

Prying the Bond that Ties
Breaking Variations in Nuclear Capabilities from Changes in Strategic Stability

by

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Raymond Morris Ruscoe, PhD

University of Pittsburgh, 2019

Do variations in state nuclear capabilities drive changes in strategic stability? The importance of strategic stability's causal relationship with nuclear capabilities is impossible to overstate, given the bulk of Cold War scholarship. Viewed broadly, strategic stability is the degree of mutual deterrence from war between potential adversaries. Since the close of World War II, tomes of research from scholars and practitioners alike have frequently coupled variations in nuclear capabilities with changes in strategic stability, treating the two conditions as if they existed in a mutually dependent relationship. The results of the present research show that this unconditional causal relationship does not exist. To determine the existence of the tight coupling of nuclear capabilities with strategic stability that scholarship has suggested, the present research examines case studies in which strategic stability changed in a dyadic state system where both sides had nuclear capabilities. Early in the Cold War, any changes in nuclear capabilities should have driven changes in strategic stability as the United States and Soviet Union fought to develop and field ever larger atomic arsenals. Throughout the 1950s and for most of the 1960s, the United States constructed atomic dominance, which afforded the government an opportunity to obtain strategic stability by denying the Soviet Union the ability to strike back if hit first. However, the Soviet Union built more significant nuclear capabilities and, in the late 1960s, American dominance waned. This enabled each side to achieve second-strike capabilities, breaking the capability–stability causal relationship. The case studies reported as part of this research detail events that

occurred between 1957 and 1967, centered on the 1962 Cuban missile crisis, a time when the causal relationship between nuclear capabilities and strategic stability should have been at its strongest. Viewed from the perspective of escalation theory, changes in strategic stability represent both positive and negative adjustments in dyadic state relations relative to dyadic state war. The results of this research apply to all existing nuclear dyads, making early Cold War dyadic state relationships relevant in the here and now. Advancing my claim further, any time that technological innovations of war have the potential to cause dyadic state strategic instability, this research shows that the causal factors of dyadic states driving toward and away from war will remain varied and not reliant on any singular weapon or capability. Through the examination of these cases, I present the argument that nuclear capabilities are sometimes sufficient to cause changes in strategic stability, but are not a necessary component.

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Preface

This dissertation examines the role that the acquisition of advanced technologies has on changes in dyadic state strategic stability. What does this mean? Simply put, when two nations have a devastating piece of technology, I examine whether obtaining additional units causes more or less destabilization. To conduct my research, I look at possibly the most influential piece of technology ever created, nuclear weapons. Specifically, my research examines nuclear capabilities between the United States and Soviet Union, two states with a long and storied past in terms of both excessive nuclear acquisition and near confrontations. While my research examines these two superpowers, I have a whole host of family members, friends, and mentors to thank because, without each of them, this project would have never been possible.

First and foremost, I need to thank the American taxpayer. As an active-duty Air Force officer, I would not be where I am without the support of those I have sworn to serve. Moreover, on a day-to-day basis, I need to thank the Air Force Institute of Technology (AFIT), the parent command throughout my studies. Each AFIT staff member assigned to my chain of command had only one goal: my success.

Special thanks are given to Ben McKechnie for providing grammatical editing services. No editing changed the context or content of the material contained herein. All content is my own and represents only my personal opinions and not those of the United States Space Force, Department of the Air Force, or the Department of Defense.

Military members do not independently achieve large accomplishments; it usually takes a team. This dissertation is no different. Baked into military heritage, often during special presentations, is that military members take the time to thank those who helped them reach the

next level of their career. This preface is my opportunity. Instead of rattling off an infinite number of names without any meaningful context, I would like to take a different approach. Those I wish to thank for helping me get to the end of my doctoral studies fit into three categories, Leadership, Strength, and Compassion. Through these three categories, I wish to express my gratitude.

Leadership

Those who provided me with leadership blazed the path I followed each day of my academic program and beyond.

I will forever give thanks to God, the author of my faith. In the best of times and the hardest of times, this foundation provides me with the support I have come to rely upon.

Temporally, special thanks go to Professor Ryan Grauer, my academic advisor, dissertation committee chair, and dare I say, friend. Having never met me before the start of my studies, Ryan tirelessly put in extraordinary effort to move me through the doctoral program in record time while providing me with insights and perspectives that I will forever cherish. I have completed all the requirements for this program because Ryan relentlessly provided leadership every step of the way.

From the date of my first class to my oral defense, the remaining members of my dissertation committee also provided tremendous support. Professors Phil Williams, Michael Poznansky, and Forrest Morgan provided unvarnished feedback based on their academic acumen and real-life experiences. In my humble opinion, rarely has a committee comprised scholars and practitioners of such a high caliber. My research in the pages that follow was made stronger because of the advice and direction provided by each of these esteemed scholars.

Finally, I sincerely acknowledge those who selected me for this doctoral studies program. Much of what I have today derives from the leadership provided by Dean Jim Forsyth and the Air

Command and Staff College faculty selection committee. Military academic institutions are unlike anything available in the civilian sector. Individuals are valued less than teams in the military, which works in combat as well as education. Academic collaboration trumps competition, and those who graduate the rigorous courses of study in military education generally do so in very compressed timeframes and have immediate impacts on the security of our great nation. A typical graduated military member moves from cap and gown to significant national-level operational impacts within weeks of receiving their diploma. Jim and the ACSC professorial staff introduced me to this unique avenue of military academia where I hope to serve for many years to come, serving those that serve our great nation.

Without the leadership of those mentioned here, the dense forest of academia would have been almost impossible for me to navigate.

Strength

There is a special group of people that provided support and strength, keeping me going as I completed my academic journey.

I am tremendously indebted to my in-laws, John and Marilyn Jackson. My wife Susan and our children, Mary, Jonathan, Rachel, and Joseph had the unique opportunity to live near John and Marilyn throughout my graduate studies, allowing us to share in many family events. Our children, for the first time in their lives, knew what it meant to live near their extended family, and I cannot help but think how much of a positive influence this was. Along the way, my in-laws provided unconditional love, guidance, and wisdom, with unquestioning support. I believe their example of solid family life and unconditional love taught me just as much as any of my doctoral studies.

My siblings Kim, Jim, Elisa, and Willis managed to provide a significant level of support and encouragement. Each has a unique path in life, but all managed to coalesce around my studies. They will never know how much their support will forever mean to me.

My father's widow, Carol, provided a special level of strength throughout my studies. In late October 2015, I called dad with the news of my acceptance into graduate school and the conversation we had that day would remain special for the rest of my life. Dad mentioned how proud he was of my accomplishments, his optimism for the future, and, in his own way, how much he loved me. Less than fifteen minutes after my phone call, Carol called me back to let me know that immediately after our phone call, while walking across the room, dad suffered a massive stroke. In the blink of an eye, I became the last sibling to speak with him. Later that week, I arrived at his hospital bedside with a college pennant in hand. Dad never regained his cognitive functions. It was in his hospital room that I took one last picture with my father and he passed just days later. Dad will never see me publish my dissertation, receive my doctoral hood, or walk across the stage, but he will be with me during all those events. I knew he was proud, and I kept his remembrance card on my desk, looking at it every day of my studies. Carol and I would talk throughout my time at the University of Pittsburgh, where she would remind me of how proud my father was of me. Her words brought him back to life every time we spoke.

My mother provided no less support. Mom is the daughter of Puerto Rican immigrants who settled in the Bronx borough of New York City in the early 1900s. She fit the New York City stereotype of a self-supporting woman with the strength of a mountain and the heart of a saint. My success in the doctoral program at the University of Pittsburgh would not have been possible without her prayers and weekly words of encouragement. Mom took every opportunity to ask questions about my studies and remind me of the value working hard had in reaching my goal.

She was keenly interested in my work even if it did not always make sense. I share this accomplishment with her because without her, I would not be who I am today. I pray that mom's strength, love, and compassion continue for years to come.

Compassion

Finally, I want to acknowledge those who supported me with compassion, a show of unwavering love and support.

First and foremost, throughout the entire program, Ben and Jen Sweeney, along with their four beautiful daughters Megan, Sarah, Laura, and Katie, kept a smile on my face and became my escape during the height of studies and academic rigors. Ben was by chance assigned to be my crew partner in 2003 when we were assigned as intercontinental ballistic missile launch officers and we have been together ever since. Undoubtedly, the "Sweencoe" family is inextricably tied together and we would have it no other way.

Special acknowledgement goes out to Matthew Maher, Christopher Pass, Elton Saunders, Phil Foret, Erick Chamblee, Reverend Jonathan Wilson, and Reverend Luke Mary Fletcher, CFR. Since my late teens, these Brothers have been by my side. We all continue to speak on a daily basis and they never miss an opportunity to ground my ego or remind me of the places from which I come.

Of course, there are my children, Mary, Jonathan, Rachel, and Joseph. These four kids supported me every day. I was granted a once-in-a-lifetime opportunity in the pursuit of my academics. Over the course of this program, however, I was given the chance to watch my children grow up in ways I never imagined. The rigors of active-duty military life often mean foregoing the ability to attend school events, sporting matches, and so much more. During my studies, I was given the flexibility to attend so many more of my children's events than I had ever been able to

before. In short, while my children cheered me on, I was able to connect on a much deeper level with each of them because of my doctoral studies, allowing me to provide mutual support and compassion to the four most important children in my life.

Finally, I wish to acknowledge not only my best friend and confidant, but the very person whose daily efforts make all things possible. By the time this dissertation is published, Susan and I will have been married for twenty-two years. Over that time, Susan and I have lived in fifteen different houses across seven states. She has kept our house together through multiple duty assignment changes, deployments, compressed doctoral studies, and anything else the Air Force has asked of our family. Susan has accomplished everything with grace, poise, and a prayerful demeanor. Her strength and support have allowed me to progress through eighteen years in uniform and she is not slowing down. Looking ahead to the future, Susan is excited for all the challenges we are about to face in our upcoming assignments, and it is from her optimism and compassion that I find strength to continue on each day. I have no idea why I have been graced with such a wonderful human; I only know that I would not be where I am today without her.

1.0 Introduction

During the early Cold War, after the Korean conflict and before the end of the 1960s, a period existed where conventional thinking among scholars and practitioners alike tightly bound variations in nuclear capability to changes in strategic stability. Holding tight the capability–stability bond meant that any changes in nuclear capabilities drove a change in strategic stability, the degree of which mutually deterred potential adversaries from war. Although the capability–stability bond undoubtedly exists, I contend these two variables do not have a tight causal relationship. Variations in nuclear capabilities manifest as a change in the total number of nuclear weapons, the number of transportation vehicles, or the number of nuclear weapons transported at one time. Resulting from nuclear-capability variations, according to period scholarship and supported by some contemporary writers, deterrence from a war between two states becomes more or less likely. Considering the arguments presented by countless scholars, I test existing claims tightly binding variations in nuclear capabilities to changes in strategic stability.

The research conducted addresses the following question: do variations in state nuclear capabilities drive changes in strategic stability? Specifically, I examine strategic stability through existing scholarship and research that tightly binds capability variations with changes in strategic stability before mutually assured destruction (MAD) began to dominate the Cold War. Analyzing the results from my research shows that the unconditional causal relationship between capability and stability, as suggested through academic research and policymaker practice, does not exist; nuclear capabilities are not a necessary component and are only sometimes sufficient to cause changes in strategic stability. The data examined in my research are comparisons of historical cases where changes in strategic stability occurred during the same timeframe as variations in

nuclear capabilities between two states. Through my research, the bond between nuclear capabilities and changes in strategic stability is examined, specifically through researching historical cases between the United States and the Soviet Union, a data rich dyad, where changes to strategic stability occurred between 1957 and 1967, before the establishment of MAD later in the 1960s.

What applicability does Cold War research have on international affairs today? This question has two answers. First, the United States and the Soviet Union are no longer the only nuclear-weapon states; nine states have nuclear capabilities today, and not all have positive international relations with the United States.¹ Therefore, given the broader proliferation of nuclear capabilities internationally and the varying level of advancement in each state's programs, a higher number of potential nuclear state dyads exist that have not reached the level of MAD, as was the case between the United States and the Soviet Union before 1967.²

Second, just as technological advancement through the creation of nuclear weapons had an influence on strategic stability during the Cold War, today's innovative technologies promise to cause changes in strategic stability. The 2018 National Defense Strategy provides a summary of threats facing the United States today, which are "defined by rapid technological change, challenges from adversaries in every operating domain, and the impact on current readiness from

¹ According to the Arms Control Association, the nine countries with nuclear weapons are the United States, United Kingdom, France, Israel, Pakistan, India, Russia, China, and the Democratic Peoples Republic of Korea (North Korea). In the 2017 National Security Strategy, Russia, China, and North Korea are all highlighted as states who have varying levels of adversarial relationships with the United States. Kelsey Davenport and Kingston Reif, "Nuclear Weapons: Who Has What at a Glance" (Arms Control Association, July 2019), www.armscontrol.org; Donald Trump, "National Security Strategy 2017" (US Government, 2017).

² A good example of two states that have not reached the level of MAD is India and Pakistan; two states with poor relations with one another and each having a rudimentary, pre-MAD, nuclear program. Another dyadic state example includes the United States and North Korea, where North Korea cannot guarantee a second-strike capability which is a key part of MAD.

the longest continuous stretch of armed conflict in our Nation's history."³ The next threat to strategic stability among one or more states need not come from variations in nuclear capabilities, but might very well originate from cyber attacks on national banking systems, space-based attacks on any part of the global multibillion dollar orbiting space-based infrastructure, or from sources not currently even imagined. Relevant to international security today, technological advances, malicious computer attacks, and operations in and through space have the potential to cause an imbalance in state dyads leading to decreased mutual deterrence from war or decreased strategic stability in some circumstances, much like traditional scholarship attributes to nuclear capabilities.

The results from my research show that variations in nuclear capabilities between the United States and the Soviet Union were consistently not necessary in the timeframe before the establishment of MAD and only sometimes sufficient to cause changes in strategic stability. In the United States and Soviet Union dyadic system between 1957 and 1967, multiple movements to and from war occurred, although only some were attributable to variations in nuclear capabilities. Severing the requirement for variations in nuclear capabilities to drive changes in strategic stability contextualizes nuclear weapons in today's international arena, while opening the possibility for research for substitutions into other causal factors.

³ Department of Defense, "Summary of the 2018 National Defense Strategy of the United States of America; Sharpening the American Military's Competitive Edge" (US Government, 2018).

1.1 Academic Research and Policymaker Practice

What has scholarship and practice stated about variations in nuclear capabilities driving changes in strategic stability? The answer, at first, was not much because much atomic work was accomplished in secret, but as time progressed, a tremendous amount of scholarship became available, almost all of it tightly upholding the capability stability connection. From the inception of nuclear weapons in the late 1930s until each side developed second strike capability and MAD was obtained in the late 1960s, scholars tightly linked nuclear-capability changes to variations in strategic stability. Three distinct periods evolved of scholarship discussing atomic influences on the capability–stability connection: Period 1 (1940–1950), Period 2 (1951–1960), and Period 3 (1961–onward). In each period, scholarship and practice corresponded to the state growth of nuclear capabilities and how they affected strategic stability.

Defining Period 1 is scholarship and practice referencing American domination in nuclear capabilities, from 1940 until just after the Soviet Union gained nuclear capabilities in 1949. The United States prior to 1949 enjoyed deterrence provided by the ability to strike first and unopposed against any actual or perceived Soviet aggression. Period 2 begins at a time when the Soviets started building their capability in the early 1950s and into the early 1960s, but the United States could still conduct a second strike if attacked first. Scholarship and practice from Period 2 recognized the United States’ ability to conduct an unopposed strike found in Period 1, when the capability–stability bond was tightest, and then the loosening of the tight bond as the Soviets ramped up their nuclear capability. Finally, Period 3 denotes the timeframe during which the Soviets gained a credible second-strike capability in the mid-1960s, weakening the capability stability bond. Scholarship and practice produced during this period further loosened the capability–stability connection, eventually canceling one another out as MAD was obtained

between the United States and the Soviet Union. The following sections describe each of the three periods and the transformation that occurred as the influence of nuclear capabilities on changes in strategic stabilities waned.

1.1.1 Period 1: 1940–1950

Characterizing the first period of scholarship and practice is the shock and awe spawned by the devastating power nuclear capabilities brought to traditional methods of war. Before the first atomic explosion on 16 July 1945, the world had never experienced such a devastating implement of war. In the epilog to his 1947 book, *Revolution in Warfare*, Basil Liddell Hart noted two conditions under which nuclear capabilities have the most significant influence on dyadic state strategic stability: “If one side possesses atomic power and the other does not, embattled resistance makes nonsense. That spells the disappearance of warfare in such cases. Resistance must be transferred into sublet channels, of non-violent or guerrilla type.”⁴ “Where both sides possess atomic power, ‘total warfare’ makes nonsense.”⁵ Liddell Hart bound the obtaining of nuclear capabilities tightly with the proximity two states have to or from war. Stated differently, for Liddle Hart, nuclear capability on one or both sides of a dyadic state system had a direct connection to how the conflict should proceed between the states should it arise. Putting into application Liddell Hart’s idea that nuclear capabilities directly influence strategic stability, in early 1950 President Harry Truman’s White House published *A Report to the National Security Council on United*

⁴ Basil Henry Liddell Hart, *The Revolution in Warfare* (New Haven: Yale university press, 1947), 85.

⁵ Ibid.

States Objectives and Programs for National Security.⁶ In this document, the Truman administration tightly bound nuclear capabilities with strategic stability by stating the following:

“There is a basic conflict between the idea of freedom under a government of laws, and the idea of slavery under the grim oligarchy of the Kremlin, which has come to a crisis with the polarization of power described in Section I, and the exclusive possession of atomic weapons by the two protagonists. The idea of freedom, moreover, is peculiarly and intolerably subversive of the idea of slavery. But the converse is not true. The implacable purpose of the slave state to eliminate the challenge of freedom has placed the two great powers at opposite poles. It is this fact which give the present polarization of power the quality of crisis.”^{7,8}

Truman made his point abundantly clear, each state obtaining nuclear capabilities drove the United States and the Soviet Union to a position of instability, going as far as to label the relationship under the banner of “crisis.”

⁶ This document is more commonly referred to as NSC-68.

⁷ Section I referred to in this quote is labeled “Backgrounds of the Present World Crisis.” In this section, the document lays out the nature of the relationship between the United States and the Soviet Union. Establishing the initial capability-stability connection, the document states, “On the one hand, the people of the world yearn for relief from the anxiety arising from the risk of atomic war. On the other hand, any substantial further extension of the area under the domination of the Kremlin would raise the possibility that no coalition adequate to confront the Kremlin with greater strength could be assembled. It is in this context that this Republic and its citizens in the ascendancy of their strength stand in their deepest peril.” Harry Truman, “A Report to the National Security Council - NSC 68” (US Government, April 12, 1950), 4, https://www.trumanlibrary.org/whistlestop/study_collections/coldwar/documents/pdf/10-1.pdf.

⁸ Truman, 7.

1.1.2 Period 2: 1951–1960

During Period 2, from 1951 to 1960, each state continued to gain capability. The United States fielded enough nuclear capabilities to allow a second strike, while the Soviet Union continued to expand its nuclear arsenal.⁹ Put differently, during the second period, both the inequality and destabilizing nature of a first strike diminished as both the United States and the Soviet Union expanded their respective arsenals. In 1953, President Dwight Eisenhower reinforced a tight capability–stability relationship through publishing *A Report to the National Security Council on Basic National Security Policy*.¹⁰ In this report, the Eisenhower administration stated the following:

“When both the USSR and the United States reach a stage of atomic plenty and ample means of delivery, each will have the probable capacity to inflict critical damage on the other, but is not likely to be able to prevent major atomic retaliations. This could create a stalemate, with both side reluctant to initiate general warfare; although if the Soviets believed that initial surprise held the prospect of destroying the capacity for retaliation, they might be tempted into attacking.”¹¹

Inherent in this passage from NSC 162/2 is Eisenhower’s foundational assumption that, before obtaining “atomic plenty,” variations in nuclear capabilities would drive changes in strategic stability. President Eisenhower conveyed two ideas of the capability–stability bond through NSC-162/2. First, if the Soviets were to gain enough nuclear capability, war with the United States

⁹ Albert Wohlstetter, “The Delicate Balance of Terror,” *Foreign Affairs* 37, no. 2 (1959): 211–34.

¹⁰ This document is more commonly referred to as NSC-162/2

¹¹ Dwight D. Eisenhower, “A Report to the National Security Council - NSC-162/2” (US Government, 1953), 4.

could be negated through a properly placed or advantageous Soviet first strike. Second, Eisenhower provided a foreshadowing of MAD in the decade to come by stating that a stalemate, or no movement to or from war, would ensue should both sides reach a level of comparable capability. In both cases, Eisenhower exemplified the second period well, providing a view of the current tight capability–stability bond but looking ahead to the eventual dissolution of this connection once both sides obtain MAD.

Published immediately after NSC-162/2 in July 1954, J. Robert Oppenheimer, the father of the atomic bomb, directly tied his work realizing the atomic bomb to strategic stability with the Soviet Union in an article published in *Foreign Affairs*, where he stated the following:

“Atomic weapons are not just one element of an arsenal that we hope may deter the Soviet Government, or just one of the means we think of for putting an end to a war, once started. It is, perhaps, almost the only military measure that anyone has in mind to prevent, let us say, a great battle in Europe from being a continuing, agonizing, large-scale Korea. It is the only military instrument which brings the Soviet Union and the United States in contact – a most uncomfortable and dangerous contact – with one another.”¹²

According to Oppenheimer, the mere existence of dyadic state nuclear capabilities forced the United States and the Soviet Union to deal with each state’s grievance with the other. This direct contact between the two states, brought about by the presence of nuclear capabilities, had a direct result in the maintenance of peace between the two states. For Oppenheimer, the capability–

¹² J Robert Oppenheimer, “Atomic Weapons and American Policy,” *Foreign Affairs* 31, no. 4 (July 1953): 528.

stability bond was tight because it forced each state to deal with the other, yielding a desirable peace in Europe.

Further solidifying the capability–stability bond and laying the groundwork for MAD, during President Eisenhower’s 1954 State of the Union address to the Eighty-Third Congress, he made the connection that peace results from deterrence, which is, in part, derived from the capability to strike back.¹³ “Since our hope for all the world is peace, we owe ourselves and the world a candid explanation of the military measures we are taking to make that peace secure. As we enter this new year, our military power continues to grow. This power is for our own defense and to deter aggression. We shall not be aggressors, but we and our allies have and will maintain a massive capability to strike back.”¹⁴ Eisenhower continued to see the need to counter the growing threat posed by what the administration perceived as an enormously growing Soviet nuclear arsenal. “The evidence clearly indicates an increasing threat which may become critical in 1959 or early 1960. The evidence further suggests the urgency of proper time-phasing of needed improvements in our military position vis-à-vis Russia.”¹⁵ For Eisenhower and the rest of the nation, it became a national imperative to produce enough nuclear capability to provide a massive retaliation, to absorb the first round of nuclear attacks and still be able to strike back against the Soviet Union.

¹³ When referencing the concept of deterrence in this context, it is important to refer back to Thomas Schelling’s work outlining what deterrence truly is. “The deterrence concept requires that there be both conflict and common interest between the parties involved; it is inapplicable to a situation of pure and complete antagonism of interest as it is to the case of pure and complete common interest.” The common interests stated multiple times by both the United States and the Soviet Union was one of peace. However, throughout the 1950s, it became evident that peace could only come as the result of deterrence, and deterrence was only obtained through the growth of nuclear capabilities. Thomas C. Schelling, *Strategy of Conflict*, 1st edition (Cambridge: Oxford University Press, 1960), 11.

¹⁴ “Department of State Bulletin, 25 January 1954,” in *Department of State Bulletin*, vol. Vol. XXX, Publication 6740, No. 758-770 (Washington, D.C.: U.S. Government Printing Office, 1954), 77.

¹⁵ Security Resource Panel, “Deterrence and Survival in The Nuclear Age (‘The Gaither Report of 1957’)” (Washington, D.C.: Office of Defense Mobilization, November 7, 1957).

Reinforcing the capability–stability connection and the requirement each side had to build a nuclear capability, early Cold War strategist Albert Wohlstetter held that “to deter an attack means being able to strike back in spite of it. It means, in other words, a capability to strike second.”¹⁶ For Wohlstetter, the only way to deter an attack, thereby keeping war at bay, is for each state to build a nuclear capability to provide the ability to conduct a second strike, thus reinforcing the capability–stability connection.

Scholarship and practice produced during this timeframe held sacred the capability–stability connection while the intellectual framework began the establishment of MAD, a period when both sides obtained the ability to launch a secured second strike independent of any additional changes in nuclear capabilities.¹⁷ Any one side independently obtaining a second-strike capability would continue to promote a robust capability–stability bond. “Whereas a first strike involved counterforce, a second strike need be no more than counter value.”¹⁸ With only one side having the ability to conduct a second strike, scholarship supported a continued lopsided dominance where changes in nuclear capabilities had significant effects on existing strategic stability.¹⁹

¹⁶ Wohlstetter, “The Delicate Balance of Terror,” 213.

¹⁷ Wohlstetter, “The Delicate Balance of Terror”; John J. Mearsheimer, *The Tragedy of Great Power Politics* (New York: W. W. Norton & Company, 2001); Jan Lodal et al., “Second Strike: Is the U.S. Nuclear Arsenal Outmoded?,” *Foreign Affairs* 89, no. 2 (2010): 145–52; Keir A. Lieber and Daryl G. Press, “The Rise of U.S. Nuclear Primacy,” *Foreign Affairs* 85, no. 2 (2006): 42–54; Henry Kissinger, *Nuclear Weapons and Foreign Policy*, Abridged edition (New York: W. W. Norton & Company, 1969).

¹⁸ Lawrence Freedman, *The Evolution of Nuclear Strategy*, 3rd ed (Houndmills, Basingstoke, Hampshire, New York: Palgrave Macmillan, 2003), 128.

¹⁹ A good example of the confidence established with a one-sided ability to conduct a second strike; I reference this memorandum from Secretary of Defense McNamara to President Johnson. In his writing to the President, McNamara not only touts American second-strike capability but also provides a quantitative outline of his assured destruction policy. “An essential test of the adequacy of our posture is our ability to destroy, after a well planned and executed Soviet surprise attack on our Strategic Nuclear Forces, the Soviet government and military controls, plus a large percentage of their population and economy (e.g. 30% of their population, 50% of their industrial capacity, and 150 of their cities). “Draft Memorandum from Secretary of Defense McNamara to President Johnson; Document 151, 6 December 1963.” in *Foreign Relations of the United States; National Security Policy, 1961-1963*,

By 1960, the stage was set for explosive growth in nuclear capabilities on each side of the Cold War. To acquire the coveted second-strike capability, the strategy for the United States became to obtain a greater nuclear capability than the opposing side. Lacking the ability to obtain more nuclear weapons than the opposing side meant, for the Soviets, taking a different approach, one that afforded an opportunity to use nuclear capabilities in such a manner as to deliver a crippling blow before the United States launched a second strike. In a declassified Central Intelligence Agency (CIA) report from 1960, the assessment was that the Soviet Union, through Nikkita Khrushchev, had developed an adequate level of nuclear capability to knock out a potential enemy while adopting a strategy of pre-emption, unexpectedly striking first.²⁰ The CIA's assessment of the Soviet embrace for pre-emptive nuclear strikes was not unfounded. Also published in 1960, and declassified in 1992, was an article found in the Top Secret Soviet journal *Voyennaya Mysl* (Military Thought). In this article, General of the Army Pavel Alekseyevich Kurochkin cited other contemporary military thinkers advocating for the primacy of nuclear capabilities. General Kurochkin equated increased nuclear capabilities with yielding the ability to be successful in war.

“If we follow the concepts developed by the authors of the articles mentioned, and doubtless agree that nuclear-missile weapons should have the decisive role in assuring the possibility ‘of concurring in a short time’, in a way, on the whole, or to achieve success in any operation, everything else seems relatively simple. It is only necessary to supply the missile troops with adequate means, provide the

vol. VIII, Foreign Relations of the United States 1961–1963 (Washington, D.C.: United States Government Printing Office, 1996), 28.

²⁰ Matthew Gallagher and W. P. Southard, “Khrushchev on Nuclear Strategy,” Current Intelligence Staff Study (Washington, D.C.: Central Intelligence Agency, January 19, 1960), 11.

necessary nuclear-missile means to the ground forces and other branches of the armed forces, review certain aspects of our military strategy and operational art, and thus are created the conditions for successful resolution of the course and outcome of all armed combat.”²¹

By 1960, the United States believed that deterrence, and thus peace, could only be obtained through the ability to launch a second strike. Fueling the United States’ push toward a second strike was the CIA’s assessment that the Soviet Union continued unfettered growth of its nuclear capability with a pre-emptive nuclear strike strategy, pushing nuclear capabilities to the frontline troops and the opening salvos of any conflict.

1.1.3 Period 3: 1961–Onward

By the end of the 1950s, the Soviet Union had become convinced that nuclear conflict was imminent, and the United States was the one that would initiate a surprise attack. “The masters of the imperialist bloc are preparing to wage nuclear war on a scale against the socialist countries by massive and surprise nuclear strikes. The terms ‘defense,’ ‘retaliatory blow,’ and ‘massive retaliation’ are merely meant to conceal these preparations, which are all based on American superiority in nuclear weapons.”²² Against this backdrop, the Soviets needed to bolster nuclear stockpiles as a means of providing for a proper defense. “To do this, it is essential to have the means for retaliation in constant readiness: Strategic Missile Forces, the Long Range Air Force,

²¹ P. Kurochkin, “The Nature of Modern Armed Combat and the Role and Place in it of the Various Branches of the Armed Forces,” trans. Central Intelligence Agency, *Voyennaya Mysl (Military Thought)*, 1960, 6.

²² Vasilii Dani Sokolovskii, ed., *Soviet Military Strategy; Translation from Russian and Originally Published by the Military Publishing House of the Ministry of Defense of the USSR*, trans. Herbert S. Dinerstein, Leon Goure, and Thomas W. Wolfe (Englewood Cliffs, N.J: Prentice Hall, 1963), 382–83.

and nuclear weapons, and it is necessary to master effective techniques for delivering rapid and devastating nuclear blows to the enemy, if the socialist countries are compelled to do so.”²³ The Soviets entered the 1960s tightly binding nuclear capabilities to strategic stability.

According to research from the 1960s, the abundant nuclear capabilities on both sides spawned by the Soviet view of American dominance, along with the constant threat of using the weapons, broke apart the tight capability–stability bond that had existed at the end of the 1950s. “The appearance of possessing both the ability and the resolution to make good threat and counterthreat becomes, then, of paramount importance as a condition for the success of mutual deterrence.”²⁴ According to this quote from Hans Morgenthau, deterrence is viable only when both sides have viable capabilities to make substantiated threats of violence; lacking such validity negates the possibility of deterrence. Moreover, Kenneth Waltz substantiated Morgenthau’s claim by recognizing bipolar balancing in the 1960s as “the nearly constant presence of pressure and the recurrence of crisis.”²⁵ Unlike during the earlier era of nuclear capabilities, it was no longer suitable to have them as the only means of effecting strategic stability; since both sides could enact mutual deterrence, the effects of nuclear capability appeared to have been mitigated.

Looking back at the developments made in nuclear capabilities during the 1960s, contemporary scholars break apart the strong capability–stability bond at the point each side obtained the capacity to perform a secured second strike. This break is the hallmark of the third period of scholarship and practice addressing the capability–stability connection.²⁶ The abundance

²³ Sokolovskii, 410.

²⁴ Hans J. Morgenthau, “The Four Paradoxes of Nuclear Strategy.,” *American Political Science Review* 58, no. 01 (1964): 24.

²⁵ Kenneth N. Waltz, “The Stability of a Bipolar World,” *Daedalus* 93, no. 3 (1964): 883.

²⁶ Robert Powell, “Nuclear Brinkmanship, Limited War, and Military Power,” *International Organization* 69, no. 3 (2015): 589–626; Mearsheimer, *The Tragedy of Great Power Politics*; Paul H. Nitze, “Assuring Strategic Stability

of nuclear capabilities on both sides translates under a dyadic state MAD system to a reduced likelihood of nuclear conflict, because each side is assured they will suffer cataclysmic consequences for engaging in a nuclear war first. “A MAD world is highly stable at the nuclear level, because there is no incentive for any great power to start a nuclear war that it could not win; indeed, such a war would probably lead to its destruction as a functioning society.”²⁷

According to available research, MAD breaks apart the mutually dependent relationship between nuclear capabilities and strategic stability because it reduces the incentives for either side to conduct a first strike. Scholarship for the timeframe prior to MAD presented a tight capability–stability causal relationship without questioning the possibility that variations in nuclear capabilities can exist without effecting a change in strategic stability. This tight connection broke apart when the Soviets bolstered their nuclear capabilities. The administration of President John F Kennedy initiated a movement toward a renewed and revised plan for conducting warfare acknowledged the tight capability–stability bond as well as the need to reduce the level of importance attributed to nuclear weapons in maintaining dyadic state strategic stability. “In general, the administration felt past plans for general war were too rigidly geared to a massive retaliation to surprise attack. It therefore sought means to expand the latitude of possible reactions to fit the wide range of circumstances in which conflict could be initiated.”²⁸ As a means of isolating the purported influences that variations in nuclear capabilities have on strategic stability, as found in the first two periods, it is essential to study the period before the United States and the

in an Era of Detente,” *Foreign Affairs* 54, no. 2 (1976): 207–32; Robert Jervis, “Why Nuclear Superiority Doesn’t Matter,” *Political Science Quarterly* 94, no. 4 (1979): 617–33; Freedman, *The Evolution of Nuclear Strategy*; William W. Kaufmann, *The McNamara Strategy*, 1st ed. (New York: Harper & Row, 1964).

²⁷ Mearsheimer, *The Tragedy of Great Power Politics*, 130.

²⁸ “History of the Joint Strategic Target Planning Staff: Background and Preparation of SIOP-63” (History and Research Division: Headquarters Strategic Air Command, 1964), 1.

Soviet Union obtained MAD along with the common belief that the capability–stability bond that existed then was at its strongest point.

1.2 Framing Strategic Stability

Implicit in relevant scholarship dating back to the 1950s, a four-part causal story appears, beginning with variations in nuclear capabilities and ending with changes in strategic stability. In this section, I present a summary of the causal chain connecting variations in nuclear capability to changes in strategic stability. Through this causal chain and according to the abovementioned scholarship, variations in nuclear capabilities should have led to changes in strategic stability.

