National Security Affairs, Volume II, Part 1, Documents: 94, 97, 98.
[67] NSC 68, in Kesaris et al. ed., *Microfilm Edition of Documents of the National Security Council. Seventh Supplement*.

muddled process where new weapons were incorporated into familiar modes of thinking without a larger consideration of the rational alternatives.

The strategy outlined by NSC 162/2 and the larger policy planning process undertaken in the first nine months of the Eisenhower administration are completely at odds with the predictions of what a rational state should do. Instead of pursuing a rational policy based on a secure second strike and deterrence by punishment the Eisenhower administration inaugurated an irrational policy of pursuing victory in a thermonuclear war under the conventional logics of deterrence by denial and extracting extended, but anti-theoretical, benefits from nuclear weapons instead of focusing solely on deterring nuclear war in the first place. NSC 162/2 represents the culmination of a muddled decision-making process occurring in the shadow of immense empirical uncertainty.

As Lindblom predicted, the policymakers of the Eisenhower administration chose goals and strategies familiar to them. The primary goal was victory with a secondary emphasis on extracting traditional military benefits such as extended deterrence, and coercion over allies, and on reducing the costs of defense. With only these goals, conventionally understood, and no empirical evidence to guide them the policy makers based their strategic choices in what was familiar to them. They chose to emphasize deterrence by denial and traditional force ratios to understand the needs for meeting their goals instead of new and rational logics, goals and policies.

This empirical case study is far from definitive in explaining irrational state policy because it only looked at a nine-month period of the Eisenhower administration and only looked at the United States. We can hypothesize that because empirical uncertainty has continued to be nearly absolute when it comes to nuclear deterrence, the process of muddling has continued

relatively apace. Under Lindblom's model, the grave mistakes of an initial muddled policy should be improved upon as the muddled policymaking process is iterated and results come in to guide iteration. When it comes to nuclear deterrence policy makers are operating under continued empirical uncertainty and so when they iterate on policy, they see no issue in continuing to focus on strategic superiority and victory, using conventional logics.

By no means does this mean that American deterrence strategy has remained stagnant since 1953; there have been relatively minor changes. However, the overall focus on victory utilizing conventional logics of superiority and deterrence by denial has remained a constant which has restricted the space for change in deterrence strategy. The task for future research is to conduct similar analyses at other key moments in U.S. strategic decision making to understand how the muddling process has continued and exactly why the field was not redefined along more rational lines. The obvious candidates are the Kennedy administration post-missile crisis, Regan administration decisions leading to SDI, policy changes after the end of the Cold War and ongoing strategic changes in deterrence posture ostensibly to counter increased threats from Russia and China. The biggest challenge to these proposed studies is the fact that as the time period under study approaches the present, an increasing majority of documents remain classified. Nonetheless future work focusing on these other key moments should center empirical uncertainty at the center of the analysis and anticipate a muddled decision making process.

Similarly future work should be undertaken to look at how empirical uncertainty affected deterrence strategy formation in other countries and if those strategies were muddled as well. The obvious first country to look at is the Soviet Union who pursued an identical policy to that of the United States, more or less. The questions re then why did the Soviet Union follow the United States into an irrational policy, was their process muddled and how did the example of the U.S.

factor in to that decision? I would argue, however, the more interesting cases are non-cold war superpower states. China, for example, relied on an approximation of a secure second-strike capability for its deterrence strategy until the last decade when a major build up was initiated. Why did China change course? What about Israel's ambiguous position on even possessing nuclear weapons? Why did France and Britain move more towards a rational deterrence strategy after the fall of the Soviet Union? Similarly interesting are the dynamics of the Pakistan-India nuclear dyad and the rapid changes in both those countries strategies since 1990. Answering any of these questions with the concept of empirical uncertainty at the core of an analysis of key decision-making processes would greatly further our understanding of nuclear weapons.

