

EXPLORING THE EFFECTIVENESS OF NUCLEAR DETERRENCE: A
COMPARATIVE ANALYSIS OF THE KOREAN WAR, CUBAN MISSILE
CRISIS, AND RUSSIA-UKRAINE CONFLICT THROUGH THE LENS OF
RATIONAL NUCLEAR DETERRENCE, THE NUCLEAR TABOO, SELF-
DETERRENCE, AND ATOMIC ANXIETY THEORIES

by

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A thesis submitted to the Graduate Council of
Texas State University in partial fulfillment
of the requirements for
Master of Arts
with a Major in Political Science
May 2023

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DEDICATION

I dedicate this thesis to the next generation, in hopes that my research can contribute to a world that is free from the threat of nuclear weapons. As we move forward, it is vital that we take a critical look at the dangers posed by nuclear weapons, and work tirelessly to prevent their proliferation. By shining a light on the potential consequences of these devastating weapons, we scholars can help ensure that future generations inherit a safer and more peaceful world. May this work inspire and motivate those who come after me to continue the fight for a world free of nuclear weapons, and to never lose sight of the urgent need for disarmament and nonproliferation efforts.

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LIST OF ABBREVIATIONS

Abbreviation	Description
D.C.	District of Columbia
ICBM	Intercontinental Ballistic Missile
JCS	Join Chief of Staff
KT	Kiloton
NATO	North Atlantic Treaty Organization
NPT	Nuclear Non-Proliferation Treaty
NSC	National Security Council
ODNI	Office of the Director of National Intelligence
SAC	Strategic Air Command
SLBM	Submarine-Launched Ballistic Missile
SIPRI	Stockholm International Research Institute
UN	United Nations
U.S.	United States
WWII	World War Two

ABSTRACT

This research project aims to explore the effectiveness of nuclear deterrence by analyzing three case studies - the Korean War, Cuban Missile Crisis, and Russia-Ukraine conflict - through the lens of four theories of nuclear weapons non-use: rational nuclear deterrence, the nuclear taboo, self-deterrence, and atomic anxiety. The central research question is whether nuclear weapons actually deter conflicts, with four possible answers: nuclear weapons deter, deter most of the time but not every time, deter only sometimes, or have not deterred at all. The hypothesis of this paper is that the theory of self-deterrence best explains nuclear weapons non-use in the three case studies and that nuclear weapons only deter sometimes. The four theories of nuclear weapons non-use provide a theoretical framework for evaluating the effectiveness of nuclear deterrence and help explain why nuclear weapons have not been used more frequently in international conflicts. Ultimately, this research project has far-reaching implications for global security and seeks to contribute to the ongoing debate on nuclear weapons and their place in international relations.

I. INTRODUCTION

Nuclear weapons, without a doubt, represent an unparalleled level of destructive potentiality. Their utilization can inflict catastrophic outcomes of unprecedented scale. For example, in the event a 10-kiloton nuclear warhead is used, it would cause significant destruction if detonated in a populated area (Glasstone and Dolan 1977, 11-38; DiCarlo et al., 2011, 1). The immediate effects of the explosion would include a blinding flash of light, a blast wave, intense heat, and radiation. Within the first second of detonation, the fireball would expand to a radius of about 150 meters, with temperatures exceeding several million degrees Celsius at the center (Glasstone and Dolan 1977, 11-38; DiCarlo et al, 2011).

The intense heat would ignite anything flammable in the vicinity, causing widespread fires that could merge and create firestorms. The blast wave would cause significant damage to buildings and infrastructure within a radius of approximately 1.5 kilometers from ground zero, with the effects diminishing further away (Glasstone and Dolan 1977, 11-38; DiCarlo et al, 2011). The shockwave would shatter windows, collapse buildings, and cause widespread injuries and fatalities. The radiation released by the explosion would also be a significant hazard, causing immediate acute radiation sickness in those exposed to high doses. The long-term effects of radiation exposure could also cause cancer and other health problems in those who survive the initial blast (Glasstone and Dolan 1977, 165-265; DiCarlo et al., 2011). In summary, the detonation of a 10-kiloton nuclear warhead in a populated area would result in utter devastation, causing irreparable damage to infrastructure and loss of life.

Despite their immense destructive power, nuclear weapons have been a defining feature of international relations since the end of World War II. The concept of nuclear deterrence has been a key element of the strategic planning of major nuclear states, who have sought to leverage

the threat of the weapons assured destructive power to discourage other nations from engaging in aggressive behavior (Sagan 2011, 227; Posen 2014, 9; Lieber and Press 2017, 9). Despite widespread calls for disarmament due to the devastation the weapon entails (Shultz, Perry, Kissinger, and Nunn 2007; Whittner 2015, 635-639; Payne 2019, 7-37), nuclear weapons continue to shape the dynamics of international relations. This research project aims to evaluate the effectiveness of nuclear deterrence policies by applying four theories of nuclear weapons non-use - rational nuclear deterrence, the nuclear taboo, self-deterrence, and atomic anxiety - to three case studies: the Korean War, the Cuban Missile Crisis, and the Russia-Ukraine conflict.

The central research question of this project is whether nuclear weapons actually deter conflicts. To address this question, this research project will examine four possible answers: nuclear weapons deter, deter most of the time but not every time, deter only sometimes, or have not deterred at all. This question is critical because it concerns a fundamental aspect of international relations and has far-reaching implications for global security. The hypothesis of this paper is that the theory of self-deterrence best explains nuclear weapons non-use in the three case studies. I believe state leaders will express concerns about losing reputation both domestically and internationally if they were to use nuclear weapons, fearing that such action would appear irrational, which in turn leads to acts of self-deterrence. Ultimately, I hypothesize that nuclear weapons deter only sometimes.

The four theories of nuclear weapons non-use that will be applied in this study provide a theoretical framework for evaluating the effectiveness of nuclear deterrence and help explain why nuclear weapons have not been used since 1945. The first theory, rational deterrence, argues that the threat of nuclear retaliation is enough to deter any rational adversary from launching an attack (Jervis 1989, 187-190; Lebow and Stein 1989, 208-212; Sagan 1994,69-71). This theory

assumes that states act rationally and in their own self-interest, and that the consequences of a nuclear attack are so catastrophic that no rational state would risk using nuclear weapons (Waltz 1990, 731; Waltz 1993, 51-53; Sagan 1994, 69). Rational deterrence has largely been the basis of the nuclear strategy for many states, including the United States and Russia (Jervis 1989; Freedman 2004).

The second theory, the nuclear taboo, posits that the leaders of nuclear weapon states refrain from their use due to a function of conscience. For one cannot live with oneself if nuclear weapons are used, which is why nuclear non-use has occurred (Tannenwald 1999, 433-436). More specifically, the nuclear taboo is an absolute moral prohibition on the first use of nuclear weapons (Tannenwald 1999, 436; Tannenwald 2007, 10-12). This theory suggests that the normative, moral, and legal principles surrounding the use of nuclear weapons have become so ingrained in the international community that any state that uses nuclear weapons would be seen as violating these norms and facing severe consequences, including international isolation and condemnation.

The third theory, self-deterrence, suggests that state leaders restrain themselves from using nuclear weapons due to concerns about losing reputation among domestic and international audiences for acting contrary to normative, moral, and legal principles (Paul 2016, 20). Furthermore, the theory suggests state leaders are concerned with establishing precedents which can blow back upon an actor. For example, states do not want to establish the precedent that nuclear weapons end wars, to then get entangled in a conflict upon which one's adversary uses nuclear weapons to end the crisis. This theory further highlights the role of domestic and international public opinion in shaping the decision-making of state leaders. Leaders may feel pressure from their constituencies and the international community to act in ways that are

perceived as legitimate and acceptable, which may deter them from using nuclear weapons (Paul 2016, 26-28).

Finally, the theory of atomic anxiety proposes that the fear and uncertainty associated with nuclear weapons cause states to act more cautiously and avoid conflict. This theory suggests that the very existence of nuclear weapons creates a collective experienced feeling of fear, that is the 'Great Fear' (Boyer 1994, 14) of *death en masse*, containing deeply and widely felt uncertainties and grueling worries about the survival of the entire human race (Sauer 2015, 127). Therefore, the theory predicts that nuclear weapon states may be hesitant to engage in conflict, or they may adopt more cautious and conciliatory approaches in their interactions with other states for fear of triggering *death en masse* (Sauer 2015, 135-136).

Overall, these four theories provide a comprehensive framework for understanding why nuclear weapons have not been used more frequently in international conflicts. They highlight the role of rational calculations, normative constraints, domestic and international public opinion, and the psychological impact of nuclear weapons in shaping state behavior. This research project will apply these four theories to three case studies, the Korean War, the Cuban Missile Crisis, and the Russia-Ukraine conflict, to determine which theory provides the most compelling explanation for the effectiveness or lack thereof of nuclear weapons in deterring conflict. The cases of the Korean War, the Cuban Missile Crisis, and the Russia-Ukraine conflict have been selected to examine the effectiveness of nuclear deterrence for several reasons.

Firstly, the Korean War, which took place from 1950 to 1953, is relevant because it was the first major conflict after the use of nuclear weapons in World War II (Tannenwald 2007, 115). Furthermore, it is a case where the U.S. supported South Korea via alliance and had unquestioned nuclear superiority and a nuclear policy of massive retaliation in place. In contrast,

China supported North Korea, although they did not have nuclear weapons. However, China sent 3 million soldiers to support North Korea to bolster their defense (Jervis 1980, 563-592; Carson 2018, 142-186). Furthermore, although the Soviet Union was not “directly” involved in the conflict they supported North Korea and China via military aid, and they were in the process of developing an existential nuclear deterrent policy at the time (Lieber and Press 2020, 44). This makes it a significant case study to examine the effectiveness of nuclear deterrence in preventing major wars.

Secondly, the Cuban Missile Crisis of 1962 is a well-documented example that showcased the catastrophic risks of nuclear weapons (Gavin 2012, 60). It began when the United States discovered that the Soviet Union had deployed nuclear missiles in Cuba, which resulted in a tense standoff between the two superpowers (Lebow 1983, 431-432). This situation arose as the Soviet Union attempted to address the strategic imbalance between the U.S. by adopting a policy of extended deterrence while the United States adopted a policy of flexible response with nuclear superiority (Lebow 1983, 453). Ultimately, the crisis was resolved through diplomatic negotiations, demonstrating the importance of diplomacy and restraint in managing nuclear crises.

The ongoing Russia-Ukraine conflict since 2014 serves as a compelling case study to analyze the efficacy of nuclear deterrence in contemporary times. This conflict is unique because it involves a regional power, Russia, with nuclear capabilities, and its neighbor, Ukraine, without any nuclear armaments. Additionally, Ukraine famously relinquished Soviet nuclear weapons to Russia in the 1990s (Mearsheimer 1993, 50-51). Furthermore, this is a special case in which NATO is supporting Ukraine via proxy and Russian President Vladimir Putin consistently

threatens to escalate the conflict to the nuclear level if NATO crosses certain ambiguous red lines with their support (Faulconbridge 2023).

This case also highlights Russia's "escalate to de-escalate" or "escalate to win" strategy. Effectively, Russia has a strategy for escalation management that utilizes a range of nonnuclear and nuclear capabilities to dissuade, intimidate, or achieve de-escalation at key transition points and early phases of conflict, from peacetime through large-scale and nuclear war (Kofman and Fink, 2022). This strategy involves applying force in a progressive manner to increase the expected costs for the adversary above the desired benefits (Kofman and Fink, 2022). In summary this case study can provide insights into the factors that contribute to the effectiveness or failure of modern nuclear deterrence policies.

The structure of this paper is as follows. The next section presents a literature review that examines previous research on rational nuclear deterrence, the nuclear taboo, self-deterrence, and atomic anxiety. This section analyzes the independent variables and causal mechanisms proposed by each theory that led to the non-use of nuclear weapons. Ultimately, the section evaluates the strengths and weaknesses of each theory in explaining the effectiveness of nuclear deterrence. The conclusion drawn from this analysis is that the theory with the most relevant causal mechanism for explaining non-use is the theory that best explains the effectiveness of nuclear deterrence.

The third section of the paper describes the methodology, which will follow in chronological case study order. The section outlines the historical context of each case study to provide a background understanding of the conflict and the role of nuclear weapons in it. It also examines the reasons why nuclear weapons were not used in each case, considering the policies and strategies employed by the parties involved. This section also involves discourse analysis of

the state leaders involved in each conflict. After describing the case studies, the paper applies the four theories of nuclear weapons non-use - rational nuclear deterrence, the nuclear taboo, self-deterrence, and atomic anxiety - to each case.