The first part of the causal story is simply a variation in nuclear capabilities. Nuclear capabilities are composed of two parts, namely payload capacity and strategic nuclear warheads. These two components are mutually supportive of one another, both needing the other to supply value. Nuclear warheads are useless unless they have a means of making it to the target, and payload capacity means extraordinarily little if there are no payloads. However, together, as payload capacity or the number of strategic nuclear warheads change, so do nuclear capabilities.

The second part of the causal story speaks to the use of varied nuclear capabilities, referred to as a utility. In a nuclear state dyadic system, as nuclear capabilities vary up or down, they become more or less useful to conduct missions such as deterrence or brinkmanship. State leaders, looking to existing nuclear capabilities, will feel emboldened or reserved based on what they have available for use. The nuclear capability utility is a direct result of any variations made in either payload capacity or strategic nuclear warheads.

The utility of a state's nuclear capabilities to conduct intended missions leads directly into the third part of the causal story, incentives. Incentives to use nuclear-capability variations are not a mandated action but a choice provided to the state. The incentives to conduct nuclear missions, if the state decides to use them, will vary based on the utility of the nuclear capabilities. If state nuclear capabilities have a high utility, leaders may be willing to take more significant risks because their relative power against a prospective competitor may be more than it was previously, supplying an advantage. Moreover, the lowering of a state's utility will reduce the incentives of a state to take risks while also increasing the incentives of an adversary to take a risk.

An example of utility leading to changes in incentives for use comes from President Richard Nixon's placement of nuclear forces on elevated alert status in October 1969 while attempting to end the conflict in Southeast Asia. Just before this period, the Soviets obtained second-strike capability, but the United States still had a significant lead over the Soviet Union in total nuclear capability. Specifically, the United States, across the entire nuclear enterprise, had a payload capacity of 5,642 coupled with 5,882 nuclear warheads, compared with the Soviet Union's 1,777 payload capacity and 1,815 warheads.²⁹ President Nixon's placement of nuclear forces on elevated alert was his way of producing a forcing function, a means of driving the Soviets back to the negotiating table. It is suspected that Nixon wanted to capitalize on the United States' dominating nuclear capabilities as a means of forcing Moscow to re-engage with Hanoi regarding terms to end the war in Southeast Asia while also deterring a potential Soviet nuclear attack against

²⁹ P. L. Podvig and Oleg Bukharin, eds., *Russian Strategic Nuclear Forces* (Cambridge, Mass: MIT Press, 2001); Robert Standish Norris and Thomas B. Cochran, *US-USSR/Russia Strategic Offensive Nuclear Forces, 1945-1996*, Nuclear Weapons Databook (Washington, D.C.: Natural Resources Defense Council, 1997).

China.³⁰ In summary, Nixon engaged in brinkmanship with the Soviet Union, risking the possibility of nuclear war, not because his capabilities placed him at a disadvantage but because the United States' nuclear capabilities provided the utility to partake in such a risky endeavor.

From the incentives chapter of the causal story comes the fourth and final part, strategic stability. As state leaders feel more or less emboldened to conduct nuclear-capability missions, changes in strategic stability become a direct result. Because strategic stability measures the proximation to or from war, when two states equally deter each other from war, resulting in full strategic stability, peace is the result. At the opposite end of the spectrum, when states, emboldened by a varied nuclear capability, decide to conduct acts of brinkmanship, they run the risk of diminishing deterrence, resulting in the loss of strategic stability before war ensues.

An old-fashioned pistol duel can act as an analogy for strategic stability. An honorable set of pistol duelers from the 18th century would involve two people who both wished to protect their interests in the face of an equal but challenging opponent. Each dueler would choose from one of two comparable guns loaded with a single bullet. The duelers would use a common starting point, take an equal number of steps away from each other, turn on command, and shoot. Three potential outcomes would await them: emerging unscathed by avoiding the opponent's bullet, being wounded, or death.

Applying the strategic stability causal story above to dishonorable pistol duelers, all equality disappears. From the beginning, changes in capability are analogous to one of the pistol duelers cheating by switching out their issued gun for one that is larger or more powerful. The larger or more powerful weapon opens a series of opportunities for the cheating dueler that their

³⁰ M. Todd Bennett, ed., *Foreign Relations of the United States; National Security Policy, 1969-1972*, vol. XXXIV, Foreign Relations of the United States 1969–1976 (Washington, D.C.: United States Government Printing Office, 2011), 232.

opponent does not have. During the dueling sequence, the larger gun emboldens the cheating dueler to take more risks, turning and firing early or aiming the weapon at their opponent's loved one as a means of trying to force capitulation. In the end, the cheating dueler, with their more substantial or more powerful gun, changes the outcome of the duel not because each side fought with equality as the honorable duelers would have, but because the balance of power was shifted in their favor beginning with their enhanced capability.

The four-part causal story is unpacked even further in the following sections. The next three sections outline how changes in nuclear capabilities drive changes in potential usage, resulting in changes in strategic stability.

1.2.1 Changes in nuclear capabilities

Nuclear-capability variations, according to strategic stability scholarship, are the underlying causal drivers leading to changes in strategic stability. Specifically, my research is most concerned with strategic nuclear capabilities, long-range rockets capable of being launched against an opposing state either as sea-launched nuclear missiles or from mainland bases, in addition to long-range bombers. As states alter their nuclear capabilities, the manner in which states potentially use them changes and drives adjustments to actual or perceived incentives by state leaders, yielding changes in dyadic state strategic stability.

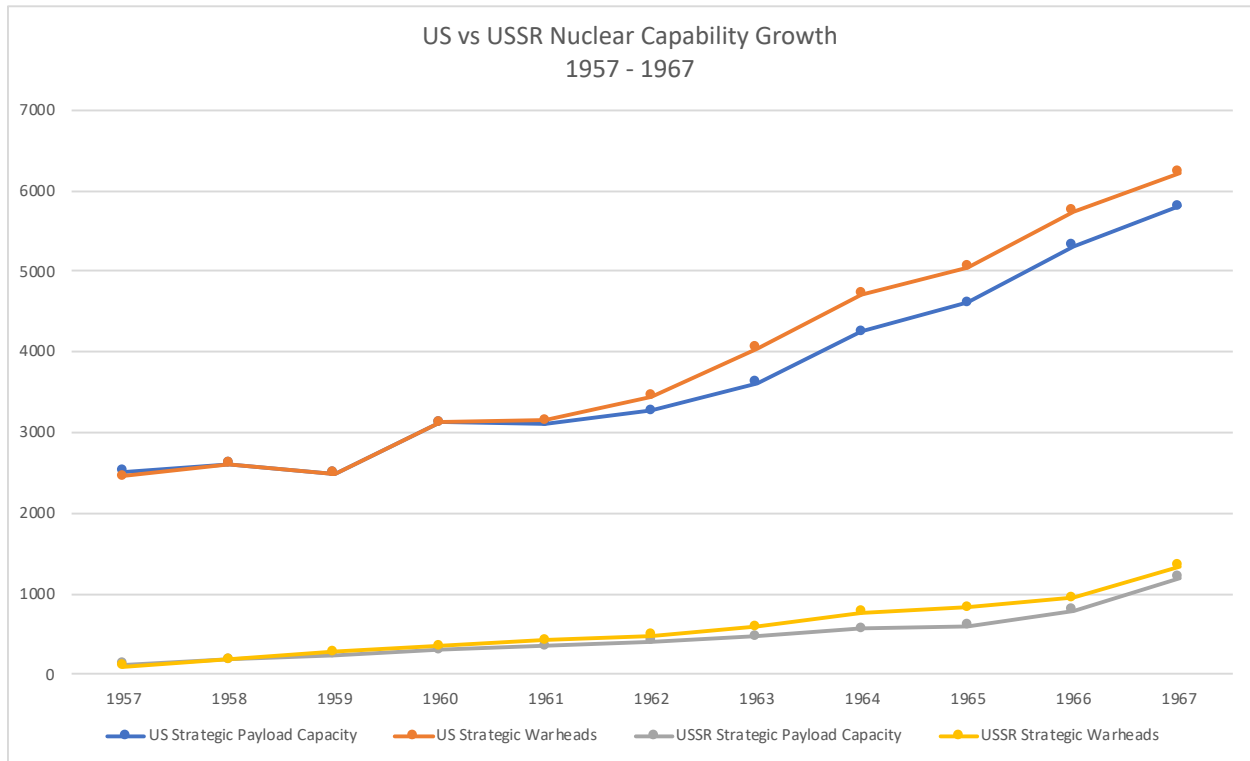
Scholarship produced before each side obtained MAD supported the connection between changes in nuclear capabilities and changes in how states use them. For example, Wohlstetter's works throughout the early 1950s claimed the best way to use more and advanced nuclear-missile technology, capable of longer distances, was to pull basing on foreign soil back to the United

States, supporting only austere refueling bases to accommodate long-range bombers.³¹ For Wohlstetter, the change in nuclear-missile capabilities also changed how other components of the nuclear triad were used, while simultaneously not diminishing the nuclear mission.

Graph 1-1 below charts constant variations in nuclear capabilities, measured through total payload capacity and total nuclear strategic warheads between the United States and the Soviet Union from 1957 to 1967, a period of frequent changes in strategic stability in this dyadic state system. The payload capacity denotes the total number of operational strategic warheads deliverable through the nuclear triad. Strategic nuclear warheads signify the total number of operational nuclear warheads deliverable through any method of the nuclear triad. What makes payload capacity and strategic nuclear warheads emblematic of a state's nuclear capability when, in reality, many additional components are part of the process as well? The answer focuses solely around the nuclear warhead; replaced with anything else, the weapon would be substantially less lethal. Nuclear capability is only concerned with how many warheads can be delivered, regardless of the delivery method, coupled with the number of available warheads. One does not find value in existing without the other.

³¹ Albert Wohlstetter and Fred Hoffman, "Defending a Strategic Force After 1960" (Santa Monica, CA: RAND, 1954); Albert J Wohlstetter, Roberta Wohlstetter, and Strategic Studies Institute, *Nuclear Heuristics Selected Writings of Albert and Roberta Wohlstetter*, ed. Robert Zarate and Henry D Sokolski (Washington, D.C.: US Government, 2009).

Graph 1-1: US vs. USSR Raw Nuclear Capability Comparison, 1957–1967



1.2.2 Wielded nuclear capabilities

In academic scholarship and policy, the presence of nuclear weapons prior to the establishment of MAD between the United States and the Soviet Union has long been considered both necessary and sufficient to influence strategic stability between nuclear powers. Significant bodies of research have connected strategic stability with nuclear capabilities in a dyadic nuclear state system. Framed in terms of offensive and defensive actions, this section addresses two theories outlining the use of nuclear weapons to effect change in strategic stability: brinkmanship and deterrence. Changes in potential nuclear capability use, either through brinkmanship or deterrence, yield the potential to change incentives for both State A and State B. Stated differently,

how a state in a dyadic nuclear system uses nuclear capabilities directly translates to both states' incentives and the proximity to war with one another.

1.2.2.1 Offensive nuclear capability

One of the most iconic theories of the potential use of nuclear capabilities is that of brinkmanship. Brinkmanship is a coercive process for changing the status quo and is conducted by engaging in an activity that may get out of hand and brings some risk of disaster between the two states, even as an unintended consequence.³² Traditional components in the scholarship on brinkmanship include a desire by one state to change the status quo, escalation in hostilities between two states, the use of coercion, and the possible risk of war. The threat of war is a necessary component to wage brinkmanship successfully.³³

Brinkmanship conducted by State A against State B carries an underlying fear of war; lacking such fear, State A's coercion tactics lack credibility. Prior to MAD being obtained, it was feared that war between the United States and the Soviet Union would inevitably mean a nuclear confrontation by at least one side, either as a retaliatory response to a conventional attack or a first strike. Today, contemporary writing by Matthew Kroenig reference non-MAD situations coupled with the need to retain a nuclear advantage over any adversary as a means of dissuading potential challenges through the changing of nuclear capabilities.³⁴ If variances in nuclear capabilities drive

³² Thomas C. Schelling, *Arms and Influence* (New Haven, CT: Yale University Press, 1966), 91; Powell, "Nuclear Brinkmanship, Limited War, and Military Power"; Herman Kahn, "Escalation as a Strategy," *Fortune* 71, no. 4 (1965): 110–12, 243–54.

³³ Phil Williams, *Crisis Management: Confrontation and Diplomacy in the Nuclear Age* (New York: Wiley, 1976), 135–36; Powell, "Nuclear Brinkmanship, Limited War, and Military Power."

³⁴ Matthew Kroenig, *The Logic of American Nuclear Strategy: Why Strategic Superiority Matters* (New York City: Oxford University Press, 2018).

changes in strategic stability, brinkmanship, applied as a means to coerce the opposing side into capitulation, is a vital tool to drive those changes.³⁵

Before MAD is obtained between two nuclear states, does changing nuclear capabilities alter how a state potentially uses brinkmanship? Once greater nuclear capabilities are obtained compared with those of a competitor, a state has the option of feeling emboldened and enacting brinkmanship tactics as a means of forcing capitulation. With greater nuclear capabilities at the disposal of the state, leaders have the option to exercise the ability to impose state power over a competitor.³⁶ On the other hand, following a decrease in nuclear capabilities compared with a competitor, state leaders may not find brinkmanship to be as valuable a strategy to pursue since the risk of war inherent in the theory may be too significant. Stated differently, changing nuclear capabilities changes the incentives states have to flex their atomic muscle as capabilities grow, or to retract the leader's ambition for the state as capabilities decrease.

1.2.2.2 Defensive nuclear capability

If brinkmanship threatens a direct use of nuclear capabilities to change the status quo while running the risk of war, then the second nuclear theory, deterrence, uses an indirect threat of violence as a means of keeping the status quo from ever changing in the first place. Deterrence is defined as the prevention of war through the known assurance that any hostile actions would have devastating effects on each side.³⁷ Prior to MAD, Schelling outlined that deterrence “is concerned

³⁵ Taken further, Kroenig develops his theory into what he calls “nuclear superiority theory,” associating the size of the nuclear to an increased level of resolve during a potential brinkmanship confrontation. Kroenig; Matthew Kroenig, “Nuclear Superiority and the Balance of Resolve: Explaining Nuclear Crisis Outcomes,” *International Organization* 67, no. 1 (2013): 141–71.

³⁶ Kroenig, “Nuclear Superiority and the Balance of Resolve.”

³⁷ John J. Mearsheimer, “Nuclear Weapons and Deterrence in Europe,” *International Security* 9, no. 3 (1984): 19.

with influencing the choices that another party will make, and doing it by influencing his expectations of how we will behave. It involves confronting him with evidence for believing that our behavior will be determined by his behavior.”³⁸ More contemporary scholars hold that deterrence is manifested as an indirect use of force to dissuade an enemy from initiating a hostile action.³⁹ In theory, “to deter an attack means being able to strike back despite it. It means, in other words, a capability to strike second.”⁴⁰

In the late 1960s, the MAD policies that developed between the United States and the Soviet Union relied on deterrence since both sides knew that in a nuclear exchange, each could conduct a second strike, leaving a “delicate balance of terror.”⁴¹ In a nuclear dyadic state construct, deterrence only occurs when both states equally acknowledge the other’s nuclear capabilities as a necessary component for keeping the peace. States varying their nuclear capabilities, instead of trying to force capitulation as with brinkmanship, provides the potential to keep an opponent state at bay by making the threat of retaliation so costly that no incentive exists for waging war.

As state nuclear capabilities change, deterrence becomes more or less attractive. When nuclear capabilities increase, this emboldens state leadership to advertise the use of their nuclear arsenal as a means of keeping the status quo against a revisionist enemy. During instances of nuclear capability decline, the state loses the ability to keep the status quo if challenged by a

³⁸ Schelling, *Strategy of Conflict*, 13.

³⁹ Avery Goldstein, *Deterrence and Security in the 21st Century: China, Britain, France, and the Enduring Legacy of the Nuclear Revolution* (Stanford, Calif: Stanford University Press, 2000); Michael J Mazarr, “Perspective: Understanding Deterrence” (RAND Corporation, 2018).

⁴⁰ Wohlstetter, “The Delicate Balance of Terror,” 445.

⁴¹ Donald M. Snow, “Current Nuclear Deterrence Thinking: An Overview and Review,” *International Studies Quarterly* 23, no. 3 (1979): 445.

dominant competitor. A direct correlation exists between a change in nuclear capabilities and the effectiveness of a state's ability to coerce an enemy through deterrence to maintain the status quo.⁴²

1.2.3 Incentivized nuclear capabilities

Changes in the possibility of either deterrence or brinkmanship drive changes in both state leaders' incentives to use nuclear means to effect changes in strategic stability. Variations in offensive nuclear capabilities relate to each state's stability across a broad spectrum of socioeconomic issues, as well as the desire or incentive a state has to start a conflict. This section covers two incentive theories, political stability and crisis stability, each of which connects the benefits a state receives to the reason why changes in nuclear capabilities occur.

1.2.3.1 Political stability

Do deviations in social, political, or economic problems, previously regarded as acceptable, become intolerable as utility increases? Political stability, as applied to nuclear state dyads, is "the absence of incentives to take political actions that might lead to crisis or nuclear war."⁴³ Political stability encompasses variations in social, economic, and other factors that potentially drive international instability.⁴⁴ On its own, political instability cannot start a nuclear conflict, but it

⁴² Todd S. Sechser and Matthew Fuhrmann, "Crisis Bargaining and Nuclear Blackmail," *International Organization* 67, no. 1 (2013): 173–95.

⁴³ Joseph S. Nye, "Nuclear Learning and U.S.-Soviet Security Regimes," *International Organization* 41, no. 3 (1987): 371–402.

⁴⁴ C. Dale Walton and Colin S. Gray, "Chapter 3: The Geopolitics of Strategic Stability: Looking beyond Cold Warriors and Nuclear Weapons," in *Strategic Stability: Contending Interpretations*, ed. Elbridge A. Colby and Michael S. Gerson, Strategic Studies Institute (Carlisle Barracks, PA: U. S. Army War College, 2013), 85–115.

does feed into crisis stability. In a dyadic nuclear state system, crisis chips away at strategic stability while inching toward war, the complete absence of strategic stability.

1.2.3.2 Crisis stability

Do riskier actions in crises look more or less attractive when brinkmanship or deterrence utility changes? Crisis stability, applied to a nuclear state dyad, is the absence of incentives to fire the first shot, giving up the possibility of gaining the upper hand in a conflict.⁴⁵ Changes in the defensive utility will likely reduce incentives to revise the status quo and contribute to crisis stability. The incentives both states have to preemptively start a war drive stability, the “assurance against being caught by surprise, the safety in waiting, the absence of a premium on jumping the gun.”⁴⁶ Crisis stability speaks to the heart of nuclear first strike policies, keeping in mind that no benefits await the first strike so long as each state in a nuclear dyad has a second-strike capability. Applied to the United States and the Soviet Union, early in the Cold War, both states acquired second-strike capabilities, eliminating the incentives for either side to strike first in hopes of delivering a knockout blow to their competitor.

1.2.4 Section summary

Scholarship suggests that, prior to obtaining MAD, changes in nuclear capabilities drive changes in how states use nuclear capabilities; these changes can put a state in either an offensive or defensive position. Depending on the position resulting from the change in nuclear capability,

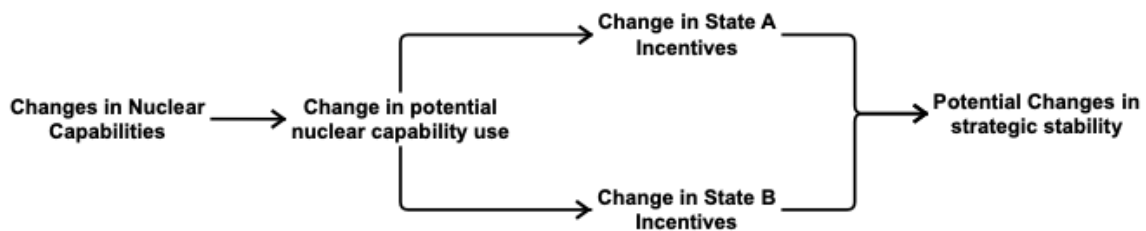
⁴⁵ Nye, “Nuclear Learning and U.S.-Soviet Security Regimes”; Nitze, “Assuring Strategic Stability in an Era of Detente.”

⁴⁶ Schelling, *Arms and Influence*.

each state leader assesses their incentives to change strategic stability based on what is in front of them. The actions of the states, based on the incentives created by the potential nuclear-capability use, drive changes in strategic stability. Figure 1-1 below outlines the path variations in nuclear capabilities have on strategic stability. Strategic stability, according to this understanding, does not independently change without influence from an outside causal driver. Said differently, states do not spontaneously go to war without some level of justification.

Additionally, according to this understanding, changes in nuclear capability are a consistent causal driver of changes in strategic stability. My review of relevant scholarship and practice shows that nuclear-capability variation drives changes in the potential use of atomic weapons, which influence the incentives each state has to either react offensively or defensively. The actions of the state then drive changes in strategic stability.

Figure 1-1: Relationship between strategic stability and possible causal mechanisms



1.3 Kargil

Up to this point, the discussion has highlighted the dyadic state relationship between the United States and the Soviet Union, which may raise questions about the utility of this research when applied to other dyadic state relationships or other technological advancements. Does the

capability–stability connection only apply to the United States and the Soviet Union before MAD was obtained in the late 1960s? During the summer of 1999, between May and July in the Kargil region of India, near Pakistan, a ground war broke out that tested the resilience of these two nuclear states.⁴⁷ This conflict is a suitable analog for the pre-MAD relationship between the United States and the Soviet Union before the late 1960s. Both India and Pakistan had nuclear capabilities in the late 1990s, but neither side advanced its state program to the point of supplying assured second strike options. The absence of MAD in this case study means variations in nuclear capabilities should drive changes in the potential use of nuclear weapons, which should in turn affect the offensive or defense incentives each state develops; the states, acting on their changed incentives, should then drive changes in strategic stability. If the model created by scholarship addressing pre-MAD dyadic state relationships is correct, changes in nuclear capabilities between India and Pakistan should drive changes in strategic stability.

In the pre-MAD India–Pakistan relationship during the late 1990s, the established nuclear state of India responded to militarized aggression initiated by Pakistan.⁴⁸ Looking to compensate for the advantages of the Indian military, Pakistan relied on recently acquired nuclear weapons to provide a level playing field with India. Furthermore, Pakistan sought to change the status quo in the region by shifting the balance of power through brinkmanship. Stated differently, Pakistan’s nuclear capabilities changed, which appeared to drive a change in utility compared with India.

⁴⁷ Andrei Kokoshin, “Ensuring Strategic Stability in the Past and Present:” (Harvard Kennedy School, 2011); Jack S. Levy and William R. Thompson, *Causes of War* (Chichester, West Sussex, U.K.; Malden, MA: Wiley-Blackwell, 2010).

⁴⁸ Mark S. Bell, “Beyond Emboldenment,” *International Security* 40, no. 1 (2015): 87–119; Vipin Narang, “What Does It Take to Deter? Regional Power Nuclear Postures and International Conflict,” *The Journal of Conflict Resolution* 57, no. 3 (2013): 478–508.

Although a conflict had begun between these two states with nuclear capabilities, a nuclear war did not ensue.

What caused the conflict between India and Pakistan? Pakistan's altered nuclear capabilities seemingly resulted in an emboldened move toward brinkmanship in the Kargil region. Tensions in the region have historically been high between the two states. Kargil district is located in the Kashmir region within India's borders. Kashmir sits on the border and is a point of dispute between the two states, with Pakistan claiming ownership from India. In May 1999, Pakistani troops crossed the border, beginning the conflict.

During May 1998, one year before crossing the border into India, an emboldened Pakistan crossed the threshold of advanced weaponry by detonating the state's first nuclear warhead.⁴⁹ The pursuit of nuclear capabilities by Pakistan had long existed as a means of compensating for an inferior military compared with that of India. Consistent with the causal chain in Figure 1-1, Pakistan's nuclear capabilities changed, and this change appears to have provided Pakistan with the operating space to act in the Kargil region, a contentious geographic region with India. Using brinkmanship fueled through changed nuclear capabilities, Pakistan seemingly chose to act against India in a manner that incited crisis while pursuing efforts to overtake the Kargil region. Pakistan desired state power equality with India and, while appearing to attempt a redefinition of the status quo, a war broke out.⁵⁰

⁴⁹ John F. Burns, "Nuclear Anxiety: The Overview; Pakistan, Answering India, Carries Out Nuclear Tests; Clinton's Appeal Rejected," *The New York Times*, May 29, 1998, sec. World, <https://www.nytimes.com/1998/05/29/world/nuclear-anxiety-overview-pakistan-answering-india-carries-nuclear-tests-clinton.html>.

⁵⁰ "Russian National Security: Perceptions, Policies, and Prospects" (Carlisle Barracks, PA: U.S. Army War College, 2001).

History remembers the Kargil conflict clearly, but is this the right encounter to study? The similarities of two nascent nuclear states confronting one another could misleadingly drive one to believe that Kargil is the perfect analog. The recounting of the Kargil conflict seemingly exemplifies each of the links in the causal chain found in Figure 1-1. Moreover, international affairs scholarship and research since the 1950s have addressed the insanity of using nuclear weapons in a major power dyad. This insanity, coupled with increasing second-strike capability by one or both sides, is often thought to have brought about a mutual deterrence, keeping hostilities at lower thresholds below the level of nuclear war.⁵¹

Unfortunately, the Kargil conflict does not clearly represent the ability of both sides to deter warfare through a decisive first strike, nor many of the nuanced aspects of each component of Figure 1-1.⁵² The Indian military was and continues to be qualitatively superior to Pakistan's military forces, and the nuclear capabilities of India have been significantly more mature. Strategic stability explains the degree to which dyadic states obtain a mutual deterrence from war, but given the superiority of India over Pakistan, strategic stability in this case can be argued to be the result of India's restraint instead of true dyadic state stability. Because of the lack of a good explanation through recounting the Kargil conflict coupled with a lack of research material, a more in-depth review of the data-rich Cold War interactions between the United States and the Soviet Union is more suitable for exploring the capability–stability connection in detail.

⁵¹ Wohlstetter, "The Delicate Balance of Terror."

⁵² Graham T. Allison, "Conceptual Models and the Cuban Missile Crisis," *The American Political Science Review* 63, no. 3 (1969): 689–718.

1.4 The Influence of Complete Annihilation

Without MAD, an evolved policy that came of age in the late 1960s, changes in nuclear capabilities should result in changes to strategic stability. This pre-MAD timeframe in both the United States and the Soviet Union should have tightly bound nuclear capabilities with strategic stability, creating a mutually dependent relationship. Forming MAD policies should have then cleaved nuclear-capability variations from changes in strategic stability. Since this dissertation seeks to examine the tight capability–stability bond, it is essential to know when state MAD policies developed, thereby breaking the very bond I seek to study. Juxtaposed with the theories presented in the previous section, policies for both the United States and the Soviet Union underwent numerous maturations, beginning in the late 1950s, tightly binding capability variations with strategic stability, and ending in the late 1960s with a cleaving of the capability–stability requirement. This section walks through the policy maturations experienced by the United States and the Soviet Union, ending in MAD and the absence of the capability–stability bond.

Mutually assured destruction, for the purposes of this dissertation, refers to the ability of each nuclear state, following the initiation of a nuclear exchange, to respond with a second strike.⁵³ A second strike translates to the ability of a state to absorb an initial nuclear strike and have a sufficient nuclear capability to fire back at the aggressor, leaving each state vulnerable while causing a reliance on bilateral deterrence to keep the peace.⁵⁴ Supporting the claim that bilateral second-strike capability promotes deterrence and cleaves the capability–stability bond, Robert

⁵³ Erik Gartzke, Jeffrey M. Kaplow, and Rupal N. Mehta, “The Determinants of Nuclear Force Structure,” *Journal of Conflict Resolution* 58, no. 3 (2014): 481–508; Kroenig, “Nuclear Superiority and the Balance of Resolve”; Nitze, “Assuring Strategic Stability in an Era of Detente.”

⁵⁴ Kroenig, “Nuclear Superiority and the Balance of Resolve”; Kenneth Neal Waltz, *Realism and International Politics*, Transferred to digital print (New York, NY: Routledge, 2009).

Jervis stated, “(b)ecause either side can use its nuclear weapons to destroy its opponent’s population centers, the danger of escalation would play a very large role in any war and could not be controlled by having more missiles, more accurate missiles, and more invulnerable missiles than the other side.”⁵⁵ Once obtaining second-strike capability, the reliance on nuclear capabilities driving changes to strategic stability reduces because each state has the ability to cause the other state significant damage. Therefore, examining cases of variations in nuclear capabilities that potentially effected changes in strategic stability before MAD took hold is crucial, because scholarship and practice tightly bind these two as interdependent.

1.4.1 United States

President Eisenhower’s nuclear policies originated from the Truman administration. Realizing the great need to build a suitable nuclear arsenal, Truman tried to develop and incorporate nuclear weapons through all branches of the military and into many aspects of his international policy. Addressing this issue, Truman advocated through the 1950 NSC-68 policy, a “rapid and sustained build-up of political, economic, and military strength of the free world.”⁵⁶ Truman’s policy supported the growth of nuclear capabilities and provided the structural framework for the next president to refine nuclear capability policy further.

Following the Truman administration, Eisenhower wanted to keep policy focus on nuclear capabilities as key to the national strategy to gain control of post-war economic issues. During President Eisenhower’s time in office (1953–1961), he worked to accomplish three tasks: (1)

⁵⁵ Jervis, “Why Nuclear Superiority Doesn’t Matter,” 631.

⁵⁶ Truman, “NSC-68.”

increase military effectiveness; (2) stabilize the post-war economy by reducing costs; and (3) use nuclear capabilities to enhance national strategy. Under the Eisenhower administration, the only way to accomplish all three objectives meant moving away from Truman's policy of massive military rearmament in favor of a new reliance on airpower and nuclear weaponry.⁵⁷

Eisenhower's 1953 nuclear policy, outlined in NSC-162/2 and referred to as New Look, was credited with being the first dedicated strategy to address the expanded employment of nuclear capabilities. The New Look shifted Truman's massive spending approach focused on troop build-ups to one concentrated on economic stability and nuclear capability production as a means of decreasing expensive conventional fighting forces. A single nuclear bomb under the New Look policy would take the place of a multitude of conventional troops and machinery. Furthermore, under the New Look policy, the bolstering of strategic stability came as the product of a stronger nuclear force, one capable of replacing expensive troops with comparatively cheaper nuclear capabilities. Eisenhower's policy also explicitly identified the Soviet Union as the primary threat to the United States, and he vowed to address the threat while avoiding "seriously weakening the US economy or undermining our fundamental values and institutions."⁵⁸

Post-war economic stability became a vital issue during the Eisenhower presidency and was the driving force behind many of the New Look initiatives. Eisenhower outlined the requirement to rebuild a robust economic base at home while providing a sound economic backdrop for our European allies. Furthermore, the New Look policy outlined excess government

⁵⁷ Richard M. Leighton, *History of the Office of the Secretary of Defense; Strategy, Money, and the New Look, 1953-1956*, vol. III, History of the Office of the Secretary of Defense (Washington, D.C.: Historical Office, Office of the Secretary of Defense, 2001), i.

⁵⁸ Eisenhower, "NSC-162/2."

spending as needing to be controlled while cutting taxes to spur future economic growth.⁵⁹ Finally, the New Look policy found value in enhancing nuclear capabilities as a way of cutting costly conventional fighting forces.

Eisenhower's 1953 NSC-162/2 outlined what came to be known as the doctrine of massive retaliation. In defense against the Soviet threat, massive retaliation mandated the following⁶⁰:

- 1) A strong military posture, with emphasis on the capability of inflicting massive retaliatory damage by offensive striking power;
- 2) U.S. and allied forces in readiness to move rapidly initially to counter aggression by Soviet bloc forces and to hold vital areas and line of communication; and
- 3) A mobilization base, and its protection against crippling damage, adequate to ensure victory in the event of general war.

To meet these objectives, the United States needed to enhance its nuclear capabilities from where they were at the end of the Truman presidency. Eisenhower's replacement of Truman's conventional military build-up relied heavily on nuclear capabilities. Such a shift, Eisenhower reasoned, would help the United States address pressing budgetary challenges in the wake of World War II and the Korean War while enhancing the country's ability to deter perceived threats from the Soviet Union. Under the Eisenhower administration, when changes to nuclear capabilities were to have a significant effect on strategic stability, his policy of "massive retaliation" was supposed to be the driving force for dyadic state strategic stability.

The Kennedy administration continued Eisenhower's overarching policy of maintaining strategic stability with the Soviet Union but chose a drastically different path. Three specific

⁵⁹ Eisenhower, 14–15.

⁶⁰ Eisenhower, "NSC-162/2."

nuclear policy issues aimed at maintaining strategic stability dominated the Kennedy administration's abbreviated time in office: flexible response, centralized nuclear command and control, and development of a strategy of peace with the Soviet Union. Each of these three Kennedy administration nuclear policy efforts strove to maintain strategic stability in the face of changing capabilities at home and abroad.

Flexible Response

The first nuclear-related policy effort by the Kennedy administration, flexible response, moved nuclear weapons away from the initial stages of battle and toward the end of a gradual build-up of hostilities beginning with low-level conventional conflict.⁶¹ The flexible response strategy changed the very first formal nuclear-use doctrine developed under the Eisenhower administration, under the title of "massive retaliation," which sought to use an overwhelming threat of nuclear retaliation as a means of deterring any hostile actions against the United States or its allies. Kennedy and McNamara did not believe that massive retaliation's promise of deterrence through the threat of nuclear holocaust posed a credible means of dissuading the enemy, and thus they turned to the concept of flexible response developed by U.S. Army General Maxwell Taylor in the beginning days of the administration.

General Taylor, following retirement in 1960 and dismissed by his contemporaries on the Joint Staff, published *The Uncertain Trumpet* as a critical review of Eisenhower's massive retaliation doctrine.⁶² In retirement, Taylor advised the incoming Kennedy administration of the

⁶¹ Edward J. Drea, *Secretaries of Defense Historical Series; McNamara, Clifford, and the Burdens of Vietnam, 1965-1969*, vol. VI, Secretaries of Defense Historical Series (Washington, D.C.: Historical Office, Office of the Secretary of Defense, 2011), 293.

⁶² As Army Chief of Staff, General Taylor was not alone in his criticism of the New Look policy of massive retaliation. His predecessor, General Matthew B. Ridgway began formulating the initial critiques that General Taylor then expanded upon. The primary critique levied by both generals was the over reliance by the Eisenhower administration on nuclear weapons at the expense of conventional ground force capabilities: Steven L. Rearden,

virtues of a nuclear policy that addressed a wide range of potential issues, appropriately dubbed “flexible response.”⁶³ Taylor fathered the notion of moving the threshold of using strategic nuclear weapons further away from the start of the conflict and, in turn, McNamara institutionalized the policy and brought it to NATO partner states for the larger coalition. The result, long before the Cuban Missile Crisis of 1962, was that the Kennedy administration began adopting a lineage of policies embracing graduated strategic nuclear responses instead of preemptive nuclear attacks.