Conclusion: Theory Revisited

Given the seeming simplicity of an empirical uncertainty and muddling argument to explain seemingly irrational deterrence policy, why has this hypothesis not been put forward by previous scholars? Obviously, there are innumerable potential explanations, but a few stand out. The first is that this argument is not original; it pulls from disparate sources to cobble together an answer. Some of the key pieces, Lindblom, were published in the 1950s but others were only published in last year.[68] Without all the work done by these scholars this argument could not have been pulled together. Which leads to the second point; the sheer volume of different things that can and have been written about deterrence strategy alone. Arguably because of empirical uncertainty, there has always been a lot written about nuclear strategy with little space left over for deeper analysis of actual policy. The first generation of nuclear strategists, Brodie, Schelling, Wohlstetter and Snyder among others, wrestled with the basic characteristics of the post-nuclear

[68] Two key pieces that forced the asking of this question were Mearsheimer and Rosato's 2023 book *How States Think* and Lieber and Press's 2020 book *The Myth of Nuclear Revolution* which, in my view, drew renewed attention to the problem of inexplicable deterrence strategy.

world and arguably opened more questions and paradoxes than they answered by the time theory hit "a dead end" in the 1960s.[69] The second generation of theorists, Glaser and Jervis, came about in 1980s during a renewed nuclear arms race and attempted to correct some of the excesses of early theory and strategy. They established the flaws of U.S. strategy, no small task, but did not offer a developed answer to the question of why as their attention was on theoretical disagreement. These authors, like many IR theorists, worked on theory increasingly divorced from the reality of decision-making and it is only recently that the field has returned to the question of state decision making as the key process under study within IR.

The Cold War was also drawing to a close at the same time as the publishing of *The Meaning of the Nuclear Revolution* (1989) and *Analyzing Strategic Nuclear Policy* (1991). After the Cold War ended and the "unipolar moment" began, it was no longer fashionable to study deterrence strategy and much of what was written about nuclear issues focused on non-proliferation and disarmament. With renewed global challenges and the end of the supposed "unipolar moment" it makes sense that we are currently seeing renewed interest in studies of deterrence that build on the works from the first- and second-generation Cold War nuclear scholars. The United States, China and Russia are all focused on massive nuclear modernization, and in the case of China expansion, programs that strongly echo the arms racing of the Cold War have drawn attention to the basic issue of deterrence strategy once again.

Looking at the renewed attentions states are paying to nuclear modernization and expansion I would argue that we are likely seeing the same muddled process happening again. As Lindblom argued flawed and muddled policy would quickly be fixed as the policy-making

[69] Trachtenberg, *History and Strategy, 3*.

process was iterated and the flaws of past policy became clear. Empirical uncertainty ensures that this does not occur for deterrence. Despite the theoretical dangers of pursuing any policy that goes beyond a secure second strike; the same muddling process, where nuclear weapons are factored into conventional logics because they are familiar and empirically certain, is occurring once again in the U.S. as past strategies are maintained as valid because their flaws are empirically unknown, and a major policy reset still has not been forced.

When looking beyond the U.S. it is easy to see the same muddling process happening where familiar conventional logics are applied, irrationally, to nuclear weapons under the pressures of empirical uncertainty. This fact is obvious in the rhetoric Russia and China use around their nuclear arsenals and expansion and modernization projects.[70] Arguably there are two interrelated additional factors that differentiate subsequent deterrence policy-making decisions by non-U.S. nuclear powers. The first is the apparent success of the U.S. policy initiated in 1953 already discussed. The second difference is that because the United States made the first move into an irrational policy it incentivizes all states who want to compete with the U.S. to do the same under a classic security dilemma. The choice for the Soviet Union in the 1950s and '60s and for China after the first decade of this century was to either let the United States pursue its superiority strategy and rely only on a secure second strike or, as Glaser predicted, engage in a mutual security competition.[71] Because the alternative, a secure second-strike capability, is equally unproven and unfamiliar a state can, essentially, hedge and play the game with the United States using familiar strategies. To date, no state has had the confidence in a secure second strike to counter an aggressive U.S. policy with it. Empirical uncertainty all but ensures

[70] Obviously future research should interrogate this further.
[71] Glaser, *Analyzing Strategic Nuclear Policy*.

that a great power will feel safer with a direct response to the aggressive appearing policy of the United States that plays into the security dilemma. To choose a policy relying on a secure second strike would require, with zero empirical evidence, fully considering the theoretical implications of the nuclear revolution and disregarding what appears to be a commonsense response. That is an impossible task given the stakes. China was willing to accept a secure second strike as enough until it entered a more direct security competition with the United States, and it began an arsenal expansion program to more directly compete with the United States and Russia.