This involves evaluating each theory's ability to explain the effectiveness or lack of effectiveness of nuclear deterrence in each case. The evaluation considers whether nuclear weapons deterred the parties involved from using them and whether the outcome of the conflict was influenced by the presence of nuclear weapons. The paper assesses each theory in terms of its explanatory power and predictive power. Additionally, the section also identifies any patterns or anomalies in the cases, if possible, and looks for additional factors that may have influenced the effectiveness of nuclear deterrence.

The last section of the paper is the conclusion, which summarizes the findings on the effectiveness of nuclear deterrence, discusses the implications of the results for future policy, and highlights the limitations of the study. The paper concludes with suggestions for future research, such as the need for more case studies and statistical analyses to further evaluate the effectiveness of nuclear deterrence policies.

II. RATIONAL NUCLEAR DETERRENCE THEORY

The concept of deterrence has been utilized by states for centuries, employing communication and signaling to influence the perceptions and beliefs of potential adversaries. Schuyler Foerster notes that “Deterrence” and “terror” share the same Latin root; that is to “deter” is to suggest terrifying consequences if something is done (2014 193). The objective of deterrence is to create or reinforce the belief that the costs or risks of taking a certain action, such as attacking or invading a country, outweigh the potential benefits (Freedman 2004, 1-10; Jervis 2017). Deterrence relies on the use of explicit and implicit threats to communicate the credibility of a potential response and the willingness of a state to use force. Success in deterrence depends on the ability of the sender to effectively convey the credibility and willingness of the threat, as well as the perceived rationality of the adversary in interpreting and responding to those messages (Wirtz 2018, 58-59). The central tenet of deterrence is that it relies on inducing fear into one’s adversary (Sauer 2015, 114).

Rational nuclear deterrence theory argues that possessing nuclear weapons and threatening retaliation is enough to deter any rational adversary from launching an attack (Jervis 1989, 187-190; Lebow and Stein 1989, 208-212; Sagan 1994, 69-71). This theory assumes that states act rationally and in their own self-interest and that the consequences of a nuclear attack are so catastrophic that no state would risk using nuclear weapons (Waltz 1990, 731; Waltz 1993, 51-53; Sagan 1994, 69). Therefore, the primary concept underlying rational deterrence theory is simple but powerful. States that possess a survivable nuclear arsenal – that which can withstand attempts to destroy or damage it - are unlikely to be conquered, because no adversary would pay the potential price of its own annihilation to attempt (or even threaten) to acquire the states territory (Gavin 2020, 127).

To illustrate this further, picture a massive, ominous sword hanging over the head of every state leader. This sword, representing the destructive power of nuclear weapons, looms threateningly over the world, ready to strike at any moment. Rational deterrence theory argues that by possessing this sword, states can ward off any potential attackers, as the consequences of unleashing it would be too catastrophic to justify any rational state taking the risk. It's a delicate balance of power, where the threat of destruction becomes the means to ensure peace.

Therefore, the independent variables in this theory which leads to successful deterrence outcomes, is the perceived capability and credibility of a state's nuclear arsenal (Foerster 2014, 193). The perceived capability of a state's nuclear arsenal refers to the perceived destructive power of the state's nuclear weapons (Jervis 1989, 73; Sagan 1993, 149). The capability is based on the number, types, and range of nuclear weapons a state possesses, as well as its delivery systems and the effectiveness of its command-and-control structures. The more powerful and sophisticated a state's nuclear arsenal is, the higher the perceived capability, and the stronger the deterrent effect (Waltz 1981, 11; Narang 2014, 29).

The credibility of a state's deterrent threat refers to the degree to which an adversary believes that a state would actually use its nuclear weapons in response to an attack (Betts 1987, 21; Foerster 2014, 193; Smith 2014, 258-259). If the adversary does not believe that the state would use its nuclear weapons, the deterrent effect would be weakened. Therefore, the state must establish its reputation as a rational actor with a credible threat of retaliation. This can be achieved through clear communication and non-verbal actions that demonstrate a willingness to use nuclear weapons if necessary (Freedman 2004, 133; Foerster 2014, 193-197; Smith 2014, 258-259).

Clear communication is important to convey to potential adversaries that the state has a credible nuclear deterrent (Narang 2014, 131-140; Smith 2014, 258-259). The state needs to be clear about its nuclear policy, including the conditions under which it would use nuclear weapons. It should also communicate the consequences that would result from a nuclear attack on its territory. Such communication can be achieved through official statements, diplomatic channels, and public speeches (Narang 2014, 131-140; Foerster 2014, 193-197; Smith 2014, 258-260).

Non-verbal communication involves actions that demonstrate the state's willingness to use nuclear weapons if necessary. For example, the state may conduct regular nuclear weapons tests to show its ability to deploy nuclear weapons. It may also undertake military exercises and maneuvers that simulate nuclear warfare scenarios. Such actions can send a strong message to potential adversaries about the state's resolve and capability to use nuclear weapons (Smith 2014, 257-260).

However, the state should also be careful not to appear too eager or trigger-happy, as this could create mistrust and escalate tensions. If a state is seen as being too eager to use force or is perceived as being overly aggressive in its signaling, this could create mistrust among potential adversaries (Booth and Wheeler 2008, 45-50). Therefore, communication and actions should be measured and strategic to maintain a balance between demonstrating resolve and avoiding unnecessary provocation. In summary, clear communication and actions that demonstrate a willingness to use nuclear weapons if necessary are critical to establishing the credibility of a state's nuclear deterrent. This requires a careful balance of words and actions that communicate resolve and capability without provoking unnecessary aggression.

Therefore, the causal mechanism of rational nuclear deterrence theory, is the belief formation in the adversary's mind that to continue with aggression will risk the consequences of nuclear retaliation. Which is considered to be so fear inducing that no rational state would risk aggression once threatened with a retaliatory strike. This is because the effects of a nuclear attack would be widespread and devastating, with far-reaching consequences for both the attacking state, the international community, the state that is bombed, and its neighbors. Therefore, according to the theory, the belief in the catastrophic consequences of nuclear retaliation is intended to deter states from aggression which leads to successful deterrence outcomes and the non-use of nuclear weapons.

Rational nuclear deterrence theory has its strengths and weaknesses. On the one hand, the theory provides a logical framework for understanding the dynamics of nuclear deterrence and why it has potentially been successful in preventing a major war between nuclear-armed states. It assumes that states act rationally and in their own self-interest. Furthermore, the theory emphasizes that the decision to use nuclear weapons is not an irrational or emotional one, but rather a strategic calculation based on a cost-benefit analysis (Schelling 1981, 95-109). Game theory, a branch of mathematics used to study decision-making in strategic situations, plays a crucial role in rational nuclear deterrence theory (Schelling 1981). In the context of nuclear deterrence, game theory is used to model the strategic interaction between two or more actors, such as nuclear-armed states. The goal of the game is to choose the best course of action that maximizes one's own payoff, while minimizing the payoff of the other players.

One of the most well-known examples of game theory in the context of nuclear deterrence is the "prisoner's dilemma" game (Schelling 1981, 95-109). The game can be played as a one-shot interaction or an iterated interaction. In a one-shot interaction between two nuclear-

armed states, the rational choice for each state would be to use nuclear weapons, as this would result in the highest payoff for them if they believed that their opponent will not use nuclear weapons in retaliation.

On the other hand, in an iterated interaction between two nuclear-armed states, where the game is played repeatedly over time, the rational choice for each state is to cooperate and not use nuclear weapons. This is because if one state were to use nuclear weapons, the other state would likely retaliate with their own nuclear weapons, resulting in a lose-lose outcome for both. By cooperating and not using nuclear weapons, both states can avoid this outcome and receive a higher payoff over the long term.

Furthermore, the concept of tit-for-tat can be applied in an iterated interaction between two nuclear-armed states. Tit-for-tat is a strategy where a player initially cooperates, and then subsequently mirrors their opponent's previous move (Schelling 1981, 95-109). In the context of nuclear deterrence, this means that if one state were to use nuclear weapons, the other state would retaliate with their own nuclear weapons in the next round. This strategy can help maintain stability and deter the use of nuclear weapons. As such, it is easy to understand how rational nuclear deterrence theory provides a basis for evaluating the effectiveness of deterrence and making recommendations for future policies.

However, on the other hand, the theory assumes that all states are rational actors, which may not be true in every case. While this theory provides a useful framework for understanding the strategic calculations of states, it ignores the fact that some states may be more ideologically motivated or less risk-averse than others. This in turn makes deterrence less effective. For example, some states may be motivated by religious, nationalist, or other ideological considerations that are not easily captured by rational cost-benefit analysis (Jervis 2017, 327).

These states may be more willing to take risks or to engage in behavior that is not easily explained by strategic calculations. In such cases, nuclear deterrence may be less effective, as the other side may not be deterred by the same factors that would deter a more rational actor.

Additionally, some states may be less risk-averse than others, meaning that they are more willing to take risks or engage in behavior that is potentially destabilizing. For example, a state with a weak economy or internal instability may be more willing to take risks with its nuclear arsenal to gain leverage over its adversaries (Sagan and Waltz 2012; Narang 2014, 67). In such cases, the other side may not be able to rely on deterrence as a reliable means of preventing conflict.

Moreover, the assumption that all states are rational actors is challenged by research from cognitive psychology, which suggests that state leaders are boundedly rational and subject to cognitive biases, heuristics, and time constraints (Simon 1955; Kahneman and Tversky 1979; Simon 1984). Bounded rationality refers to the idea that individuals, including state leaders, have limited cognitive resources and are unable to process all available information in a rational manner (Selten 1990, 649-653; Simon 1991, 125-134; Kahneman 2003, 1449). This can lead to decision-making that is less than fully rational and may result in suboptimal outcomes.

For instance, cognitive biases are systematic errors in thinking that can lead individuals to make irrational decisions (Tversky and Kahneman 1974, 1124; Kahneman 2011, 52). One prominent cognitive bias is confirmation bias. This refers to the tendency to seek out information that confirms pre-existing beliefs, while ignoring information that contradicts those beliefs. Ultimately, cognitive biases can lead to distorted perceptions of reality and may result in strategic decisions that are based on flawed assumptions (Jervis 2017, 20).

Heuristics are mental shortcuts that individuals use to simplify complex decision-making tasks (Kahneman 2011). While heuristics can be useful in many situations, they can also lead to cognitive biases and errors in judgment (Tversky and Kahneman 1974, 1124-1127). For example, the availability heuristic refers to the tendency to rely on readily available information when making decisions, rather than seeking out more complete or accurate information (Tversky and Kahneman 1973). Time constraints can also limit the ability of state leaders to make fully rational decisions (Simon 1955, 116). In situations where decisions must be made quickly, state leaders may rely on heuristics and cognitive biases to simplify complex decision-making tasks.

Overall, research from cognitive psychology suggests that the assumption of rationality in rational nuclear deterrence theory may be overly simplistic. Cognitive psychology literature suggests that state leaders are boundedly rational and subject to cognitive biases, heuristics, and time constraints, which can lead to suboptimal decision-making (Simon 1955; Tversky and Kahneman 1973; Tversky and Kahneman 1974; Kahneman and Tversky 1979; Simon 1982; Selten 1990; Simon 1991; Kahneman 2011). This has important implications for the effectiveness of nuclear deterrence, as it suggests that the decision-making processes of state leaders may not always be fully rational or predictable.

Furthermore, rational nuclear deterrence theory assumes that states have perfect information about each other's intentions and capabilities with regards to nuclear deterrence when this is often not the case. States without total satellite surveillance, like most of the world, must rely on a variety of sources to gather information, including human intelligence, covert operations, cyber espionage, public statements, and historical context (Handel 1984; Director of National Intelligence 2019). The implications of inaccurate or incomplete information can often be costly. For example, during the 2003 invasion of Iraq, the United States believed that Iraq had

weapons of mass destruction, but subsequent investigations found no evidence of such weapons (Fawn 2006). The lack of accurate intelligence led to a costly and controversial war that did not achieve its intended goals.

Additionally, when analyzing how nuclear weapons states would gather information on their adversaries historically, it becomes clear that decision-makers were often given information that was incomplete and inaccurate about their adversaries' intentions and capabilities. One historical example is the Cuban Missile Crisis. During the crisis, U.S. intelligence agencies initially failed to detect the presence of Soviet missile installations in Cuba, which were only discovered after U-2 spy planes conducted surveillance flights over the island (Alison 1971, 39-62; Fursenko and Naftali 1997; Sechser and Fuhrmann 2017, 200). The U.S. also had limited knowledge of Soviet intentions and was uncertain about whether the Soviet Union was prepared to escalate the crisis to nuclear war. Similarly, the Soviet Union was also uncertain about the U.S.'s intentions and capabilities, leading to a high level of tension and uncertainty throughout the crisis (Alison 1971, 39-62).