Practically, the Kennedy administration’s embrace of the flexible response doctrine proved beneficial during multiple crises. The global community and academics saw nuclear capabilities as a deterrent from great power conflict, but not as a reasonable response to many low-level engagements.⁶⁴ Examples of such low-level conventionally fought conflict during the Kennedy administration include the 1961 Bay of Pigs crisis, 1961 in Laos, 1961–1963 in Vietnam, and 1961 in Berlin.⁶⁵ Each of these crises brought the Kennedy administration in its early years to respond

Council of War: A History of the Joint Chiefs of Staff - 1942 - 1991, History of the Joint Chiefs of Staff (Washington, D.C.: National Defense University Press, 2012), 145.

⁶³ General Taylor’s retirement from active duty did not last long. Following the failure of the Bay of Pigs incident, President Kennedy recalled General Taylor to active duty in 1961 to fill the newly formed role of Military Advisor. In position, General Taylor conducted a post-mortem review of the Bay of Pigs operation. His work as presidential military advisor led to President Kennedy appointing General Taylor as the 5th Chairman of the Joint Chiefs of Staff on 1 October 1962, just two weeks before the initiation of the main events in the Cuban Missile Crisis. Rearden, *Council of War: A History of the Joint Chiefs of Staff - 1942 - 1991*.

⁶⁴ Also known as the Stability-Instability paradox, nuclear capabilities were seen as effective in deterring the Soviet Union from attacking the United States during the Cold War but nuclear weapons did not deter either the Korean or Vietnam conflicts from occurring: Glenn H. Snyder, “The Balance of Power and the Balance of Terror,” in *Balance of Power*, ed. Paul Seabury, Chandler Publications in Political Science (San Francisco: Chandler Pub. Co, 1965); Mark S. Bell and Nicholas L. Miller, “Questioning the Effect of Nuclear Weapons on Conflict,” *Journal of Conflict Resolution* 59, no. 1 (2015): 74–92.

⁶⁵ Except for the 1961 Berlin crisis covered in the previous chapter, the Bay of Pigs, Laos, and Vietnam case studies are not dyadic conflicts between the United States and the Soviet Union meaning they are not covered in this research. However, the Kennedy administrations application of flexible response across all conflicts, as opposed to the massive retaliation doctrine, means that nuclear weapons are pushed to the end of a gradual expansion of hostilities. Lawrence S. Kaplan, Ronald D. Landa, and Edward J. Drea, *History of the Office of the Secretary of Defense; The McNamara Ascendancy, 1961-1965*, vol. V, History of the Office of the Secretary of Defense (Washington, D.C.: Historical Office, Office of the Secretary of Defense, 2006), 294.

with low-level conventional force without initial consideration of using nuclear capabilities. The Cuban Missile Crisis represents the quintessential flexible-response success story. President Kennedy began with conventional force deployments building to a naval quarantine, a strategy that kept various levels of strategic stability in place while continuing to place military pressure on the Soviet Union. Flexible response changed strategic stability in a controlled fashion beginning with low-level conventional conflict while working toward the ultimate utilization of nuclear capabilities, breaking any tight bond between strategic stability resulting from changes to nuclear capability.

Centralized Nuclear Command and Control

Beginning in 1961, the second policy effort of the Kennedy administration was the adaptation of nuclear capability use to the flexible response doctrine. Under the Eisenhower administration, nuclear-use doctrine centered on massive retaliation executed through various military commanders, who controlled nuclear capabilities in the field with no central hub of coordination or execution. Between 1958 and 1960, from the various military units across all the services, wargames conducted at the national level identified over 200 targeting conflicts.⁶⁶ In response to these identified conflicts and the fundamental lack of centralized control, General Nathan Twining, Chairman of the Joint Chiefs of Staff (JCS), began a movement across all the services to coordinate nuclear-capability execution efforts. Initially built as a centralized means of executing nuclear capabilities under the massive retaliation doctrine, these efforts to coordinate centralized nuclear command and control coalesced just before the Cuban Missile Crisis around President Kennedy's direction to adapt to his flexible response doctrine.

⁶⁶ "History of the Joint Strategic Target Planning Staff: Background and Preparation of SIOP-62" (History and Research Division: Headquarters Strategic Air Command, n.d.).

In September 1961, Kennedy received his first briefing on the Single Integrated Operational Plan (SIOP). The SIOP for Fiscal Year 1962 (SIOP-62), put together under the auspices of Eisenhower's massive retaliation policy before Kennedy took office, went into effect across the military forces on 1 April 1961. The JCS outlined two mission tasks assigned to SIOP-62: "1) destroy or neutralize the Sino-Soviet strategic nuclear capability and primary military and government controls of major importance. 2) Attack the major urban-industrial centers of the Sino-Soviet Bloc to the extent necessary to paralyze the economy and render the Sino-Soviet Bloc incapable of continuing war."⁶⁷ Various military commanders and Department of Defense leadership, having never previously coordinated at this level, provided a game plan for United States responses using nuclear forces in reaction to a Soviet military attack, "preemptively if possible, but in retaliation if necessary."⁶⁸ The new Chairman of the JCS, General Lemnitzer, presented Kennedy with fourteen options, varied only by the state of military readiness, but all accomplishing the same objective: launching the entire United States nuclear arsenal against military or urban-industrial targets.⁶⁹ In response to the SIOP-62 briefing, and with considerable influence from McNamara, Kennedy requested the war plan to be altered to allow varied choices in potential attack sequences.⁷⁰

The direction given to the military in reformulating SIOP-62 was to produce a revised plan that broke free from the massive retaliation doctrine's rigidity and the requirement to launch the

⁶⁷ "History of the Joint Strategic Target Planning Staff: Background and Preparation of SIOP-62."

⁶⁸ Scott D. Sagan, "SIOP-62: The Nuclear War Plan Briefing to President Kennedy," *International Security* 12, no. 1 (1987): 39.

⁶⁹ Sagan, 37.

⁷⁰ Rearden, *Council of War: A History of the Joint Chiefs of Staff - 1942 - 1991*, 218.

entire nuclear arsenal all at once.⁷¹ While providing direction to the planners, the JCS directed SIOP-63 to be assigned three mission objectives: 1) Destroy or neutralize the military capabilities of the enemy; 2) Minimize damage to a level consistent with national survival and independence; and 3) End the war on the best terms possible for the United States and its allies.⁷² In August 1962, just before the Cuban Missile Crisis, President Kennedy approved SIOP-63, a modified nuclear capability plan that reflected his request for flexibility. Additionally, reflecting Kennedy's preference for a flexible response, SIOP-63 provided "options to permit withholding of reserve forces from initial attack; to avoid attacks on urban-industrial, population, and government control centers; to avoid attacks on one or more Sino-Soviet Bloc nations, and to provide adjustments in force readiness."⁷³ Under the United States' military responses dictated by SIOP-63, leading into the Cuban Missile Crisis, strategic stability was further decoupled from changes in nuclear capabilities, with greater emphasis applied to lower levels of conflict over the massive retaliation responses seen in SIOP-62.

Nuclear Peace Movement

The Kennedy administration's third policy effort was focused on establishing peace in a world populated with nuclear weapons. This policy effort did not directly affect the Cuban Missile Crisis, but it was the main topic of discourse between Kennedy and Khrushchev before the discovery of missiles in Cuba in October 1962, exemplifying Kennedy's mindset of peace, not proliferation. Speaking at the American University to the graduating class of June 1963, President Kennedy outlined his concept of peace as a "gradual evolution in human institutions – on a series

⁷¹ "History of the Joint Strategic Target Planning Staff: Background and Preparation of SIOP-63."

⁷² "History of the Joint Strategic Target Planning Staff: Background and Preparation of SIOP-63," 1.

⁷³ "History of the Joint Strategic Target Planning Staff: Background and Preparation of SIOP-63," 5.

of concrete actions and effective agreements which are in the interests of all concerned.”⁷⁴ Kennedy’s idea of peace advocated for international agreements reducing nuclear weapons while divorcing them as a requirement to obtain strategic stability. During his administration, Kennedy began a journey toward nuclear peace through negotiating, signing, and presenting to the Senate for ratification the Limited Test Ban Treaty, concluded between the United Kingdom, Soviet Union, and United States in the second half of 1963.

The origins of the Limited Test Ban Treaty efforts, supported by then-Senator John F. Kennedy, began under the Eisenhower administration with an unofficial moratorium on nuclear testing between the Soviet Union and the United States in late 1958.⁷⁵ Immediately upon taking office in January 1961, Kennedy opened a dialog with Chairman Khrushchev on ways and means to transition the test ban into a formalized agreement. Faced with the inability to monitor and enforce the informal test ban properly, the Soviets resumed nuclear testing in late 1961, followed by the United States. Kennedy continued to communicate with Khrushchev to further negotiations on establishing a permanent test ban between the two states. Breaking only during the 1962 Cuban Missile Crisis, Kennedy and Khrushchev continued a steady flow of diplomatic communiques concerning the nuances of a nuclear test ban. Finally, the Limited Test Ban Treaty was signed in September 1963 and ratified by the United States Senate the following October.

⁷⁴ John F. Kennedy, “Remarks of the President at American University Commencement Ceremony” (Keynote Speech, University Graduation, Washington, D.C., June 10, 1963).

⁷⁵ General Twining, Eisenhower's CJCS objected to stopping nuclear testing on the grounds that the United States stockpile size was well know and halting tests would make no difference. Eisenhower replied to Twining by stating “world anxiety over testing, even if not well founded, did exist and was itself a source of tension.” James F. Schnabel, Robert J. Watson, Kenneth W. Condit, Byron R. Fairchild, et al., eds., *History of the Joint Chiefs of Staff: The Joint Chiefs of Staff and National Policy - 1957-1960*, vol. 7, 11 vols. (Washington, D.C.: US Government Printing Office, 2000).

Strategic stability under the Kennedy administration was supposed to be the result of controlling the use of nuclear capabilities, as seen through his Flexible Response Limited Test Ban Treaty policies. Unfortunately, Kennedy never saw his policies reach full potential; following his assassination in November 1963, the Johnson administration came to power unexpectedly. Amid the transition between administrations, Johnson kept Robert McNamara as Secretary of Defense and General Maxwell Taylor as Chairman of the JCS, resulting in a continuity of nuclear policy. The policies developed under Johnson built on Kennedy's flexible response strategy. Under the Johnson administration, three nuclear policy priorities took shape: 1) the transition of NATO policy away from massive retaliation; 2) the evolution of flexible response in the United States; and 3) arms control. Each of these policy issues sought, in part, to balance strategic stability by controlling variations in nuclear capabilities.

President Johnson faced a post-crisis nation following Kennedy's assassination. In a short timeframe (1958–1962), the United States had endured two stand-offs with the Soviet Union in Berlin, the Cuban Missile Crisis, and the assassination of a president. Congress bolstered the fiscal year 1962 and 1963 budgets by \$10 billion following the 1961 Berlin crisis, resulting in an increased number of combat divisions from 11 to 16, and emphasized more significant nuclear missile commitment with our European allies.⁷⁶ In May 1962 and then again in June, McNamara attempted to sway NATO allies away from the prevailing massive retaliation mindset in Europe to one focused on flexible response.⁷⁷ McNamara battled a NATO general assembly that embraced

⁷⁶ Kaplan, Landa, and Drea, *History of the Office of the Secretary of Defense; The McNamara Ascendancy, 1961-1965*, V:308.

⁷⁷ Robert McNamara, "Statement Made on Saturday, 5 May by Secretary McNamara at the NATO Ministerial Meeting in Athens" (Speech, NATO Ministerial Meeting, Athens, Greece, May 5, 1962); Robert S. McNamara, "Commencement Speech, June 1962 by Secretary of Defense McNamara at Graduation Commencement of the University of Michigan in Ann Arbor" (Speech, Graduation, University of Michigan, Ann Arbor, June 1962).

the use of nuclear weapons at the lowest possible threshold during a conflict with the Soviet Union.⁷⁸ As nuclear policy evolved in the United States, both McNamara and Johnson believed it was essential to ensure the United States was on the same page as NATO allies. To counter the difference between the United States' view of flexible response and NATO's embrace of massive retaliation, it became necessary for the United States to ensure allied partners of the importance of a restrained yet strong retaliatory force.⁷⁹

Internally, the United States found itself moving away from the Kennedy-era strategy of flexible response. Prior to the Cuban Missile Crisis, McNamara embraced a damage-limiting approach to the flexible response strategy through the no cities doctrine.⁸⁰ Prominently highlighted in his Athens and Ann Arbor speeches, McNamara considered prevailing American nuclear strategy to be a counterforce approach, targeting only the military capabilities of the Soviets over civilian population centers. Following the Cuban Missile Crisis, McNamara evolved his thinking into what became known as assured destruction for two reasons.⁸¹ First, counterforce required a substantial build-up of nuclear weapons to meet all the military-targeting objectives. This massive build-up, in the mind of McNamara, proved to be too costly for the Department of Defense's budget. Second, the standoff over Cuba made McNamara believe nuclear weapons were not a useful tool for great power conflict. Using only the counterforce doctrine, McNamara saw the idea

⁷⁸ Kaplan, Landa, and Drea, *History of the Office of the Secretary of Defense; The McNamara Ascendancy, 1961-1965*, V:315.

⁷⁹ "Cold War Foreign Policy Series; Evolution of the Secretary of Defense in the Era of Massive Retaliation: Charles Wilson, Neil McElroy, and Thomas Gates, 1953-1961," Cold War Foreign Policy Series (Washington, D.C.: Office of the Secretary of Defense: Historical Office, 2012).

⁸⁰ Edward Kaplan, *To Kill Nations: American Strategy in the Air-Atomic Age and the Rise of Mutually Assured Destruction* (Ithaca: Cornell University, 2015).

⁸¹ Kaplan, Landa, and Drea, *History of the Office of the Secretary of Defense; The McNamara Ascendancy, 1961-1965*, V:319.

of nuclear-weapon use becoming an accepted component of warfare, so long as no one targeted civilians. The normalization of nuclear weapons during a general war was unacceptable to McNamara, which drove his efforts to change how to use them.

Evolving from flexible response, McNamara proposed a new strategy in the fiscal year 1965–1969 budget: assured destruction.⁸² Three guidelines outlined this concept. First, the strategic nuclear force structure needed to be sufficient to destroy 30% of the Soviet population, 50% of the Soviet industrial capacity, and 150 Soviet cities.⁸³ Second, the Soviets needed to have a comparable assured destruction strategy as well.⁸⁴ Finally, with a redefined strategy, the force structure could be drastically limited compared with the needs of a counterforce doctrine. With the new assured destruction strategy, once in place, strategic stability became even less tightly bound to variances of nuclear capabilities and more reliant on the constant threat of mutual annihilation. Once both the United States and the Soviet Union obtained the capability to launch a second strike in the late 1960s, the reliance on variations in nuclear capabilities driving changes in strategic stability dissipated, breaking the capability–stability bond.

The policy changes under the Johnson administration matured Kennedy’s flexible response doctrine into assured destruction and then into MAD, thereby driving a permanent wedge between variations of nuclear capabilities affecting changes in strategic stability by the late 1960s. Under Eisenhower, the massive retaliation strategy required nuclear capabilities to be large enough to not

⁸² “Draft Memorandum from Secretary of Defense McNamara to President Johnson; Document 151, 6 December 1963.”

⁸³ Kaplan, Landa, and Drea, *History of the Office of the Secretary of Defense; The McNamara Ascendancy, 1961-1965*, V:319; Drea, *Secretaries of Defense Historical Series; McNamara, Clifford, and the Burdens of Vietnam, 1965-1969*, VI:346–47; James F. Schnabel, Robert J. Watson, Kenneth W. Condit, and Walter S. Poole, eds., *History of the Joint Chiefs of Staff: The Joint Chiefs of Staff and National Policy - 1965-1968*, vol. 9, 11 vols. (Washington, D.C.: US Government Printing Office, 2012); “Draft Memorandum from Secretary of Defense McNamara to President Johnson; Document 151, 6 December 1963.”

⁸⁴ Schnabel, Watson, Condit, and Poole, *History of the Joint Chiefs of Staff*, 9:21.

only survive the first strike from the Soviets but also to respond with overwhelming force to stop any future attacks. Under Johnson's assured destruction, the numbers of various nuclear capabilities could be cut so long as sufficient nuclear capability existed to accomplish the goals proposed under McNamara's guidelines. As state priorities changed, so too could the numbers of required capabilities to meet those priorities.

1.4.2 Soviet Union

The Soviet Union first detonated a nuclear weapon in 1949 under the leadership of Stalin, but it was still more than four years behind advances made by the United States in both technology and policy. Coming to power in 1955, Khrushchev adopted three policy objectives as a means of compensating for the Soviet Union's late start in building nuclear capabilities: 1) Coalesce all strategic rocket forces under a new branch of the military; 2) Emphasize strategic missile technology as a means of reducing costs, shrinking the military, and projecting power; and 3) Create a nuclear strategy that embraces preemptive attack.⁸⁵ Meeting these objectives, Stalin planned on streamlining and reducing the post-WWII military while controlling costs to bolster the Soviet economy.

The first policy objective under Khrushchev was the consolidation of the Soviet Union's different strategic rocket units under a single branch of the military. Under Stalin's leadership following WWII, the artillery branch, *Gvardeyskie Minometnyie Chasti* (Guard Rocket Launcher Units), was the central organization charged with the initial development of Soviet missile

⁸⁵ John Hines and Ellis M. Mishulovich, "Soviet Intentions 1965-1985, Volume I: An Analytical Comparison of U.S.-Soviet Assessments During the Cold War," Prepared for: OSD-Net Assessment (McLean, VA: BDM Federal, Inc., September 22, 1995).

technology.⁸⁶ The fielding and operations of nuclear capabilities, however, were spread among twenty different engineering regiments, driving nuclear weapon delivery into a crisis and lacking a focus in the face of decentralization.⁸⁷

Under Khrushchev, priorities for weapon-delivery methods changed from Stalin's emphasis on bombers to one focused on rockets, theoretically allowing faster delivery times once launched in addition to higher levels of mass production. Once the R-7 completed operational testing, entering military service in December 1959, the Soviet Council of Ministers began the process of transitioning the Guard Rocket Launcher Units into the new Strategic Rocket Forces (SRFs), elevating their status to one of the senior services in 1961.⁸⁸ The elevation of the SRFs did not have an immediate effect on the fielded nuclear capabilities of the Soviet Union, and the change did not occur until 1967 when rocket production numbers began to increase significantly compared with years past.

The second policy goal under Khrushchev was the bolstering of strategic rocket technology as a means of reducing costs, shrinking the military, and projecting power. Leading up to the Cuban Missile Crisis, the Soviets were able to field both nascent intercontinental ballistic missile (ICBM) and sea-launched ballistic missile (SLBM) capabilities in addition to their existing bombers, providing capabilities to all three legs of their nuclear triad, which was equal to the United States but not considered sufficient for a second strike. During the Chairmanship of Khrushchev, the burden of military power projection shifted onto the shoulders of Soviet nuclear

⁸⁶ Podvig and Bukharin, *Russian Strategic Nuclear Forces*.

⁸⁷ Podvig and Bukharin.

⁸⁸ Podvig and Bukharin, 121; Carl G. Jacobsen, "Chapter 7, Soviet Strategic Policy Since 1945," in *Strategic Power: USA/USSR* (New York: St. Martin's Press, 1990), 108.

capabilities, moving away from pricier conventional forces.⁸⁹ Khrushchev's actions are similar to Eisenhower's New Look policy, emphasizing the importance of nuclear capabilities as a way of reducing the financial burdens of conventional forces, overwhelming firepower, and destruction provided through nuclear capability, would supplant the logistical and expensive traditional army.⁹⁰

Oleg Troyanovsky, a foreign policy advisor for Khrushchev, recounted that the Soviet military was cut from 3.6 to 2.4 million troops; "producing nuclear missiles was cheaper than financing large land armies."⁹¹ The Soviet military reductions were 2.7 times greater than what Eisenhower was able to accomplish between 1954 and 1957, following the 1953 publication of NSC-162/2.⁹² To reduce the size of the Soviet army, Khrushchev had to find a means of delivering nuclear capability efficiently, and ICBMs seemed to be the answer.

Under Khrushchev, an aggressive build-up of ICBMs supplanted Stalin's bomber initiative. Khrushchev's emphasis on ICBMs did not have a significant effect on the Soviet relative nuclear capability or the Soviet state's ability to conduct a second strike. As the number of fielded ICBMs increased, the available payload capacity should also have increased, driving Soviet

⁸⁹ Honoré Marc Catudal, *Soviet Nuclear Strategy from Stalin to Gorbachev: A Revolution in Soviet Military and Political Thinking*, Militärpolitik Und Rüstungsbegrenzung 6 (Berlin: Berlin-Verl. Spitz, 1988), 6; Jacobsen, "Chapter 7, Soviet Strategic Policy Since 1945," 110.

⁹⁰ Sergei Khrushchev, "Chapter 10: The Military-Industrial Complex, 1953-1964," in *Nikita Khrushchev*, ed. William Taubman, Sergei Khrushchev, and Abbott Gleason (New Haven, Conn: Yale University Press, 2000), 263.

⁹¹ Oleg Troyanovsky, "Chapter 9: The Making of Soviet Foreign Policy," in *Nikita Khrushchev*, ed. William Taubman, Sergei Khrushchev, and Abbott Gleason (New Haven, Conn: Yale University Press, 2000).

⁹² Eisenhower's actualized personnel reductions following the publication of his New Look strategy were significantly lower because of the heavy requirements each service portrayed in their fulfillment of the policy. Following publication of NSC-162/2 in 1953, the FY 1954 budget outlined a military end-strength of 3,257,266 troops. The approved FY 1957 budget provided for 2,815,000. This was a total reduction of 442,266 as compared to the Soviet's 1,200,000 troop reduction. Leighton, *History of the Office of the Secretary of Defense; Strategy, Money, and the New Look, 1953-1956*, III:328.

nuclear capabilities higher. However, Soviet production numbers for the first few years (until 1967) did not reach significant levels compared with the nuclear capability of the United States.

Finally, the third policy objective undertaken by Khrushchev made full nuclear war inevitable as a result of a general conflict with the United States.⁹³ Before the Cuban Missile Crisis, Chairman Khrushchev incorporated the concept of offensive surprise, launching nuclear weapons first when the enemy is least expecting it, as a means of striking a crippling blow early in the conflict. The benefits afforded by ICBMs as the primary delivery vehicles fed directly into this policy. Various regiments of the newly formed SRFs could launch instantaneous attacks on the United States with little or no warning, yielding devastating results.

Furthermore, the consolidated work being performed by the SRFs during this time bore the first movement toward ballistic missile defense as a viable component of national defense.⁹⁴ When operational, ballistic missile defense eliminated incoming rockets while they were in flight but before they had the opportunity to destroy their targets. Preemptively using existing Soviet nuclear capabilities while defeating the capabilities of the United States through ballistic missile defense continued to demonstrate Khrushchev's reliance on strategic stability as a product of nuclear capabilities.

For Khrushchev, his nuclear program was nascent and had little real influence on strategic stability as he started from a position of disadvantage from Stalin's time in office. Khrushchev's work to build a nuclear force to compete with the United States supplied the basis for the MAD capability to come at the end of the 1960s. However, a year after the assassination of President Kennedy, Khrushchev's time in office came to an end. No other Soviet nuclear policy initiatives

⁹³ Khrushchev, "Chapter 10: The Military-Industrial Complex, 1953-1964."

⁹⁴ Jacobsen, "Chapter 7, Soviet Strategic Policy Since 1945," 110.

came into effect during 1963–1964. Following a bloodless coup originating from inside the Kremlin, Khrushchev stepped aside, allowing Leonid Brezhnev to take over as Soviet Chairman.⁹⁵ Through to the end of his time in office, Khrushchev continued to work on his three main policy objectives: 1) Coalesce all strategic rocket forces under a new branch of the military; 2) Emphasize strategic missile technology as a means of reducing costs, shrinking the military, and projecting power; and 3) Create a nuclear strategy that embraces preemptive attack.⁹⁶

The departure of Khrushchev from the Kremlin in 1964 resulted in a nuclear policy transformation as Brezhnev began his two decades as leader of the Soviet Union. Undertaking three nuclear policy initiatives, Brezhnev embarked on an aggressive embrace of nuclear capability expansion. Under Brezhnev, the policies adopted aimed to enhance and bolster Soviet military forces, specifically the nuclear forces. The first policy initiative was an increase in both nuclear and conventional forces; the second was the race to catch-up with the United States both in overall numbers and technology; and the third policy initiative under Brezhnev was an immediate fielding of Soviet anti-ballistic missile (ABM) technology as a means of guarding against the technologically and numerically superior Americans. Through these initiatives, Brezhnev hoped to boost the Soviet Union from what he had perceived as deficiencies resulting in a weak Soviet military leftover from the Khrushchev era.

As much as Brezhnev wanted a change in the military, explicitly in the nuclear forces, some strategic mindset continuities stemming from the late 1950s influenced his decision-making.

⁹⁵ Sergei Khrushchev, Nikita Khrushchev's son, writes about his father: "was it accidental that history almost simultaneously removed both reformers from the stage - the Chairman of the USSR Council of Ministers, Nikita Khrushchev, and the U.S. president, John F. Kennedy? No answer exists for such questions, and history does not accept conjecture.": Khrushchev, "Chapter 10: The Military-Industrial Complex, 1953-1964," 274.

⁹⁶ Hines and Mishulovich, "Soviet Intentions 1965-1985, Volume I: An Analytical Comparison of U.S.-Soviet Assessments During the Cold War," 72–73.

Consistent with the existing Soviet strategy, when Brezhnev took office he held tight to the belief that war with the United States would either start as nuclear or would initiate as a conventional conflict and then turn nuclear.⁹⁷ However, given Khrushchev's focus on cutting the budget and catching up with the United States' nuclear capabilities, in 1964, Brezhnev faced a Soviet Union lacking the ability to address conflicts across the entire spectrum below the level of nuclear war.⁹⁸ Under the Soviet mindset that war with the United States is a nuclear conflict, any change in nuclear capabilities could give away any potential advantage, reinforcing the tight bond between variances in nuclear capabilities and changes in strategic stability.

Guarding against this vulnerable mindset of imminent war, as a matter of prevention for Brezhnev, building significant capabilities to conduct both nuclear and conventional wars became a significant imperative.⁹⁹ Assisting Brezhnev in his policy of military build-up was an institutional proclivity for the accumulation of weapons, and a higher number of weapons, especially nuclear but also conventional, directly contributes to a higher probability of deterrence.¹⁰⁰ Brezhnev entered office at a time when the nuclear capabilities of the Soviet Union continued to be significantly less than those of the United States, and which were insufficient to field a secured second-strike capability. This trend, stemming from the very beginning of the Soviet nuclear program, continued until 1967 when Brezhnev's efforts paid off with the very first increase in Soviet nuclear capability.

⁹⁷ Catudal, *Soviet Nuclear Strategy from Stalin to Gorbachev*, 98; Daniel S. Papp, "Chapter 14, Soviet Views of Escalation/Limited War," in *Strategic Power: USA/USSR*, ed. C. G. Jacobsen (New York: St. Martin's Press, 1990), 162; Robert Arnett, "Chapter 33, Soviet Thinking on Nuclear War," in *Strategic Power: USA/USSR*, ed. C. G. Jacobsen (New York: St. Martin's Press, 1990), 375–76.

⁹⁸ Catudal, *Soviet Nuclear Strategy from Stalin to Gorbachev*, 60.

⁹⁹ Arnett, "Chapter 33, Soviet Thinking on Nuclear War," 376.

¹⁰⁰ Freedman, *The Evolution of Nuclear Strategy*, 257.

Under Brezhnev's leadership, ABM technology took a dramatic leap forward, which was identified in the 1957 Gaither Report as potentially destabilizing.¹⁰¹ At that time, countering ABM technology was required to launch a higher number of missiles against the enemy in hopes that one or some of the warheads made it through the defenses. A prototype ABM system was fielded around Moscow by 1962 while the United States continued to work on fielding an American version. Technologies associated with ABM defenses led Brezhnev to begin work on the R-36 missile, built specifically to counter ABM systems. Later in 1969, the R-36 was developed into a system capable of deploying three nuclear warheads, defeating available ABM technology of the time.¹⁰² In 1969, the United States and the Soviet Union, recognizing the destabilizing nature of ABM technology, began negotiations to limit the use of such systems. The result of these negotiations led to the 1972 signing of the ABM Treaty. As ABM technology required more nuclear capability to perform the same destructive task as before, in the late 1960s, the capability–stability bonds were loosened; strategic stability did not solely depend on variations in nuclear capabilities but also on the ability of this new system to stop incoming warheads.

The leadership of Brezhnev ushered an aggressive technological revolution to the forefront, driven by long-standing mindsets shaped around the belief that war with the United States would turn nuclear if it occurred. Needing to bolster Soviet nuclear numbers, Brezhnev had a significant gap to overcome with the limited numbers of already-fielded ICBM systems and few Soviet bombers. Although progress ensued, Brezhnev's efforts to build-up the nuclear force did not begin paying off until 1967, three years after he took office. Furthermore, the Soviet ABM program, coupled with the development of the R-37 missile, set the groundwork to begin a future arms race,

¹⁰¹ Security Resource Panel, "Deterrence and Survival in The Nuclear Age ('The Gaither Report of 1957')."

¹⁰² Podvig and Bukharin, *Russian Strategic Nuclear Forces*, 7.

because only more missiles could defeat such a system. Thankfully, that arms race never occurred. However, Brezhnev's policies, expanding the Soviet nuclear arsenal when and where possible, enabled the Soviet embrace of MAD at the end of the 1960s.

1.4.3 Summary

At the outset of the period considered in this dissertation, during the late 1950s, nuclear-capability variations were directly tied to changes in strategic stability. Both Eisenhower and Khrushchev purposely tied variations in nuclear capabilities to changes in strategic stability because neither had a nuclear capability 'upper hand' or the ability to conduct a second strike; it was imperative that one side's first strike could take out the opponent. However, as nuclear capabilities grew on both sides, so too did the ability to conduct a second strike, and MAD was born. The research I conducted is focused on the point when the capability–stability connection was at its highest levels, before both sides embraced MAD at the end of the 1960s.

1.5 Case selection

To study relationships between variations in state nuclear capabilities and the suspected tightly associated changes in strategic stability, my research focuses on the nuclear capability variances of the United States and the Soviet Union between 1957 and 1967. During this timeframe, numerous quantified changes in nuclear capabilities occurred between the two states, in addition to multiple episodes of direct militarized confrontations. The high rates of occurrence of nuclear capability changes and direct militarized confrontations make 1957–1967 an ideal

period in which to observe any potential capability–stability associations, if they existed as scholarship and practice have proposed.

Each state entered 1957 with previously fielded nuclear capabilities: the United States with a high number of long-range bombers and the Soviet Union with a much smaller number of bombers, but also a small number of fielded SLBMs. Over the next ten years, policies adopted by each state aggressively led to a build-up in each leg of the nuclear triad to include long-range bombers, ICBMs, and SLBMs. The bolstering of each state’s triad capabilities during this timeframe supplies the basis of measurement for the present research. To determine any potential capability–stability associations during times when changes in nuclear capabilities occurred, my research conducted assessments on cases of decreased strategic stability at points when nuclear capabilities varied.

During the 1957–1967 timeframe, ten cases of militarized confrontation occurred between the United States and the Soviet Union. At the center is the 1962 Cuban Missile Crisis, which, based on the scholarship available, represents a definitive change in strategic stability between the United States and the Soviet Union, as both sides moved toward an armed confrontation during a period of relative nuclear-capability build-up. The proximity of confrontation to nuclear capability build-up coupled with the notoriety of the Cuban Missile Crisis made this an ideal focal point.

The primary case selection used in my research originated from an analysis of interstate conflicts coded in *The Dyadic Militarized Interstate Disputes (MIDs) Dataset Version 3.0* (more popularly known as the Correlates of War [COW] dataset) with initial qualitative case descriptions

provided by Douglas Gibler.¹⁰³ Cases selected for analysis were required to meet the following criteria:

- 1) A direct militarized interaction between the United States and the Soviet Union.
- 2) A change in dyadic state strategic stability had occurred.

The selection of the first criterion was based on the need to only focus on the conflict between each state. During 1957–1967, both the United States and the Soviet Union interacted on several political, civil, and militarized levels. However, this research is concerned with the conflict that occurred separately from any other interaction. The second criterion was chosen as a means of producing measurable change between the United States and the Soviet Union. Given the criteria and timeframe, six cases occurred between 1957 and 1961, before the 1962 Cuban Missile Crisis, and three occurred in the years that follows before 1967.

Why are these ten cases the right examples to study? At the heart of this research is the requirement to find the nexus between changes in strategic stability and changes in nuclear capabilities. Subject scholarship and practice have tightly connected changes in strategic stability to changes in nuclear capabilities. With the high number of confrontations and massive nuclear capability build-up, if the capability–stability connection exists, the 1957–1967 timeframe, more so than any other time before or after, provides the best opportunity to show such a tight binding. Stated differently, the 1957–1967 timeframe is data-rich with a high number of cases identified as

¹⁰³ One case meeting selection criterion, the 1964 RB-66 shootdown, discovered through background research on the 1964 T-39 shootdown. The RB-66 was a previously classified event and not included yet in the Correlates of War dataset. Zeev Maoz et al., “The Dyadic Militarized Interstate Disputes (MIDs) Dataset Version 3.0: Logic, Characteristics, and Comparisons to Alternative Datasets,” *Journal of Conflict Resolution*, 2018; Douglas M. Gibler, *International Conflicts, 1816-2010: Militarized Interstate Dispute Narratives*, vol. 1 & 2, 2 vols. (Lanham: Rowman & Littlefield, 2018).

either least or most likely.¹⁰⁴ Least likely cases are those where changes in strategic stability were not likely to be explained through variations in nuclear capabilities. The research I conducted focuses on most likely cases, representing instances of strategic stability change almost certainly caused by variations in nuclear capability.¹⁰⁵ The most likely cases presented are ones that if nuclear capabilities drove strategic stability, it would be present in these cases. If the capability–stability connection cannot hold during this timeframe, favoring the outcome in most likely cases, for all cases of changed strategic stability, there would be reason to question the strength of the bond as portrayed by scholarship and practice.