What should the United States do in this situation? The simplest policy recommendation would be to unilaterally fall back onto a secure second-strike nuclear force, more in line with post-cold war French and British strategies or pre 2010 Chinese strategy and hope that this broke the security competition cycle. This is much easier said than done. Under the model of muddling, empirical evidence is the pathway for policy improvement and that pathway will likely continue to not function for nuclear strategy. While deterrence strategy has undergone changes based on minor empirical evidence, such as the Cuban Missile Crisis, the core empirical uncertainty about the requirements for deterrence has not been resolved and U.S. policy debates remained restricted to the massive retaliation/assured massive destruction area of the deterrence spectrum. Simply asking policy makers to slow down and fully consider the logics of nuclear deterrence in a method similar to Glaser and Jervis and adopt a secure second-strike strategy is unlikely to be palatable to U.S. leaders caught in a high stakes, historically precedented security dilemma.

The most likely pathway for the U.S. to pursue a more rational deterrence strategy is multilateral arms control precipitated by some deescalating move by the United States. This follows the recommendation for simultaneous cooperation and unilateral restraint to solve a

security dilemma put forward by Glaser in 1994.[72] Because states have irrationally become caught in a security dilemma the best path forward is to mutually break the cycle. Obviously, world politics more or less make bringing Russia, the U.S. and China to a table to agree on disarmament a near impossibility. A sliver of hope does exist, however, in the popular sentiment lodged in the non-proliferation movement. Since the NPT was indefinitely extended in 1995, the universal norm of non-proliferation at the highest level has weakened considerably due to hypocrisy on the part of nuclear weapons states and poor leadership by the United States and Russia.[73] Nonetheless support for non-proliferation remains strong both by non-nuclear weapons states and the larger international public, see the TPNW. Given how much the United States values the norm of non-proliferation, arguably because of the empirically uncertain consequences of increased numbers of nuclear weapons states, it should unilaterally take some move towards a less aggressive deterrence posture to rebuild that coalition anyway but that strength could also be used to break the security competition.

The obvious candidate would be to discontinue the Sentinel program designed to replace the existing Minuteman III ICBM fleet, but the logic functions for any high-profile modernization program.[74] Cancelling the Sentinel would not endanger the United States at all, even under muddled logics. Nonetheless, it would require some work to get policymakers to realize this, although significantly less work that convincing them to unilaterally reconsider deterrence policy. While the Minuteman III is old and a modern missile would make maintenance easier, ICBM's are themselves redundant and nearly useless from a secure second strike perspective and so having a suboptimal ICBM capability is not an issue. With enough skill

[72] Glaser, "Realists as Optimists."
[73] See *The Crisis of the Treaty on the Nonproliferation of Nuclear Weapons* (2024) by the author.
[74] "Sentinel Land-Based Nuclear Modernization Program Will Continue, With Changes."

it should be easy to argue for the cancellation of a program that does not actually threaten any real capability. The signal it would send to our adversaries, however, would be incredibly valuable. If the United States cancels the program in a high profile manner while making obvious gestures towards the non-proliferation/disarmament community it could strengthen the global non-proliferation movement by bringing the United States back into the fold. With the United States back in the coalition, significant pressure could be exerted on China and Russia to come to the table for tri-lateral disarmament talks to succeed New START. Once the arms racing cycle is broken, at least for a time, advocacy work for a mutual secure second strike strategy could begin. This policy recommendation is mostly a pipedream but arguably represents the best hope for breaking a cycle of irrational and muddled deterrence strategies under conditions of absolute empirical uncertainty.

Regardless of potential fixes hopefully this paper has made a few things clear about irrational deterrence policy, the importance of empirical uncertainty to nuclear studies and how decisions are made in states. The first months of the Eisenhower administration leading to the passing of NSC 162 was a muddled process. NSC 162 formed the baseline from which U.S. nuclear strategy has been drawn from ever since. In their defense policymakers were faced with an unenviable task. The summer of 1953 saw the certain dawn of the thermonuclear age as both the United States and the Soviet Union became capable of developing and deploying massively destructive thermonuclear weapons which dwarfed the destructive ability of atomic weapons. These weapons made the logics of mutual kill and deterrence by punishment the core of a rational deterrence posture. The destruction that just a handful of these weapons could exact would approximate state death a cost that any state should be unwilling to bear.[75] The process

[75] Glaser, *Analyzing Strategic Nuclear Policy*.

that was initiated by the Eisenhower administration, however, selected a strategy that irrationally favored conventional military logics such as deterrence by denial, superiority, and optimism that a clear victory could be achieved in nuclear war.