To conclude, rational nuclear deterrence theory argues that possessing nuclear weapons and threatening retaliation is enough to deter any rational adversary from launching an attack. This theory assumes that states act rationally and in their own self-interest and that the consequences of a nuclear attack are so catastrophic that no state would risk using nuclear weapons. The independent variables that lead to successful deterrence outcomes are the perceived capability and credibility of a state's nuclear arsenal. Clear communication and actions that demonstrate a willingness to use the bomb are critical to establishing the credibility of a state's nuclear deterrent. The causal mechanism of rational nuclear deterrence theory is the belief formation in the adversary's mind that to continue with aggression will risk the consequences of

nuclear retaliation, which is considered to be so fear-inducing that no rational state would risk aggression once threatened with a retaliatory strike. While the theory has its strengths when explaining conflicts between nuclear weapons states, it also has its weaknesses, and its effectiveness in the face of current global challenges and changes in the international system is still a matter of debate.

III. THE NUCLEAR TABOO

Nina Tannenwald's nuclear taboo theory suggests that the non-use of nuclear weapons is not only due to a normative taboo against their use. This taboo is akin to the taboo against slavery and cannibalism. That is there is an absolute personal, moral, and ethical aversion to the first use of nuclear weapons (Tannenwald 2005, 8). The taboo is not the behavior of nonuse itself but rather the normative belief about the behavior (Tannenwald 2005, 8). In this way, the taboo against the use of nuclear weapons can be compared to a moral compass that guides the decisions of states when it comes to their potential use. Tannenwald argues that the taboo has developed over time, first emerging in the aftermath of the bombings of Hiroshima and Nagasaki (Tannenwald 2007, 73) and has become a fundamental part of international norms, ethics, and values (Tannenwald 2007, 361).

Tannenwald argues that the nuclear taboo is not a static norm but rather a dynamic one that has evolved over time (Tannenwald 2007, 362-365). In her view, the independent variable in the theory is the normative taboo itself, which has been influenced by a range of factors, including changes in technology, the changing nature of warfare, and shifts in the international system. Tannenwald argues the norm of non-use has become deeply embedded in international law and has been reinforced by treaties such as the Nuclear Non-Proliferation Treaty (NPT), which seeks to prevent the spread of nuclear weapons (Tannenwald 2007, 56-57).

The development of the nuclear taboo was not a foregone conclusion, however. Tannenwald argues that it was the result of the efforts of a range of actors, including scientists, politicians, diplomats, and civil society groups (Tannenwald 2007, 155-190, 241-294). These actors worked to shape public opinion and to build consensus around the idea that nuclear weapons use was morally and ethically unacceptable. Tannenwald's work highlights the

importance of socialization and identity in shaping the normative landscape of international politics. The taboo offers a compelling account of how norms can constrain state behavior even in the absence of formal legal prohibitions. The theory argues that norms are social constructions that can change over time.

Tannenwald suggests that the taboo has developed over time through a process of normative entrepreneurship. Normative entrepreneurship is a process of advocating for new norms and values, and it can take many forms, such as public advocacy, diplomacy, and legal action (Finnemore and Sikkink 1998, 893). The process of normative entrepreneurship involves convincing state leaders that nuclear weapons are so morally and ethically reprehensible that they should be delegitimized, and their use should be taboo.

Ultimately, the nuclear taboo has important implications for examining the effectiveness of nuclear deterrence policies in historical case studies. If the theory holds, then the non-use of nuclear weapons is not just a product of strategic calculation but also of moral and ethical norms. Therefore, the causal mechanism of the nuclear taboo theory, is the belief formation in the minds of state leaders that using nuclear weapons is morally and ethically reprehensible to such an extent that they would never use them. In other words, the taboo posits that state leaders have internalized a norm that the use of nuclear weapons is not only impractical but also morally unacceptable. This belief is tantamount to committing an unforgivable sin against humanity.

However, critics of the nuclear taboo point out that most of Tannenwald's research and argument is entirely limited to U.S. history (Narang 2014, 151-155; Dill, Sagan, and Valentino 2022, 5). Furthermore, recent research on public opinion within nuclear weapon states, including the U.S., France, Israel, and Britain, has challenged the idea that the nuclear taboo is widely ingrained in society. A study by Dill, Sagan, and Valentino (2022, 1-31) found that the public of

these states largely supports the use of nuclear weapons and is willing to violate the principle of noncombatant immunity if their countries' lives are at stake. This principle is a fundamental tenet of international humanitarian law and is enshrined in various international treaties, including the Geneva Conventions, which each of these countries has recognized. The study suggests that the nuclear taboo may not be as deeply rooted in society as previously thought, particularly considering the significant support for nuclear weapons use for retribution purposes (Dill, Sagan, and Valentino 2022).

Moreover, critics argue that the taboo overemphasizes the strength of normative constraints and ignores the grander role of strategic calculations in shaping state behavior (Lieber and Press 2006, 7; Mearsheimer 2019, 29). States may be willing to use nuclear weapons if they perceive their survival to be at stake, regardless of the normative constraints or ethical concerns. In effect, the survival of a state can be like a person drowning in a sea, who would do anything to stay afloat, even if it means grabbing onto a shark. Additionally, taboo theory assumes a uniformity of international attitudes towards nuclear weapons.

Ultimately the nuclear taboo may be a useful theory to help explain certain cases historically upon which the U.S. and its leadership had held the belief that the use of nuclear weapons is to be considered morally and socially unacceptable, and that this normative constraint had deterred the U.S. from nuclear first use in certain conflicts (Tannenwald 2007). However, evidence has shown that the nuclear taboo is not truly universal (Dill, Sagan, Valentino 2022). Therefore, its theoretical framework struggles to explain historical case studies outside of the U.S. Furthermore, the states upon which nuclear weapons use is of concern today (North Korea and Russia), have not given the international community much reason to believe that either state currently adheres too or believes in a nuclear taboo against the first use of nuclear weapons. As

stated before, North Korea actively brandishes and tests the bomb. While Russia has recently threatened their first use in the Russia-Ukraine war, has withdrawn from the New START treaty, and has recently displayed undetectable hypersonic missiles to flex their nuclear capabilities (Chappell 2023).

In conclusion, while Nina Tannenwald's nuclear taboo theory proposes that the non-use of nuclear weapons is due to a normative taboo against their use, recent research challenges the idea that the taboo is widely ingrained in society. Tannenwald argues that the nuclear taboo is a dynamic norm that has evolved over time and was the result of the efforts of a range of actors. However, critics point out that most of Tannenwald's research and argument is entirely limited to the United States, and recent research on public opinion within nuclear weapon states challenges the idea that the taboo is global or universally felt. Therefore, further research on the nuclear taboo and its normative constraints on states and cases outside the U.S. and its history are necessary to have a better understanding of the strengths of the taboo. Nonetheless, the theory highlights the importance of socialization and identity in shaping the normative landscape of international politics, and it offers a compelling account of how norms can constrain state behavior even in the absence of formal legal prohibitions.

IV. SELF-DETERRENCE

Self-deterrence can be defined as the unwillingness to use coercive military power against an adversary, despite a declaratory threat to do so, due to self-imposed as opposed to other-imposed constraints (Paul 2016, 26). T.V. Paul's theory suggests that states possess nuclear weapons primarily as a means of deterring other states from attacking them. However, these states may also be deterred from using their own nuclear weapons, especially for coercive purposes, due to the fear of damaging their reputation and credibility for such reasons as acting contrary to normative, moral, or legal principles (Paul 2016, 26). This theory posits that the possession of nuclear weapons can lead to self-deterrence, as states may be reluctant to use them for fear of tarnishing their reputation as responsible and rational actors (Paul 2016, 20). In this way the possession of nuclear weapons by states can be likened to a double-edged sword. While it is a powerful tool for deterrence, it also carries the risk of damaging one's own reputation, like a sharp blade that can inflict harm not only to the intended target but also to the wielder.

The independent variable in this theory is a state's desire to maintain a good reputation. A state's reputation is built on its past actions, behavior, and perception by other states and the international community (Paul 2016, 39-40). The perceived reputation of a state can influence its standing in the international community, its ability to negotiate with other states, and its overall foreign policy. There are several factors that can influence a state's reputation.

Adherence to international norms and agreements is one important factor that can enhance or damage a state's reputation. If a state consistently follows international norms and agreements, it is likely to be viewed positively by other states, which can enhance its reputation. On the other hand, if a state violates international norms and agreements, it is likely to be viewed negatively, which can damage its reputation (Paul 2016, 35-39).

Similarly, a state's reputation can be affected by its perceived capabilities, such as the size and sophistication of its nuclear arsenal (Paul 2016, 28). States with larger and more sophisticated nuclear arsenals are often viewed as more powerful and influential in the international community. Conversely, states with smaller and less sophisticated arsenals are often viewed as weaker and less influential.

Another factor that pertains to reputation is a state's concern about establishing precedent. States that are seen as setting positive examples in areas such as human rights or climate change can enhance their reputation as responsible global actors, while those that set negative examples may damage their reputation (Paul 2016, 39-40). The potential for a state's actions to establish precedent and influence the behavior of other states is an important consideration in how its reputation is perceived by the international community. Overall, a state's reputation is a complex and multifaceted concept that is shaped by several factors, including its adherence to norms, strategic capabilities, and concern about establishing precedent.

Therefore, the causal mechanism of self-deterrence theory lies in the belief formation of state leaders that using nuclear weapons would harm the state's reputation and credibility while additionally having concern about setting precedents that might backfire upon them. This belief is based on the understanding that others see nuclear use as an extreme and irrational act that would be widely condemned by the international community. State leaders, therefore, may be reluctant to use nuclear weapons for fear of being seen as reckless or irrational, which could diminish their ability to influence international affairs and is likely a death blow to re-election.

The fear of reputation damage is particularly relevant in the context of nuclear weapons because they are widely considered to be the ultimate weapon of mass destruction (Waltz 1990, 731-732). The use of nuclear weapons would not only result in devastating human and

environmental consequences but would also be viewed as a violation of international norms and agreements (Paul 2016, 29-33). As a result, a state's use of nuclear weapons would likely result in severe international condemnation, sanctions, and loss of credibility. One can view this as a paradox in which the possession of nuclear weapons may provide a state with a sense of security and deterrence against other states, yet at the same time, the possession of these same weapons may also lead to a sense of vulnerability due to the fear of damaging one's own reputation.

T.V. Paul's self-deterrence theory provides a valuable insight into the complex and multifaceted nature of nuclear nonuse. The theory explains how a state's reputation and credibility can play a critical role in its decision to use nuclear weapons (Paul 2016, 39-40). The explanatory strength of this theory lies in its ability to explain why states possessing nuclear weapons have not used them in conflict, despite issuing coercive declaratory threats to do so (Paul 2016, 20).

The self-deterrence theory provides valuable predictive power as well. It suggests that states with nuclear weapons are more likely to behave responsibly in international affairs and adhere to international norms and agreements. If a state believes that the use of nuclear weapons would damage its reputation, it is less likely to use them in a conflict. This insight is particularly relevant when it comes to analyzing the behavior of nuclear powers such as the United States, Russia, China, and India. Furthermore, it helps explain the historical tradition of nuclear non-use (Paul 2016, 29-33).

However, one weakness of self-deterrence theory is that it may not apply equally to all states. It is often argued that states with authoritarian regimes may have different priorities and values compared to democracies, and this may affect their willingness to use nuclear weapons to achieve their goals (Bernstein 2014, 106-122). Authoritarian regimes may place less emphasis on

international reputation and may be more willing to take risks in pursuit of their objectives. However, it is important to note that credibility is still an important factor for authoritarian states. They want their threats and promises to be taken seriously and to be seen as capable of following through on their actions. Nonetheless, authoritarian regimes may prioritize their own survival or the achievement of specific objectives over maintaining their international reputation, which may lead them to take actions that are perceived as more aggressive or risky. Additionally material calculations, such as the ability to use cheaper, less violent, and less imprecise alternatives for forceful retaliation, are not a part of self-deterrence (Paul 2016, 26).