1.6 Methods and findings

Methodologically, I performed a qualitative analysis for each of the ten cases, overlaying changes in strategic stability with any variances in nuclear capabilities for either side of the dyadic nuclear state system. For each of the ten cases, multiple changes in strategic stability occurred and were evaluated separately, yielding thirty-nine nodes of unique strategic-stability measurements. From the thirty-nine independent nodes, twenty-nine represented instances of change in strategic stability; twenty-one showed strategic-stability changes that occurred during times of change in nuclear capabilities; and, after qualitative analysis, only three nodes showed that changes in strategic stability could tie back to changes in nuclear capabilities on either side of the dyadic state

¹⁰⁴ Harry Eckstein is known for originally presenting this concept using either “easy” or “hard” cases. Harry Eckstein, “Case Study and Theory in Political Science,” in *Strategies of Inquiry*, ed. Fred I. Greenstein and Nelson W. Polsby, Handbook of Political Science, v. 7 (Reading, Mass: Addison-Wesley Pub. Co, 1975).

¹⁰⁵ Aaron Rapport, “Hard Thinking about Hard and Easy Cases in Security Studies,” *Security Studies* 24, no. 3 (July 3, 2015): 431–65.

system. Testing the hypothesis across each of the cases and nodes showed that most changes in strategic stability occurred independently of any change in nuclear capabilities.

Comparisons of the ten cases that occurred between 1957 and 1967 resulted in only three instances where variations in nuclear capabilities led to changes in strategic stability. The data in Table 1-1 below summarize the findings from the research conducted. Cases were broken down into two categories based on the occurrence of measurable nuclear-capability changes during the year of the case. Cases occurring during years of nuclear-capability change (Type-I) numbered seven, whereas only three cases occurred when no change in nuclear capability (Type-II) was measurable. Strategic stability changed among the ten cases a total of twenty-nine times.

Table 1-1: Summary of findings

	Strategic Stability Change	Capability-Stability Connection
Type I (7 Cases)	21	3
Type II (3 Cases)	8	0
TOTAL	29	3

The implications of this research are that variations in nuclear capabilities are not necessary, although they are sometimes sufficient to change strategic stability. Breaking the bond of necessity with variations in nuclear capabilities opens the possibility that influences on strategic stability can come from other sources. Future strategic stability research can focus on technological influences, implications of national security policy, and human error, to name just a few areas.

1.7 Structure of the dissertation

Across six chapters, I examine the bond between changes in strategic stability caused by variances in nuclear capabilities. The remainder of this dissertation is organized as follows. Chapter 2 supplies the research introduction and methodology. Chapter 3 covers the first six cases of changes to strategic stability between the United States and the Soviet Union, which occurred between 1957 and 1961; the first quantified change of relative nuclear capabilities occurred in 1960. Chapter 4 covers the 1962 Cuban Missile Crisis and the events before, during, and after; this chapter captures each 1962 change in strategic stability and is composed of the following three sections: 1 January to 15 October 1962, 16–28 October, and 29 October to 31 December. Chapter 5 covers three cases that occurred after the Cuban Missile Crisis between 1963 – 1967. Finally, Chapter 6 provides a summary of the analysis from Chapters 3–5 and provides the conclusion along with recommendations for further research.

2.0 Methods and Cases

Measuring a change in strategic stability and its possible connection to variations in nuclear capabilities requires a defined methodology to establish the presence or absence of a causal connection. The strategic stability scholarship and research that tightly bind nuclear-capability variations with changes in strategic stability assists in establishing the capability–stability connection. Existing scholarship assumes a linkage between strategic stability and nuclear capabilities but lacks a comprehensive assessment to support the connection. The research I performed, through the methodologies outlined in this chapter, began the process of testing the capability–stability connection.

Outlined in this chapter are the qualitative methods devised to create a repeatable process of case study analysis in a nuclear dyadic state system. Changes in strategic stability, the principal critical criterion for case consideration, had to occur in an instance that involved both the United States and the Soviet Union. Furthermore, this chapter provides background terminology used throughout the remainder of the dissertation, along with the analytical efforts performed to determine variations in nuclear capabilities.

2.1 Key concepts defined

This section undertakes two tasks: explaining the components of measurement in this research and justifying why a potential alternative measure to my independent and dependent variables reliant on leader perceptions was excluded. These tasks are presented in four subsections.

First, I provide further explanations of the independent and dependent variables, nuclear capabilities, and strategic stability. Second, to judge the influence that variations in nuclear capabilities have on strategic stability, I outline the necessity and sufficiency criteria as they apply to variable changes. Third, I define a key component of measurement, the rate of escalation, and highlight actions that can drive states closer to or further away from war. Fourth and finally, I address leader perceptions and explain why they were not used to define my key variables despite their being a common factor cited in modern research on states' decisions to engage in conflict.

2.1.1 Variables

2.1.1.1 Independent Variable

The independent variable (IV) used throughout my research is nuclear capabilities. Nuclear capabilities are defined as a composite term of reference that describes the various components of nuclear weaponry, including nuclear warheads, delivery methods, and payload capacity.¹⁰⁶ The nuclear triad is the ability of the state to deliver nuclear capabilities from the land, sea, and air. For the work outlined in this research, these three methods are the only delivery mechanisms of nuclear capabilities for state actors.

As an IV, nuclear capabilities allow for a clean and repeatable quantification of a state's nuclear capabilities. This variable can be transported outside this research and applied to any state as a means of explaining nuclear capabilities. States that have nuclear capabilities have traditionally kept true and accurate accounting of stockpiles at the highest level of classification.

¹⁰⁶ No effort is made to differentiate nuclear warheads based on calculated yield. For the purposes of this research, the yield of a nuclear warhead has does not change the calculated nuclear capabilities of any state.

Therefore, limitations on this variable include accurate and accessible accounting of nuclear capabilities along with the technological competency of the state to mass-produce any component of its nuclear capabilities. However, these limitations were not an issue in the present research for two reasons. First, the nuclear component accounting numbers used throughout this research are the best available unclassified bookkeeping available. Second, if in the future newer or better numbers become available, the processes proposed in this research are repeatable. Applying the nuclear capabilities IV to any state, and specifically to the United States and the Soviet Union, allows for a quantified accounting of that state's ability to conduct a nuclear strike.

2.1.1.2 Dependent Variable

Strategic stability, the dependent variable (DV) in this research, is the degree of mutual deterrence from war between potential adversaries. This definition of strategic stability clearly distinguishes the objective of stability, the avoidance of war, in addition to defining the participants, the potential adversaries. Notably, there is no inherent reference to nuclear weapons. This is in contrast to much scholarship published since the dawn of the nuclear age, which has often hijacked the term and bound it to nuclear capabilities and nuclear-capable states.

2.1.2 Necessity and Sufficiency

At the heart of this research is the pursuit to uncover whether changes in the IV, nuclear capabilities, are either necessary or sufficient to change the DV, strategic stability.¹⁰⁷ This task is

¹⁰⁷ Practically applying necessity and sufficiency comes in the form of both Hoop and Smoking Gun tests. Passing a Hoop Test confirms that necessity of a condition while failing such a test discounts the condition from further considerations. However, passing a Smoking Gun Test will likewise also confirm the sufficiency for a hypothesis but failing said test only weakens the hypothesis while not discounting it from future considerations. David Collier,

undertaken through process tracing the relationship between the two, relying upon the practices recommended in works by various scholars of qualitative research methods.¹⁰⁸ The case study analysis performed should either contradict or validate contemporary research on strategic stability through the determination of one of the following four conclusions. If the scholarship connecting nuclear capabilities and strategic stability is correct, one of the first three conclusions must be correct:¹⁰⁹

1. Variations in nuclear capabilities are necessary causes of changes in strategic stability but not always sufficient.
2. Variations in nuclear capabilities are sufficient but unnecessary causes of changes in strategic stability.
3. Variations in nuclear capabilities are both necessary and sufficient for changes in strategic stability.
4. Variations in nuclear capabilities are neither sufficient nor necessary for changes in strategic stability.

Conclusions 1, 2, and 3, if validated, would show that variations in nuclear capabilities result in changes in strategic stability.

“Understanding Process Tracing,” *PS: Political Science & Politics* 44, no. 04 (2011): 823–30; James Mahoney, “The Logic of Process Tracing Tests in the Social Sciences,” *Sociological Methods & Research* 41, no. 4 (2012): 570–97.

¹⁰⁸ Andrew Bennett, “Process Tracing and Causal Inference,” in *Rethinking Social Inquiry: Diverse Tools, Shared Standards*, ed. Henry E. Brady and David Collier (Lanham, Maryland: Rowman & Littlefield Publishers, 2010), 179–89; Stephen Van Evera, *Guide to Methods for Students of Political Science*, 1st Edition (Ithaca: Cornell University Press, 1997); Mahoney, “The Logic of Process Tracing Tests in the Social Sciences”; Collier, “Understanding Process Tracing.”

¹⁰⁹ Zaks would consider this a key part of process tracing and part of “Casting the net widely for alternative explanations.” Sherry Zaks, “Relationships Among Rivals (RAR): A Framework for Analyzing Contending Hypotheses in Process Tracing,” *Political Analysis* 25, no. 3 (July 2017): 344–62.

2.1.3 Escalation

Measuring how much nuclear capabilities change, as noted above, is an empirical science. Measuring changes in strategic stability, by contrast, is a little less concrete. For the purposes of this investigation, changes in strategic stability are accounted for in terms of escalation. Escalation describes actions in a dyadic system as each state independently, or in concert, moves between peace and war. If changes in nuclear capabilities are necessary or sufficient for causing changes in strategic stability, then process tracing should reveal a correlation between alterations in the empirical measures of the former with shifts in escalatory and de-escalatory moves within the relevant dyad.

The scholarship on escalation congregates around two views describing the order of movement between peace and war. The first view of movement originates in the mid-1960s during the chilliest parts of the Cold War with Herman Kahn's escalation ladder theory. Kahn described escalation as "an increase in the level of conflict in international crisis situations."¹¹⁰ To illustrate his theory, Kahn outlined a linear forty-four step "ladder," broken into seven categories of differentiated levels of hostility, meant to describe the devolution into conflict beginning with "ostensible peace" and terminating with "spasm or insensate war."¹¹¹ Although Kahn did not explicitly prescribe a requirement for reaching each rung of the ladder methodically before progressing higher, his theory advocated a linear movement where lower level rungs occur before those further up the ladder.¹¹² Viewed as a form of brinkmanship, escalation, according to Kahn,

¹¹⁰ Herman Kahn, *On Escalation: Metaphors and Scenarios* (New York: Praeger, 1965), 3.

¹¹¹ *Ibid.*

¹¹² Kahn, "Escalation as a Strategy."

is a two-sided interaction where the shared risk of war forces one state into capitulating to the second state's will.¹¹³ Table 2-1 below outlines the complexity of Kahn's forty-four step escalation ladder as it progresses from the initiation of crisis to insensate war. Under Kahn's complex forty-four step theory, escalation begins during a crisis and, if left unchecked, progresses through lower levels of conflict while heading on a path toward unadulterated nuclear war.

Table 2-1: Herman Kahn's Forty Four Step Ladder¹¹⁴

Starting Point		End Point					
Cold War	Don't Rock the Boat Threshold	Nuclear War is Unthinkable Threshold	No Nuclear Use Threshold	Central Sanctuary Threshold	Central War Threshold	City Targeting Threshold	Aftermaths
	1 Ostensible Crisis	4 Hardening of Positions	10 Provocative Breaking Off of Diplomatic Relations	21 Local Nuclear War - Exemplary	26 Demonstration Attack on Zone of Interior	32 Formal Declaration of "General" War	39 Slow-Motion Counterforce War
	2 Political, Economic, and Diplomatic Gestures	5 Show of Force	11 Super-Ready Status	22 Declaration of Limited Nuclear War	27 Exemplary Attack on Military Targets	33 Slow-Motion Counter-"Property" War	40 Countervalue Salvo
	3 Solemn and Formal Declarations	6 Significant Mobilizations	12 Large Conventional War	23 Local Nuclear War - Military	28 Exemplary Attack against Property	34 Slow-Motion Counterforce War	41 Augmented Disarming Attack
		7 "Legal" Harassment - Retortions	13 Large Compound Escalation	24 Unusual, Provocative, and Significant Countermeasures	29 Exemplary Attack against Population	35 Constrained Force Reduction Salvo	42 Civilian Devastation Attack
		8 Harassing Acts of Violence	14 Declaration of Limited Conventional War	25 Evacuation	30 Complete Evacuation	36 Constrained Disarming Attack	43 Some Other Kind of Controlled General War
		9 Dramatic Military Confrontations	15 Barely Nuclear War		31 Reciprocal Reprisals	37 Counterforce with Avoidance Attack	44 Spasm or Insensate War
			16 Nuclear "Ultimatums"			38 Unmodified Counterforce Attack	
			17 Limited Evacuations				
			18 Spectacular Show or Demonstration of Force				
			19 Justifiable Counterforce Attack				
			20 Peaceful Worldwide Embargo or Blockade				

¹¹³ Schelling, *Strategy of Conflict*, 200.

¹¹⁴ Kahn, *On Escalation*.

The second collection of views on escalation, championed by Lisa Carlson and developed over 30 years after Kahn’s original work, contend that escalation occurs in the form of state actions crossing perceived boundaries while acting as the coercive component of bargaining, bilaterally imposing costs, and increasing the “intensity and scope” of conflict.¹¹⁵ Variations in nuclear capabilities that drive toward a potential use and heightened incentives for the use of nuclear capabilities become a method for imposing costs, driving the breaching of boundaries and dyadic state escalation. Carlson defined escalation boundaries using the same construct made useful in the COW dataset.¹¹⁶ Carlson’s useful adoption of the COW boundaries allows for the uniform measurement of escalation across multiple conflicts and crises below the threshold of war between any two state participants. The boundaries outlined by Carlson and the COW dataset begin with peace or the absence of war and end with the breakout of war. This defined spectrum of escalation boundaries ties closely with strategic stability since the latter is the mutual deterrence of war. Therefore, Table 2-2 below shows the tight correlation between strategic stability and Carlson’s escalation boundaries. Tying escalation levels to various stages of strategic stability is used in case analysis to describe the dyadic state system’s proximity to or from war.

¹¹⁵ Forrest E Morgan et al., *Dangerous Thresholds: Managing Escalation in the 21st Century*, Project Air Force (Pittsburgh, PA: RAND Corporation, 2008); Lisa J. Carlson, “A Theory of Escalation And International Conflict,” *Journal of Conflict Resolution* 39, no. 3 (1995): 511–34.

¹¹⁶ Carlson, “A Theory of Escalation and International Conflict”; J. David Singer, ed., *The Correlates of War* (New York: Free Press, 1978).

Table 2-2: Correlation between escalation boundaries and strategic stability¹¹⁷

Level of Strategic Stability	Full	Reduced	Partial	Diminished	Absent
Escalation Level	1	2	3	4	5
Escalation Category	No Hostility	Threat	Display	Use	War
Qualifying Actions		Threat to use force Threat to blockade Threat to occupy Threat to declare war Threat to join war	Show of troops Show of ships Show of planes Alert Mobilization Fortify border	Border violation Blockade Occupation of territory Seizure Clash Raid Declaration of war	Begin interstate war Join interstate war Use of WMD

Comparing Kahn’s escalation ladder and Carlson’s theory of escalation, both address the same issue, explaining the causal pathway between peace and war. However, Kahn’s ladder fails to explain those instances where states engage in activities that do not neatly step through each rung of his linear process. Put differently, Kahn’s ladder does not address what has become known as a “bolt out of the blue” or, in some instances, preemption.¹¹⁸ When conducting this research, I found that almost all the cases selected jumped from peace to higher levels of escalation in short order, often missing many of Kahn’s intermediary steps. Carlson’s theory on escalation addresses the possibility that states could jump from peace to severe hostility in short order and then back down again, a scenario observed in each of the case studies repeatedly. Carlson’s parsimonious work was therefore used in this research as the basis for measuring how states move to or from conflict with a stronger explanatory power in each of the case studies.

Next, using Carlson’s framework, it was crucial to define what constitutes each end of the strategic stability spectrum.” If mutual deterrence from war defines strategic stability, what is each

¹¹⁷ This table is a derivative of Carlson and Singer’s work, showing a correlation between strategic stability and escalation. Carlson, “A Theory of Escalation and International Conflict”; Singer, *The Correlates of War*.

¹¹⁸ Christopher Chivvis et al., *Strengthening Strategic Stability with Russia* (Washington, D.C.: RAND Corporation, 2017); Sagan, “SIOP-62”; Richard K. Betts, *Surprise Attack: Lessons for Defense Planning* (Washington, D.C.: Brookings Institution, 1982); George H. Quester, “Crises and the Unexpected,” *The Journal of Interdisciplinary History* 18, no. 4 (1988): 701–19.

state trying to maintain and, at the same time, avoid? Defining peace is the easiest of the two terms as it is the lack of any militarized hostility. In a dyadic system, peace is the baseline status between two states and is maintained when neither state is performing militarized armed conflict against the other state. On the opposite end of the spectrum is war, a status each side usually desires to avoid. The COW dataset set a widely accepted standard for defining war as any interstate conflict yielding 1,000 battle related deaths.¹¹⁹ To count as a participant, a state needs to contribute a minimum of 1,000 troops and suffer at least 100 battle related deaths.¹²⁰ The Soviet Union and the United States comprised a dyadic state system at a time when both could use nuclear capabilities to inflict severe combat casualties. Although both states spent the majority of the time between 1957 and 1967 in a state of peace, had either side decided to use nuclear capabilities then the thresholds for war would have easily been attained.

Table 2-2 also identifies qualifying actions for each of the five defined levels of escalation. These qualifying actions allow for an assessment of each state's activities in a dyadic state competition to be associated with a correlated escalation level and subsequent strategic stability status. For example, in September 1973, the escalation level between the state of Israel bordering Arab neighbors in the region, specifically Egypt, was maintained at Escalation Level-1, given that no militarized hostilities were occurring. During September 1973, the existing peace dissipated in early October when Egyptian forces crossed the Suez Canal to attack Israel from the South while

¹¹⁹ Meredith Reid Sarkees and Frank Whelon Wayman, *Resort to War: A Data Guide to Inter-State, Extra-State, Intra-State, and Non-State Wars, 1816-2007*, Correlates of War Series (Washington, D.C: CQ Press, 2010); Melvin Small and J. David Singer, *Resort to Arms: International and Civil Wars, 1816-1980*, 2nd Edition (Beverly Hills, Calif: Sage Publications, 1982); Dan Reiter, Allan C. Stam, and Michael C. Horowitz, "A Revised Look at Interstate Wars, 1816–2007," *Journal of Conflict Resolution* 60, no. 5 (2016): 956–76; Maoz et al., "The Dyadic Militarized Interstate Disputes (MIDs) Dataset Version 3.0."

¹²⁰ Small and Singer, *Resort to Arms: International and Civil Wars, 1816-1980*; Sarkees and Wayman, *Resort to War*; Reiter, Stam, and Horowitz, "A Revised Look at Interstate Wars, 1816–2007"; Maoz et al., "The Dyadic Militarized Interstate Disputes (MIDs) Dataset Version 3.0."

Syrian forces joined the onslaught later by attacking from the North in the Golan Heights region. The crossing of borders by the Egyptians constituted a change to Escalation Level-4 through the actions of the southern border raid. After Israel mobilized its national defense forces, bringing a full national militarized response resulting in thousands of troops called into action, another change occurred as the interstate conflict warranted a change to Escalation Level-5. These qualifying actions, used in demonstrating the tight coupling of escalation levels to strategic stability during the 1973 Yom Kippur War, provide a consistent basis of assessment when judging changes in the strategic stability obtained between states.

2.1.4 Perceptions

Since the determination to undertake actions that alter the balance of strategic stability, including war, is a human decision made by state leaders, it was essential to address the topic of perceptions in this research. Perceptions are the conclusions decision-makers draw from the observable actions of other world leaders, potentially independent of the underlying “objective” reality.¹²¹ Are changes in state leader perceptions a better measure of nuclear capabilities and strategic stability, or a dyadic state system’s proximity to war, than the more objective measures outlined above? Put differently, should variations in nuclear capabilities and strategic stability be assessed in terms of leaders’ beliefs about the nuclear balance and how close or far they are from war, rather than the number of weapons in each state’s arsenal and the discrete actions that states take? This section explains why perceptions were not used to measure changes in strategic stability

¹²¹ Robert Jervis, *Perception and Misperception in International Politics* (Princeton, N.J: Princeton University Press, 1976).

when so many authors have written about their value when explaining conflict. It is not my intention to degrade the value of perceptions when accounting for state leader decisions to enter into conflict; my goal, as stated, is to identify the most useful and portable measure of the influence that actual quantitative variations of nuclear capabilities have on strategic stability.

How can perceptions be operationalized in reference to variations in nuclear capabilities and changes in strategic stability? The answer revolves around leaders believing that changes in either the IV or DV occurred based on the observed actions of other state leaders. For example, if a state leader believes changes in an opposing state's nuclear warheads, payload capacity, or available payload have occurred, then that state leader would assume a variation in the nuclear capabilities of the opposing state have also occurred. Moreover, regardless of any actual variations in nuclear capabilities, if a state leader believes their state is closer to war with another state than before, the strategic stability between the two states will change. In both examples provided, the leader believed that changes occurred in either the IV or the DV independent of any quantifiable changes in state arsenals or activities.

Throughout this research, the rules used to measure the quantitative variations in nuclear capabilities over time did not change. By contrast, measuring individual perceptions across multiple state leaders and time would have been supremely complex while adding very little fidelity in examining the research question. My research was intended to create both a parsimonious and portable model for evaluating influences that variations in nuclear capabilities, or indirectly, technology, have on changes in strategic stability. Accounting for perceptions would needlessly complicate the assessment model presented in this dissertation, making the end result neither parsimonious nor easily portable.

While there is little reason to believe that measuring changes in nuclear capabilities or strategic stability through reference to the perceptions of the leaders in question would provide significantly more analytical leverage than the more objective measures employed in this research, I did check for their influence in the cases examined. In each case study addressed in Chapters 3, 4, and 5, leader perceptions are noted in the recounting of events. To this end, there was a robustness check in each of the case studies, which ensured that my operationalization of changes in nuclear capabilities and strategic stability did not drive the results.

2.2 Research Questions

The specific research question addressed in this research is as follows: Are variations in nuclear capabilities tightly connected to changes in the degree of strategic stability in a dyadic nuclear state system? Stated differently, when State A executes a change in nuclear capabilities, does this new variation drive a change in proximity to war with State B? In a practical application, in 1963, when the United States drastically increased the fielded nuclear capabilities of its ICBM force while maintaining no significant changes in either its bomber or SLBM forces, did this move increase the possibility of war with the Soviet Union?¹²² Deliberately designing the research question in this manner allowed for an examination of the possibility that strategic stability is an absolute function of variations in nuclear capability.

Case study research addresses the identified question and supplies a suitable vehicle to test the selected hypotheses. The selection of the case studies was performed after candidates met

¹²² Norris and Cochran, *US-USSR/Russia Strategic Offensive Nuclear Forces, 1945-1996*.

criteria showing variations in nuclear capabilities, by either state, transpiring during periods of change in strategic stability. Picking cases in this fashion is what Stephen Van Evera would call a rudimentary Hoop Test. “Predictions of high certitude and no uniqueness provide decisive negative tests: a flunked test kills a theory or explanation, but a passes test gives it little support.”¹²³ For cases with changes in strategic stability during the same year as variations in nuclear capabilities, further examination against each of the primary and secondary hypotheses was warranted. However, for cases with changes in strategic stability outside of years when variations in nuclear capabilities occurred, evaluations against only the secondary hypothesis were conducted. Using the questions derived from the observable indicators for each of the hypotheses, an evaluation of each case was undertaken. The results from each of the questions determined whether the causal factors presented in the evaluated case connected to the hypothesis.

To test the causal pathway, starting with variations in nuclear capabilities and leading to changes in strategic stability, two hypotheses were necessary. These hypotheses originated from Cold War deterrence scholarship and research, which claimed that changes to strategic stability were caused by variations in nuclear capabilities driving increased utility for a state, resulting in a shift in incentives. This bank of research is appropriate for this purpose because its authors attempted to explain changes in strategic stability or how to maintain it during the 1950s through the 1980s, when continuous variations in nuclear capabilities occurred.

¹²³ Van Evera, *Guide to Methods for Students of Political Science*.

2.2.1 Hypotheses

2.2.1.1 H1

This first hypothesis holds that the unbalancing of strategic stability occurs as a result of variations in nuclear capabilities. Stated differently, when changes in nuclear capabilities happen, strategic stability is altered through the new capabilities influencing both how a state views the potential use of nuclear weapons and the incentives for their use. This hypothesis derives directly from the theory presented in Chapter 1 and displayed in Figure 1-1. Varied nuclear capabilities afford the state an ability to reassess the potential uses for its new nuclear arsenal.

States reassessing the potential use of their newly defined nuclear capabilities can choose one of two paths: brinkmanship or deterrence. Brinkmanship entails the threat of nuclear-capability use or the use of force that may lead to war with an action or set of actions that carries some level of risk of an unintended disaster.¹²⁴ Brinkmanship is observable when states flex nuclear capabilities in such a way as to threaten conflict in an attempt to compel another state into changing the status quo. Under brinkmanship, nuclear capabilities simultaneously act as the big stick used to threaten an enemy as well as the weapon to be used to attack that enemy if an unintended disaster occurs.

The second path along which a state may potentially choose to use newly changed nuclear capabilities is deterrence. “Deterrence is concerned with influencing the choices that another party will make, and doing it by influencing his expectations of how we will behave. It involves confronting him with evidence for believing that our behavior will be determined by his

¹²⁴ Schelling, *Arms and Influence*; Kroenig, *The Logic of American Nuclear Strategy*.

behavior.”¹²⁵ Wohlstetter opened the parameters even wider when he specifically associated successful deterrence with the state’s ability to conduct a second or retaliatory strike during a nuclear exchange.¹²⁶ Deterrence is observed in states when nuclear capabilities can be used to dissuade changes to the status quo. Put differently, deterrence is carrying a big stick and credibly threatening to use it as a means of avoiding change.

How a state views the potential use of nuclear weapons, either through brinkmanship or deterrence, translates into potential changes in incentives that state has for altering the actual use of nuclear weapons. Scholarship advocating incentives as a driver of change in strategic stability can be broken into two categories: political stability and crisis stability.

Political stability is evident when states in a dyad avoid political actions that may cause either crisis or nuclear confrontation.¹²⁷ Walton and Gray noted how comprehensive the concept of political stability is, remarking that “the conditions that might contribute to such instability are myriad - social, economic, technological and other factors can create the conditions for international instability, either brief or prolonged.”¹²⁸ If changes in nuclear capabilities make either brinkmanship or deterrence more practicable for a state, then social, economic, technological, and other factors that were previously deemed tolerable may no longer be thought of in such terms; states may be incentivized to move away from previously defined levels of political stability. Observation of political stability is possible following states’ determination of

¹²⁵ Bolstering Schelling's idea of deterrence, Professor John Mearsheimer embraced what Schelling had put forward in the 1960s in the 1980s stated that deterrence was “the best way to prevent war is to ensure that it would have devastating consequences for all the participants.” Schelling, *Strategy of Conflict*; Mearsheimer, “Nuclear Weapons and Deterrence in Europe.”

¹²⁶ Wohlstetter, “The Delicate Balance of Terror.”

¹²⁷ Nye, “Nuclear Learning and U.S.-Soviet Security Regimes.”

¹²⁸ Walton and Gray, “Chapter 3: The Geopolitics of Strategic Stability: Looking beyond Cold Warriors and Nuclear Weapons.”

potential uses of new nuclear capabilities. If they make efforts to move away from previously obtained political arrangements, stability would decline, whereas if they make no such effort, stability would remain.

Crisis stability is “the absence of incentives to preempt in time of crisis.”¹²⁹ It refers to the “strategic condition wherein the very character, readiness, and mobilization procedures of armed forces in confrontation should not themselves comprise the proximate cause of war.”¹³⁰ “Crisis stability and the means of achieving and maintaining it - crisis management - are not about warfighting. They are about building and posturing forces in ways that allow a state, if confronted, to avoid war without backing down.”¹³¹ Mutually assured destruction (MAD) exemplifies an extreme case of crisis stability. Formulated under Secretary of Defense McNamara in the 1960s, MAD is “when two states possess secure second-strike capabilities, both sides have the ability to launch a devastating nuclear response even after absorbing an enemy first strike.”¹³² So long as neither state can obtain an advantage over the other, there exists no incentive to initiate a strike on one’s opponent. Put differently, the MAD strategy controls strategic stability by controlling state incentives to attack, capitalizing on the innate fear that a first strike will draw a devastating counterstrike. Lacking an incentive to attack, a nuclear dyadic state system will control the crisis, removing the desire to preempt. If changes in nuclear capabilities make brinkmanship more

¹²⁹ Nye also conveyed in the work of Nitze where he talks to the gains neither side would benefit from should crisis stability falter. Nye, “Nuclear Learning and U.S.-Soviet Security Regimes”; Nitze, “Assuring Strategic Stability in an Era of Detente.”

¹³⁰ Colin S. Gray, “Strategic Stability Reconsidered,” *Daedalus* 109, no. 4, (1980): 135–54.

¹³¹ Forrest E. Morgan, *Crisis Stability and Long-Range Strike: A Comparative Analysis of Fighters, Bombers, and Missiles* (Santa Monica, CA: RAND, 2013).

¹³² Kroenig's view of MAD is also reflected in the work of John Mearsheimer who believed that as long as both sides could hold one another as bay with nuclear capabilities, neither side could benefit from any incentives brought upon by power or superiority over the other. Kroenig, “Nuclear Superiority and the Balance of Resolve”; John J. Mearsheimer, “Why We Will Soon Miss the Cold War,” *The Atlantic Monthly* 266, no. 2 (1990): 35–50.

practicable, states will be more likely to attempt it, even during times of crisis; by contrast, if changes in capabilities make deterrence more practicable, no such incentive to strike first in periods of high tension will exist and crisis stability will be reinforced.

Changes in the political and crisis incentives of states may then yield changes in strategic stability, or the distance two states are from war. Such changes are not guaranteed because even incentivized states do not always act. Observations of changes to strategic stability between states occur when the actual actions between them become more or less hostile, as defined in Table 2-2. For example, states that threaten the use of force are further away from war than those that conduct border incursions or low-level skirmishes with troops from the other side. Likewise, states that mobilize troops for combat are closer to conflict than states that do not undertake any militarized action at all.

Determination the validity of H1 in the presented cases is performed through asking the following question: Can the variation of nuclear capabilities explain changes in strategic stability? An affirmative answer would support H1, whereas a negative response would drive an examination of the case details against H2.

2.2.1.2 H2

The second hypothesis asserts that nuclear-capability variations do not solely drive changes in strategic stability. Stated differently, strategic stability changes arise from a multitude of sources, not all of them related to variations in nuclear capabilities. Scholarship explicitly embracing this perspective is thin compared with the decades and tomes of nuclear-based research outlined above. However, the lack of scholarship outlining non-nuclear-based causes for changes in strategic stability does not negate the existence of this potential reality.

Non-nuclear capability driven changes in strategic stability fall under two categories: technological substitutes for nuclear capabilities and “everything else.”¹³³ Because the “everything else” category can encompass an endless array of explanations driving changes in nuclear capabilities, the most straightforward category to explain is technological substitutes. Current scholarship on technological substitutes capable of affecting strategic stability is in the nascent stages of maturity as relevant technologies continue to improve and authors begin to see the viability of non-nuclear technological influences on strategic stability. Erik Gartzke and Jon Lindsay presented an excellent example of non-nuclear-based research highlighting technological influences on strategic stability.¹³⁴ Gartzke and Lindsay proposed that strategic stability in a nuclear state dyad could be “a function of relative offensive and defensive cyber capacity.”¹³⁵ Although Gartzke and Lindsay’s version of cyber influences on strategic stability can entail driving variations in nuclear capabilities, an avenue also exists where cyber capabilities on their own will drive changes in strategic stability.

Defined by the vast array of potential causal factors leading to changes in strategic stability, no one set of defined H2 indicators exists. Instead, H2 indicators can be defined as those that do not have any association with variations in nuclear capabilities while simultaneously triggering a change in strategic stability. To confirm a case against the H2 indicator, a two-part test was used. First, the case would have to not be able to answer H1 affirmatively. Responding favorably to the

¹³³ It is easy to believe that further categories are possible in addition to technological substitutions. Such other categories could be human error, rogue players looking to further personal or ideological agendas, misperception of intentions, and so on. However, as explained earlier in this chapter, my research has an underlying desire to look specifically at technological disruptors to strategic stability. Also mentioned earlier in this chapter, there is no way to pick out all potential technological disruptors, but that is not the point. Identifying a gap between nuclear capabilities and strategic stability is only the first step in future academic explorations to identify equally as potent disruptors to dyadic state strategic stability that are not based on nuclear capabilities.

¹³⁴ Erik Gartzke and Jon R. Lindsay, “Thermonuclear Cyberwar,” *Journal of Cybersecurity* 3, no. 1 (2017): 37–48.

¹³⁵ Gartzke and Lindsay.

H1 validating question would negate the possibility of a positive response to the H2 validating question. The second part requires the case to provide a positive answer to the following question: Can changes in strategic stability be explained by causal mechanisms other than variations in nuclear capabilities?

2.2.1.3 Hypotheses Summary

The data in Table 2-3 summarize the proposed hypotheses. Without many nuances between each of them, each hypothesis touches on one of two indicators used to explain changes in strategic stability. Outlined with each hypothesis is the indicator used to explain the hypothesis in relation to the others presented. Finally, each hypothesis' validating question is included as a means of allowing for a charted comparison among each of the hypotheses. If a case evaluation did not pass the H1 test, then that case could still be evaluated against H2. The same goes for a case evaluated against H2; a failure to match the hypothesis would not negate the case and H1 would remain a possibility.

Table 2-3: Summary of hypotheses

	Hypothesis	Indicator	Validating Question
H1	Variations in nuclear capabilities unbalance strategic stability	Variations in nuclear capabilities tightly connect to changes in strategic stability	Can the variations of nuclear capabilities of a state drive changes in potential usage, affecting state leaders incentives, resulting in a direct correlation to changes observed in strategic stability?
H2	Causes of strategic stability change are non-nuclear	Changes in strategic stability come from a multitude of causal factors, not necessarily related to variations in nuclear capabilities	Can changes in strategic stability be explained by causal mechanisms other than variations in nuclear capabilities?

2.3 Methodology

Regarding the core methodology used to test each of the hypotheses, a qualitative analysis of the case studies was employed. Each of the case studies was analyzed using congruence testing, identifying cases that had both variations in nuclear capabilities occurring during the same year as changes in strategic stability. The cases that passed congruence testing were then analyzed with process-tracing techniques to identify case-specific causal mechanisms for each change in strategic stability. Posing the hypotheses questions found in Table 2-2 against each case following process tracing introduced a repeatable process into this research.