The Eisenhower administration ended up with this irrational policy because they were operating under extreme empirical uncertainty and relied on a muddled decision-making process. The nuclear revolution and the logics of nuclear stalemate are unique because they have remained without empirical evidence for over seventy years. Because deterrence, defined on the highest level as avoiding nuclear war, has never failed. There is no concrete and proven baseline from which to design policy. All deterrence strategies remain empirically valid, even if they are theoretically tenuous. As a result, a muddled process was used to form deterrence strategy. A muddled process is the obvious alternative to a near impossible, resource intensive and complete theoretical analysis of every option available to them. Decision makers took values, goals, and strategies familiar to them and unthinkingly integrated nuclear weapons into them. This is not because policymakers failed to recognize that thermonuclear weapons were different, they clearly did. Instead, when empirical uncertainty forced policymakers to fall back on a muddled process they utilized goals and strategies familiar to them, the goal of victory and the logics of deterrence by denial and conventional superiority. To overcome their preference for familiar policies would have required comparing them to the whole breadth of potential policies, including the rational ones.

The claim that the Eisenhower administration used the wrong, conventional, logics to develop nuclear policy strongly echoes what Robert Jervis most clearly argued 40 years ago in *The Illogic of American Nuclear Strategy* and was repeated in his and Charles Glaser's later works. What these authors were missing, and hopefully this paper rectified, was a strong

explanation for why an irrational policy emerged. Empirical uncertainty and the subsequent process of muddling through actually provide a theoretically strong explanation for irrational deterrence policy. Empirical uncertainty is at the core of the nuclear world but is not often given enough weight in studies trying to interrogate the nuclear era. As this study has demonstrated, when empirical uncertainty is centered in studies of the nuclear era new ground can be opened to find new answers to old questions. An analysis that centralizes empirical uncertainty and the fact that states and theorists alike are acting blind could shed new light on the origin of and functioning of the non-proliferation regime, the value of nuclear weapons, theories of extended deterrence and reinvigorate the "how much is enough" debate among any other number of questions.

When empirical uncertainty is more broadly considered, it can be argued that states logically endeavor to minimize the effects of empirical uncertainty in their decision-making process just like other types of uncertainty.[76] Analysts of state behavior then needs to recognize that very likely states are motivated by reducing the effects of empirical uncertainty and may act in seemingly irrational ways. This claim is not entirely divorced from the concept of ontological security, states are happier acting as if empirical uncertainty does not exist. If states ignore empirical uncertainty and muddle through, they do not have to take on a paralyzing cognitive load that they are unequipped to handle by literally staring into the abyss. It could be argued that many decisions are made because their effect on a state's security are empirically uncertain. While no other case has the enduring empirical uncertainty of nuclear deterrence, hopefully

[76] Mearsheimer and Rosato, *How States Think*, 212.

studies centered on empirical uncertainty can shed some light on other decisions some view as irrational or where states justified their action by asking "what if?"[77]

Empirical uncertainty affects state policy via the process of state decision making which is itself a very fertile and ongoing debate. This paper relied heavily on Mearsheimer and Rosato's model of rationality both to establish the concept of empirical uncertainty and as a clear model of rationality. Their model highly idealized and seems to only function on the highest level of analysis. This is not a fault of the theory but rather a feature as multiple things can be true at once. They provide just one model of how rationality should function, but reality is infinitely more complicated. Lindblom's theory provides a seemingly more realistic model of decision making that does not meet the definition of rational by Mearsheimer and Rosato but proved itself greatly useful for understanding state behavior in this paper.

This, however, leads into the problem of rationality as a term. No state ever intentionally acts irrationally, as viewing your actions as irrational would cause some kind of internal crisis of identity for the state. Instead, I would argue rationality is really a loosely defined term that is used to describe what various scholars view as the ideal choices a state should have made based on their perspective. This is how the term was used in this paper and how it was used by Jervis and Glaser. There is no reason why IR cannot sustain numerous ideal models of rationality to provide a frame of comparison for robust empirical interrogations of state decision-making. This is a historically neglected issue that debates about rationality should bring to the fore. There is a strong tendency to decry state behavior as irrational when a theory does not play itself out in reality without identifying the deeper causes within the decision-making process. Instead,

[77] Some examples could include NATO durability after the Cold War, recent turns to an illiberal trade policy vis a vi China, and any other situation where the rhetoric centers on "but what if."

scholars should interrogate governmental processes to understand why their theories were wrong and how to improve their theories and move our understanding of state behavior forward and make better normative prescriptions, if desired.

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