Ultimately, to prove that nuclear weapons are actually effective in deterring conflict when observing cases through the lens of self-deterrence theory, researchers would need to provide evidence that state leaders are motivated by the fear of damaging their reputation when making decisions related to nuclear weapons. This evidence could include statements by state leaders or records of their discussions, as well as analysis of the broader international context and the impact that the use of nuclear weapons would have on a state's standing in the international community. Researchers would also need to consider alternative explanations for state behavior and rule out factors such as strategic calculations or domestic political considerations that may have influenced decision-making. By carefully analyzing historical cases and weighing the available evidence, researchers can gain a better understanding of the role that self-deterrence plays in the effectiveness of nuclear deterrence policies.

V. ATOMIC ANXIETY

The theory of atomic anxiety proposes that the fear and uncertainty associated with nuclear weapons cause states to act more cautiously and avoid conflict. This theory suggests that the very existence of nuclear weapons creates a collective experienced feeling of fear. That is the ‘Great Fear’ (Boyer 1994, 14) of *death en masse*, containing deeply and widely felt uncertainties and grueling worries about the survival of the entire human race (Sauer 2015, 127). Therefore, the theory predicts that nuclear weapon states may be hesitant to engage in conflict, or they may adopt more cautious and conciliatory approaches in their interactions with other states for fear of triggering *death en masse* (Sauer 2015, 135-136).

For instance, individuals and policymakers may be willing to take extreme measures to prevent the use of nuclear weapons, even if these measures are not in their best interests from a purely rational standpoint. This is because the fear of nuclear war can lead individuals and policymakers to focus on worst-case scenarios and adopt a risk-averse approach to decision-making (Sauer 2015, 135-136). Furthermore, the psychological impact of nuclear weapons is influenced by a range of factors, including the cultural context in which they are used and the way they are represented in the media and popular culture (Sauer 2015, 122-127). For instance, the Cold War era was marked by a pervasive sense of anxiety about nuclear war, which was reflected in popular culture through films and television shows that portrayed the destructive power of nuclear weapons. This cultural context helped to shape the psychological impact of nuclear weapons and reinforced the belief that nuclear war was a looming threat that required constant vigilance and preparedness (Sauer 2015).

Overall, the psychological impact of nuclear weapons is a crucial independent variable in understanding the ways in which individuals, societies, and international relations are shaped by

the fear and anxiety generated by the prospect of nuclear war. This impact is shaped by a range of factors, including cultural context and media representation, and can lead to powerful emotional responses that can override rational decision-making processes. As such, understanding the psychological impact of nuclear weapons is crucial to developing effective strategies for preventing nuclear war and promoting international peace and security.

The causal mechanism of atomic anxiety theory is the belief formation in the minds of state leaders that the symbolic power, combined with the fear of death and destruction, creates a sense of existential threat that can be extremely powerful and difficult to overcome (Sauer 2015, 127-135). In effect atomic anxiety is like the famous story of the Sword of Damocles (Sauer 2015, 132). In the story, Damocles is a courtier who envies the king's position of power and wealth. The king offers to let Damocles sit on the throne for a day but hangs a sword over his head by a single hair to symbolize the constant danger and insecurity of ruling. Damocles is unable to enjoy his day, constantly fearing that the sword will fall and kill him and realizes the true cost of the king's power. Similarly, the existential threat of nuclear weapons can create a sense of impending doom that can override rational decision-making, as the consequences of a nuclear war are so catastrophic that any risk may seem too great to take (Sauer 2015, 131).

Additionally, Sauer notes that atomic anxiety is best described as underlying existing explanations of nuclear non-use.

“After all, the idea of nuclear deterrence, born out of fear, is to create a situation of reciprocal fear. Deterrence theory in its most basic, unsophisticated, and unrefined sense is about figuring out how the fear of being attacked can be harnessed and turned against the enemy to forestall a first strike. Applied as a strategy, nuclear deterrence resorts to fear by actively using it against the enemy to scare him into submission with credible threats of retaliation. The nuclear taboo, in contrast, is the flip side of this, that is, the endured fear impacting collective identity formation and the resulting moral disgust and pangs of remorse that come along with the fearful and repulsive thought of actually using

the angst-inducing terror weapon against others. Atomic anxiety, in both cases, is the emotional springboard” (Sauer 2015, 136).

The grand takeaway from this quote is that atomic anxiety is a crucial factor in understanding the reasons for nuclear non-use. Nuclear deterrence theory relies on the fear of a nuclear attack as a means of preventing an attack, while the nuclear taboo is the moral restraint that prevents the use of nuclear weapons. Atomic anxiety, which is the fear of the consequences of a nuclear attack, plays a significant role in both deterrence theory and the nuclear taboo. The fear of using nuclear weapons is rooted in collective identity formation and moral disgust, which is driven by the enduring fear of the catastrophic consequences of nuclear war (Sauer 2015, 136).

One of the strengths of the atomic anxiety theory is that it provides a unique perspective on the psychological impact of nuclear weapons on decision-making. This perspective highlights the potential for emotions and irrational fears to influence the behavior of states and policymakers, which may not be accounted for by other more rationalist theories of international relations (Sauer 2015). Moreover, the theory has the potential to explain why states possessing nuclear weapons have not engaged in large-scale military conflicts. Additionally, the theory has a strong historical basis, as it is grounded in the cultural and political context of the Cold War era, which was marked by a pervasive sense of anxiety about nuclear war. This historical context helps to demonstrate the ways in which cultural and media representations of nuclear weapons can shape perceptions and attitudes towards them.

However, one of the weaknesses of the theory is that it is difficult to determine the extent to which the psychological impact of nuclear weapons is a result of cultural and media representations, as opposed to other factors such as direct experiences with nuclear weapons or political and economic factors. Moreover, the theory does not fully account for the role of other

factors, such as the balance of power or alliance dynamics, in shaping decision-making processes.

In conclusion, the theory of atomic anxiety suggests that the fear and uncertainty associated with nuclear weapons cause states to act more cautiously and avoid conflict. The psychological impact of nuclear weapons is influenced by a range of factors, including the cultural context in which they are used and the way they are represented in the media and popular culture. This impact can lead to powerful emotional responses that can override rational decision-making processes. While it provides a unique perspective, it does not fully account for the role of other factors in decision-making. Nonetheless, understanding the psychological impact of nuclear weapons is crucial to preventing nuclear war and promoting international peace and security.

VI. KOREAN WAR

The Korean War was fought between 1950 and 1953, with the United States and the United Nations fighting against North Korea and China (Jervis 1980; Tannenwald 2007, 115-154; Popescu 2017, 54-57; Sechser and Fuhrmann 2017, 174-180; Carson 2018). The Korean War began on June 25, 1950, when North Korea invaded South Korea. Within five days, U.S. President Harry S. Truman approved unrestricted use of air and naval assets as well as General MacArthur's request to redeploy ground troops from Japan to protect the crucial Korean Port city of Pusan (Carson 2018, 151). The conflict was a result of a long-standing rivalry between the two Koreas and the division of the Korean Peninsula following the end of World War II. The Soviet Union and the United States played major roles in the escalation of tensions, as they supported the respective communist and capitalist regimes in North and South Korea. The war ended in 1953 with an armistice, but no peace treaty was ever signed, leaving the two Koreas technically at war to this day.

Ultimately, the Korean War was a devastating conflict that caused a significant loss of life. Estimates of the total number of casualties vary, but it is generally believed that between 2.5 and 3.5 million people were killed, wounded, or went missing during the war. The following is a breakdown of estimated casualties for each party involved: South Korea: around 217,000 military personnel and an estimated 1 million civilian casualties. North Korea: approximately 214,000 military personnel and around 1.5 million civilian casualties. United States: around 36,500 military personnel and 3,300 civilian casualties. United Nations forces: around 3,000 military personnel casualties. China: approximately 400,000 military personnel casualties (Porter 2020, 109-110). In essence, the Korean War had a significant impact on the political, economic, and social landscape of the Korean Peninsula, as well as on the broader international community.

It is widely regarded as one of the major conflicts of the Cold War era, and its legacy continues to be felt today.

Additionally, the war was fought in the backdrop of the nuclear arms race between the United States and the Soviet Union, making the war a perfect case study to examine the effectiveness of nuclear deterrence policies and their ability to successfully deter conflict. At the time, the U.S. nuclear policy was focused on maintaining a nuclear monopoly and using them as a deterrent against the Soviet Union (Jervis 1980, 566-567; Nichols 2014, 17-20; Lieber and Press 2020, 52-58). This policy was coupled with the belief that the U.S. held unquestioned nuclear superiority over its adversaries (Jervis 1980, 566). At the start of the war, the U.S. had roughly 300 atomic bombs with reliable delivery methods compared to the Soviets roughly dozen atomic weapons, with no feasible means of delivery. Therefore the U.S. had an effective atomic monopoly at the beginning of the war (Tannenwald 2007, 116).

Moreover, for the United States, the President is the only person authorized to order a nuclear strike, and during wartime, the President has the authority to use nuclear weapons to defend the United States and its allies at his or her own discretion (Jonas and McWhorter 2021). This means that in the event of a threat to national security, the President has the power to initiate a nuclear strike without requiring the approval of Congress or any other branch of government. This exclusive power held by the President is meant to ensure that the use of nuclear weapons is subject to careful consideration and that the decision-making process is centralized and controlled (Jonas and McWhorter 2021).

This case study seeks to analyze the effectiveness of the U.S. nuclear deterrent during the Korean War. Furthermore, it will analyze the factors that influenced the decision not to use nuclear weapons. By examining the language used by key actors such as Harry S. Truman,

Douglas MacArthur, and Dwight D. Eisenhower, and their additional advisors, the paper will explore the effectiveness of U.S. nuclear policy during the crisis. The analysis will be guided by the four theories of nuclear non-use, namely rational deterrence theory, the nuclear taboo, self-deterrence, and atomic anxiety. Ultimately, whichever theory that has the most relevant causal mechanism that is active is the theory that best explains nuclear non-use in this case study.

Nuclear War Plans in Korea

Due to several significant battlefield losses, President Truman and his advisors discussed the use of tactical atomic weapons several times throughout the war (Tannenwald 2007, 117). In fact, during the first meeting of the crisis on June 25th, Truman ordered the Air Force to prepare a contingency plan to knock out Soviet air bases in the Far East with atomic bombs (U.S. Department of State, 1950). No one present during the meeting raised any objections (Tannenwald 2007, 117). Roughly a week later, a study presented to Truman in the first week of July by the Army Operations Division argued that atomic attacks might soften up ports prior to an amphibious assault (Tannenwald 2007, 117). The study called for penetration-type atomic bombs to be used against enemy forward bases (Joint War Plans Branch of the Army Operations Division 1950). Nevertheless, despite the occurrence of operational discussions and plans regarding the use of the bombs, they were not deployed during the initial phase of the war.

A study presented by the U.S. Air Force to Truman and his advisors in July may have been a starting point for understanding why not. The study argued that the use of atomic weapons on tactical targets would likely be ineffective, demonstrating U.S. impotence and cruelty while doing considerable damage to South Korean territory (Tannenwald 2007, 117). It would place America in the “untenable propaganda position of a butcher discarding his morals and killing his friends in order to achieve his ends.” (Crane 2000, 73). Additionally, a later study presented by

the Pentagon argued that the deterrent value of atomic weapons far outweighed their practical use in battle especially if their use produced indeterminate results (Ad Hoc Committee Plans Division, 1950). These early reports began to question the efficacy of atomic weapons use in battle, and their perceived reputation internationally once use would occur.

Therefore, the stages were set upon which the military industrial complex had entirely split views on nuclear weapons applicability in war, and their use as a purely psychological deterrent. However, the question must be asked why would some in the military be so in favor of their use while others would not be? After all, the U.S. held a nuclear monopoly at this time and their use could have theoretically saved U.S. and UN soldiers' lives. If there was ever a time outside of WW2 where nuclear weapons use had a feasible, practical, applicable case, the Korean war is such an occasion. Ultimately, there is a reason why largely half of Truman's generals were supporting nuclear weapons use (Tannenwald 2007, 135-140). In particular, Tannenwald notes that the commanders in the field and the weapon specialist in the Pentagon were far more interested in atomic options than his top military advisors the Joint Chiefs of Staff (JCS) (2007, 118-119). Ultimately the debate derived around what many considered to be appropriate and viable targets for atomic weapons in Korea (General MacArthur and other generals) while others found no such targets to exist (JCS 1950, 1276-81; Tannenwald 2007, 133). The distinction in views was often due to those on the ground in Korea supporting their use, while those in D.C. did not. Which I argue is a direct result of commanders seeing men die every day, versus JCS considering the grander impacts the precedent of nuclear use in war would have set.