2.3.1 Data Collection

Before summarizing how data collection was performed, it is vital to outline what type of data was collected. When referencing nuclear capabilities for both the United States and the Soviet Union during 1957–1967, both states had combinations of strategic and tactical weaponry. Strategic weaponry refers to capabilities able to travel farther than 5,500 kilometers, whereas tactical weaponry is shorter in range and used in specific battles or geographic regions.¹³⁶

The research I conducted is concerned with strategic nuclear effects, most commonly delivered through strategic or long-range missiles and bombers. However, there is one exception. In 1962, during the Cuban Missile Crisis, the Soviet Union placed twenty-six medium- and intermediate-range ballistic missiles on the island of Cuba. These particular missiles fell short of

¹³⁶ “PART 1: Nuclear Terms and Definitions in English,” in *NATO-Russia Glossary of Nuclear Terms and Definitions* (North Atlantic Treaty Organization, 2007), <https://www.nato.int/docu/glossary/eng-nuclear/>.

the 5,500-kilometer threshold and were placed on the doorstep of the Florida coastline. Even though these missiles did not constitute a change in nuclear capabilities as defined, it was determined best to include this case as part of the research. Viewed historically, the Cuban Missile Crisis is the quintessential episode of Cold War brinkmanship and a frontal assault to crisis stability. Furthermore, although this case is a crucial Cold War conflict, the number of nuclear warheads and payload capacity added onto the Cuban Island did not amount to enough to cause a significant change relative to the United States. During the brief period the Soviet missiles became operational on Cuba, the ability of the Soviet Union to strike the United States mainland increased slightly and the United States correspondingly reacted, thereby driving a change in strategic stability, rendering the case worthy of analysis.

Nuclear capabilities referenced throughout this research are composed of two parts, namely the delivery payload capacity and the warhead; each component is rendered useless without the other. Payload capacity is calculated in terms of the number of nuclear warheads a given delivery platform can carry, and warheads require little explanation. For example, in 1959, the American B-52 bomber was capable of carrying two nuclear warheads, while the ATLAS-D intercontinental ballistic missile could only carry one warhead. The total payload capacity calculated between one B-52 airframe platform and a single ATLAS-D for 1959 therefore equals three.

Even with historical records becoming increasingly available for analysis, finding accurate numbers for payload capacity and strategic nuclear warheads in both states is a difficult task at best. My research is reported in Table 2-3, providing a summary of nuclear capabilities for each state during the timeframe of interest. For the United States' nuclear capabilities, the work of Norris, Standish, and Cochran provided the basis of the dataset, while Podvig and Bukharin's work

provided the foundation of the Soviet arsenal component of the dataset.¹³⁷ In the cases of both the United States and the Soviet Union, Kristensen’s work on the Bulletin of Atomic Scientists, Nuclear Notebook provided a reliable reference and invaluable supplemental information.¹³⁸ Every effort was made to accurately depict each state’s delivery mechanism and strategic nuclear warheads during 1957–1967.

Table 2-4: Summary of Year to Year Nuclear Capabilities¹³⁹

		1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
United States	Delivery Platforms	1,605	1,620	1,551	1,559	1,532	1,653	1,812	2,012	1,888	2,139	2,268
	Strategic Payload Capacity	2,520	2,610	2,496	3,127	3,110	3,267	3,612	4,244	4,603	5,311	5,798
	Strategic Warheads	2,460	2,610	2,496	3,127	3,153	3,451	4,050	4,718	5,055	5,744	6,226
Soviet Union	Delivery Platforms	68	97	148	203	249	302	368	469	503	693	1,117
	Strategic Payload Capacity	126	182	243	304	352	405	471	572	606	792	1,201
	Strategic Warheads	102	186	283	354	423	481	589	771	829	954	1,349

2.3.2 Combined Relative Nuclear Capability Score

Indisputable in the 1950s through to the end of the Cold War in 1990 was the nuclear competition between the United States and the Soviet Union. Both states raced feverishly to increase nuclear capabilities as a means of either playing catch-up or outdoing one another. Lacking in this massive build-up on both sides of the dyadic state system was a means of adequately comparing the capabilities of one state with the other. My research employed a method for conducting a relative comparison of strategic nuclear capabilities in a dyadic state system,

¹³⁷ Norris and Cochran, *US-USSR/Russia Strategic Offensive Nuclear Forces, 1945-1996*; Podvig and Bukharin, *Russian Strategic Nuclear Forces*.

¹³⁸ Hans M. Kristensen and Robert S. Norris, “Nuclear Notebook,” *Bulletin of the Atomic Scientists*, accessed December 10, 2016, <http://thebulletin.org/nuclear-notebook-multimedia>.

¹³⁹ Norris and Cochran, *US-USSR/Russia Strategic Offensive Nuclear Forces, 1945-1996*; Podvig and Bukharin, *Russian Strategic Nuclear Forces*.

shown in the equation below, using a derivative of the total payload capacity (P') plus a derivative of the total strategic warheads (W') to create the “combined relative nuclear capability” (CRNC) score. The CRNC score, calculated for each state during an identified year, provides a metric for comparing the nuclear capabilities each state brings to a nuclear dyadic state system.

$$P' + W' = CRNC$$

The scholarship on strategic stability since the 1940s holds multiple instances of relative versus absolute references to power and capability.¹⁴⁰ Why is a relative comparison of dyadic state nuclear capabilities favored? The answer is scope. This dissertation only examines the nuclear dyadic state system between the United States and the Soviet Union. An absolute comparison would be concerned with the entirety of the nuclear capabilities in existence at any one time, whereas a relative analysis would be limited to only those states being compared. Stated differently, absolute measurements are concerned with the sum of known parts and are independent, whereas relative measurements are limited in scope and dependent upon only a few specific parts. In this research, absolute measurements of nuclear capabilities would have conveyed the same information but with less fidelity than a dyadic state relative measurement.¹⁴¹

Staying with the relative comparison between the United States and the Soviet Union, only nuclear capability growth between 1957 and 1967 was considered. To compare growth between

¹⁴⁰ Arnold Wolfers, Percy E. Corbett, and William T. R. Fox, *The Absolute Weapon: Atomic Power and World Order*, ed. Bernard Brodie (New Haven, CT: Yale Institute of International Studies, 1946); Nitze, “Assuring Strategic Stability in an Era of Detente”; Jervis, “Why Nuclear Superiority Doesn’t Matter”; Robert A. Levine, *The Strategic Nuclear Debate* (Santa Monica, CA: RAND Corporation, 1987); Chivvis et al., *Strengthening Strategic Stability with Russia*.

¹⁴¹ Authors like John Mearsheimer speak to the importance of relative measurements of state power. Mearsheimer holds that as a state increases in power, relative to a competitor, the chances of an attack go down. Furthermore, relative power measurements are key in determining balance of power outcomes, specifically in Europe. John J. Mearsheimer, “Numbers, Strategy, and the European Balance,” *International Security* 12, no. 4 (1988): 174; John J. Mearsheimer, “Structural Realism,” in *International Relations Theories: Discipline and Diversity*, ed. Timothy Dunne, Milja Kurki, and Steve Smith (Oxford; New York: Oxford University Press, 2007).

the two states, for each component used to calculate the CRNC, across all delivery platforms available at the time, the relative minimum and maximum totals were used to calculate a total number, which was then divided by ten and provided a numerical value between 1 and 10. The numerical range of 1–10 was selected as a means of providing a clear and concise breakdown of potential change in this relative comparison. Selecting values greater than ten would warrant continuous indications of change while ranges below ten would miss significant opportunities to show change. Table 2-4 below converts the numerical value of the calculated sum for each part making up the CRNC score into a value ranging from 1 to 10. The calculated numerical value for each component is then combined to create the CRNC score.

Table 2-5: Capability Calculator Chart

Strategic Payload Capacity		Score	Strategic Warhead Capacity	
Min	Max		Min	Max
0	580	1	0	623
581	1161	2	624	1247
1162	1742	3	1248	1871
1743	2323	4	1872	2495
2324	2904	5	2496	3119
2905	3485	6	3120	3743
3486	4066	7	3744	4367
4067	4647	8	4368	4991
4648	5228	9	4992	5615
5229	5809	10	5616	6239

Payload capacity calculations take into consideration the available payload capacity during any given year for ICBMs, SLBMs, and aerial bombers. The final number results from adding each component to yield P', which is then used in part to calculate the CRNC.

$$ICBM^{Payload} + SLBM^{Payload} + Bomber^{Payload} = P'$$

Strategic nuclear warheads undergo an identical process as the one described for payload capacity. The only difference, visible in Table 2-4, is the increments used to determine the assigned value between 1 and 10.

$$P' = 597 + 160 + 2855 = 3612 = 7$$

$$W' = 597 + 160 + 3293 = 4050 = 7$$

$$1963 \text{ US CRNC} = 7 + 7 = 14$$

The above repeatable process was then conducted for each year between 1957 – 1967. The CRNC values for each year and each state were compared with the year before to determine if a change in nuclear capability occurred significant enough to raise or lower the calculated score. Table 2-5 below shows the final year by year calculated CRNC score from all data collected for each state, and each category between 1957 and 1967. The results from just the CRNC analysis confirmed the desire of both sides to rapidly grow their nuclear capabilities while showing a total of seven CRNC score increases, four changes based only on the United States, one based only on the Soviet Union, and two years where both the United States and Soviet Union both had CRNC changes. Years showing a CRNC score changes from just the year prior became eligible to host case studies following the congruence testing described in the next section.

Table 2-6: Combined Relative Nuclear Capability Calculation Chart¹⁴²

	ICBM		SLBM		Bombers		CALCULATED SCORE		
	Payload Capacity	Strategic Nuclear Warheads	Payload Capacity	Strategic Nuclear Warheads	Airframe Payload Capacity	Strategic Nuclear Warheads	Relative Payload	Relative Warhead	Combined Relative Nuclear Capability
United States	1957	-	-	-	2520	2460	4	5	9
	1958	-	-	-	2610	2610	5	5	10
	1959	6	6	-	2490	2490	5	5	10
	1960	12	12	32	3083	3083	6	6	12
	1961	57	57	80	2920	3016	6	6	12
	1962	203	203	144	2920	3104	6	6	12
	1963	597	597	160	2855	3293	7	7	14
	1964	907	907	384	2953	3427	8	8	16
	1965	854	854	736	3013	3465	9	8	17
	1966	1004	1004	1264	3043	3476	10	10	20
1967	1054	1044	1552	3192	3630	10	10	20	
Soviet Union	1957	-	-	10	116	152	1	1	2
	1958	-	-	12	170	250	1	1	2
	1959	-	-	33	210	310	1	1	2
	1960	2	2	63	239	354	1	1	2
	1961	12	10	87	253	382	1	1	2
	1962	38	36	104	263	392	1	1	2
	1963	96	99	104	271	440	1	1	2
	1964	193	191	104	275	522	2	1	3
	1965	226	281	104	276	532	2	2	4
	1966	420	416	104	268	546	2	2	4
1967	820	818	143	238	576	3	3	6	

2.3.3 Analysis

The first step of the present case study analysis was congruence testing, or what Van Evera called “congruence procedure type 2.”¹⁴³ The argument I tested holds that changes in nuclear capabilities must occur in order for there to be changed strategic stability; congruence testing assesses this connection. Congruence testing identified through in-case analysis instances when changes in the DV, strategic stability, occurred during the same year as variations in the IV, nuclear capabilities.

¹⁴² Numbers for ICBM, SLBM, and Bomber columns derived from: Norris and Cochran, *US-USSR/Russia Strategic Offensive Nuclear Forces, 1945-1996*; Podvig and Bukharin, *Russian Strategic Nuclear Forces*.

¹⁴³ Van Evera, *Guide to Methods for Students of Political Science*, 181.

Congruence testing is best applied when “(1) many observations of values on the IV and DV are possible; and/or (2) values on the IV or DV vary sharply over time or across space (across the region, institution, group, and so on) within a case.”¹⁴⁴ The IV used for congruence testing was nuclear capabilities, whereas the DV was strategic stability. The CRNC score, calculated per year for each state, was used as a tool to determine if changes in nuclear capabilities occurred from the year prior.

Congruence testing classified a case as either Type I or Type II. Type-I cases were those where strategic stability change occurred during years when variations in nuclear capabilities by either side also took place.¹⁴⁵ Type-II cases were those where strategic stability changes occurred outside of years when nuclear capability variations also occurred. Type-I cases potentially address the research question: are changes in strategic stability tightly connected with variations in nuclear capabilities? Lacking a clear connection between variations in nuclear capabilities and changes in strategic stability, Type-II cases were not analyzed further but contributed to the conclusion that showed variations in nuclear capabilities were only sometimes sufficient to drive changes in strategic stability, as seen in some Type-I cases, but they were not necessary, as seen in Type-II cases.

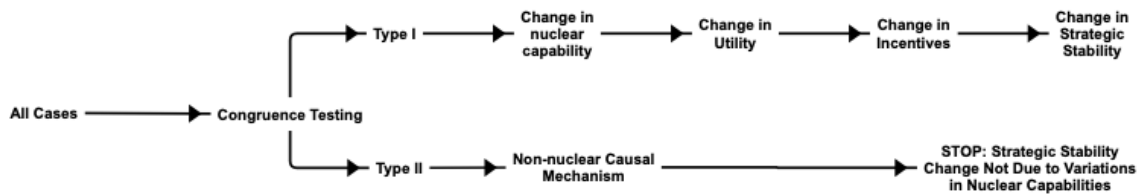
Following congruence testing, Type-I cases, those most likely to show a tight bond between variations in nuclear capabilities and strategic stability, were subjected to process tracing. This

¹⁴⁴ Van Evera, 62.

¹⁴⁵ The research in this dissertation is conducted using a calendar year system (i.e. 1961, 1962, 1963, etc.). It can be argued that different results may be obtained if twelve calendar months were used before or after any noted change to strategic stability rather than designated years. Using calendar months makes the most sense during Type-II cases when variations in nuclear capabilities occurred the year before. However, the numbers used to calculate nuclear capabilities are only reported on a year to year basis with no designation given to month to month. It is impossible to know consistently if the Soviet Union fielded more systems in March or September vice any particular whole calendar year. Therefore, fidelity on causal factors driving changes to strategic stability is tightly bound with the year to year reporting of variations in nuclear capabilities.

second form of case study testing “attempts to trace the links between possible causes and observed outcomes.”¹⁴⁶ “Process tracing tests can be used to help establish that (1) an initial event or process took place, (2) a subsequent outcome also occurred, and (3) the former was a cause of the latter.”¹⁴⁷ Figure 2-1 presents a flow diagram of what each case undergoes from congruence testing to causal determination. For all Type-I cases, the diagram shows process tracing continuing through to causal determination. For Type-II cases, the diagram shows that each case is non-nuclear by nature; strategic stability changed during years when variations in nuclear capabilities did not.

Figure 2-1: Analytical case study flow model



Through process tracing, the determination made in all the cases analyzed resulted in multiple instances of strategic stability change occurring as each case progressed from beginning to end. At each change in strategic stability, process tracing was applied to determine if the cause of strategic stability change was due to nuclear capability variations or it was non-nuclear. Changes in strategic stability investigated through process tracing on all cases determined only sixteen instances of strategic stability change that were also Type-I cases, and only four changes (one quarter) were due to variations in nuclear capabilities.

¹⁴⁶ Alexander L. George and Andrew Bennett, *Case Studies and Theory Development in the Social Sciences*, BCSIA Studies in International Security (Cambridge, Mass: MIT Press, 2005), 6.

¹⁴⁷ Mahoney, “The Logic of Process Tracing Tests in the Social Sciences.”

2.4 Case study selection

To examine the relationship between variations in nuclear capabilities and associated changes to strategic stability, I focused on dyadic state interactions following WWII and throughout the early years of the Cold War, the period most likely to present the conditions necessary for significant variations in both the IV and the DV.¹⁴⁸ Three criteria were taken into account when selecting case studies for research: possession of nuclear capabilities, the volatility of the dyadic state relationship, and data richness. The greatest of efforts were made to include a concise timeline for study with the largest number of cases available for analysis.

Nuclear capabilities following the end of WWII became a highly sought-after addition to national power for any state able to obtain these weapons of mass destruction. In the two decades following WWII, five states, together composing the permanent members of the United Nations Security Council, obtained nuclear capabilities. The United States obtained nuclear capabilities in 1945, followed by the Soviet Union in 1949, then the United Kingdom in 1952, France in 1960, and finally China in 1964. The United States and the United Kingdom continued an allied relationship following WWII while the Soviet Union drifted further into communism and began competing with the United States, and by the time France obtained nuclear capabilities in 1960, the United States and the Soviet Union had over a decade of peer competitor experience.

Possessing nuclear capabilities is not enough to test the relationship between variations in nuclear capabilities and changes in strategic stability; there needs to be some level of volatility in the dyadic state relationship. Volatility is best captured when states recently obtained nuclear

¹⁴⁸ Van Evera, *Guide to Methods for Students of Political Science*.

capabilities since, over time, national interests change. States may feel emboldened after obtaining nuclear capabilities but, after learning of the destructive power and perceptions in the international community, may nevertheless give way to more reserved prudence in the use of nuclear capabilities.¹⁴⁹ Stated differently, “new nuclear states, with a nascent arsenal and lack of experience in nuclearized disputes, play the ‘nuclear card’ more often than their more experienced nuclear counterparts, making them more likely to reciprocate militarized disputes. Possibly counterintuitively, more experienced nuclear states reciprocate disputes less frequently, which suggests perhaps that opponents learn over time about how to calibrate their challenges against nuclear powers.”¹⁵⁰ Applied to the years following the end of WWII, the antagonistic relationship between the United States and the Soviet Union occurred at the same time as both states had new nuclear capabilities, and they had the potential to create higher instances of strategic stability changes as both states challenged one another.

With the United States and the Soviet Union bolstered by newly acquired nuclear capabilities, data richness became an easy criterion to meet. Table 2-6 below, derived from the latest version of the COW dataset, outlines dyadic state militarized interstate disputes between all five states with nuclear capabilities throughout the entirety of the post-WWII timeframe and the subsequent Cold War (1945–1990). Table 2-7 outlines instances of participation in a militarized interstate dispute where 1) both states took part, and 2) at a minimum, a display of force occurred, and at a maximum, both sides took part in a war.¹⁵¹ The dyad with the largest number of militarized

¹⁴⁹ Nye, “Nuclear Learning and U.S.-Soviet Security Regimes.”

¹⁵⁰ Michael Horowitz, “The Spread of Nuclear Weapons and International Conflict; Does Experience Matter?,” *Journal of Conflict Resolution* 53, no. 2 (2009): 234–57.

¹⁵¹ There are instances where known allies have quantified values reporting in Table 2-6. A good example of this is the United States and the United Kingdom, both states have continued a fruitful allied relationship following WWII but have twelve cases where both took part in the same militarized interstate dispute. Further examination of this

interstate disputes by far is the United States and the Soviet Union, with twenty three. Further examination of these reported disputes between 1945 and 1990 between the two states revealed that the period of 1957–1967 held the highest number of disputes overall with a total of ten or almost half of all the disputes for this dyad.

Table 2-7: Dyadic state MID participation: 1945–1990¹⁵²

	United States	Soviet Union	United Kingdom	France	China
United States					
Soviet Union	23				
United Kingdom	12	14			
France	6	2	2		
China	12	9	3	5	

The timeframe of 1957–1967 thus captures a large number of cases in which the United States and the Soviet Union both engaged in militarized conflicts and were likely to have aggressive international policies, increasing the possibility of disruptions in strategic stability. Furthermore, as discussed in Section 1.4, the MAD between the United States and the Soviet Union significantly influenced the cases selected; MAD meant that each side could absorb an initial nuclear attack and launch a retaliatory second strike. Discussed further in Chapter 1, when both sides achieved the level of MAD, the influence of variations in nuclear capabilities upon changes in strategic stability decreased. For the United States and the Soviet Union, MAD was obtained

phenomenon reveals that many of the cases are instances of allied coalitions taking part on the same side in a war, i.e. the Korean conflict, Vietnam, etc.

¹⁵² Maoz et al., “The Dyadic Militarized Interstate Disputes (MIDs) Dataset Version 3.0.”

between the two sides toward the end of the 1960s. Given the high number of instances of hostility between the two states occurring between 1957 and 1967, if a connection between variations in nuclear capabilities and changes to strategic stabilities should exist without undue influence from the existence of MAD, this timeframe would be the best opportunity to find the highest number of representative cases.¹⁵³

Chapters 3 and 4 report case studies most likely not influenced by MAD considerations, that is, when variations in nuclear capabilities had the greatest potential to effect change in strategic stability. The Cuban Missile Crisis, covered in detail in Chapter 4, is often regarded as the most emblematic historical case in which changes in nuclear capabilities brought about changes in strategic stability. The idea of Khrushchev's placement of missiles on the island of Cuba, causing Kennedy to respond militarily, is often thought of as the very definition of strategic stability changing as a result of variations in nuclear capabilities. However, this is not entirely the case as strategic stability changed multiple times throughout the Cuban Missile Crisis, each for a different reason, and not all because of variations in nuclear capabilities. Chapter 5 reports cases that occurred at a time when both sides began to reach the point of possessing MAD capabilities. As the United States and the Soviet Union entered the end of the 1960s, the prospect of MAD reduced the chances that variations in nuclear capabilities would significantly influence the dyadic state strategic stability.

Aside from the Cuban Missile Crisis, the other nine instances of change in strategic stability with a minimum show of force all followed the same pattern. Starting at full strategic stability between the United States and the Soviet Union, between two and three changes to strategic

¹⁵³ Eckstein, "Case Study and Theory in Political Science."

stability occurred, each for independent reasons and not all having to do with variations in nuclear capabilities. After analyzing each of the twenty-nine resultant changes in strategic stability, only four could be clearly credited to variations in nuclear capabilities.

2.5 Conclusion

Throughout the next three analytical chapters, the repeatable investigative process outlined in this chapter is applied to the ten cases of strategic stability change that occurred between 1957 and 1967. As described, no deliberate attempt was made to shape or selectively identify cases in which the United States and the Soviet Union may have experienced changes in strategic stability that were not caused by changes in nuclear capabilities. On the contrary, if existing scholarship and practitioner thought from the era is correct, any change of strategic stability in this particular nuclear state dyadic system during this particular time period should have been caused by variations in nuclear capabilities. The reality is, using the repeatable process outlined in this chapter, instances of strategic stability change caused by variations in nuclear capabilities explain a small fraction of the total number of changes to strategic stability. Although changes in nuclear capabilities are sometimes sufficient to cause changes in strategic stability, the data and analysis presented clearly show they are not necessary.

3.0 Pre-Cuban Missile Crisis: 1957–1961

The late 1950s and early 1960s represent a period of aggressive nuclear-capability growth for both the United States and the Soviet Union. This chapter captures the initial stages of nuclear capability growth between two burgeoning nuclear powers before the onset of MAD. In addition to examining the nuclear capability growth for each state, this chapter reports six case studies occurring between 1957 and 1961 showing instances of hostility between the United States and the Soviet Union. Because of the high number of conflicts occurring in the nuclear dyadic state system, this timeframe provides the best opportunity to show, if scholarship is correct, variances in nuclear capabilities driving changes in strategic stability. The concluding analysis shows only a minimal association of variances in nuclear capabilities affecting changes to strategic stability.

The study of nuclear learning contends that state powers that recently acquired nuclear weapons are more aggressive when challenged than states that have either had nuclear weapons for an extended period or do not have nuclear weapons at all.¹⁵⁴ This chapter’s timeframe, 1957–1961, begins just over a decade after the United States obtained nuclear weaponry and less than eight years after the Soviet Union joined the nuclear weapons club. With the newness of each state’s nuclear capabilities, coupled with the tensions of the Cold War, events that occurred in these early years are the most likely to show changes in strategic stability driven by variances in nuclear capability, if a tight connection exists.

The six cases in this chapter represent some of the most famous instances of confrontation between the United States and the Soviet Union outside of the Cuban Missile Crisis, which is

¹⁵⁴ Horowitz, “The Spread of Nuclear Weapons and International Conflict; Does Experience Matter?”

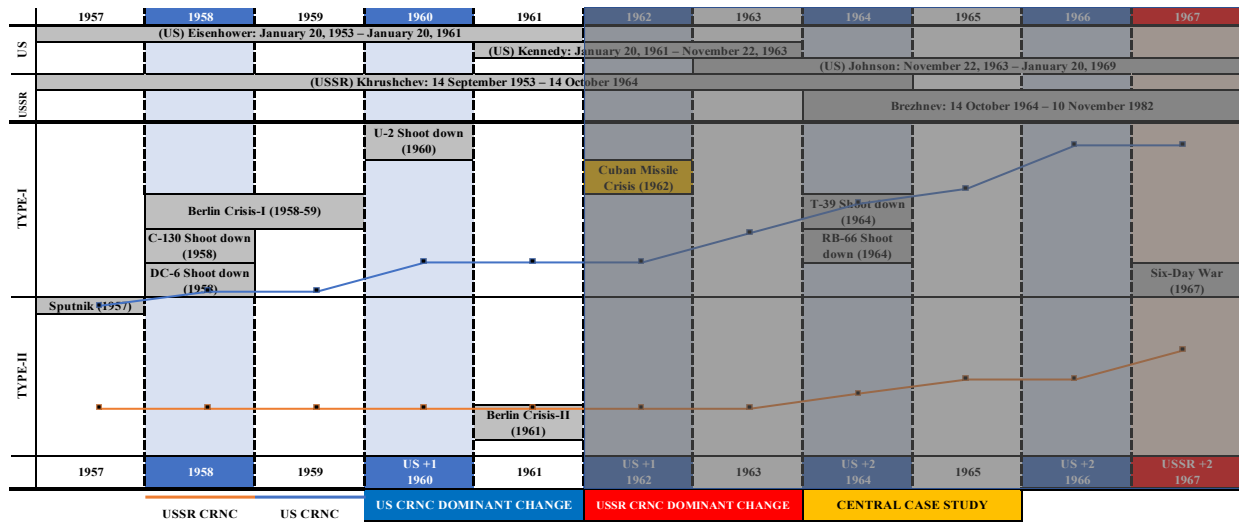
covered later in Chapter 4. Sputnik (1957) sounded the alarm for the United States that the Soviet Union was not only the first to reach space, but it had also developed ICBM technology sooner than expected. Additionally, three aircraft shootdowns occurred, all following the same pattern of events; an American aircraft was found to be in a foreign adversary's airspace and the Soviet military justified the defense of its borders through a militarized response. Although all three shootdowns raised the Escalation Level, only one of the three shootdowns occurred during a period of nuclear capability change and can be tied back to such variations.

Finally, on two separate occasions between 1958 and 1961, Escalation Levels increased as tensions elevated over the Western occupation of Berlin, as outlined in the Potsdam protocols. Neither of these Berlin incidents occurred at a time when there were changes in nuclear capabilities and both ended peacefully following intervention from high-level government officials. In all six of this chapter's cases, the United States and Soviet Union began their interaction with a status of full strategic stability in the dyadic state system, then one or more events occurred that raised the Escalation Level while decreasing strategic stability, and drove one or both sides to take actions to defuse the tensions with the goal of returning the dyadic state relationship to full strategic stability. This cycle of strategic stability degradation and rehabilitation occurred repeatedly, but the presence of changes in nuclear capabilities was sporadic at best and nonexistent most often.

Figure 3-1 below provides an overview of this chapter's case studies with a particular emphasis on comparing changes in strategic stability along with any association with variances in nuclear capabilities. The unshaded area in Figure 3-1 represents 1957–1961, this chapter's period of concern. Most visible in Figure 3-1 is the stark contrast between the total number of cases during this timeframe and the number of cases that occurred during a change in the CRNC score. Most of the cases between 1957 and 1961 occurred at a time when there were no changes in nuclear

capabilities. Additionally, during this chapter's period of interest, the single change in nuclear capabilities occurred in favor of the United States while the Soviet Union remained stagnant. Figure 3-1 associates nuclear capability variations and the changes in strategic stability that occurred in the six case studies. The evaluation of each case explored the necessity of and sufficiency that variations in nuclear capabilities had in relation to changes in strategic stability.

Figure 3-1: Pre-Cuban Missile Crisis in Context: 1957–1963



The years 1957–1961 represent a period of high expectations for changes in strategic stability as each state looked to expand its nuclear capabilities aggressively. Neither state during this period had stockpiled significant nuclear capabilities to ensure either assured destruction or MAD. If the theory is correct, a high rate of nuclear capability expansion should yield tightly connected changes in strategic stability. Among the six cases presented in my research, twenty-two data points were collected, yielding sixteen data points reflecting changes in strategic stability. Of the sixteen data point changes to strategic stability, only one exhibited a change in strategic stability attributable to changes in nuclear capabilities; the remaining fifteen data points either represented changes to strategic stability occurring outside any changes to nuclear capabilities or changes to strategic stability, shown following analysis, not connected to changes in nuclear

capabilities. The data from the cases presented in this chapter showed that nuclear capabilities were not required to change strategic stability.

This chapter proceeds in three sections, analyzing six case studies that occurred before the Cuban Missile Crisis, between 1957 and 1961. Section 3.1, Nuclear capabilities, provides an overview of each state's nuclear capabilities, growth that took place from the beginning of the timeframe to the end, and any significant changes in CRNC score. Additionally, Section 3.1 presents initial congruence testing, dividing cases into two categories, comparing case events to changes in the CRNC score. Section 3.2, Case studies, provides details for each of the six cases, and process-traces the causal factors using existing theories of strategic stability. Finally, Section 3.3, Conclusion, provides a summarized overview of findings, looking across all of the cases; furthermore, the section presents a summary table showing how each case's data points compare with the expectations of existing theories of strategic stability.

3.1 Nuclear capabilities

Figure 3-1 shows that, in the years preceding the 1962 Cuban Missile Crisis, the United States maintained clear nuclear-capability dominance over the Soviet Union. Eisenhower's 1953 NSC-162/2 and massive retaliation doctrine provided the basis for the United States' supremacy.¹⁵⁵ Here, Eisenhower advocated building the military to both survive the first wave of attacks from the Soviet Union as well as respond in such a manner as to be decisive in the exercise of retaliatory

¹⁵⁵ Desmond Ball, "United States Strategic Policy Since 1945: Doctrine, Military-Technical Innovation and Force Structure," in *Strategic Power: USA/USSR*, ed. Carl G. Jacobsen (New York: St. Martin's Press, 1990), 87.

power.¹⁵⁶ The success of massive retaliation rested upon the threat that any war would escalate to a full-war and any action against the United States, regardless of size or scope, would yield a full-blown military response that included nuclear weapons. To effect this doctrine, Eisenhower increased nuclear spending under the Department of Defense to build a mostly survivable and capable nuclear force.

Table 3-1 below outlines the United States and Soviet Union state strategic nuclear capabilities between 1957 and 1961. As explained in Chapter 2, the CRNC value assigned to each state for each year is a two-state comparative score based on relative values assigned to fielded nuclear payload capacities and strategic warheads.¹⁵⁷ The United States entered 1957 with only a bomber delivery capability but two and a half times the fielded nuclear capacity of the Soviet Union, as reflected in the CRNC score displayed in Table 3-1.¹⁵⁸ The Soviet Union entered 1957 with the ability to deliver strategic nuclear weapons via bombers and SLBMs but with a significantly lower CRNC because of the calculation of relative capability as compared with the United States. By 1960, both states were able to strike one another with each of the triad delivery methods: ICBMs, SLBMs, and bombers.¹⁵⁹

¹⁵⁶ Eisenhower, “NSC-162/2.”

¹⁵⁷ Outlined in Chapter 2, by “relative,” it is meant that category weight for each state is only given using the total numbers presented for each respective category; the minimum and maximum is then divided into 10 equal parts to derive the category’s calculated score. Use of the relative scoring system is limited to states whose categories were used to calculate the minimum and maximum score. Any additional input from outside states, potentially drives a new relative weight calculation.

¹⁵⁸ Norris and Cochran, *US-USSR/Russia Strategic Offensive Nuclear Forces, 1945-1996*.

¹⁵⁹ Referenced together, the three deliver methods: ICBM, SLBM, and bombers, are known as the ‘triad.’

Table 3-1: US and USSR Nuclear Capabilities, 1957–1961¹⁶⁰

	ICBM		SLBM		Bombers		CALCULATED SCORE		
	Payload Capacity	Strategic Nuclear Warheads	Payload Capacity	Strategic Nuclear Warheads	Airframe Payload Capacity	Strategic Nuclear Warheads	Relative Payload	Relative Warhead	Combined Relative Nuclear Capability
United States	1957	-	-	-	2520	2460	4	5	9
	1958	-	-	-	2610	2610	5	5	10
	1959	6	6	-	2490	2490	5	5	10
	1960	12	12	32	3083	3083	6	6	12
	1961	57	57	80	2920	3016	6	6	12
Soviet Union	1957	-	-	10	116	152	1	1	2
	1958	-	-	12	170	250	1	1	2
	1959	-	-	33	210	310	1	1	2
	1960	2	2	63	239	354	1	1	2
	1961	12	10	87	253	382	1	1	2

While the overall Soviet strategic nuclear warheads and payload delivery capability grew between 1957 and 1961, the arsenal did not grow enough to change the CRNC score. Khrushchev’s initial efforts built up the Soviet bomber force to provide a responsive weapon against the United States’ power capabilities.¹⁶¹ From 1957, the Soviet Union was able to deliver nuclear capabilities through SLBMs and bombers; it did not gain ICBM delivery capacity until after the 1957 launch of Sputnik. The limited numbers, however, plagued the Soviet Union the entire time between 1957 and 1961. During the same timeframe in the United States, rapid ICBM and SLBM expansion provided for higher numbers of launcher payload capacities as well as strategic nuclear warheads, increasing its CRNC score from 10 to 12 in 1960.

Viewed from a different perspective, by 1960, Khrushchev changed course and adopted the offensive surprise policy, reflecting his thoughts that any war with the United States would automatically yield a full-blown nuclear war and it would be best to strike first.¹⁶² In response to

¹⁶⁰ Podvig and Bukharin, *Russian Strategic Nuclear Forces*; Norris and Cochran, *US-USSR/Russia Strategic Offensive Nuclear Forces, 1945-1996*.

¹⁶¹ Catudal, *Soviet Nuclear Strategy from Stalin to Gorbachev*.

¹⁶² Catudal, 49.

the offensive surprise policy, the Soviets consolidated efforts behind their SRFs and the ICBM, which, although not perfect in its targeting, proved to be a more responsive nuclear delivery option than the heavy lift bomber. Finally, Table 3-1 highlights a vital issue with Soviet nuclear capabilities evident before the Cuban Missile Crisis. Discussed further in Chapter 4, the Soviet Union could strike the United States with bombers, ICBMs, and SLBMs without relying on the placement of shorter-range missiles on Cuba and within easy reach of the United States military forces.

3.1.1 Congruence Testing

Outlined in Chapter 2, congruence testing evaluates each case against the hypothesis, validating the existence of congruent variations in the IV and DV during periods of change.¹⁶³ Explicitly applied to this study, using cases occurring between 1957 and 1961, along with congruence testing data found in Table 3-2, changes to the CRNC score identified and matched with cases that occurred during the same whole-year timeframe. Cases that passed congruence testing with a variation in CRNC score occurring at the same time as observed changes in strategic stability were labeled Type-I. Cases where the IV and DV did not change at the same time were labeled Type-II. As noted above, given the general trends of the research on strategic stability and the emergent scholarship on state actions during the first years after they obtain nuclear weapons, the 1957–1961 timeframe should feature several Type-I cases.¹⁶⁴

¹⁶³ George and Bennett, *Case Studies and Theory Development in the Social Sciences*, 181–204.

¹⁶⁴ Horowitz, “The Spread of Nuclear Weapons and International Conflict; Does Experience Matter?”

Table 3-2: Congruence testing case stratification: 1957–1961

	Date	Case	CRNC	CRNC Favored	Rationale
TYPE-I	1958	DC-6 Shoot Down C-130 Shoot Down Berlin Crisis (I)	+1	US	US CRNC increased following additional nuclear capable bombers and nuclear warheads coming available for use.
	1960	U-2 Shoot Down	+1	US	US CRNC increase caused by influx of bomber manufacturing and the beginning of ICBM & SLBM production. US Capable of launching across all three legs of triad with a dominant bomber lead over USSR.
	1957	Sputnik Launch	-	-	No CRNC change during case study
TYPE-II	1961	Berlin Crisis (II)	-	-	No CRNC change during case study

Evaluating six cases of variations in strategic stability during 1957–1961, using congruence testing, Table 3-2 presents four cases that met Type-I criteria. As noted in Table 3-1, 1958 and 1960 were the only years where the CRNC changed for either the United States or the Soviet Union. In the following section, organizing the cases according to their congruence testing typology, process tracing is employed to examine each of the cases and either confirm or reject the congruence testing results.

3.2 Case studies

On six separate occasions between 1957 and 1961, the United States and the Soviet Union confronted each other either directly or indirectly. This section accomplishes three tasks: it presents historical data on each of the six cases of conflict, applies data from each case to process tracing, and conducts an in-case analysis. The six cases presented in this section yielded twenty-two data points representing sixteen changes in strategic stability.

Typological classifications resulting from congruence testing determined the presentation order for each of the six cases. The first category, Type-I, comprises the one case in which a change in strategic stability occurred at the same time as a change in the CRNC score. The second

category, Type-II, encompasses changes in strategic stability that did not occur during a change of the CRNC score. Analysis of case-specific data revealed that only one of the four Type-I cases contained a data point representing an instance of correlation between variance in nuclear capabilities and strategic stability. The remaining Type-I data points and all the Type-II cases did not present evidence that changes in strategic stability were driven by changes in nuclear capabilities. The overwhelming pattern of data presented in this chapter, for all six cases presented, casts significant doubt on the assumption that variations in nuclear capabilities are fundamentally connected to changes in strategic stability.¹⁶⁵

3.2.1 Type-I Cases

3.2.1.1 1958: DC-6 and C-130 border incursions

The first instances of measurable change in strategic stability during the period in question occurred in 1958 when, on two separate occasions, the Soviet military responded with the use of force following border incursions of aircraft belonging to the United States. The first aircraft shootdown became public on 30 June 1958, following the publication of a New York Times article concerning the bringing down of an American transport plane with nine personnel aboard. The article outlined requests by the United States government for the return of nine service members

¹⁶⁵ As outlined in Chapter 2, Escalation Levels are the selected means of measuring the proximity of an event to full strategic stability or the absence of strategic stability manifested in interstate war. In a dyadic state system starting from a state of peace or no war, escalation is an increase of hostile actions crossing threshold(s) considered significant by one or more states. Thresholds defining each of the Escalation Levels, outlined in the previous chapter, are based on a ranking from 1, representing full strategic stability, to 5 signifying the complete absence of strategic stability or interstate war. Not all cases in this section require changes in nuclear capabilities to change strategic stability as scholarship would suggest. Kahn, *On Escalation*; Morgan et al., *Dangerous Thresholds: Managing Escalation in the 21st Century*; Carlson, “A Theory of Escalation and International Conflict”; Maoz et al., “The Dyadic Militarized Interstate Disputes (MIDs) Dataset Version 3.0.”

and their DC-6 aircraft, which had been brought down by Soviet military personnel in the area as it strayed into Armenian airspace. Soviet government officials accused the United States of deliberately sending the aircraft 100 miles into Armenian airspace.¹⁶⁶ In response, the United States only apologized for the “inadvertent navigation error” during a routine cargo flight, dismissing the incident as an accidental episode of poor navigation. In July, the Soviet military returned all personnel to the United States alive, closing the aircraft downing episode without any further issues.

Thirty-five years after the June 1958 shootdown, the National Security Agency declassified another incident of the use of force by the Soviet Union against the United States. In this second incident, occurring in September 1958 and instigated through a nonintentional border incursion by the United States, Soviet air forces shot down an American C-130 with 17 personnel onboard as they conducted intelligence operations along the Armenian border region.¹⁶⁷ Located 55 km southwest of Yerevan, inside Armenia’s border, the aircraft wreckage laid wasted as a result of Soviet military firepower. In stark contrast to the June 1958 downing of the DC-6, not all the crew members survived. The Soviet government only returned six bodies of the deceased C-130 crew members from the incident while the remaining eleven remain missing.

Nuclear Capability

In 1958, the nuclear capabilities between the United States and the Soviet Union looked very similar to those in place during 1957. Additionally, as noted in Table 3-1, the 1958 CRNC

¹⁶⁶ Gibler, *International Conflicts, 1816-2010*, 1 & 2:939; Max Frankel, “U.S. Hands Soviet Note On 9 Airmen: Requests Prompt Release of Fliers Forced Down by Russian Fighters,” *New York Times*, 1958.

¹⁶⁷ Michael L Peterson, “Maybe You Had to Be There: The SIGNIT on Thirteen Soviet Shootdowns of US Reconnaissance Aircraft,” *Cryptologic Quarterly* 22 (1993): 1–44.

value increased for the United States from the 1957 scores, explaining the Type-I case designation for both the DC-6 and C-130 shootdowns.

In 1958, the United States still relied on bombers to deliver any strategic nuclear capabilities. Meanwhile, the Soviets had a relatively small 1958 bomber fleet with a payload capacity of 170 compared to the United States' 2,610. However, the Soviets continued to be the sole possessors of SLBM capabilities, affording them the ability to threaten a surprise attack on the mainland United States by launching from waters off the United States coast. Even though both sides lacked diversification of their nuclear capabilities, they demonstrated a willingness to continue maintaining what nuclear capabilities they had compiled up to 1958.

Strategic stability

Both the DC-6 and C-130 shootdowns were very similar in how they impacted strategic stability. Both incidents involved three separate changes to strategic stability. Moreover, both 1958 cases began from the same level of strategic stability, namely Escalation Level-1. Furthermore, the details of each case have the same essential elements: a United States aircraft with multiple airmen onboard crossing the Armenian border without permission and the Soviet military responding by downing the aircraft through firepower. Finally, in each case, following a period of diplomacy and a final exchange of casualties, all information available shows the situation ended with a return to Escalation Level-1 and no further tensions carried forward. Similarities in each case study's timeframe and events allowed for parallel analysis of both cases. This parallel analysis continued to further reinforce the lack of tight bonding variations in nuclear capabilities have with changes in strategic stability.

The initial change in Escalation Level for each case occurred when the United States crossed the sovereign border into Armenian airspace without permission. According to the

Escalation Level definitions found in Chapter 2, such border violations represent an Escalation Level-4 event. In each case, both the DC-6 and the C-130 crossed into Armenia without permission, resulting in a quick jump from full strategic stability to a higher Escalation Level and jeopardizing strategic stability. Regardless of changes to nuclear capabilities, aircraft border violations result in decreased strategic stability.

The second change in the Escalation Level, more akin to a lateral movement, resulted from the use of firepower to bring down the offending aircraft, reflecting an Escalation Level-4 use of force action by the Soviet military. In both the DC-6 and C-130 incidents, upon identification of the offending United States aircraft, the Soviet military reacted accordingly to defend the borders with the use of firepower.

Finally, the Type-I DC-6 and C-130 cases confirm a pattern of universal conflict initiation and resolution. Starting from a position of full strategic stability, Escalation Level-4 obtained following perceived hostilities committed by the United States, and then a lateral move to another Escalation Level-4 event occurred following a Soviet response to the perceived hostilities, and, finally, a return to Escalation Level-1 occurred following a period of diplomacy.

Case analysis

The analysis performed on each of the two shootdowns resulted in identifying change in strategic stability three separate times for each case. However, following the variations in nuclear capabilities occurring in 1958, no evidence presented showing either state changed utility. Stated differently, the CRNC scores reflected in Table 3-2, in favor of the United States, do not coincide with any perceivable changes in actions by the United States in either actions taken to increase deterrence or perform acts of brinkmanship. Lacking a change in utility, the causal pathway connecting variations in nuclear capabilities to changes in strategic stability breaks. The details of

the cases do not present evidence that variations in nuclear capabilities drove either the actions of the United States or the militarized shutdowns performed by the Soviet military. Instead, evidence presented in both cases suggested the Soviet militarized responses were an acceptable reaction to unplanned border incursions by a competing foreign military.

Case summary

The DC-6 and C-130 cases followed the same pattern: case initiation at Escalation Level-1 prior to the incident, procession to Escalation Level-4 driven by some egregious airspace violation by the United States, a Soviet response that laterally drives another Escalation Level-4 event, and finally a return to Escalation Level-1 following a period of diplomacy. In both shutdown cases, it does not seem that the presence or absence of nuclear capability changes influenced the course of events.

3.2.1.2 1958–1959: Berlin I

Berlin, more so than any other location, represented the tenuous relationship influencing strategic stability between the United States and the Soviet Union. Located securely within East-German borders and bound by the 1945 Potsdam Protocols splitting the city into four quadrants, Berlin became a continuous display of East vs. West. Great Britain, France, and the United States held the West portion of the city while the German Democratic Republic (GDR) occupied the East in addition to all surrounding land. Remarking on the tactical disadvantage of having Western troops stationed inside the city, Eisenhower noted that “Berlin’s actual defense lay only in the West’s publicly expressed intention that to defend it we would, if necessary, resort to war.”¹⁶⁸

¹⁶⁸ Dwight D. Eisenhower, *Waging Peace, 1956-1961: The White House Years*, 1st ed., Book, Whole (Garden City, N.Y: Doubleday, 1965).

War with the Soviet Union for Eisenhower, under the massive retaliation doctrine, would not only be a complete collapse of strategic stability but would also have meant the use of nuclear weapons.

In December 1957, following the October launch of Sputnik, Secretary of State John Foster Dulles met with NATO heads of state in Paris to announce the willingness of the United States to participate in the placement of nuclear weapons in Europe, releasable to NATO commanders should hostilities erupt with the Soviet Union.¹⁶⁹ By September 1958, while the German East–West border was still open to the free flow of traffic, immigration had reached 10,000 East Germans migrating to the West each month. East-German migrations to West Germany, calculated over ten years, would top three million.

Khrushchev made a speech to the Moscow chapter of the Soviet–Polish Friendship Society on 10 November 1958. Coinciding with Khrushchev’s speech was an increase in NATO firepower, bolstered by the United States, and a mass exodus of people and labor from East Germany. Khrushchev reiterated Stalin’s 1948 sentiments regarding the importance of creating a unified Berlin under Soviet influence, arguing that it was time for the Western powers to give up their rights in Berlin and imposed a six-month timeline for withdrawal.¹⁷⁰

Reinforcing his 10 November public speech, on 27 November, Khrushchev sent the United States, Great Britain, and France a letter outlining the details of his plan for expelling the Western states from Berlin while proclaiming that “the Soviet Union regards as null and void the ‘Protocol of the Agreement between the Governments of the Union of Soviet Socialist Republics, the United

¹⁶⁹ Robert J. Watson, *Secretaries of Defense Historical Series; Into the Missile Age, 1956-1960*, vol. IV, Secretaries of Defense Historical Series (Washington, D.C.: Historical Office, Office of the Secretary of Defense, 1997), 465; Troyanovsky, “Chapter 9: The Making of Soviet Foreign Policy.”

¹⁷⁰ Robert M. Slusser, “The Berlin Crisis of 1958-59 and 1961,” in *Force Without War: U.S. Armed Forces as a Political Instrument*, ed. Barry M. Blechman and Stephen S. Kaplan (Washington: Brookings Institution, 1978), 356.

States of America, and the United Kingdom on the zones of occupation in Germany and on the administration of Greater Berlin.”¹⁷¹ Providing a justification for his six-month timeline while referencing Dulles’ negotiations with NATO regarding the placement of missiles in Europe, Khrushchev added the following to his letter: “they included West Germany in the North Atlantic bloc, which was created behind the back of the Soviet Union and, as everyone is aware, against it, and are now arming West Germany with atomic and rocket weapons.”¹⁷² Khrushchev perceived the Western powers to be tightening a nuclear noose around the neck of the Soviet Union through the power of NATO. Loosening the ever-increasing Western power chokehold required pushing Western powers further away from Soviet interests in East Germany.

In response to Khrushchev’s letter, Eisenhower conveyed the position of the United States, Great Britain, and France through an open press release by stating that “the United States will not acquiesce in a unilateral repudiation by the Soviet Union of its obligations and responsibilities formally agreed upon with Britain, France, and the United States in relation to Berlin. Neither will it enter into an agreement with the Soviet Union which, whatever the form, would have the end result of abandoning the people of West Berlin to hostile domination.”¹⁷³ Tensions continued to increase and, by January 1959, Eisenhower had approved graduated military options to provide messaging detectable by the Soviets that the United States and the rest of NATO were willing to

¹⁷¹ “Department of State Bulletin, 19 January 1959,” in *Department of State Bulletin*, vol. Vol. XL, Publication 6756, No. 1021 (Washington, D.C.: U.S. Government Printing Office, 1959), 86.

¹⁷² “Department of State Bulletin, 19 January 1959,” 83.

¹⁷³ “Department of State Bulletin, 15 December 1958,” in *Department of State Bulletin*, vol. Vol. XXXIX, Publication 6740, No. 1016 (Washington, D.C.: U.S. Government Printing Office, 1958), 948.

take the fight for Berlin seriously, even if it meant movement toward war.¹⁷⁴ Each side began to take a stand in yet another challenge to the Western presence in Berlin.

Khrushchev had a significant interest in establishing a peace treaty with East Berlin and, in turn, expelling Western powers. A peace treaty would shift the German balance of power in favor of the Soviets. Soviet efforts to legitimize East Germany through a peace treaty as an independent government meant turning over Soviet control of East Germany to the German Democratic Republic (GDR,) nullifying the Potsdam Protocols.¹⁷⁵

Defusing the tensions over Berlin, both sides agreed to meet in Geneva. The Geneva Conference ran from May to August 1959 and sought to establish a path toward peace with regard to the Berlin crisis, create bilateral peace, and settle issues surrounding post-WWII Germany. Almost immediately, Khrushchev used the opportunity to begin a one-sided discourse denouncing the placement of missile units in Italy and Greece, as had been negotiated through Secretary of State Dulles, while at the same time advocating for nuclear-free zones in the Balkans.¹⁷⁶ As Khrushchev's outward rhetoric became inflamed, Eisenhower seized the opportunity to invite the Soviet leader to the United States as a guest. Khrushchev responded favorably to Eisenhower's invitation and the Berlin situation defused along with the erasing of the six-month timeline.¹⁷⁷

Nuclear capability

¹⁷⁴ Eisenhower's embracing of a graduated series of responses was not necessarily out of line with the massive retaliation policy. Stretching back as far as 1957, Secretary of State Dulles, often credited with being the father of massive retaliation through his November 1953 speech, had written an article in *Foreign Affairs* where he found the possibility of utilizing tactical nuclear weapons. Slusser, "The Berlin Crisis of 1958-59 and 1961," 353; Jonathan Samuel Lockwood and Kathleen O'Brien Lockwood, *The Russian View of U.S. Strategy: Its Past, Its Future*, 2017.

¹⁷⁵ Kaplan, Landa, and Drea, *History of the Office of the Secretary of Defense: The McNamara Ascendancy, 1961-1965*, V:154.

¹⁷⁶ Slusser, "The Berlin Crisis of 1958-59 and 1961," 378-79.

¹⁷⁷ Slusser, 380; Schnabel, Watson, Condit, Fairchild, et al., *History of the Joint Chiefs of Staff*, 7:127.

In late October 1959, the United States became the first state to field ICBMs when its Atlas-D missiles became operational on Vandenberg Air Force Base in California.¹⁷⁸ The Atlas-D was a liquid-fueled missile, launched above ground and mated with the 1.4 megaton yield W49 nuclear warhead. While the Americans were fielding the Atlas missile, the Soviets increased their already-fielded SLBM payload capacity, from 10 in 1957 to 33 by 1959. Additionally, the Soviets continued to slowly expand their bomber payload capacity, almost doubling it from 116 in 1957 to 210 in 1959. It was unmistakable; each side continued to value nuclear capabilities and expressed this value in the form of continued growth and variation across all available platforms.

On a smaller scale, variations in nuclear capabilities occurred with a shift in Eisenhower's policy. Consistent with the New Look policy, Eisenhower saw an opportunity to reduce costly troop deployments and reassure allies seeking protection under the United States' nuclear umbrella. President Eisenhower, through Secretary of State John Dulles, proposed to the NATO allies an extension of the United States' nuclear protection through the deployment of intermediate-range ballistic missiles (IRBMs) in Europe. Dulles, taking Eisenhower's policy of IRBMs in Europe to NATO, initiated negotiations in 1957. In 1959, Thor and Jupiter missiles became operational in Great Britain, Turkey, and Italy, but not in numbers large enough to change the Americans' CRNC score.¹⁷⁹ This move with IRBMs, reassuring to its NATO allies, did nothing to numerically change the nuclear capability advantage the United States already had over the Soviet Union.

¹⁷⁸ Norris and Cochran, *US-USSR/Russia Strategic Offensive Nuclear Forces, 1945-1996*, 14.

¹⁷⁹ In Turkey, only 15 Jupiter missiles were deployed, and they did not begin to become operational until between November 1961 and March 1962. In Chapter 4, these same Jupiter missiles will be the subject of negotiations during the withdrawal of Soviet nuclear assets from Cuba following the Cuban Missile Crisis. Watson, *Secretaries of Defense Historical Series; Into the Missile Age, 1956-1960*, IV:539-43; Schnabel, Watson, Condit, Fairchild, et al., *History of the Joint Chiefs of Staff*, 7:46.

Strategic stability

The 1958–59 Berlin I Crisis began and ended at Escalation Level-1 and underwent three changes to strategic stability. In the Berlin I case, before Khrushchev ordered the military to close the *autobahn* to Western troops, the first change to strategic stability occurred when the perception of Escalation Level-1 for both sides transformed following the building of missile sites for placement of Thor and Jupiter missiles in the United Kingdom, Italy, and Turkey. The United States and the Soviet Union, under Eisenhower's plan for NATO IRBMs, had to adjust their perception of what constituted normal strategic stability. No longer were only the United States bombers an American nuclear capability threat to the Soviet Union; now, small numbers of IRBMs were within striking distance of the Soviet mainland. The IRBMs did not deploy in high enough numbers throughout Europe to change CRNC scores by themselves or cause further movement through the causal chain to drive changes in utility, but their placement was still a threat to the Soviet Union and altered each side's perception of nuclear capability normalcy at Escalation Level-1.

The second change to strategic stability occurred in November 1958, with Khrushchev's speech in Moscow and the 27 November letter from Moscow to the Western powers of the United States, Great Britain, and France regarding the termination of the Potsdam Protocols in Berlin.¹⁸⁰ In the letter to the Western powers in Berlin, Moscow justified the call for disbanding the Potsdam Protocols due to the inclusion of West Germany into NATO and the potential placement of nuclear missiles close to Soviet interests. Actions taken between these two events constituted a change in strategic stability while moving toward Escalation Level-2 as Khrushchev established a six-month

¹⁸⁰ Schnabel, Watson, Condit, Fairchild, et al., *History of the Joint Chiefs of Staff*, 7:120.

timeline for expelling the Western states, tacitly threatening war if the Western states failed to turn over West Berlin according to his demands. Eisenhower moved forward with graduated military options, reinforcing Escalation Level-2 while Khrushchev was demanding the expulsion of Western powers from East Berlin. Each side of the conflict inched toward a mutual degradation of strategic stability without the mobilization of troops.

The last change in strategic stability came during the Geneva Conference in May 1959. President Eisenhower's invitation to Khrushchev to visit the United States defused the previous Escalation Level-2 tensions. With Khrushchev's acceptance of Eisenhower's offer and removal of the states' six-month expulsion timeline from Berlin, Escalation Level-2 returned to Level-1, fully restoring strategic stability.

Case analysis

Capability

The shutting down of Berlin to Western powers, specifically the United States, took place at a time when changes to nuclear capabilities occurred. The United States' increase in available nuclear-capable bombers, referenced in Table 3-1, was enough to drive an increase of the CRNC score by one, making this a Type-I case. Since the European IRBMs and the increase in the United States' CRNC score occurred concurrently, the effects of the increased nuclear capability from both sources should be viewed as a single effort.

Utility

The utility change for this case occurred when the United States and the Soviet Union interlocked in brinkmanship over the closure of the city to the Western allies. Khrushchev's actions of shutting down the city mutually increased the risk of war, while driving Eisenhower to begin publicly speaking of an armed response as a means of regaining access, which had been

guaranteed under the Potsdam Protocols. Outside the view of the public, Eisenhower looked to his expanded nuclear capabilities to supply the ability to strike the Soviet Union as part of the end results in a graduated attack plan. Furthermore, in 1959, the United States' first six ICBMs became operational, supplying Eisenhower with the ability to strike the Soviet mainland from the continental United States. Eisenhower's ability to counter Khrushchev's shutting down of access to Berlin was possible because of the extended options provided in the American nuclear arsenal.

Incentives

The ability Eisenhower's extended nuclear arsenal provided to him as a means of overcoming the Soviet military bolstered his incentives to stand up to Khrushchev's actions. As a means of avoiding crisis, Eisenhower sought political stability by first working through the Geneva conference and then on a one-to-one basis with Khrushchev as a means of regaining access to Berlin. The efforts of Eisenhower prevailed when Khrushchev accepted his invitation to visit the United States and set-aside the six-month timeline to remove Western troops from the city.

Strategic Stability

Strategic stability returned to normal as a result of incentives changes when Khrushchev accepted Eisenhower's invitation. Khrushchev's acceptance led to the removal of the abovementioned six-month timeline, which also ended potential hostilities between the states, thereby reestablishing the status quo and returning strategic stability back to normal.

Case summary

The Berlin I case represents the first instance of a Type-I case in which it is possible to connect variations in nuclear capabilities to changes in strategic stability. The increased inventory of United States bombers coupled with the previously negotiated placement of American nuclear missiles in Europe drove a brinkmanship situation when Moscow ordered the shutdown of access

into Berlin for the Western allies. Although the placement of IRBMs did have an effect on the perceptions of what nuclear normalcy had become, the missiles had not been deployed in significant enough numbers to cause alarm. Put differently, changed perceptions because of the IRBMs were not significant enough to become the sole driving force behind changed strategic stability. Strengthened by an ability to conduct greater nuclear retaliation against the Soviet Union than ever before, Eisenhower sought a peaceful process of negotiation to find resolution consistent with the earlier status quo. The end result was a removal of the transport blockade into Berlin and a return to full strategic stability.

3.2.1.3 1960: U-2 Shootdown

The second Type-I case is the shooting down of a United States U-2 spy plane, which occurred just before the Paris Peace Talks between President Eisenhower and Chairman Khrushchev. The Paris summit occurred in May 1960 and was to be the capstone peace summit between the East and the West. Before the summit began, on 1 May 1960, a Central Intelligence Agency (CIA) flight of the U-2 spy plane had gone missing over Sverdlovsk, Russia, shortly after overflying the Tyuratam Missile Test Center.¹⁸¹

The public denial by the United States of the overflight program and U-2 shootdown by the Soviets could not negate Khrushchev's speech on 16 May 1960, in which he lambasted Eisenhower in front of the Paris Peace Talks opening session for the willful border incursion with the spy plane. Bolstering Khrushchev's castigation of Eisenhower were irrefutable pictures of the downed U-2 aircraft and captured pilot who was, remarkably, still alive. Following the U-2

¹⁸¹ Peterson, "Maybe You Had to Be There: The SIGNIT on Thirteen Soviet Shootdowns of US Reconnaissance Aircraft," 28.

shootdown and Khrushchev's public display of the captured pilot, the Soviet leader used the opportunity to demand an end to United States overflights, terminate the Paris Peace Talks, and discredit Eisenhower by postponing any further negotiations until the incoming presidential administration was in place.¹⁸² Responding to Khrushchev's demands, Eisenhower conveyed a promise to cease overflights during the remainder of his presidency.¹⁸³

Nuclear capabilities

Determining changes in strategic stability alone does not verify a tight bonding with changes in nuclear capabilities. To solidify the bond, the latter must have both occurred during the case and be the cause of the change in strategic stability. Additionally, changes in nuclear capabilities can either be perceived or verified.

In February 1960, the Central Intelligence Agency published the National Intelligence Estimate 11-8-59 (NIE 11-8-59), which fueled the idea that a missile gap existed between the United States and the Soviet Union.¹⁸⁴ In actuality, nuclear capabilities for both states across all three parts of the nuclear triad displayed in Table 3-1 contradicted NIE 11-8-59. Instead of the drastic build-up of Soviet ICBM technology discussed in the NIE, the United States was the real driving force behind nuclear capability increases in 1960. The United States, on the back of a significant surge in bomber capacity and the introduction and fielding of SLBM technology, increased its CRNC from 5 to 6. Leading up to the shootdown of the U-2, changes in nuclear

¹⁸² Gibler, *International Conflicts, 1816-2010*; Troyanovsky, "Chapter 9: The Making of Soviet Foreign Policy," 224–26.

¹⁸³ Schnabel, Watson, Condit, Fairchild, et al., *History of the Joint Chiefs of Staff*, 7:70.

¹⁸⁴ Director of Central Intelligence, "National Intelligence Estimate, NIE 11-8-59, Document #88, 9 February 1960.," in *Foreign Relations of the United States, 1958–1960, National Security Policy; Arms Control and Disarmament*, ed. Edward C. Keefer and David W. Mabon, vol. III, *Foreign Relations of the United States 1958–1960* (Washington, D.C.: United States Government Printing Office, 2018).

capabilities existed for the United States as it perceived the growth of the Soviet ICBM fleet, as well as for the Soviets as the United States continued to surge its actual bomber fleet.

Strategic stability

Heading into the 1960 Paris summit, this case began with full strategic stability or Escalation Level-1. The CIA's U-2 overflight, vehemently protested by Khrushchev, was undertaken in response to the United States' need for higher fidelity on the Soviet's nuclear capabilities while trying to validate a suspected "missile gap." In July 1959, Eisenhower approved a single CIA U-2 flight over the Soviet Tyuratam test facility as a means of validating the current status of the Soviet missile program, but the intelligence gathered revealed no significant findings.¹⁸⁵ Seven months later, the NIE 11-8-59 concluded the Soviets were increasing their ICBM production and "would provide on the order of 140-200 ICBMs on the launcher in mid-1961."¹⁸⁶

General Nathan Twining, Chairman of the JCS, used the 1959 NIE assessment to advocate for the increased frequency of U-2 flights. Examining Table 3-1 shows, had NIE 11-8-59 been accurate in its assessment, that the Soviets would have had almost fielded enough ICBMs to pose a 4:1 lead over the United States' ICBM program in 1961. The increased Soviet ICBM fielding would equal a dramatic CRNC increase in favor of the Soviet Union, bringing them closer to parity with the United States.

Beginning in 1959, with each U-2 overflight of the Soviet Union, the United States committed a border violation, an Escalation Level-4 event. These border violations did not go

¹⁸⁵ Rearden, *Council of War: A History of the Joint Chiefs of Staff - 1942 - 1991*, 182.

¹⁸⁶ Schnabel, Watson, Condit, Fairchild, et al., *History of the Joint Chiefs of Staff*, 7:50; Director of Central Intelligence, "National Intelligence Estimate, NIE 11-8-59, Document #88, 9 February 1960."

unnoticed by the Soviet Union's military, which was capable of monitoring the border violations as they occurred but lacked the technical means of countering the high-flying spy plane.¹⁸⁷ The Soviet military chose not to respond by increasing the Escalation Level until they had the appropriate technology to do so.

In response to the May 1960 U-2 border incursion, the Soviet Defense Minister Marshal Rodion Molinovsky, speaking from the Kremlin, announced that "he had ordered the nations rocket forces to strike at any base from which a plane might violate the frontiers of the Soviet Union or of its allies."¹⁸⁸ Justifying his orders, Marshal Molinovsky emphasized that any plane crossing borders might be carrying a nuclear weapon, and would be dealt with as a threat.

The Soviet military, on 1 May 1960, successfully countered the United States' U-2 border violation. Responding to the U-2 aircraft flying deep inside its borders, the Soviet Union was finally able to shoot the plane down, a response itself equal to an Escalation Level-4 through the use of force. Additionally, a parallel Escalation Level-2 came from Molinovsky's order to shoot down any new aircraft crossing the Soviet border. This threat paled in comparison to the final demise through the actual use of force that brought down the U-2. Finally, Escalation Level-1 resumed after the United States vowed not to restart overflights of Soviet territory and the Eisenhower administration ended, giving way to the incoming Kennedy administration.

Case Analysis

Capability

¹⁸⁷ Troyanovsky, "Chapter 9: The Making of Soviet Foreign Policy," 224.

¹⁸⁸ Osgood Caruthers, "Malinovsky Vows Rocket Reprisals on Air Incursions," *New York Times*, May 31, 1960; Slusser, "The Berlin Crisis of 1958-59 and 1961," 387.

The year 1960, as denoted in Table 3-1, saw a significant growth in the United States' CRNC score with an increase of two points from the previous year. This significant growth of nuclear capabilities represented a combination of increasing ICBMs from six to twelve, bringing thirty-two SLBMs onto alert for the first time, and most importantly the addition of almost six-hundred nuclear-capable bombers and strategic nuclear warheads. Driving this nuclear capability explosion was NIE 11-8-59, which predicted that the Soviet Union would out-produce the Americans' nuclear arsenal and soon create a missile gap in favor of the Soviets. The perceived deficiency in American nuclear capability production, compared with the Soviets, spawned high-level efforts to produce even greater nuclear capability.

Utility

The Americans, insecure about the size of their arsenal relative to that of the Soviet Union's and wanting to keep a lead in nuclear-capability production, sought to verify the status of the Soviet arsenal. Specifically, the Eisenhower administration had a choice to make between the pursuit of brinkmanship or deterrence policies and chose deterrence to avoid the potential risk of war, but he needed to verify the size and capabilities of the Soviet nuclear arsenal. Keeping an American lead in nuclear arms production translated to maintaining the status quo and finding a way to deter the Soviets from surpassing the United States, as predicted in NIE 11-8-59. To accomplish verification of the Soviet arsenal, the choice was made to conduct cross-border U-2 missions. My research showed retrospectively that the American nuclear arsenal was not in danger of being overtaken by the Soviets, a fact that was not known to Eisenhower or the rest of the country at that time.

Incentives

Flush with uncertainty of the size and status of the missile gap, Eisenhower launched the ill-fated U-2 flight as a means of avoiding any potential disruption to political or crisis stability. A faltering of political stability could have led to a crash in crisis stability, resulting in war. The breaching of the border into sovereign Soviet territory during the U-2 flight can be traced back to the variations of nuclear capabilities, both actual and perceived.

Strategic Stability

Strategic stability changed multiple times because of the changes in nuclear capabilities by the United States and what Eisenhower perceived as current and future changes in Soviet nuclear capabilities. To verify whether the United States still had the ability to maintain the status quo with the Soviet Union and refrain from devolving into a crisis, United States U-2 flights were authorized, the last of which ended in the aircraft being shot down. The border violations of the U-2 and the subsequent shooting down of the aircraft both changed strategic stability.

Case Summary

The shooting down of the U-2 spy plane on 1 May 1960 displays an association between variations in nuclear capabilities and changes in strategic stabilities. Strategic stability undoubtedly decreased as the United States crossed sovereign border regions and the Soviet Union shot down the U-2, which was an Escalation Level-4 action. However, this is only a part of the bigger story. As seen in numerous other cases, more than one change in strategic stability occurred, and each change was frequently the product of different drivers.

3.2.2 Type-II Cases

3.2.2.1 1957: Sputnik

The first Type-II case, the Soviet launching of the Sputnik space payload, shows a minor change in strategic stability that occurred without associated changes in nuclear capabilities. During 1957, the Soviet Union began flexing its burgeoning military might in displays of force and technology for all the world to see, especially the United States. As noted in Table 3-1, in 1957 the United States' CRNC was two and half times that of the Soviet Union, with the Americans having outpaced Soviet efforts by fielding significantly more long-range bombers and strategic nuclear warheads. Starting from a position of nuclear-capability disadvantage, the Soviet Union initiated a series of programs to start down the long road of catching up to the superior nuclear delivery capabilities of the United States.

On 5 October 1957, the Soviets chose the thin veil of space exploration to test their burgeoning ICBM technology in the form of the R-7 rocket.¹⁸⁹ During this launch, the Soviet government chose to put a small spherical satellite on top of the newly developed R-7 rocket. This display of Soviet technical superiority was meant to serve a dual purpose: to beat the United States to space, thereby initiating the space race, and, more importantly, to convey a message that the Soviet Union was more advanced than the United States in the development and manufacturing of strategic nuclear-capability delivery rockets. The Soviets succeeded on both counts.

Commissioned before the death of Stalin, the R-7 missile's range was 8,000 km while loaded with either a three- or five-megaton nuclear weapon. The accuracy of the R-7 was 10 km.

¹⁸⁹ Podvig and Bukharin, *Russian Strategic Nuclear Forces*.