This becomes more apparent when Chinese troops made a surprise entry into the war at the end of November 1950 that greatly threatened a military disaster for the US-UN coalition. Due to consistent battlefield losses, Truman's generals and commanders in the field routinely

considered and called for the use of tactical atomic weapons (Tannenwald 2007, 117). General Douglas MacArthur, the Commander-in-Chief of the United Nations Command in Korea along with the Army's Plans and Operations Division assistant chief of staff Charles Bolte requested the case for using nuclear weapons be heavily reconsidered by the JCS (Tannenwald 2007, 119). General J. Lawton Collins the army chief of staff submitted a memorandum to the JCS that "in the event of an all-out effort by the Chinese Communists, the use of atomic bombs against troops and material concentrations might be the decisive factor in enabling UN forces to hold a defensive position or to effect the early drive to the Manchurian border" (Memo, G-3 to Chief of Staff, US Army, 1950).

Despite these requests, they were ultimately denied, and the U.S.-UN coalition would go on to prevail in a back-and-forth battle across Korea against their adversaries for well over a year. Eventually General MacArthur was relieved of his command by President Truman on April 11, 1951 (Belmonte 1995, 641-642). The main reason for MacArthur's dismissal was his public disagreement with Truman's policy of limiting the war in Korea. MacArthur wanted to escalate the conflict by expanding the war into China and using nuclear weapons, which Truman believed would lead to a wider conflict and possibly World War III. MacArthur also made several public statements criticizing Truman and the administration's policies, which was seen as insubordination and a threat to civilian control of the military (Belmonte 1995, 641-642).

Truman ultimately decided to replace MacArthur with General Matthew Ridgway, who supported Truman's policy of limited war and was more willing to work within the chain of command. However, by April 1951 the Truman administration would receive intelligence pending a major military setback to occur presenting Ridgway and Truman a serious test for their restraint. Intelligence reports suggested the possibility of a massive Soviet intervention with

aircraft and troops. After consultations with his advisors, Truman dispatched nine atomic weapons to the Pacific, though making clear he had not yet decided to use them (Tannenwald 2007, 125).

On April 11th (same day MacArthur was dismissed) the JCS directed General LeMay to prepare targeting plans. Tannenwald notes “this is the first-time atomic bombs had been deployed overseas since 1945” (Tannenwald 2007, 125). General Ridgway was given qualified authority to attack air bases in Manchuria and for an atomic strike in retaliation for a major Chinese air strike originating outside of Korea (Tannenwald 2007, 125). Fortunately, the Soviet invasion never occurred and after the dismissal of MacArthur, Truman and his administration began to consider ways to bring the war to an end via diplomacy. It was at this time that the Soviets became receptive to diplomatic talks and by June 1951 the B-29 bombers equipped with atomic warheads returned home and Truman never again sent nuclear weapons abroad (Tannenwald 2007, 125). The war then settled into a nasty stalemate after the Summer of 1951.

When analyzing the language used by Truman’s top commanders, generals, and military organizations, it becomes clear that the results on the battlefield were not going as well as the commanders would have liked. They knew full well that Korea and China were not being deterred by the U.S. nuclear arsenal and that conventional capabilities were limited in their ability to achieve decisive victories. The U.S. and UN commanders knew that to win the war faster, to save additional lives, that credibility of the U.S. nuclear arsenal needed to be enhanced by their use in battle. These commanders saw their soldiers die every single day. The moral and ethical aversion to using nuclear weapons for these men, did not exist. In an examination of the language used by the commanders on the ground in Korea, these men felt no taboo against the first use of nuclear weapons. In fact, these men encouraged the bombs use. They believed it was

the only way they could achieve a true victory in Korea. For example, General MacArthur asked his superiors for thirty-four atomic bombs, submitting a list of targets which he considered would require 26 bombs and requesting four bombs to be used on invasion forces and four bombs to be used on critical concentrations of air power, both targets of opportunity (Tannenwald 2007, 124).

However, the JCS came to believe that there were several military reasons against using atomic weapons (Tannenwald 2007, 119). In the JCS perspective the stockpile of bombs was too small to risk their use in Korea rather than in Europe, which to the JCS was the core security interest of the United States. They believed Korea had few useful targets, and that the bombs use would not equate to a decisive victory, which would thus diminish their deterrent strength elsewhere (Memorandum of Conversation 1950). The Truman administration would take these recommendations very seriously, and throughout the war, they rejected various generals request to use atomic weapons and to broaden the scope of war (Tannenwald 2007, 126). However, Truman was not the only president during the Korean war, and was thus, not the sole man responsible for the use of atomic weapons.

Coercive Nuclear Threats

In January of 1953 Dwight D. Eisenhower would step into the Oval Office confronted with a bloody stalemate in Korea that had dragged on for two long years (Sechser and Fuhrmann 2017, 174). Eisenhower sought a way of compelling China and North Korea to terminate hostilities. Previous to entering office, Eisenhower had suggested using atomic weapons against North Korea as early as 1950 (Crane 2000, 72-73). Todd Sechser and Matthew Fuhrmann suggest that the development of low-yield tactical nuclear weapons in the intervening years made this option even more attractive to Eisenhower (2017, 174-175).

For example, on February 11, 1953, Eisenhower suggested using nuclear weapons to target Kaesong, where enemy troops were believed to be preparing for a massive offensive attack. According to notes from this meeting, Eisenhower “expressed the view that we should consider the use of tactical atomic weapons on the Kaesong area, which provided a good target for this type of weapon” (U.S. Department of State 1953). Sechser and Fuhrmann note that Secretary of State John Dulles, director of Policy Planning at the State Department Paul Nitze, Chairman of the Joint Chiefs of Staff Admiral Radford along with Eisenhower himself were all pressing for the nuclear option within their National Security Council (NSC) meetings in the first months of Eisenhower being in office (2017, 175).

Eventually contingency plans were drawn up that involved the use of atomic weapons “in the event that current truce negotiations break down and it is decided to extend the war in an effort to gain a military decision” (U.S. Department of State 1953). Several days after the plans were drawn up, in the Nevada desert, the United States conducted its first and only test of an artillery-fired atomic shell (Sechser and Fuhrmann 2017, 176). These contingency plans were told to the Indian Prime Minister Jawaharlal Nehru and were intended and assumed to eventually be passed on to the Chinese government alerting the Chinese that if a diplomatic armistice could not be reached, that the U.S. would use atomic weapons and make a stronger military exertion. Shortly after Eisenhower approved the nuclear contingency plan, China agreed to U.S. conditions for an armistice, and a truce was signed a month later (Sechser and Fuhrmann 2017, 176).

Was Deterrence Successful in Korea?

The short answer is that nuclear deterrence utterly failed to deter North Korean and Chinese aggression throughout the war. When looking at this case study through the lens of

rational nuclear deterrence theory, the theory would have predicted that non-use was due to successful deterrence outcomes. That is, it would have predicted that a nuclear arsenal with unquestioned nuclear superiority, an unquestioned nuclear monopoly of destructive yields and delivery methods, should have deterred any rational actor to cease aggression the moment nuclear threats are issued. However, this did not take place. Deterrence utterly failed, which was largely acknowledged by every commanding general within Korea who on one occasion or another requested the use of the atomic bomb. Therefore, rational nuclear deterrence theory and its causal mechanism are entirely irrelevant with regards to explaining nuclear non-use in this case. It cannot explain why nuclear weapons failed to induce fear into the adversary.

Because deterrence failed Nina Tannenwald suggests that it is due to the emergence of the nuclear taboo that nuclear weapons non-use occurred (Tannenwald 2007, 126-135). To Tannenwald, political and normative factors appear to have played a key role in inhibiting the use of atomic weapons by Truman and his advisors during the war (Tannenwald 2007, 126). However, for the nuclear taboo to truly be at play the belief formation in the minds of state leaders that using nuclear weapons is morally and ethically reprehensible to such an extent that they would never use them has to be exhibited in their language. That is Truman and his advisors would have had to show a deep personal and moral aversion to nuclear first use.

However, a close examination of the language exhibited by Truman and his advisors within this case study shows that “taboo talk” was not all that present. In fact, the language exhibited primarily reputational concerns about the bombs use and concerns about setting a precedent of atomic weapons use in war to achieve military goals. There did not appear to be a deeply held personal, moral, and ethical aversion to their first use. For example, Truman and his advisors routinely developed war plans for nuclear weapons at the request of their Korean war

commanders and generals, they just never implemented the plans believing their use should be reserved only in the event the Soviets entered the fray. Furthermore, Eisenhower and his administration exhibited little taboo talk. In fact, Tannenwald even acknowledges that Eisenhower was serious about using nuclear weapons (Tannenwald 2007, 148). The grand takeaway is that if the sole man responsible for the use of atomic weapons is serious about using the bomb and has developed war plans for their use, then it is safe to say that individual does not exhibit a nuclear taboo.

The reality of this case is that U.S. leadership, even when capable of inflicting unacceptable punishment on their opponent, was held back due to factors that are not connected to capability or military retribution by the opponent. The U.S. leadership expected that it would suffer more harm than is acceptable, even though that harm is not physical. That is, the U.S. desisted from using its nuclear capability for such reasons as the fear of losing reputation among domestic and international audiences for acting contrary to normative, moral, or legal principles. In other words, Presidents Truman and Eisenhower were self-deterred due to reputational concerns regarding the bombs use and setting a dangerous precedent for years to come.

Neither president exhibited the atomic anxiety that Frank Sauers theory would predict. There was little to no fear of *death en masse* or the existential dread of harming humanity by using the bomb. Furthermore, they were not constrained by the moral and ethical aversion to first use, and they were not deterred by the Soviet nuclear deterrent. It was entirely reputational concerns that lead to the non-use of the bomb. If you remove that variable, it is very likely that the U.S. would have used the atomic weapons.

In conclusion, the case study of the Korean War highlights the limitations of rational deterrence theory, the questionable emergence of the nuclear taboo, a lack of atomic anxiety, yet

a strong persistent presence of reputational considerations and concerns with the bombs use. Therefore, the causal mechanism for self-deterrence, based on reputational concerns, appears to be the most relevant in explaining why the U.S. leadership did not use nuclear weapons during the Korean War. The fear of losing reputation among domestic and international audiences for acting contrary to normative, moral, or legal principles was the primary factor that self-deterred Truman and Eisenhower. This highlights the importance of considering political and normative factors in explaining nuclear non-use, in addition to military and strategic factors.

VII. CUBAN MISSILE CRISIS

After Fidel Castro's communist government took control of Cuba in 1959, tensions between Cuba and the United States began to escalate. In response to Castro's nationalization of American-owned businesses and properties, the US implemented an economic embargo on Cuba in 1960. The following year, the US sponsored the Bay of Pigs invasion, an unsuccessful attempt by Cuban exiles to overthrow Castro's government.

Meanwhile, the Soviet Union saw an opportunity to establish a foothold in the Western Hemisphere and began to offer military and economic support to Cuba (Sechser and Fuhrmann 2017, 200). In September 1962, Soviet Premier Nikita Khrushchev decided to deploy nuclear missiles to Cuba as a deterrent against a potential US invasion. This decision was likely influenced by the Soviet Union's perception of American aggression, such as the Bay of Pigs invasion and the deployment of US missiles in Turkey (Sechser and Fuhrmann 2017, 200-201).

The US became aware of the missile deployment through aerial surveillance in mid-October of 1962 (Sechser and Fuhrmann 2017, 200). President Kennedy convened a group of advisors known as the Executive Committee of the National Security Council (EXCOMM) to discuss options for responding to the crisis. The US ultimately decided to impose a naval blockade of Cuba to prevent further Soviet shipments of armaments, while also demanding the removal of existing missiles (Sechser and Fuhrmann 2017, 200-201). This led to a tense standoff between the two superpowers, with both sides preparing for the possibility of a nuclear exchange. Ultimately, the crisis was resolved through diplomatic negotiations, with the Soviet Union agreeing to remove its missiles from Cuba in exchange for a US promise not to invade Cuba and the removal of US missiles from Turkey (Sechser and Fuhrmann 2017, 203).

At the time, the U.S. had about 3,260 nuclear warheads, the Soviet Union had roughly 480 (Tannenwald 2007, 243). On the surface it would appear that the U.S. still maintained nuclear supremacy such as they did during the Korean War. However, according to Kiers Lieber and Daryl G. Press, by 1962 “the odds of the United States executing a successful disarming strike against the Soviet Union had dropped substantially” (2020, 48). Once the Soviets had built a nontrivial number of ICBMs and submarines, coordinating an effective nuclear strike became much more complicated. There was no precise moment at which a U.S. first strike would have been truly possible therefore the age of mutual assured retaliation had arrived (Lieber and Press 2020, 48).

Due to these dynamics, the United States Secretary of State Dean Rusk (1961-1969) called it “the most dangerous crisis the world has ever seen,” the only time when the nuclear superpowers came “eyeball to eyeball” (Blight, Nye, Welch 1987, 170). For many people the crisis represents the closest point that the world has come to nuclear war (Blight, Nye, Welch 1987, 170). Graham Allison notes that “had the worst occurred, the death of 100 million Americans, over 100 million Russians, and millions of Europeans as well would make previous natural calamities and inhumanities appear insignificant” (1969, 689). Given the probability of disaster which President Kennedy estimated was “between 1 out of 3” our survival seems remarkable (Sorensen 1965, 705). This case study will examine the factors that influenced the decision not to use nuclear weapons for both states involved. It will ultimately determine whether nuclear deterrence policies were successful.

The analysis will be guided by the four theories of nuclear non-use. The study will use discourse analysis to examine speeches, statements, and other official communications made by key actors, and will identify the presence and nature of "rationality talk," "taboo talk,"

"reputational talk," or "anxiety talk" in their language. The data will be collected from primary and secondary sources and analyzed thematically to provide a unique perspective on the decision-making processes that influenced U.S. and Soviet nuclear policy during the crisis. The goal of the analysis is to determine which theory has the most relevant causal mechanism at play.

Deterrence in the Crisis

When the Soviet Union placed nuclear missiles in Cuba, they were attempting to establish a nuclear policy of extended deterrence to shield the Castro regime from an American invasion (Sechser and Fuhrmann 2017, 207). Soviet Premier Nikita Khrushchev may have believed this was a doable tactic due to the U.S. having put nuclear missiles in Turkey aimed directly at the Soviet Union. In response, the Soviets had deployed their R-12 and R-14 missiles to Cuba in September and were actively building missile silos (Sechser and Fuhrmann 2017, 200). The U.S. did not discover the nuclear deployments until October 16th.

On October 20th, the U.S. began to prepare for war. That day the Joint Chiefs of Staff told U.S. military commanders worldwide that “the state of tension in Cuba could lead to military action.” (Fursenko and Naftali 1997, 234). The U.S. prepared for an attack by deploying planes to Puerto Rico, increasing the number of SAC bombers on active duty, and bolstering its naval presence in the Caribbean under the guise of a secret exercise called ORTSAC (Castro spelled backwards) (Fursenko and Naftali 1997, 237).

However, after deliberating the possibility of a conventional airstrike, on October 22nd the Kennedy administration elected for a naval blockade coupled with the application of international pressure upon the Soviets to withdraw their missiles from Cuba (Sechser and Fuhrmann 2017, 200-203). That same day in a private letter to Khrushchev, Kennedy wrote “I

must tell you that the United States is determined that this threat to the security of this hemisphere be removed. At the same time, I wish to point out that the action we are taking (the quarantine) is the minimum necessary to remove the threat to the security of the nations of this hemisphere. The fact of this minimum response should not be taken as a basis, however, for any misjudgment on your part” (Kennedy 1962). This letter was meant to contextualize the strength of American resolve while reinforcing the capability of the U.S. nuclear arsenal.

Then on October 24th the U.S. military for the first and only time in history, moved to DEFCON 2, one step away from imminent nuclear war (Sechser and Fuhrmann 2017, 202). The military placed ICBMs on alert and mobilized SAC for war to signal its resolve (Sagan 1985, 108-109). David Burchinal former Deputy Commander in Chief, United States European Command later explained “We had SAC bombers on nuclear alert with weapons in the bomb bays on civilian airfields all over the U.S. all these moves were signals the Soviets could see and we knew they could see them. We got everything we had ready and aimed and we made damn sure they saw it” (Trachtenberg 1985, 157). As a result of moving to DEFCON 2, military commanders were given launch authority over some nuclear forces.

On October 26th the first of Khrushchev’s famous two letters were received by the White House. Khrushchev pondered the looming ‘worldwide and destructive war’ (WHT 2001b, 353) and wrote to Kennedy: ‘I see, Mr. President, that you are not devoid of a sense of anxiety for the fate of the world, of understanding, and of what war entails’ (WHT, 2001b, 349). Khrushchev was openly acknowledging the fears and anxiety he was feeling, and he likely attempted to de-escalate tensions by appealing to this emotion directly to Kennedy, who was also known to exhibit anxiety during the crisis regarding the potential for miscalculation and thereby escalation

(Sauer 2015, 94). Kennedy regarded the use of nuclear weapons as wrong, and literally as the 'final failure' (Sauer 2015, 85, 94).

However, the next day, tensions remained high. On October 27th, a U-2 spy plane based in Alaska inadvertently strayed into Soviet airspace, leading some in Moscow to fear that a preemptive nuclear attack was imminent. The plane returned to U.S. airspace without a military incident, yet the situation could have been disastrous. That same day Khrushchev wrote to Kennedy that the U-2 "could be easily taken for a nuclear bomber, which might push us to a fateful step; and all the more so since the U.S. Government and Pentagon long ago declared that you are maintaining a continuous nuclear bomber patrol?" (Allison and Zelikow 1999, 240). On the same day Soviet anti-aircraft batteries shot down a different U-2 over Cuba, killing the pilot.

In a desperate attempt to de-escalate tensions between the two nations, on the night of October 27th, Robert Kennedy and Soviet ambassador Anatoly Dobrynin met to discuss a resolution to the crisis. By Kennedy's telling, he delivered a clear threat to Dobrynin: "If they did not remove those bases, we would remove them." (Kennedy 1969, 86). Eventually diplomacy would be the victor as the two came to a compromise to end the Cuban Missile Crisis. The Soviets would remove the missiles from Cuba if, in exchange, the U.S. privately agreed to the removal of nuclear armed Jupiter missiles from Turkey and the U.S. would publicly pledge not to invade Cuba (Sechser and Fuhrmann 2017, 203).

On October 28th, Khrushchev said, "I very well understand your anxiety and the anxiety of the United States people in connection with the fact that the weapons which you describe as "offensive" are, in fact, grim weapons. Both you and I understand what kind of weapon they are... Therefore, you can imagine what kind of responsibilities you assume, especially now during the anxious times we are now experiencing" (WHT, 2001b, 512). Furthermore, he stated

“we found ourselves face to face with the danger of war and of nuclear catastrophe, with the possible result of destroying the human race. In order to save the world, we must retreat” (Fursenko and Naftali 1997, 284). With this famous speech the Soviets began their removal of the nuclear missiles in Cuba and the crisis came to an end.

Assessing the Success of Deterrence in the Cuban Missile Crisis

Arguably, the Cuban Missile Crisis is a case of deterrence policy’s partial success. First and foremost, it should be noted, that President Kennedy was not entertaining the notion of using nuclear weapons against Cuba at any point (Sauer 2015, 89). Kennedy exhibited all the signs of atomic anxiety, coupled with a deeply felt moral and ethical revulsion to using nuclear weapons first (Sauer 2015, 94). However, for the United States, their policy of flexible response was still largely successful. This policy aimed to create a range of military options that could be used to respond to various levels of conflict. It was based on the premise that not all conflicts required a full-scale nuclear response, and that the use of nuclear weapons should be reserved as a last resort. The strategy included a mix of conventional and nuclear capabilities, and the use of both tactical and strategic nuclear weapons. In this light, the actions Kennedy took during the war reflected this policy and its strengths over the previous nuclear policy of massive retaliation. Furthermore, considering only one death occurred once the naval blockade was initiated, the policy did a relatively strong job of deterring any additional Soviet aggression.

When examining the requisite actions taken by the Soviets coupled with the language utilized by Khrushchev once the U.S. embargo occurred, the evidence seems to indicate that the Soviet were largely deterred by a fear induced effect of retaliation threats. However, when considering, it was Khrushchev who originally started the crisis by attempting to establish a policy of extended deterrence, likely to blackmail the United States with nuclear weapons (Sechser and

Fuhrmann 2017, 206), it becomes evident that this Soviet policy utterly failed at deterring U.S. aggression. Considering the central tenet is to induce fear into an adversary and force them to back down, not establish a naval blockade, it is safe to say that Soviet extended deterrence failed.

Additionally, when examining the language used by Khrushchev, it becomes clear that he exhibited a great deal of anxiety during the conflict, likely due to the understanding that the Soviet Union would be utterly destroyed in a nuclear war at that time. The Soviets had the capacity to launch maybe 10-30 submarine nuclear warheads at U.S. cities in such an event like the Cuban missile crisis escalating to DEFCON 1 (Lieber and Press 2020, 47). Millions would die in the U.S. if a few Soviet missiles made it to the mainland. The losses would have been devastating, but largely survivable. However, the effect would have been far worse for the Soviet Union. Without a doubt the U.S. nuclear arsenal and the thought of it being used against the Soviets induced an anxiety response in the mind of Soviet leadership especially Khrushchev.

The Soviet Union would have largely been wiped off the face of the Earth with over 200 strategic locations being targeted by 2000 atomic warheads (Lieber and Press 2020, 47). The U.S. made their war plans clear to the Soviets in the early days of the crisis. They wanted the Soviets to know that if things escalated, they would cease to exist on planet Earth. In this way it becomes obvious to understand that when Khrushchev made the statements that “we found ourselves face to face with the danger of war and of nuclear catastrophe, with the possible result of destroying the human race” he truly meant what he was saying. To a large extent Khrushchev experienced the great fear of *death en masse* that Frank Sauer's atomic anxiety theory discusses. In this way atomic anxieties causal mechanism appeared to be at the forefront for the belief formation that occurred for Khrushchev upon which he decided to back down.

Ultimately, the success of deterrence is a mixed bag in this case study and the takeaways are limited. Rational deterrence theory would predict that both the U.S. and the Soviets would be deterred by each other's arsenal. However, it can be noted that during the 13-day crisis, neither side was initially dissuaded or discouraged by the other's nuclear arsenal, despite the predictions of deterrence theory. It was not until the great anxiety effect took place in the ensuing days of brinksmanship that led to a diplomatic solution for the crisis. Ultimately both states took concessions, and both recognized the escalating potential for policies of extended deterrence.

In conclusion, the Cuban missile crisis is the closest the U.S. and the world for that matter has gotten to a nuclear war. At no other time in U.S. history has our military been at DEFCON 2. Yet despite the high tensions war was averted, and outside one U-2 pilot, no deaths occurred. However, an examination of the actions taken, the language used, and the policies enforced seem to indicate that both sides experienced various levels of rational cost-benefit decision making, coupled with large waves of anxiety about the existential dread of escalation, on top of the moral aversion to having to resort to killing either millions of Soviets, or inversely millions of Americans. Due to self-deterrence being limited to cases in which a country is deterred by factors other than retaliation by others, this case study is best understood using a combination of rational deterrence theory, the nuclear taboo, and atomic anxiety. This combination of analysis best explains the rational decision making, the normative constraints, and the existential dread and anxiety of *death en masse* that occurred by both parties involved.

VIII. RUSSIA-UKRAINE WAR

The conflict began in 2014 when Russia supported separatist rebels in the East and proceeded to annex Crimea from Ukraine. Since that time, the conflict has led to thousands of deaths and displacement of people. Putin said the conflict had been forced on Russia, particularly by NATO's eastward expansion since the Cold War. "The people of Ukraine have become the hostage of the Kyiv regime and its Western overlords, who have effectively occupied this country in the political, military and economic sense," he would assert at a meeting of political and military elite (Faulconbridge 2023). Based off this skewed perspective of world events, Putin began an invasion of Ukraine in February 2022.

Since Russia invaded Ukraine in February 2023, Russian leaders have issued several nuclear threats against Ukraine and NATO (Tannenwald 2023, 1). This case study aims to analyze the effectiveness of Russia's nuclear policy of escalate to deescalate. It will additionally analyze the response of Ukraine and NATO to Russian nuclear threats to analyze the overall effectiveness of deterrence. The analysis will be done through the lens of four theories that explain nuclear weapons non-use, including rational deterrence, nuclear taboo, self-deterrence, and atomic anxiety. The language used by the leaders involved in the conflict will be examined to determine which of these theories best explains the outcome of nuclear weapons non-use for the ongoing war.