It launched from the Baikonur Cosmodrome and held both Alaska and Hawaii in its crosshairs while the follow-on technology of the R-7A and its much improved 12,000 km range held the entirety of North America hostage to the potential destruction of Soviet nuclear firepower.¹⁹⁰ The high-visibility Sputnik payload was lofted in such a manner as to overfly the United States during its 90-minute orbit, providing a constant reminder that the Soviet Union could reach out and touch anywhere it wanted with little or no notice.

Nuclear capabilities

Classified as a Type-II case, the launching of Sputnik occurred during a year when no CRNC increase occurred on either side. The lack of nuclear capability variance is not to say that neither side had nuclear capabilities. Both the United States and the Soviet Union had not only nuclear capabilities but also the ability to use their nuclear arsenals against one another using at least one leg of the nuclear triad.

In 1957, the United States only had one method to deliver strategic nuclear capabilities: their bomber fleet. Noted in Table 3-1, the United States' bomber fleet was capable of providing military planners with over twenty-one times the payload capacity of the Soviet Union. This high number of bombers capable of delivering strategic nuclear capabilities gave the United States a CRNC score of 5, significantly greater than that of the Soviet Union.

In 1957, the Soviet Union paled numerically in comparison to the United States. With a total strategic bomber payload capacity of 116 in comparison to the United States' 2,520, the

¹⁹⁰ The development of both the R-7 and R-7A rockets were themselves inconsequential to the actual events of the Cuban Missile Crisis. By 1962, only 6 R-7 variants were on alert and launch capable by the Soviet Strategic Rocket Forces. However, the R-7 program did provide an acquisition testbed for the follow-on R-16 rocket which did field in larger numbers by 1962 with 32 operational missiles available to the Strategic Rocket Forces. The R-16 could lift a 3, 5, or 6 megaton thermonuclear warhead to target and providing 2.7-10 km circle of accuracy once it reached target. Podvig and Bukharin.

Soviet CRNC score of 2 accurately reflected the diminutive size of their nuclear capabilities. However, in 1957 the Soviets did field the R-11FM submarine launched missile. The R-11FM was a single-stage, liquid-fueled rocket capable of carrying either a 10- or 0.5-kiloton nuclear warhead with a maximum range of 167 kilometers.¹⁹¹ Although the R-11FM had a limited range, submarine placement off the shoreline of the United States still meant that Soviet SLBMs put a significant number of coastal American population centers at risk.

Strategic stability

Unlike the 1960 Type-I U-2 shootdown and other Type-II cases, the Sputnik launch caused a very mild change to strategic stability. At no point before, during, or after the launch of Sputnik did the United States respond by entering a higher state of military readiness or adjusting its display of military capabilities. Indeed, the use of force from either side did not occur. The new change in strategic stability came in the form of a modified United States view of Escalation Level-1 following the launch of Sputnik. Strategic rockets would afford those who have them the ability to launch a nuclear weapon with little or no warning. The redefined Escalation Level-1 now accounted for the Soviet Union actively seeking, in advance of the Americans, a strategic rocket program.

Through coincidence, immediately following the launch of Sputnik, the Joint Committee on Defense Production, commissioned from Congress, presented a report to the National Security Council originating from a charter received previously in April 1957. The report was titled “Deterrence and Survival in the Nuclear Age,” also referred to as the “Gaither Report,” and it accomplished two tasks.¹⁹² The first was to establish measures for enhancing the deterrent power

¹⁹¹ Podvig and Bukharin, 311.

¹⁹² Security Resource Panel, “Deterrence and Survival in The Nuclear Age (‘The Gaither Report of 1957’).”

of the United States, which included closing the newly perceived missile gap, and the second task found was to bolster programs aimed at keeping the nation's citizens and cities safe. Delivered on the heels of the Sputnik launch, the report became potent fuel to many concerned members of Congress who believed Eisenhower was not doing enough to counter the new Soviet threat.

The Gaither Report, fueled by the unexpected success of Sputnik, also served to begin redefining the United States' military view of Escalation Level-1. The report gave an impetus to each of the defense Service Chiefs to submit requests to increase necessary funding for programs that sought to enhance the United States' deterrence capabilities.¹⁹³ Neither Sputnik nor the Gaither Report changed the Escalation Level; however, their existence served a purpose in redefining how to view full strategic stability.

Case analysis

The 1957 Sputnik launch, as a Type-II case, by definition does not reflect the causal chain connecting variations in nuclear capabilities to changes in strategic stability. However, this case redefined Escalation Level-1 between the United States and the Soviet Union for the remainder of the Cold War. The United States now had a competitor on the international stage that could reach out and deliver nuclear weapons.

A lack of change in strategic stability should be the summation of the case analysis; the Soviets successfully tested new dual-use rocket technology and the United States did not respond by raising the Escalation Level. However, the Sputnik launch performed a vital service for the Soviets rarely seen in other cases: it redefined Escalation Level-1. This meant the Soviets were on their way to building an ICBM force capable of striking the United States. Once the Soviets

¹⁹³ Schnabel, Watson, Condit, Fairchild, et al., *History of the Joint Chiefs of Staff*.

perfected the ICBM, full strategic stability would mean that the United States would be held hostage to the threat of a Soviet ICBM system capable of launching with little or no notice.

The R-7 launch did not advance Soviet national interest by forcing the United States to change in favor of the Soviets. Rather, the R-7 launch, if anything, was the result of a Soviet incentive to begin leveling out the CRNC disparity. Although accurately predicting the instability resulting from unequal nuclear capabilities between the two parties, changes in utility failed to predict the lack of response by the United States.

Case summary

Contrary to the expected outcome of a case study challenging dyadic state stability, the Sputnik launch did not cause a change in the Escalation Level between the United States and the Soviet Union. Following the Soviets' successful launch, conclusions reached in the Gaither Report advocating for higher nuclear capability spending and deterrence programs gained unprecedented attention. Congressional debate swirled around the idea that the United States was now second in space, in addition to Eisenhower's intention, assuming the possibility that he had allowed the Soviets to beat the United States into orbit.¹⁹⁴ However, without a measurable Escalation Level change, strategic stability was merely redefined, annotating the growing Soviet launch capabilities while at the same time remaining constant.

¹⁹⁴ Forrest E. Morgan, *Deterrence and First-Strike Stability in Space: A Preliminary Assessment*, RAND Corporation Monograph Series (Santa Monica, CA: RAND, 2010); Walter A. McDougall, *The Heavens and the Earth: A Political History of the Space Age*, Johns Hopkins paperbacks ed (Baltimore, Md: Johns Hopkins University Press, 1997).

3.2.2.2 1961: Berlin II

The last words Kennedy uttered to Khrushchev as they parted the ill-fated Vienna Summit of June 1961, “it would be a cold winter,” have come to be seen as the symbolic start to the final series of events leading up to the Cuban Missile Crisis of 1962.¹⁹⁵ Vienna was supposed to be the summit Khrushchev wanted following the breakdown with Eisenhower in 1960 and the U-2 shootdown incident. Khrushchev, who continued Stalin’s mantra of a unified Berlin under Soviet control, also felt emboldened heading into the conference by the recent failure of the young new president during the botched Bay of Pigs invasion.¹⁹⁶ Kennedy entered the Vienna conference fighting an uphill political battle with Khrushchev.

Standing before Congress on 25 May 1961, before leaving for Vienna, Kennedy asked to bolster the number of Army troops to increase readiness in Europe by authorizing 89,000 men and ten divisions deployable within three to eight weeks and doubling Army combat power in less than two months.¹⁹⁷ Following the breakdown in Vienna and in response to the Soviet build-up in Berlin, Kennedy put into motion his troop deployment in July 1961 by ordering six Army divisions to Europe after the first of the year but stopped short of declaring a national emergency, as had been advocated by his close advisor and former Secretary of State Dean Acheson. Kennedy believed it necessary to deliberately escalate the readiness of the United States military presence

¹⁹⁵ Kaplan, Landa, and Drea, *History of the Office of the Secretary of Defense; The McNamara Ascendancy, 1961-1965*, V:150.

¹⁹⁶ Rearden, *Council of War: A History of the Joint Chiefs of Staff - 1942 - 1991*, 216.

¹⁹⁷ John F. Kennedy, “Presentation to a Combined Sessions of Congress” (Speech, Combined session of Congress, US Capital, Washington, DC, May 25, 1961).

in Europe to combat the potential Soviet threat should Khrushchev decide to proceed with trying to unify Berlin.¹⁹⁸

Little had changed between the Eastern and Western powers in the city since the 1958–59 Berlin Crisis. Tensions mounted as a sea of humanity continued to flood across the border into West Germany; 30,000 crossed in July 1961 and a few thousand had already crossed in the beginning days of August.¹⁹⁹ On 13 August, East-German troops began to install barbed wire and then a fortified concrete wall separating the East and West halves of Berlin.²⁰⁰ Prior to the erection of the new wall, talent and labor had joined in an exodus out of the East and into the West, threatening the existence of the very worker's paradise that was established to watch over them.

By October 1961, based on Kennedy's preference for graduated military responses, the JCS published National Security Action Memoranda (NSAM) 109, also known as the Poodle Blanket Paper. As requested by Kennedy, NSAM-109 outlined a graduated United States response to a potential Berlin crisis beginning with small conventional retaliatory responses and culminating in full-scale nuclear war.²⁰¹ Kennedy had two objectives: the first was to prepare the United States to respond to anything the Soviet Union was potentially going to do in Berlin, and the second was to actively try to reverse the massive retaliation policy of the Eisenhower administration by keeping strategic stability in the forefront and reducing the initial probability of full-scale war. The Poodle Blanket Paper marked the first codified policy of flexible response, representing a

¹⁹⁸ Kaplan, Landa, and Drea, *History of the Office of the Secretary of Defense; The McNamara Ascendancy, 1961-1965*, V:153.

¹⁹⁹ Kaplan, Landa, and Drea, V:156.

²⁰⁰ Gibler, *International Conflicts, 1816-2010*, 1 & 2:940–41.

²⁰¹ McGeorge Bundy, "National Security Action Memoranda 109, U.S. Policy on Military Actions in a Berlin Conflict" (National Security Advisor, October 23, 1961), JFKNSF-332-011-p0004, John F. Kennedy Presidential Library.

significant move away from Eisenhower's massive retaliation doctrine and limiting how the United States should use their nuclear weapons.

Khrushchev believed that NATO, under the leadership of the United States, was going to use the opening of the Twenty-Second Party Congress as its starting point for an invasion into the East to retaliate against the newly constructed wall.²⁰² In preparation, the Soviet and East-German militaries moved troops, tanks, and supplies up to the border. Finally, the inevitable occurred between 27 and 28 October 1961. A Soviet tank and an American tank came within a hundred yards of each other during a direct challenge for power and access through Checkpoint Charlie, making a militarized confrontation between the East and West seem unavoidable. The Soviets eventually withdrew first, and the situation resolved peacefully, but in the years (and eventually decades) that followed the confrontation at Checkpoint Charlie, the conception of full strategic stability in the dyadic state system was redefined to include the new wall.

Nuclear capability

Actual changes in nuclear capabilities measured through CRNC changes, compared with 1960, did not occur during 1961. However, significant advancements in situational awareness for the United States did ensue with the launching of the CIA's Discoverer and SAMOS satellites. With the ability to cover more ground than a U-2, the imagery returned from SAMOS confirmed that any perceived missile gap was non-existent.²⁰³ Dispelling the missile gap publicly, Deputy Secretary of Defense Roswell Gilpatric gave a speech highlighting the United States' nuclear

²⁰² Nikita Sergeevich Khrushchev, *Khrushchev Remembers*, trans. Strobe Talbott (Boston: Little, Brown, 1970), 459.

²⁰³ David Alan Rosenberg, "The Origins of Overkill: Nuclear Weapons and American Strategy, 1945-1960," *International Security* 7, no. 4 (1983): 48.

numerical superiority over the Soviets.²⁰⁴ The new Kennedy administration knew from early on in the White House that the Soviets did not have a substantial ICBM advantage over the United States as once thought.

In 1961, with no change in CRNC scores represented in Table 3-1, Kennedy accepted the advice presented in the Acheson Report, extending the United States' nuclear umbrella to NATO through the signing of NSAM 40: Regarding NATO and Atlantic Nations.²⁰⁵ Through NSAM-40, the United States committed to keeping nuclear weapons in Europe, using conventional resources to strengthen nuclear capabilities in the region, and expanding capabilities where possible with new technology.²⁰⁶ Moving missiles closer to the front line, as will be seen in the Cuba Missile Crisis case study, generally does not cause a variance in nuclear capabilities, even if such forward missiles are counted alongside strategic assets.

Finally, Table 3-1 displays data showing that 1961 did see numerical growth of nuclear capabilities, although not enough to change the CRNC score. The United States saw growth in their missiles, with both ICBM and SLBM stocks increasing modestly, while bombers remained relatively stagnant. In the United States, ICBM payload and associated strategic nuclear warheads in 1961 increased to 57 from only 12 in the previous year. Additionally, SLBM payload and associated strategic nuclear warheads in 1961 grew to 80 each from 32 just the year prior. Not as aggressive in its build-up, the Soviet Union increased ICBM payload capacity to 12 from only two in 1960 while increasing SLBM payload capacity to 87 from 63 one year previously. Also

²⁰⁴ Kaplan, Landa, and Drea, *History of the Office of the Secretary of Defense: The McNamara Ascendancy, 1961-1965*, V:302.

²⁰⁵ McGeorge Bundy and Dean Acheson, "National Security Action Memoranda: NSAM 40, Policy Directive Regarding NATO and the Atlantic Nations," Meetings and Memoranda, Papers of John F. Kennedy. Presidential Papers. National Security Files (John F. Kennedy Presidential Library, 1961).

²⁰⁶ Bundy and Acheson, 6.

increasing for the Soviets were bomber payloads, crawling up to 253 from 239 just one year before. Although growth occurred in the dyadic state system, it was not enough to cause a variance in the CRNC score for either state.

Strategic stability

The 1961 Berlin crisis comprised three changes in strategic stability, but none could be credibly connected to variances in American and Soviet nuclear capabilities. During the 1961 Berlin crisis, the first change to strategic stability occurred in May when Kennedy asked Congress to approve an additional 89,000 troops and 10 deployable divisions in relatively short order as a means of deterring “non-nuclear aggression.”²⁰⁷ This mobilization of military personnel equated to an Escalation Level-3 event and was explicitly not connected to changes in nuclear capabilities. Kennedy’s mobilization was in response to the breakdown of order in East Berlin and his desire to be ready in case he needed to deploy the Army quickly.

The second change to strategic stability occurred when the United States and Soviet tanks came within yards of one another at Checkpoint Charlie. Brought about by the inherent tensions at the border between the divided city of Berlin, this show of force resulted in an Escalation Level-3 event. No indication of nuclear capabilities influencing this change in strategic stability was evident in any of the sources. However, had tensions boiled into actual combat, nuclear capabilities would have become a factor based on accepted Soviet strategy at the time, which dictated that any war with the United States would become a nuclear war.²⁰⁸

The last change to strategic stability occurred immediately following the confrontation at Checkpoint Charlie. On the morning of 28 October, the tank standoff at Checkpoint Charlie

²⁰⁷ Kennedy, “Presentation to a Combined Sessions of Congress.”

²⁰⁸ Catudal, *Soviet Nuclear Strategy from Stalin to Gorbachev*, 98.

ended.²⁰⁹ No formal declaration of surrender or admission of guilt was made by either side. The Soviet tank took the first move in retreat, followed by the American tank, then the Soviet, and so forth. With tensions dissipated, the Escalation Level changed back to Level-1, reinstating full strategic stability in the United States and Soviet Union dyadic state system.

Case analysis

The Berlin II case did not occur at a time of nuclear capability change or progress down the causal path connecting variations in nuclear capabilities with changes in strategic stability. However, strategic stability changes obviously occurred. Long before the tank stand-off at Checkpoint Charlie in downtown Berlin, President Kennedy's call-up of 89,000 troops to deter non-nuclear Soviet aggression saw an immediate jump in Escalation Level from 1 to 3. No changes in nuclear capabilities occurred, prompting Kennedy's actions and the mobilized troops to only address conventional military issues. The May 1961 call-up of troops purposely decreased strategic stability without any connection to variances in nuclear capabilities.

The second change to strategic stability occurred during the tank standoff at Checkpoint Charlie. Tensions had previously been high at the border as the East Germans and Soviets constructed the new wall with the United States, Great Britain, France, and West Germany on the opposite side. As a different show-of-force event than the call-up of troops, the standoff represents a lateral movement to a new Escalation Level-3 event. No indications presented in the case details pointed to either the United States or the Soviets purposely engaging in the actions leading to the standoff, and no changes in nuclear capabilities occurred.

²⁰⁹ Barry M. Blechman and Stephen S. Kaplan, *Force Without War: U.S. Armed Forces as a Political Instrument* (Washington: Brookings Institution, 1978), 432–34.

Finally, following the initial move to pull back the Soviet tanks from the standoff at Checkpoint Charlie, the Escalation Level changed again from 3 to 1, re-establishing full strategic stability. Consistent with the previous two changes in strategic stability for this case, no changes in nuclear capabilities contributed to the resumption of full strategic stability. Lacking influence by nuclear capabilities, this last change in strategic stability was also non-nuclear.

Case summary

Two indisputable facts emerge from the Berlin II case: changes to strategic stability occurred, and variations in nuclear capabilities did not play a role. The lack of nuclear capability changes, making this a Type-II case, means the capability–stability causal path is inapplicable. Erection of the wall occurred not as a result of variances in nuclear capabilities by the United States or any Western power. Instead, it was a means of providing internal stability within East Berlin as talent fled to the freedoms promised in the West. Consistent with each of the previous cases in this chapter, the Berlin II case does not contain only a single incident of change in strategic stability. Instead, it follows the same pattern as the previous cases of multiple independent changes in strategic stability, each providing a different causal explanation.

3.3 Conclusion

During the 1958–1961 timeframe, variances in nuclear capabilities rarely influenced dyadic state strategic stability. With two burgeoning nuclear powers, growing nuclear capabilities, and multiple cases of change in strategic stability, if variations in nuclear capabilities consistently and systematically affected change in strategic stability, there should be abundant evidence of that fact in this time period, there is not. Only twice between 1957 and 1961 did either state’s CRNC

score change; however, most of the changes in strategic stability occurred before the 1960 change in the United States' CRNC score. Driving a wedge between any perceived bond is the timing of strategic stability changes with CRNC score changes. The analysis of this timeframe drove a preliminary conclusion that nuclear capabilities are only sometimes sufficient to change strategic stability, but are not always required.

Can the actual or threatened use of nuclear capabilities explain strategic stability changes occurring at the same time? Did the manner in which each state leader perceived the other state's nuclear capabilities have an effect on strategic stability? Out of the six cases, each representing strategic stability, only two cases attributed variations in strategic stability to nuclear capabilities. Only the singular change to Escalation Level-2 following Khrushchev's 10 November speech, where he cited the quantitative NATO missile emplacement, confirmed this hypothesis. Khrushchev changed strategic stability by threatening a military response to the missile emplacements even though the number of missiles did not change the United States' CRNC score. His true motive was suspected to be the removal of Western occupation in West Berlin. Therefore, the actual or threatened use of nuclear capabilities was sufficient to change strategic stability in one instance but was not necessary at all times.

The remaining two changes in strategic stability among the Type-I cases were attributed to state-level incentives. During the 1958–1959 Berlin I case, the United States placing of missiles in Europe capitalized on the incentives of both deterring the Soviets and increasing the security of European allies. During the May 1960 shutdown of the U-2 spy plane where the perceived change in Soviet nuclear capabilities drove changes in strategic stability, the incentive driving the United States to elevate the Escalation Level was the perception of the Soviets' nuclear-capability status. So great was this incentive that both the Eisenhower and Kennedy administrations

approved the overflights in the knowledge that each was a border incursion. However, not all sixteen changes to strategic stability can be traced back to incentives. This result is comparable to those above, incentives are sometimes sufficient to change strategic stability but not always necessary.

Can changes in strategic stability be explained by causal mechanisms other than variations in nuclear capabilities? Across the majority of Type-I and all Type-II changes in strategic stability, causal mechanisms other than the actual or threatened use of nuclear capabilities or incentives explained changes to strategic stability. Stated differently, perceived or actual changes in nuclear capabilities were sufficient to drive changes in strategic stability but not always necessary.

Table 3-3 presents each of this chapter's cases weighed and evaluated against accepted theories of strategic stability. Following congruence testing, during the presentation of case details, it became apparent that all cases had at least one change in strategic stability. The Escalation Level column annotates those cases with multiple changes in strategic stability. After reviewing the details of each case, it became apparent that strategic stability change occurred as little as once and as many as three times during a single case. Additionally, some changes in strategic stability occurred laterally, meaning the second incidence of Escalation Level change transpired but the new change was equal to the prior Level. With each change in the Escalation Level, either laterally or vertically, an assessment is made in Table 3-3 applying the new change to either the indicators of strategic stability or, if no indicators apply, the non-nuclear column as a means of assigning causality produced by anything outside of nuclear capability variations.

Table 3-3: Analysis Summary: Pre-Cuban Missile Crisis, 1957–1961

OBSERVED CHANGE	1957	1958			1959	1960	1961
	Sputnik Launch	DC-6 Shoot Down	C-130 Shoot Down	Berlin Crisis (I)	NO INCIDENTS	U-2 Shoot Down	Berlin Crisis (II)
Nuclear Capability	N	Y	Y	Y	/	Y	N
Utility	/			Y	/	Y	/
Incentives	/			Y	/	Y	/
Strategic Stability	Y	Y	Y	Y	/	Y	Y

Finally, this chapter leaves a question for further research regarding the nature of the technology that spawned the nuclear capabilities: Do only variations in nuclear capabilities cause changes in strategic stability, or can a revolution in technology yield changes in strategic stability? As a dual-use technology, the R-7 rocket was equally important to the development of ICBMs as it was as a revolutionary breakthrough in space transportation. Additionally, before the shutdown on 1 May 1960, the U-2’s technology was highly provocative to the Soviets while the Americans crossed into and out of Soviet border regions with impunity. Finally, the Soviet missile advancements allowing for the shutdown the U-2 aircraft also drove a change in strategic stability. It seems possible with further research that nuclear capabilities emblematically represent changes to strategic stability caused by technological revolutions.

4.0 Cuban Missile Crisis, 1962

Over thirteen days in October 1962, the Soviet Union and the United States came close to engaging in a militarized confrontation and, according to dominant policy on both sides at the time, it would have certainly turned nuclear. The United States' nuclear capabilities in 1962 quantifiably swelled as ICBM and SLBM production increased dramatically, in some cases quadrupling from 1961. With the increase in nuclear capabilities, the United States was able to implement assured destruction, the ability to conduct a second strike.

Meanwhile, the Soviet Union purposefully challenged the balance of power in the Western hemisphere through its placement of nuclear-capable medium- and intermediate-range ballistic missiles on the island of Cuba.²¹⁰ Continuing the Stalin-era mantra of dissolving the Potsdam Protocols through the removal of Western powers from post-WWII Germany, Soviet Chairman Nikita Khrushchev intended to use the missiles in Cuba to draw the United States into a fait accompli in Berlin. Contrary to the theory presented in Chapter 1, where the state gaining nuclear capability posed a potential change in utility, Khrushchev wagered through high-stakes brinkmanship that the Kennedy administration would feel pressured by the Soviet military operations in Cuba to capitulate in Berlin. His gamble failed.

Following the errant shutdown of a U-2 surveillance plane, a naval quarantine, and Kennedy's display of American resolve, the Soviet Union agreed to abandon its Cuban missile outpost, making a public proclamation of withdrawal on 28 October 1962. Historical scholarship has treated the Cuban Missile Crisis as the quintessential instance of strategic stability disrupted

²¹⁰ Wohlstetter, "The Delicate Balance of Terror."

due to changes in nuclear capabilities. Undoubtedly, the Soviets changing the location of nuclear weapons, moving them in proximity to the continental United States, was a factor in varying Escalation Levels in the Soviet–American dyadic system. This chapter analyzes the events of 1962 associated with the Cuban Missile Crisis and shows that nuclear capabilities, even during this most notable of cases, were not required at all times to change strategic stability.

Publicly, Khrushchev admitted that he did not conceive of putting any missiles on Cuba until his May 1962 trip to Bulgaria, where he conceptualized the idea, in part, to protect the Soviet Union’s newly acquired bastion of socialism in the Western Hemisphere.²¹¹ In the United States, Kennedy, the American intelligence community, and many on the National Security Council became convinced that the missiles on Cuba were meant to force the Americans and other Western powers out of Berlin.²¹² Khrushchev’s Bulgarian revelation came at a time when the protection of Cuba was secondary to the Soviet Union’s primary policy objective: the expulsion of Western forces, specifically the United States, from Berlin. Others in the United States including Kennedy and his advisors believed the missiles in Cuba were a way to bring to a head the Soviet discontent with Western troops in Germany.

Prior to the onset of the Cuban Missile Crisis, removal of Western troops from Berlin was a chief Soviet foreign policy; it was the centerpiece of meetings in May 1962 between American Secretary of State Dean Rusk and Soviet Ambassador Anatoli Dobrynin. As summer progressed toward fall, the talks became increasingly blunt and the events associated with the Cuban Missile Crisis began to unfold. Repeatedly, consistently, and with increasing fervor throughout this entire

²¹¹ Khrushchev, *Khrushchev Remembers*.

²¹² Ernest R. May and Philip Zelikow, eds., *The Kennedy Tapes: Inside the White House During the Cuban Missile Crisis*, Concise Edition (New York: Norton, 2002).

time, Chairman Khrushchev expressed his mantra that troops from the West, in the eyes of the Soviets and East Berlin, were “persona non grata.”

As tensions concerning Berlin continued to heat-up, Raul Castro traveled from Havana to Moscow on 2 July 1962 to seek additional weapons for the new Cuban government and build a relationship between Cuba and the Communist government in the Soviet Union. Solidifying the relationship between Cuba and the Soviet Union was a victory for Castro, as Cuba was often viewed as a poor investment for Soviet contributions of material and economic support.²¹³ On 10 August 1962, the tangible results of Castro’s efforts were reported by the Director of Central Intelligence when military supplies and personnel were observed heading into Cuba.

On 21 August 1962, the Director of Central Intelligence reported a revision to his previous assessment and began labeling the inflow of Soviet material and personnel into Cuba as significant.²¹⁴ Furthermore, at this same meeting, a consensus had begun to build that the United States needed to respond, possibly militarily, to the inflow of Soviet supplies to Cuba. McGeorge Bundy, President Kennedy’s National Security Advisor, responding to talk of blockading Cuba, tied any actions against the island as possibly having reciprocal responses against the United States

²¹³ In the Central Intelligence Agency's 1 August 1962 National Intelligence Estimate, the strengthened commitment between the Soviet Union and Cuba is acknowledged. However, as seen earlier in the 21 March 1962 National Intelligence Estimate, there is a continued disbelief that the Soviet Union would send military commitments to Cuba. This sentiment was also reiterated in an 22 August memo from Kennedy’s Special Assistant to the President for National Security Affairs, McGeorge Bundy: Arthur Schlesinger, “Memorandum from the President’s Special Assistant (Schlesinger) to the President’s Special Assistant for National Security Affairs (Bundy); Document #383, August 22, 1962.,” in *Foreign Relations of the United States; Cuba, January 1961–September 1962*, ed. Louis J. Smith, vol. X, FRUS 1961–1963 (Washington, D.C.: United States Government Printing Office, 1997).

²¹⁴ Updating Rusk on 24 August 1962 with information collected between 1-4 August from the United States naval installation at Guantanamo Bay, Cuba, the Chief of Naval Operations conveyed to Secretary of State that rockets of varying sizes and shapes had been offloaded under heavy guard.: Department of the Navy, “Telegram from the Chief of Naval Operations (Anderson) to the Department of State; Document #389, August 24, 1962.,” in *Foreign Relations of the United States; Cuba, January 1961–September 1962*, ed. Louis J. Smith, vol. X, FRUS 1961–1963 (Washington, D.C.: United States Government Printing Office, 1997).

in Berlin or near the United States' bases in Turkey or Southern Italy.²¹⁵ Working from the intelligence presented to him throughout August, on 7 September 1962, President Kennedy asked Congress for authorization to call-up 150,000 ready-reservists if needed to deal with Cuba.²¹⁶

Reviewing available photography from Cuba taken between 23 and 28 September helped analysts develop the hypothesis that Soviet activity on Cuba directly related to the construction of potential medium-range ballistic missile (MRBM) sites.²¹⁷ The Kennedy administration, responding to the intelligence analysis, approved on 14 October 1962 a rare flight of the U-2 to capture first-hand photography of newly arrived shipments.²¹⁸ Analysis conducted on the U-2's film by the intelligence community confirmed late on 15 October that the Soviet Union's activities in Cuba included the delivery of nuclear-capable MRBMs. Senior staff informed President Kennedy on the morning of 16 October.

Starting with a late-morning meeting in President Kennedy's office concerning options available to the United States and potential reasoning behind the Soviet's activities, the following 13 days brought increasing escalation and decreasing strategic stability. By 21 October, the President had given orders to institute a naval quarantine of Cuba as a means of halting any new Soviet shipments of military supplies and personnel. Although earlier in September the administration had made it known publicly that the Soviets were moving into Cuba, it was not

²¹⁵ Central Intelligence Agency, "Memorandum for File, Discussions in Secretary Rusk's Office; Document #382, August 21, 1962.," in *Foreign Relations of the United States; Cuba, January 1961–September 1962*, ed. Louis J. Smith, vol. X, FRUS 1961–1963 (Washington, D.C.: United States Government Printing Office, 1997).

²¹⁶ Seymour Topping, "A-War Threat Hurlled; Russia Cites Rockets; September 12, 1962 (Page 1 of 34)," *Pittsburgh Post-Gazette, Sun-Telegraph (1960-1978)*, 1962, sec. Front Page.

²¹⁷ Louis J. Smith, ed., "Editorial Note; Document #436.," in *Foreign Relations of the United States; Cuba, January 1961–September 1962*, vol. X, FRUS 1961–1963 (Washington, D.C.: United States Government Printing Office, 1997).

²¹⁸ May and Zelikow, *The Kennedy Tapes*, 30.

until 22 October 1962 that the President addressed the American people, revealing the proximity of Soviet MRBMs located on the island of Cuba. Simultaneously raising military readiness to coincide with Kennedy's address to the public, Prime Minister Fidel Castro responded by mobilizing Cuba's troops. Conflict seemed inevitable.

More rapidly than the Cuban Missile Crisis had begun, it ended. Termination of the crisis in Cuba began when Khrushchev sent a telegram to Kennedy on 26 October 1962 in which he agreed to the latter's request to stop military shipments to Cuba in exchange for an American commitment to not invade the island.²¹⁹ Before Kennedy could formally reply to Khrushchev, a second telegram arrived on 27 October 1962, repeating the stipulation of a promise of non-invasion but also adding a requirement for the removal of American missiles from Turkey.²²⁰ Following the easing of international tensions on 28 October 1962, the quarantine put into place by Kennedy took another month to conclude as each side participated in numerous negotiations to remove the Soviet nuclear capabilities from the island.

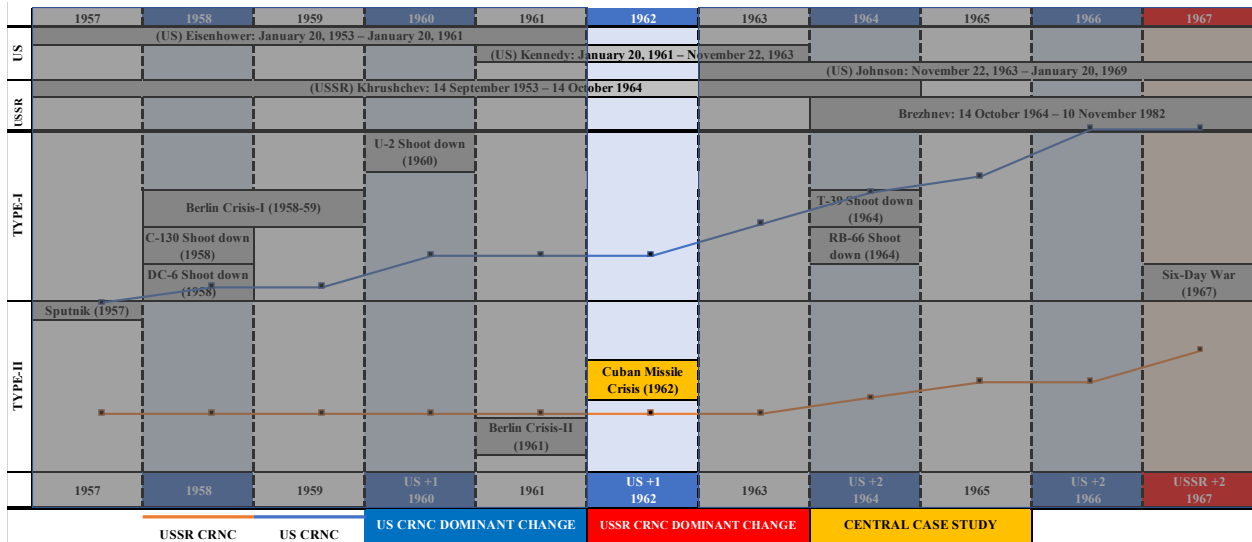
Understood in the terms developed in this thesis, the Cuban Missile Crisis was a Type-II conflict. As shown in Figure 4-1 below, it occurred at a time when the CRNC scores of neither the United States nor the Soviet Union changed. The Cuban Missile Crisis has long been thought of as a case that cleanly demonstrates a strong connection between variations in nuclear capabilities driving changes in strategic stability. Through the examination of the case in this chapter,

²¹⁹ Nikita Khrushchev, "Letter from Chairman Khrushchev to President Kennedy; Document #65, October 26, 1962.," in *Foreign Relations of the United States; Kennedy-Khrushchev Exchanges, 1961-1963*, ed. Charles S. Sampson, vol. VI, FRUS 1961-1963 (Washington, D.C.: United States Government Printing Office, 1996).

²²⁰ Nikita Khrushchev, "Letter from Chairman Khrushchev to President Kennedy; Document #66, October 27, 1962.," in *Foreign Relations of the United States; Kennedy-Khrushchev Exchanges, 1961-1963*, ed. Charles S. Sampson, vol. VI, FRUS 1961-1963 (Washington, D.C.: United States Government Printing Office, 1996).

however, the Cuban Missile Crisis was not the exemplar many assume it to be; during the crisis, not all changes to strategic stability were connected to changes in nuclear capabilities.