Russian Nuclear Strategy

Russian nuclear policy is one of escalate to deescalate. Russia has a strategy for escalation management that utilizes a range of nonnuclear and nuclear capabilities to dissuade, intimidate, or achieve de-escalation at key transition points and early phases of conflict, from

peacetime through large-scale and nuclear war (Kofman and Fink, 2022). This strategy involves applying force in a progressive manner to increase the expected costs for the adversary above the desired benefits (Kofman and Fink, 2022). The overarching goal of Russia's nuclear deterrent is to dissuade potential adversaries from launching a nuclear attack or engaging in other forms of aggression against Russia. The Russian government views nuclear weapons as a critical tool for ensuring national security and maintaining the country's sovereignty and territorial integrity. Russia's nuclear deterrent is primarily aimed at deterring the United States and its NATO allies (Tannenwald 2023).

Furthermore, Russia is believed to have the world's largest nuclear arsenal, with an estimated 5,997 nuclear warheads, including both deployed and non-deployed weapons (ICAN 2022). Of these, approximately 1,637 are reportedly deployed on missiles and other delivery systems. Russia's nuclear arsenal is composed of various types of weapons, including intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and strategic bombers (ICAN 2022). Russia's nuclear doctrine emphasizes the role of nuclear weapons as a deterrent against potential threats to its security and territorial integrity, including from the United States and NATO. Russia has also developed advanced nuclear technologies, such as hypersonic glide vehicles and underwater drones, which could potentially enhance the capabilities of its nuclear arsenal.

In summary, Russia has a first-use nuclear policy designed to intimidate an adversary and truly strike fear into their minds forcing them to back down. This policy appears to have been heavily influenced by the rationale behind rational nuclear deterrence theory. However, this policy assumes that nuclear weapons strike fear into the minds of their adversary. This will be analyzed further through discourse analysis later in the case study. Overall, its success is

dependent on their perceived credibility to use nuclear weapons and the adversary ceasing aggression.

NATO Nuclear Strategy

According to NATO's 2022 Strategic Concept, "The fundamental purpose of NATO's nuclear capability is to preserve peace, prevent coercion and deter aggression. As long as nuclear weapons exist, NATO will remain a nuclear alliance. NATO's goal is a safer world for all; the Alliance seeks to create the security environment for a world without nuclear weapons." (NATO 2022). In other words, in NATO's own eyes, the fundamental purpose of their nuclear forces is for deterrence only.

NATO itself does not possess nuclear weapons, but the alliance relies on the strategic nuclear deterrent of its member states, particularly the United States, which maintains a significant nuclear arsenal. According to the Stockholm International Peace Research Institute (SIPRI), as of January 2022, the United States possessed approximately 3,750 active nuclear warheads, of which about 1,750 were deployed and ready for use (SIPRI 2022). Other NATO member states, such as France and the United Kingdom, also possess nuclear weapons, although their arsenals are much smaller than that of the United States. It is worth noting that NATO's nuclear strategy is not based on numerical superiority, but on the credibility and effectiveness of its deterrence posture.

NATO has a first-use nuclear deterrence policy with regards to protecting all 19 nations within the alliance (Mendelsohn 1999; NATO 2022). It maintains a policy of flexible response which allows the alliance to be the first to introduce nuclear weapons into a conflict, including in response to a conventional attack on any member state (Mendelsohn 1999; NATO 2022).

Overall, NATO's deterrence and defense posture are based on what they consider to be "an appropriate mix of nuclear, conventional and missile defense capabilities, complemented by space and cyber capabilities. NATO maintains the freedom of action and flexibility to respond to the full spectrum of challenges with an appropriate and tailored approach" (NATO 2022).

While there are varying opinions on the effectiveness and necessity of NATO's nuclear strategy, it cannot be denied that NATO is one of the most powerful and influential military alliances in the world. With a robust nuclear deterrent, advanced conventional capabilities, and a commitment to collective defense, NATO has successfully maintained peace and security in Europe for all its membered states for over 70 years. Therefore, it can be concluded that NATO is the strongest alliance in the world.

Deterrence in Ukraine

Since February 2022 Russian leaders have issued numerous explicit nuclear threats against Ukraine and NATO (Tannenwald 2023, 1). For example, in April 2022 Putin threatened to respond to any outside intervention by NATO into Ukraine with "swift, lightning-fast retribution". He continued "We have all the tools for this...ones that no one can brag about" (Tannenwald 2023, 1-2). In January 2023 former President of Russia Dmitry Medvedev posted on Telegram "The loss by a nuclear power in a conventional war can provoke the outbreak of a nuclear war," he added "The nuclear powers do not lose major conflicts on which their fate depends" (Simko-Bednarski 2023). In February of 2023 Medvedev said in an interview that any "Ukrainian attacks on Crimea would be met with retaliation strikes, with no negotiations to end the conflict" (Stanton 2023).

In response to these threats, US President Joe Biden said that the Russian threat to use nuclear weapons had brought the world closer to "Armageddon" than at any time since the Cuban Missile Crisis (Bachega and Simpson 2022). China's leader Xi Jinping and German Chancellor Olaf Scholz agreed in a meeting in November 2022 that with the use of nuclear weapons "Russia would cross a line drawn by the international community" (Schmitz 2022). Both leaders openly called on the international community to reject the threat of nuclear weapons and advocate against a nuclear war (Schmitz 2022). President Zelensky of Ukraine said action was needed now, as Russia's threats were a "risk for the whole planet". Moscow, he claimed, had "made a step already" by occupying the Zaporizhzhia nuclear power plant. This is Europe's largest nuclear station which Putin ordered a direct takeover and occupation of as he is trying to turn into Russian property (Bachega and Simpson 2022).

Additionally, the Office of the Director of National Intelligence (ODNI) wrote in its annual threat report "Throughout its invasion of Ukraine, Moscow has continued to show that it views its nuclear capabilities as necessary for maintaining deterrence and achieving its goals in a potential conflict against the U.S. and NATO and it sees its nuclear weapons arsenal as the ultimate guarantor of the Russian Federation" (ODNI 2022). The report added "Heavy losses to its ground forces and the large-scale expenditures of precision-guided munitions during the conflict have degraded Moscow's ground and air-based conventional capabilities and increased its reliance on nuclear weapons" (ODNI 2022).

Despite the agency warning the U.S. and NATO about Russia's further dependence on nuclear weapons to deter NATO interference in Ukraine, NATO has not wavered once in their support for Ukraine. Specifically, NATO member countries are stepping up to support Ukraine by providing military equipment, including anti-tank and air defense systems, howitzers, drones,

and tanks, among others (NATO 2023). This military assistance is worth billions of euros and is helping Ukraine defend its right to self-defense, as outlined in the United Nations Charter. Moreover, NATO forces are also training Ukrainian soldiers to effectively utilize this equipment in the battlefield. In addition to this military aid, NATO Allies are also providing substantial financial aid to Ukraine, as well as humanitarian assistance to civilians and refugees. NATO is collaborating with international stakeholders to bring war criminals to justice, including those responsible for conflict-related sexual violence. Furthermore, NATO allies are working in tandem to facilitate Ukrainian grain exports and mitigate the global food crisis (NATO 2023).

Escalation in Ukraine

On February 21st, 2023, following a surprise visit from U.S. President Joe Biden to visit Kyiv, Putin announced the withdrawal from the New START Treaty, the last bilateral nuclear disarmament treaty in force (Sauter 2023). He further threatened to begin atmospheric nuclear weapons tests (Faulconbridge 2023). Nearly a year after the war began Putin would go on to state to his country's political and military elite "The elites of the West do not hide their purpose. But they also cannot fail to realize that it is impossible to defeat Russia on the battlefield" (Faulconbridge 2023). Putin further accused the U.S. and NATO for turning the war into a global conflict. He would additionally accuse the U.S. of breaking a moratorium on nuclear testing (Faulconbridge 2023). Putin asserted "... if the United States conducts tests, then we will. No one should have dangerous illusions that global strategic parity can be destroyed," "A week ago, I signed a decree on putting new ground-based strategic systems on combat duty" (Faulconbridge 2023).

In response to these actions, Antony Blinken, the United States Secretary of State, criticized Putin's decision as "highly regrettable and lacking responsibility". Meanwhile, Jens

Stoltenberg, the Secretary-General of NATO, expressed his concern over the impact of this decision on global security, and called on Putin to reconsider it (Faulconbridge 2023). As of now, the U.S. and its allies have made no indication that they will begin testing nuclear weapons as Putin alleged. However, Putin has indicated Russia will begin soon. This is likely an attempt to strengthen Russian perceived nuclear credibility and capability.

Deterrence Success in Ukraine?

According to Tannenwald, “nuclear weapons have mostly benefited Russia. Putin has invoked his nuclear might to deter NATO from any military intervention on Ukraine’s behalf” (2023). She asserts “That deterrence has worked: the West is (rationally) unwilling to enter the war directly or even to give Ukraine long-range firepower that could reach far into Russia, for fear that such help could end up sparking an apocalyptic nuclear conflict” (Tannenwald 2023). She comes to this conclusion by arguing that if Russian nuclear weapons were not in the calculus that “the United States and NATO would be able to employ their superior conventional firepower more effectively in Ukraine’s defense to win the war quickly” (Tannenwald 2023). Russia’s nuclear arsenal is what neutralizes the NATO’s conventional military superiority.

However, her claim that Russian deterrence has successfully prevented the United States and NATO members from intervening is highly contested. The U.S. and NATO have given unprecedented assistance to Ukraine (Masters and Merrow 2023). Furthermore, the West’s reluctance to intervene in Ukraine may have more to do with strategic calculations than with fear of Russia’s nuclear weapons. A war by proxy in Ukraine could have advantages for NATO and the U.S., such as allowing them to maintain their focus on China and preserving Taiwan’s independence (Buncombe 2023). The U.S. has a greater economic incentive to prioritize its interests in East Asia over Ukraine.

Moreover, Ukraine did not cease aggression into occupied territory when Russia threatened nuclear reprisal strikes, indicating that the rational deterrence theory did not apply as expected. If Russia begins testing nuclear weapons during the war, Ukraine should be deterred according to rational nuclear deterrence theory. It remains to be seen whether these conditions will be met. Unfortunately, or fortunately, it is still too early to make a declaration as to whether or not NATO deterrence policy will successfully be able to deter Russia from escalating things outside of Ukraine to NATO member states. The general assumption is Putin will not, which will largely indicate a deterrence victory for NATO and the U.S.

In totality, it is evident that deterrence has played a central role in the conflict. However, the success of deterrence for Russia is questionable at best. For Russia, the policy of escalate to deescalate has largely been a failure at deterring Ukraine. They have not truly won at any escalation transition points in the war and have failed to properly induce fear into the Ukrainian minds. However, Putin has not used nuclear weapons. Therefore, the question remains, is Putin being rationally deterred, is he experiencing the normative constraints of the taboo, is he being held back due to reputational concerns, or is he simply experiencing atomic anxiety regarding escalating tensions with the West if he uses the bomb?

An examination of the rhetoric he has used, the actions he has made, and the policies that have been implemented seem to indicate that the only thing holding Putin back from nuclear first use, is a lack of a clear strategic advantage for first use, coupled with reputational concerns with regards to their relationship with China. For example, a meeting between President Putin and his Chinese counterpart Xi Jinping in March 2023, established their opposition to nuclear war (Feng 2023). Additionally, Putin and Xi have agreed that nuclear weapon states should avoid deploying such weapons in foreign lands and should withdraw any that are currently deployed. The two

leaders have further reaffirmed their belief that the Treaty on the Nonproliferation of Nuclear Weapons as being a fundamental aspect of global nuclear disarmament and nonproliferation. They have committed to working together to uphold and reinforce the treaty, in order to promote world peace and security (Feng 2023). However, just a few days later Putin announced plans to deploy nuclear warheads into Belarus (Feng 2023). The implications are, Putin has varying levels to the degree he perceives his reputation is of primary concern compared to the simplicity of regime preservation against NATO and the U.S.

In conclusion, Russian deterrence policy has been questionable at achieving its stated strategic goals. Putin largely appears to be self-deterred by his relationship with China and their role as a rational actor in the international community, however it does appear this is not a finite condition and is subject to change dependent on his perception of danger that is present with regards to his regime survivability. I forecast that if Putin comes to perceive regime stability is no longer guaranteed due to calamities occurring from the Ukraine war, coupled with the continued fact that he cannot get NATO or the U.S. to change their views, rhetoric, or support with regards to their expectations for the Ukraine war outcome, Putin will use nuclear weapons to strengthen his perceived deterrent credibility. Overall, this case study concludes that the theory of self-deterrence best explains nuclear non-use in this case study, however that is subject to change dependent on Putin's perception of reality throughout the duration of the war.

Table 1. The Korean War: Best Explained Using the Lens of Self-Deterrence Theory.

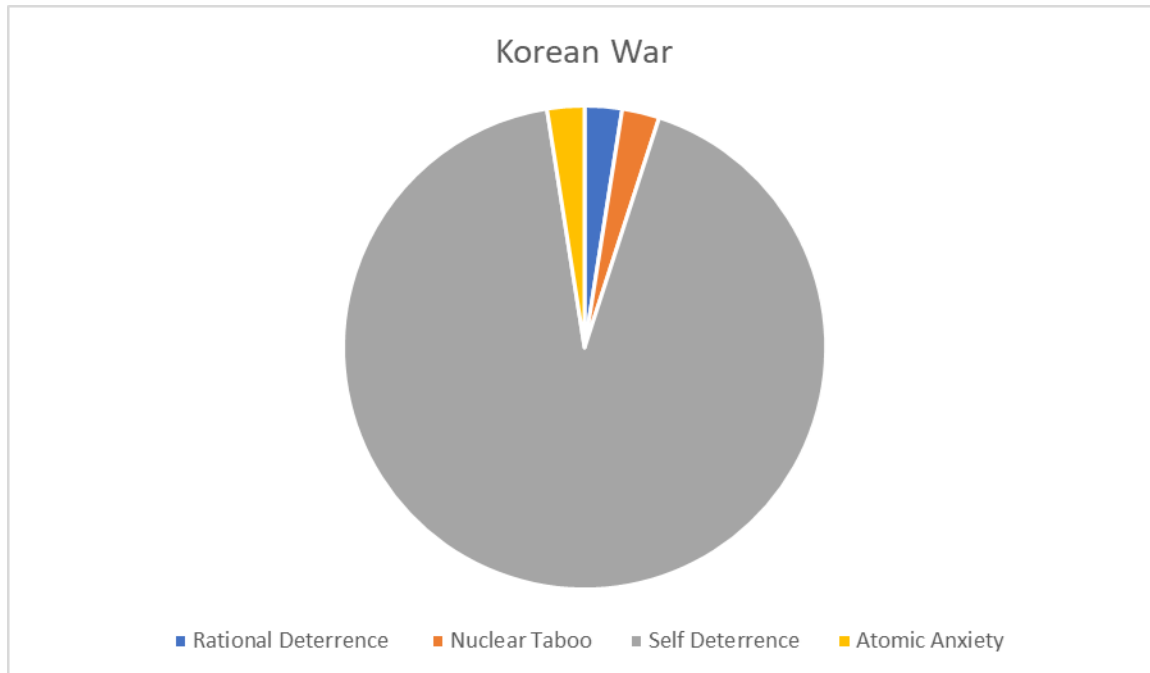


Table 2. The Cuban Missile Crisis: Best Explained Using the Lens of Rational Deterrence, The Nuclear Taboo, and Atomic Anxiety theories.

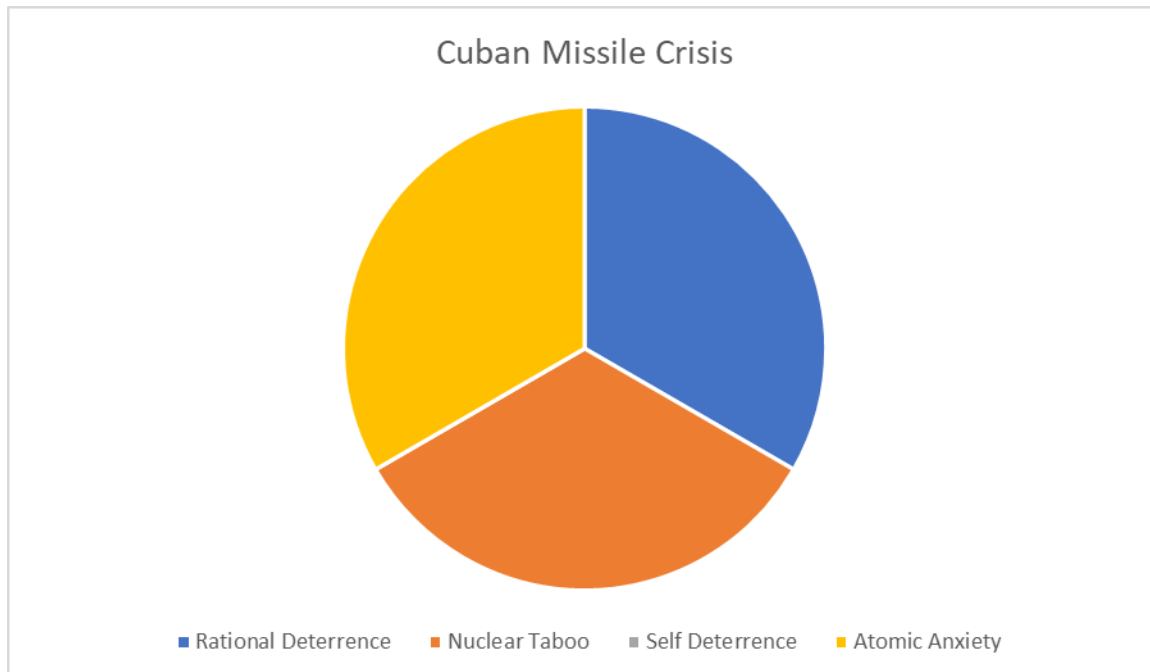
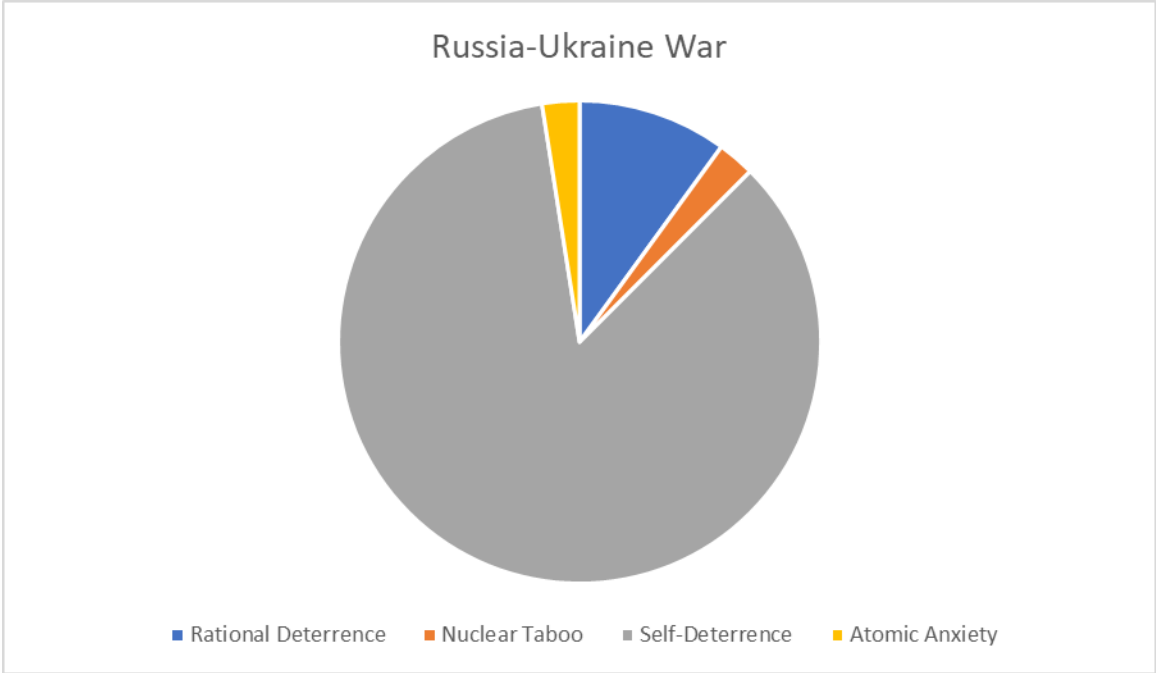


Table 3. Russia-Ukraine War: Best Explained Using the Lens of Self-Deterrence and Rational Deterrence theories.



IX. CONCLUSION

In conclusion, the concept of self-deterrence has proven to be a valuable tool for understanding certain conflicts, particularly the Korean War and the ongoing Russia-Ukraine conflict. In cases upon which a powerful actor (such as U.S. and Russia) is capable of inflicting unacceptable punishment on an opponent, while having issued coercive declaratory threats to do so, according to the dynamics of the theory, states will be held back due to factors that are not connected to capability or military retribution by the opponent. That is, the state desists from using nuclear weapons for reasons such as the fear of losing reputation among domestic and international audiences for acting contrary to normative, moral, or legal principles. The historical case study of the Korean War supports these dynamics. Furthermore, the current projection of the Russia-Ukraine war and the dynamics and factors that have led to non-use additionally supports the self-deterrence theory.

However, the theory is incapable of fully explaining the Cuban Missile Crisis, which requires a combination of rational nuclear deterrence, the nuclear taboo, and atomic anxiety theories. The Cuban Missile Crisis was a unique situation that posed a significant threat to the world due to the potential for nuclear war. The leaders of both the United States and the Soviet Union recognized the gravity of the situation and made decisions that prioritized avoiding nuclear war over their own self-interests. This demonstrated the fear inducing effect that rational nuclear deterrence theory would predict that leads to the non-use of nuclear weapons.

Additionally, the nuclear taboo played a significant role in the Cuban Missile Crisis by making the use of nuclear weapons socially and morally unacceptable. The fear of being seen as a violator of this taboo likely contributed to both sides' willingness to avoid direct confrontation. Lastly, the language exhibited by the leaders of the U.S. and Soviet Union indicate that atomic

anxiety was ever present in the minds of both state leaders. It played a major part in the crisis by highlighting the fear and uncertainty surrounding nuclear weapons' potential for destruction.

This research suggests that nuclear deterrence is not a foolproof strategy to prevent aggression, especially in regional conflicts where one nuclear-armed state has a significant interest in preserving the cities, economic resources, and the civilian populations. It furthermore has grave implications for the prospect of successful deterrence outcomes for policies of extended nuclear deterrence. Thus, policymakers must acknowledge that possessing nuclear weapons does not automatically lead to successful deterrence as there are very specific conditions upon which nuclear weapons will actually induce fear into one's adversary. Other factors such as norms, morals, ethics, psychology, reputation, and public opinion all play a vital role in decision-making and can significantly impact the success of deterrence policies.

Based on these findings, policymakers should consider non-military options, such as diplomacy, economic sanctions, and alliances, to address potential conflicts. Diplomatic efforts can help reduce tensions between nations and avoid armed conflict, while economic sanctions can impose costs on aggressive nations. Additionally, forming alliances with other nations can increase the cost of aggression for potential adversaries and provide a form of deterrence.

Moreover, policymakers must clearly communicate their intentions regarding nuclear weapons to the public. Public opinion has a significant impact on the decision-making process of state leaders, and policymakers must be aware of the potential reputational costs associated with using nuclear weapons. By explaining their intentions and rationale to the public, policymakers can help maintain support for their actions and reduce the risk of public backlash.

Finally, this study highlights the limitations of nuclear weapons in deterring conventional conflicts, particularly regional conflicts where one of the nuclear-armed states has a significant interest in avoiding destruction. Although nuclear weapons can create a sense of mutual destruction between two nuclear-armed states, they have limited effectiveness in deterring conventional conflicts, especially regional conflicts on a nuclear weapon states border. Ultimately, further research is needed to be conducted utilizing the four theories of nuclear weapons non-use to be applied to additional historic case studies such as the Kargil War between India and Pakistan or the Vietnam War between the U.S. and North Vietnam to name just a few.

In conclusion, this research highlights the importance of considering multiple factors in analyzing the effectiveness of nuclear deterrence strategies. While self-deterrence theory offers valuable insights into some conflicts, such as the Korean War and the ongoing Russia-Ukraine conflict, it is insufficient in explaining the unique dynamics of the Cuban Missile Crisis. Therefore, policymakers should be cautious in relying solely on nuclear deterrence as a strategy for preventing aggression, especially in regional conflicts. Instead, they should consider a range of non-military options, such as diplomacy, economic sanctions, and alliances, and focus on augmenting quantum computing and artificial intelligence capabilities to enhance national security. By recognizing the limitations of nuclear weapons and taking a more comprehensive approach to national security, policymakers can help prevent armed conflicts and promote global peace and stability. The study suggests areas for future research emphasizing the need for further case studies on the topic. Policymakers must consider these findings when formulating policies related to nuclear weapons to ensure a safer and more stable world.

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