Figure 4-1: Cuban Missile Crisis in Context: 1957–1967



This chapter proceeds through the Cuban Missile Crisis in four parts. Section 4.1, Nuclear Capabilities, addresses the changes in the two states’ nuclear capabilities occurring during 1962. Section 4.2, Case Events, covers the specific nuances of the Cuban Missile Crisis broken into three separate timeframes, correlating to various changes of strategic stability that occurred as the events unfolded. Next, Section 4.3, Analysis, examines the events leading to changes in the DV, strategic stability. Finally, Section 4.4, Conclusion, highlights how only two of the three instances of change in strategic stability during the Cuban Missile Crisis were tightly connected to changes in nuclear capabilities. Although viewed as an illustrative case highlighting the strong association between nuclear capabilities and strategic stability, the Cuban Missile Crisis reinforces the notion developed elsewhere in this thesis that nuclear capability changes can sometimes be sufficient to change strategic stability but are not a necessary component.

4.1 Nuclear capabilities

Similar to the previous chapter, Table 4-1 below represents the relative nuclear capabilities of both the United States and the Soviet Union. Pitted against one another in the table, each leg of the nuclear triad highlights nuclear capabilities for each state.²²¹ According to existing research, if strategic stability were to change, it would only do so in response to changes in nuclear capabilities, as seen in the United States' change occurring from 1961 to 1962.

The CRNC for both the United States and the Soviet Union remained constant between 1961 to 1962. As depicted in Table 4-1, the United States reported dramatic increases in both ICBM and SLBM nuclear capabilities in 1962 while maintaining more than ten times the bomber payload capacity over the Soviet Union's equivalent capabilities. Furthermore, between 1960 and 1962, the United States added 191 ICBMs and 112 SLBMs, resulting in an increased payload capacity along with equally associated strategic nuclear warheads. The United States entered 1962 with a numerically superior bomber fleet while continuing to grow SLBMs and ICBMs at enormous rates, bolstering their overall relative nuclear capability.

²²¹ Recall the CRNC examines only strategic, or long-range, capabilities. As each platform has the potential to carry more than one nuclear warhead, payload capacity and available strategic nuclear warheads are used to describe each from year to year. The CRNC takes a total of all platforms in both the payload and warhead categories and assigns a relative numerical value, as compared to the Soviet Union, from 1 to 10. The numerical value assigned for each category is then added together to produce the final CRNC score, which is then used to draw comparisons.

Table 4-1: US and USSR Nuclear Capabilities, 1960–1963²²²

		ICBM		SLBM		Bombers		CALCULATED SCORE		
		Payload Capacity	Strategic Nuclear Warheads	Payload Capacity	Strategic Nuclear Warheads	Airframe Payload Capacity	Strategic Nuclear Warheads	Relative Payload	Relative Warhead	Combined Relative Nuclear Capability
United States	1960	12	12	32	32	3083	3083	6	6	12
	1961	57	57	80	80	2920	3016	6	6	12
	1962	203	203	144	144	2920	3104	6	6	12
	1963	597	597	160	160	2855	3293	7	7	14
Soviet Union	1960	2	2	63	63	239	354	1	1	2
	1961	12	10	87	87	253	382	1	1	2
	1962	38	36	104	69	263	392	1	1	2
	1963	96	99	104	69	271	440	1	1	2

During this same period, from 1960 to 1962, the Soviet Union grew its nuclear capability inventory by modest amounts. During this three-year period, the Soviets added 34 ICBMs while maintaining small but capable SLBM and bomber fleets. These additional ICBMs increased the Soviet Union’s overall payload capacity across all three platforms. Even with the significant increase in Soviet Nuclear capability from 1960, the United States still dominated with a CRNC score 3.5 times higher than that of their Soviet counterparts.

Did the missiles placed on the island of Cuba make any difference to Soviet nuclear capabilities? The answer should be no, as the CRNC score only accounts for strategic or long-range nuclear capabilities. However, moving the IRBMs and MRBMs into firing range of the mainland of the United States meant that nuclear weapons became deliverable to various targets inside the United States by strategic and non-strategic missiles. In other words, those targeted by the effects of a nuclear weapon probably cared very little about how the nuclear capabilities would be delivered.

²²² Podvig and Bukharin, *Russian Strategic Nuclear Forces*; Norris and Cochran, *US-USSR/Russia Strategic Offensive Nuclear Forces, 1945-1996*.

On the island of Cuba, along with matching warheads between 200 kilotons and 1 megaton, Khrushchev moved 16 SS-5 IRBMs with a range of 2,200 miles and 24 SS-4 MRBMs with a range of 1,100 miles.²²³ Photography analyzed from 16 October found 24 IL-28 bombers with a range of 600 miles still in their crates on Cuba.²²⁴ Combining these imported capabilities with the Soviet's existing strategic nuclear capabilities increases the Soviets' overall payload capacity capable of striking the United States by 64 along with matching nuclear warheads. This nominally increased Soviet overall capability, but fell far short of the United States' overall payload capacity of 3,267 at the time. Although the spectacle of nuclear weapons appearing on the doorstep of the United States was enough to produce changes in strategic stability, the nuclear capabilities on Cuba did little to change the balance of power between the United States and the Soviet Union.

Cuban Missile Crisis as a Type-II case

Congruence testing, as previously undertaken for the cases examined in the previous chapter, sought to assess each case based on the theory that changes in the DV, strategic stability, are bound to variance in the IV, nuclear capabilities.²²⁵ During the Cuban Missile Crisis, nuclear capabilities did not change on either side of the dyadic state system during 1962. The result of this lack of CRNC change means that, although the Cuban Missile Crisis is viewed as the quintessential display of variations in nuclear capabilities driving change in strategic stability, the case did not pass congruence testing and was classified as Type-II. As a Type-II case, the historically tight capability–stability assumption did not pass the basic congruence test. The details of this case

²²³ James G. Hershberg, "Chapter 4; The Cuban Missile Crisis," in *The Cambridge History of the Cold War*, ed. Melvyn P. Leffler and Odd Arne Westad, vol. 3 (Cambridge: Cambridge University Press, 2012), 68.

²²⁴ Kaplan, Landa, and Drea, *History of the Office of the Secretary of Defense: The McNamara Ascendancy, 1961-1965*, V:207n.

²²⁵ George and Bennett, *Case Studies and Theory Development in the Social Sciences*, 181–204.

require closer examination to ascertain whether a causal relationship exists between the change in the balance of nuclear capabilities and the variance in strategic stability experienced during the Cuban Missile Crisis.

4.2 Case events

Often lumped into a single episode of conflict between the United States and the Soviet Union, the Cuban Missile Crisis was composed of three parts, with four discrete events that affected American–Soviet strategic stability. Only three of those events were associated with the states’ relative balance of nuclear capabilities. Each part of the Cuban Missile Crisis comprised a change in strategic stability, but each change was not always associated with changes in nuclear capabilities. The binding of variations to nuclear capability to changes in strategic stability is an essential issue because scholarship often conflates the entire crisis into a singular event that changed strategic stability solely because of changes in nuclear capabilities.

To address the multiple changes that occurred in strategic stability for varying reasons, the following case analysis of the Cuban Missile Crisis is broken into three distinct parts. The first section, Part 1: 1 January to 15 October 1962, examines the first time the United States became aware of Soviet military activities on Cuba and the initial response Kennedy took to address what he and the United States intelligence community perceived as a non-nuclear threat off the coast of Florida. The second section, Part 2: 16–28 October 1962, addresses the height of the Cuban Missile Crisis. During this timeframe, Kennedy reacted to the change in Soviet nuclear capabilities and made a corresponding change to the United States’ Escalation Level as a response. Finally, the last section, Part 3: 29 October to 31 December 1962, examines the sustained Escalation Level

lasting from the traditionally ascribed end of the crisis until the verified departure of Soviet nuclear weapons from Cuba. Across all three periods of the Cuban Missile Crisis, strategic stability changed multiple times for reasons that encompass both nuclear and non-nuclear capability explanations. These changes, discussed later in this chapter, lack a consistently tight bond with changes in nuclear capabilities.

4.2.1 Part 1: 1 January to 15 October 1962

Chairman Khrushchev covertly initiated Soviet military actions leading to the Cuban Missile Crisis to force closure on the many long-standing issues with Western states occupying post-war Germany. During the summer of 1962, Berlin policy took center stage amid official Soviet interactions with the United States while the Soviet military was covertly moving supplies into Cuba.²²⁶ On 30 May and again on 18 June 1962, Anatoli Dobrynin, Soviet Ambassador to the United States, met with Secretary Rusk to convey Khrushchev's sentiments on the United States' withdrawal from Berlin.²²⁷ Specifically, Dobrynin informed Secretary Rusk of Khrushchev's position that American, British, and French forces in Berlin should be replaced with United Nation troops.²²⁸ According to Khrushchev, it was his policy that "the Soviets would not

²²⁶ Charles S. Sampson, ed., *Foreign Relations of the United States; Kennedy-Khrushchev Exchanges, 1961-1963*, vol. VI, Foreign Relations of the United States 1961-1963 (Washington, D.C.: United States Government Printing Office, 1996).

²²⁷ US State Department, "Memorandum of Conversation between Secretary of State Dean Rusk and Soviet Ambassador Anatoli Dobrynin, US State Department; Document #59, May 30, 1962." in *Foreign Relations of the United States; Berlin Crisis, 1962-1963*, ed. Charles S. Sampson, vol. XV, FRUS 1961-1963 (Washington, D.C.: United States Government Printing Office, 1993); US State Department, "Memorandum of Conversation between Secretary of State Dean Rusk and Soviet Ambassador Anatoli Dobrynin, US State Department; Document #64, June 18, 1962." in *Foreign Relations of the United States; Berlin Crisis, 1962-1963*, ed. Charles S. Sampson, vol. XV, FRUS 1961-1963 (Washington, D.C.: United States Government Printing Office, 1993).

²²⁸ US State Department, "Memorandum of Conversation between Secretary of State Dean Rusk and Soviet Ambassador Anatoli Dobrynin, US State Department; Document #59, May 30, 1962."

recognize any right of the West to maintain troops in West Berlin.”²²⁹ On 5 July, immediately following Raul Castro’s visit to Moscow, Khrushchev sent a direct communique to Kennedy reiterating his Berlin policy of Western power expulsion.²³⁰ In this July communique, Khrushchev proposed “the occupation regime in West Berlin will be abolished and during the first years the troops of the United Nations will be stationed there which will act as guarantors of independence and security of West Berlin.”²³¹

At the end of July, Llewellyn Thompson, the outgoing United States Ambassador to the Soviet Union, had a face-to-face meeting with Khrushchev before relinquishing his post and returning to the United States. During this meeting, Thompson recalled Khrushchev conveying his need to bring the Berlin issue to an end and further felt that the Soviets had placed themselves in a corner too deep to back out. Pressed further by Kennedy, Thompson noted Khrushchev’s desire to push discussions with the US off until November, a time revealed in retrospect when the Soviet missiles on Cuba would have been fully in place. Thompson’s assessment, delivered to President Kennedy and Congressional leadership, was that Soviet activity in Cuba was meant to bring the showdown Khrushchev wanted in order to close the long-standing Berlin issue.²³²

As the Soviet Union increased forcefulness in its expression of Berlin policy throughout the summer of 1962, it quietly proceeded to initiate a military deployment to Cuba. Khrushchev intended the placement of missiles on Cuba to force either multilaterally, or unilaterally if necessary, a re-negotiation of the Potsdam Protocols under the guise of a “peace treaty” as Stalin

²²⁹ US State Department.

²³⁰ Nikita Khrushchev, “Message from Chairman Khrushchev to President Kennedy; Document #73, Undated (Suspected July 5, 1962).,” in *Foreign Relations of the United States; Berlin Crisis, 1962–1963*, ed. Charles S. Sampson, vol. XV, FRUS 1961–1963 (Washington, D.C.: United States Government Printing Office, 1993).

²³¹ Khrushchev.

²³² May and Zelikow, *The Kennedy Tapes*, 168.

had wanted in the 1940s. A unilateral peace accord would only occur between East Berlin and the Soviet Union. Under a unilateral solution, any hostilities taken against East Berlin would drive an immediate response by the Soviet Union.²³³ Under a multilateral approach, the Soviet Union would propose ending the Potsdam Protocols and replacing forces from Western states in Germany with troops from the United Nations. The United States viewed its presence in West Berlin as a solemn promise to the occupants of that city as a guarantor of freedom. Kennedy, leading the response from Great Britain and France, would not tolerate any change to Potsdam.

Publicly, Khrushchev justified his actions in Cuba by citing the threat NATO nuclear missiles posed to the Soviet Union from their bases in Turkey and Italy.²³⁴ Placing missiles in Cuba, with the permission of Fidel Castro, would be a comparable response to the threat perceived by the NATO missiles in Turkey and Italy.²³⁵ The cover story for this bold move onto the doorstep of the United States thus became the bolstering of defenses for the young socialist state from the threats posed by the looming capitalist power. Khrushchev, entering the initial stages of the Cuban Missile Crisis, embraced the NATO missiles, not because they were a threat to the Soviet Union but because they provided a reason to place missiles on the island of Cuba, projecting a policy of bloodless retaliation against the United States' activities in Europe.

On 7 September 1962, after receiving intelligence reports throughout the summer of Soviet military shipments of material and troops arriving in Cuba, President Kennedy sent a letter to

²³³ Khrushchev, *Khrushchev Remembers*, 452–54.

²³⁴ Khrushchev, 492–94.

²³⁵ S. A. Mikoian, *The Soviet Cuban Missile Crisis: Castro, Mikoyan, Kennedy, Khrushchev, and the Missiles of November*, ed. Svetlana Savranskaya (Washington, D.C.: Stanford, California: Woodrow Wilson Center Press; Stanford University Press, 2012), 89.

Congressional leadership requesting authorization to mobilize 150,000 ready-reservists.²³⁶ With no knowledge of the Soviet placement of nuclear capabilities on Cuba, Kennedy was willing to raise the Escalation Level, reducing strategic stability through the call-up of troops. Six days later on 13 September, Kennedy went before the media explicitly conveying United States policy that “if at any time the Communist build-up in Cuba were to endanger or interfere with our security in any way, including our base at Guantanamo, our passage to the Panama Canal, our missile and space activities at Cape Canaveral, or the lives of American citizens in this country, or if Cuba should ever attempt to export its aggressive purposes by force or the threat of force against any nation in this hemisphere, or become an offensive military base of significant capacity for the Soviet Union, then this country will do whatever must be done to protect its own security and that of its allies.”²³⁷

On 3 October 1962, President Kennedy’s request for troops was granted when Congress sent him for signature Public Law 87-736 giving the office of President the broad authority to “order any unit, or any member, of the Ready Reserve of an armed force to active-duty for not more than twelve consecutive months.”²³⁸ Actions taken by the United States in response to the quiet movement of the Soviet military onto Cuba, perceived as only a conventional force deployment void of nuclear capability changes, became an explicit change to Escalation Level-3 and a decrease in strategic stability.

²³⁶ John F. Kennedy, *Public Papers of the Presidents of the United States: John F. Kennedy; Containing the Public Messages, Speeches, and Statements of the President, 1961-1963.*, vol. 2 (Washington: US Government Printing Office, 1963), 665.

²³⁷ Kennedy, 2:674.

²³⁸ Joint Resolution, “Congressional Authorization for 150,000 Ready Reserve Troop Recall,” Pub. L. No. PL 87-736, 1 (1962).

4.2.2 Part 2: 16 to 28 October

On 15 October, using U-2 photography taken just the day prior, the Central Intelligence Agency confirmed the presence of nuclear-capable MRBMs on Cuba, less than two weeks after Public Law 87-736 had been signed. On the morning of 16 October, aides informed President Kennedy of the intelligence showing Soviet nuclear-capable missile placement.²³⁹ Both the United States and the Soviet Union now knew of the missiles on Cuba and, coupled with the authorized American troop build-up, they could equally share in Escalation Level-3, a decrease in dyadic state strategic stability. Internally, Kennedy and his staff began formulating possible responses as a means of addressing this new perceived threat as well as standing up to Khrushchev.

By Saturday, 20 October, membership in the National Security Council had split into two camps, ‘hawks’ and ‘doves,’ based on their four solutions proposed for Kennedy’s consideration:²⁴⁰

- 1) Air strike
- 2) Blockade as a precursor to an air strike
- 3) Blockade and determine later what actions to take
- 4) Blockade as a means of forcing negotiations

During a White House meeting of the National Security Council, Kennedy began formulating his centrist approach as a response to the Soviet missiles, advocating for a quarantine while demanding from the Soviets the immediate removal of the Soviet missiles and IL-28 bombers from the island of Cuba.²⁴¹ On Monday, 22 October, before addressing the nation about

²³⁹ May and Zelikow, *The Kennedy Tapes*, 30–31.

²⁴⁰ May and Zelikow, 125–26.

²⁴¹ Stemming from this meeting, quarantine became the favored term to describe the United States blockade actions as a means avoiding international community perception and ramifications based on terms used during a state of war. The conduct of the quarantine, however, would be the same as a blockade.

the presence of missiles on Cuba, Kennedy explained his approach to Congressional leadership. The result of Kennedy's Congressional briefing was that many expressed displeasure with the lack of a more aggressive approach in the form of a full-blown invasion.²⁴²

Kennedy sculpted his administration's messaging focused on two key concerns: allied trust in future American protection abroad and Soviet reaction to the United States' actions. Addressing Congressional leadership's concerns regarding the lack of an immediate invasion, prior to his televised remarks to the American public, Kennedy retorted the following: "Khrushchev will seize Berlin and that Europe will regard Berlin's loss, which is of such symbolic importance [to Europe], as having been the fault of the United States by acting in a precipitous way. After all, they are 5 or 6,000 miles from Cuba and much closer to the Soviet Union. So these missiles don't bother them and maybe they should think it should not bother us. So that whatever we do in regard to Cuba gives him a chance to do the same in regard to Berlin."²⁴³ For Kennedy, the gravity of this situation was significant. The Soviet actions in Cuba had implications much more significant than protecting this tiny island state; Khrushchev needed Cuba to force his position in Berlin.

Following his Congressional update on 22 October, Kennedy addressed the American public via a primetime televised speech from the Oval Office. At the same moment Kennedy was in front of the TV cameras, he sent a direct telegram to Khrushchev, reaching out for the first time during the crisis outlining the United States' response.²⁴⁴ Acknowledging the gravity of their

²⁴² Also occurring on 22 October was the official establishment of the Executive Committee (EXCOM) by signing NSAM-196 to act as the sub-component of the National Security Council with the explicit intent of conducting to executive office oversight for the entire event: John F. Kennedy, "National Security Action Memorandum Number 196: Establishment of an Executive Committee of the National Security Council," (Office of the President, October 22, 1962), <https://www.jfklibrary.org/asset-viewer/national-security-action-memorandum-number-196>.

²⁴³ May and Zelikow, *The Kennedy Tapes*, 170.

²⁴⁴ John F. Kennedy, "Letter from President Kennedy to Chairman Khrushchev; Document #60, October 22, 1962.," in *Foreign Relations of the United States; Kennedy-Khrushchev Exchanges, 1961-1963*, ed. Charles S. Sampson, vol. VI, FRUS 1961-1963 (Washington, D.C.: United States Government Printing Office, 1996).

correspondence, Kennedy wrote, “I have not assumed that you or any other sane man would, in this nuclear age, deliberately plunge the world into war which it is crystal clear no country could win and which could only result in catastrophic consequences to the whole world, including the aggressor.”²⁴⁵

In Kennedy’s televised speech to the American people, he outlined the United States’ seven-part policy defining his courses of action in response to the Soviet activities in Cuba.²⁴⁶ Below, Table 4-2 outlines the policy along with the Escalation Level associated with each of the seven points. As seen in Table 4-2, Kennedy responded to the Escalation Level-3 actions of the Soviet placement of MRBMs on Cuba with an Escalation Level-4 activity through the initiation of the naval quarantine. Kennedy, knowing any war with the Soviet Union would turn nuclear, did not hesitate to raise the Escalation Level, thereby decreasing strategic stability. During 1962, no changes to nuclear capabilities occurred, making this a Type-II case, and as such there was no causal pathway between changes in nuclear capabilities and changes to strategic stabilities. This does not mean that strategic stability change did not occur, it most certainly did. Not significant enough to drive a change in the Soviet Union’s CRNC score, the missiles on Cuba did influence Kennedy’s actions as he built the United States’ response.

²⁴⁵ May and Zelikow, *The Kennedy Tapes*, 189.

²⁴⁶ Kennedy, *Public Papers of the Presidents of the United States*, 2:808.

Table 4-2: United States Responses to 1962 Soviet MRBMs on Cuba²⁴⁷

United States Policy	Associated Escalation Level
Initiation of naval quarantine	4
Increased surveillance	1
Respond to any nuclear missile launch from Cuba as a Soviet attack against the United States	2
Evacuated dependents and reinforce US Naval base in Guantanamo Bay	3
Call for meetings under the Organization of American States	1
Call for a meeting of the United Nation's Security Council	1
Call for Khrushchev to immediately halt movement of MRBMs into Cuba	1

In reaction to Kennedy's televised statement on 22 October, Khrushchev reiterated to Kennedy his earlier public proclamations that Soviet activity on Cuba was for defensive purposes. Furthermore, Khrushchev pushed back on the quarantine, specifically with a warning that any prohibition of movement through international waters would bring the potential for initiating a war that inevitably would turn nuclear between the two states. "The Soviet Government considers that the violation of the freedom to use international waters and international air space is an act of aggression which pushes mankind toward the abyss of a world nuclear-missile war."²⁴⁸ With the establishment of the quarantine in waters off the coast of Cuba, both Kennedy and Khrushchev appeared ready to annihilate one another.

²⁴⁷ May and Zelikow, *The Kennedy Tapes*.

²⁴⁸ Nikita Khrushchev, "Letter from Chairman Khrushchev to President Kennedy; Document #63, October 24, 1962.," in *Foreign Relations of the United States; Kennedy-Khrushchev Exchanges, 1961-1963*, ed. Charles S. Sampson, vol. VI, FRUS 1961-1963 (Washington, D.C.: United States Government Printing Office, 1996).

On the morning of 27 October, the situation in Cuba reached a boiling point. With the United States quarantine in place, sixteen Soviet military ships turned back to home ports, but a Soviet chartered ship under a Swedish flag had run through the quarantine line just the day before, docking in Havana.²⁴⁹ The actions of the Swedish-flagged ship made the United States question if Moscow knew where the quarantine line was or if they simply did not care. Low-flying reconnaissance missions over Cuba gave a dire picture. In San Cristobal and Sagua La Grande, five MRBM sites appeared to be operational, and the remaining sites not currently operational would be in short order.²⁵⁰ Returning reconnaissance pilots began reporting that Soviet military had taken control of the Cuban air defenses and a U-2 assigned to take pictures of the island had been reported missing after not returning to base as expected.²⁵¹

The CIA's analysis of the situation stated that "to be able to bring things to a head in Berlin before the end of the year, Khrushchev had quickly to rectify the imbalance in strategic striking power. By moving in an atmosphere of peaceful East–West relations, he hoped to establish a base inside the US warning network and present the US with a *fait accompli*. He undoubtedly expects some vigorous response from Washington, but felt the establishment of the nuclear sites was worth the risk."²⁵² Having been discovered before the sites were complete and all the missiles in place, Khrushchev would be denied the master plan of forcing the United States to a reckoning over the Berlin issue. However, because of the placement of Soviet missiles on Cuba, this period of time reached a high of Escalation Level-4 following the placement of the United States blockade. This

²⁴⁹ Central Intelligence Agency, "Memorandum: The Crisis USSR/Cuba; Information as of 0600," Memorandum (Washington, D.C.: Central Intelligence Agency, October 27, 1962).

²⁵⁰ Central Intelligence Agency.

²⁵¹ May and Zelikow, *The Kennedy Tapes*, 325.

²⁵² Central Intelligence Agency, "Memorandum: The Crisis USSR/Cuba; Information as of 0600."

raise in escalation level put the United States and the Soviet Union just one step away from complete termination of strategic stability and the initiation of war.

4.2.3 Part 3: 29 October to 31 December 1962

Looking to provide a statesman-like response to a boiling military problem, Kennedy turned to the missiles in Turkey as a potential solution to the problem of removing missiles from Cuba.²⁵³ From Kennedy's perspective, it was advantageous for the United States to offer the Turkish missiles as a sacrifice for the removal of the Cuban missiles since the Soviets had a 50% gain in nuclear capability by placing their MRBMs off the coast of Florida while the United States gained nothing with the Turkish missiles.

As depicted in Table 4-1, the Soviets had a small handful of missiles that could already reach the United States. Khrushchev's addition of the Cuba-based MRBMs dramatically increased the Soviet missile capability to reach the United States, but it still was not enough to bring both sides to CRNC equality. Prior to their installation, the Turkish Jupiter missiles were already outdated, and the United States already had a comparatively dominant bomber and ICBM force that could accomplish the same task of delivering nuclear capabilities if the need ever presented itself. In short, even with the MRBMs in Cuba and removal of the Turkish Jupiter missile squadrons, the United States still dominated with a much larger nuclear capability.

Anxious to stop his brinkmanship activities before "unintended disaster" became a reality, on Sunday 28 October, Khrushchev, wanting the fastest mode of delivery, chose to air the following message to Kennedy over Radio Moscow: "In order to complete with greater speed the

²⁵³ May and Zelikow, *The Kennedy Tapes*, 323.

liquidation of the conflict dangerous to the cause of peace, to give confidence to all people longing for peace, and to calm the American people, who, I am certain, want peace as much as the people of the Soviet Union, the Soviet government, in addition to previously issued instructions on the cessation of further work at building sites for the weapons, has issued a new order on the dismantling of the weapons which you describe as ‘offensive’, and their crating and return to the Soviet Union.”²⁵⁴

Khrushchev’s words, politically allaying the crisis at that moment, were not enough to terminate Escalation Level-4 with the United States since the missiles remained located and potentially mission-capable on Cuba. Beginning on 29 October, and in the weeks following Khrushchev’s public call to stand-down Soviet military operations in Cuba, the United States and the Soviet Union underwent continuous negotiations at the United Nations as a means of setting amenable bilateral terms of withdrawal from Cuba. During negotiations and United Nations verification of nuclear-capability removal, Kennedy kept the naval quarantine in place.

Highlighting the importance each side gave to ending the crisis, from 29 October to 20 November, Kennedy and Khrushchev exchanged eight communiques addressing the various issues associated with the withdrawal of Soviet military capabilities from Cuba. Kennedy offered reassurances of non-invasion coupled with the removal of the missiles from Turkey. Reciprocally, Kennedy wanted Khrushchev’s nuclear capabilities removed from the island. The missiles were the easiest to send back to the Soviet Union, but the primary sticking point was the removal of the IL-28 bombers, which the Soviet Union attempted to classify as a defensive capability afforded to the Cuban government.

²⁵⁴ May and Zelikow, 402.

Following the Soviets' agreement to remove the aircraft and the subsequent verification of departure, President Kennedy conducted a press conference on 20 November to announce his order to lift the quarantine of Cuba and return the requested 150,000 mobilized troops to ready reserve status.²⁵⁵ The Soviets gave in to the pressures put in place by Kennedy, and in doing so removed the missiles from Cuba, returning to a pre-crisis balance of power. With the termination of the quarantine and troop demobilization, strategic stability between the United States and the Soviet Union returned to what it had been before the call-up of reservists in September, Escalation Level-1 or full strategic stability.

4.3 Analysis

4.3.1 Dependent variable

Changes in strategic stability, occurring on three separate occasions during the Cuban Missile Crisis, transpired for several reasons. The first change in strategic stability happened during Part 1, prior to 16 October and before the United States found missiles on Cuba. The United States and the Soviet Union began in 1962 at Escalation Level-1, a state of full strategic stability where no militarized conflict was active. Elevating to Escalation Level 3 on 3 October, following Congressional approval for Kennedy to call-up 150,000 ready-reservists, strategic stability diminished closer to war. This degradation of strategic stability was driven solely by the Soviet troop build-up in Cuba and was not connected to any change in the balance of nuclear capabilities

²⁵⁵ Kennedy, *Public Papers of the Presidents of the United States*, 2:830.

(real or perceived), breaking the purported tight bond between changes in nuclear capabilities and changes in strategic stability.

Nuclear capabilities played a part in a separate Escalation-Level-3 event, serving as a bridge from Part 1 of the Crisis to Part 2. The U-2 photography of mainland Cuba captured on 14 October discovered the now famous nuclear-capable MRBMs. Shortly after discovering the missiles, Kennedy and his National Security Council responded by executing an elevated alert status among the military. This second Escalation-Level-3 incident, finding new nuclear-capable missiles on Cuba, reinforces for the first time the tight bond between changes in strategic stability and changes in nuclear capabilities. Based upon these two Escalation-Level-3 incidents, changes to nuclear capabilities appear to be sufficient, but not necessary, to change strategic stability.

The second change to strategic stability, transitioning from Escalation Level-3 to Escalation Level-4, occurred during Part 2 of the Crisis on 22 October when Kennedy established the naval quarantine around Cuba. Effectively a military blockade under a different name, the establishment of the quarantine instituted Escalation Level-4, further reducing the dyadic state strategic stability to a point just short of war and a complete absence of strategic stability. Between Escalation Level-3, justified through the discovery of MRBMs on the island during Part 1 of the Crisis, and the movement to Escalation Level-4, no significant new information developed.

Feeling justified in elevating the Escalation Level on 22 October in response to the crisis, Kennedy intended his actions to stop the inflow of troops and equipment into Cuba and force Khrushchev to the bargaining table. Khrushchev's tactic had been one of brinkmanship as a means of driving Kennedy's capitulation based on the perceived overwhelming Soviet force and a redefinition of the status quo. In return, Kennedy, in keeping with his mantra of gradual military

build-up and a flexible response, replied with a measured escalation in hopes of returning to the status quo. History proves that Kennedy chose a better path.

The third and final change in strategic stability, a return to Escalation Level-1, did not occur until after 28 October, when most historians mark the end of the Cuban Missile Crisis. President Kennedy required verification of the complete withdrawal of Soviet nuclear capabilities from Cuba before removing the quarantine. Confirmation of the removal of all nuclear capabilities occurred on 20 November following verification received by the United States from the United Nations. Only following assurances from the United Nations that all Soviet nuclear capabilities had departed Cuba did Kennedy decommission the naval quarantine and terminate the call-up of the 150,000 ready-reservists.²⁵⁶ Just as the discovery of Soviet military forces and subsequent nuclear capabilities on Cuba drove the initial movement to Escalation Level-3, decreasing strategic stability, the validation of their complete removal increased strategic stability while returning to Escalation Level-1.

4.3.2 Causal mechanisms

This section examines which factors connected changes in the balance of strategic stability with changes in the balance of nuclear capabilities throughout the Cuban Missile Crisis. If changes in strategic stability were tightly bound to changes in nuclear capabilities, then at least one or more existing theories of strategic stability should supply an adequate explanation. However, this is not the case. Changes to strategic stability occurred three times during 1962, over the course of four

²⁵⁶ Kennedy, 2:830.

separate incidents. The Cuban Missile Crisis was a Type-II case; variations in nuclear capabilities were not connected to changes in strategic stability using the capability–stability causal pathway.

Cuban Missile Crisis: Part 1

The first change in strategic stability on 3 October during the call-up of the ready-reservists, caused by what Kennedy perceived as a non-nuclear Soviet force build-up on Cuba, did not connect with any changes in nuclear capability that would have caused alarm to Kennedy. The last change in CRNC score occurred in 1960 with an increase in favor of the United States; no historical documentation has connected Khrushchev’s deployment decision into Cuba to the 1960 changes in the United States’ nuclear capabilities. The first change in strategic stability during the Cuban Missile Crisis cannot be connected to changes in nuclear capabilities or any existing theories.

Before 1962, both the United States and the Soviet Union had at least a minimal complement of capabilities in each of the three legs of the nuclear triad. Coupled with the Soviet doctrine of ‘first strike,’ the Soviet Union was already a formidable enemy before placing missiles on Cuba. On 18 October, Secretary McNamara was asked how nuclear weapons in Cuba change the military equation with the USSR. He responded with, “it is not a military problem that we’re facing. It’s a political problem. It’s a problem of holding the alliance together. It’s a problem of properly conditioning Khrushchev for our future moves. And the problem of holding the alliance together, the problem of conditioning Khrushchev for our future moves, the problem of dealing with our domestic public, all required action that, in my opinion, the shift in military balance does

not require.”²⁵⁷ Khrushchev’s motives were to drive a political message through the placement of missiles on Cuba, not to force each state into a nuclear war.

Khrushchev had political incentives to change the status quo with the United States. Before 1962, there had been three attempts to expel the Western powers from Berlin, one under Stalin in 1948, and two under Khrushchev in 1958 and 1961. Each had failed and the Western states, under the leadership of the United States, remained in Berlin, surrounded by Soviet controlled German territory. Placing nuclear missiles on Cuba, a different technique for forcing a fait accompli in Berlin, provided Khrushchev with the hopes of changing the status quo, dissolving the Potsdam Protocols, and expelling the Western alliance from Berlin.

Cuban Missile Crisis: Part 2

The second change in strategic stability occurred on 22 October, when Kennedy initiated the naval quarantine in response to the missiles on Cuba. This change was a further decrease in the dyadic state strategic stability, with the overall situation having transitioned from Escalation Level-3 to Level-4. The new change brought the United States and the Soviet Union to the edge of war and the potential demise of strategic stability through the tight binding of change of strategic stability to a change in nuclear capabilities.

There had been no significant new information or new threats driving the change from Escalation Level-3 from Part 1 to Kennedy’s decision to institute the quarantine, driving Escalation Level-4 in Part 2. What did change between 16 and 22 October was the strategy of the United States. Leading up to the televised announcement on 22 October was almost a week of internal maturations between Kennedy and his staff over the proper course of action. The Executive

²⁵⁷ May and Zelikow, *The Kennedy Tapes*, 84.

Committee, also referred to as EXCOM, had broken into two camps by 18 October, representing ‘hawks,’ those advocating for aggressive military action, and ‘doves,’ those looking for a peaceful or non-militarized response to the missile placements. Kennedy, credited for taking a measured approach, worked between both camps to develop the quarantine as a response to Khrushchev’s actions on the island of Cuba.

Cuban Missile Crisis: Part 3

The last change in strategic stability occurred on 20 November with Kennedy’s order to remove the naval blockade and cancel the call-up of the 150,000 ready-reservists. Although historians generally designate 28 October as the last day of the Cuban Missile Crisis, Kennedy continued the mobilization of reservists and the quarantine until he obtained verification that all Soviet nuclear capabilities had been removed from Cuba. Following the verified removal, Kennedy’s actions changed the Escalation Level from 4 to 1, enhancing strategic stability for the first time since the United States, suspicious of the Soviet military activity on Cuba over the summer of 1962, had called up the ready-reservists. As a Type-II case and assessed along the capability–stability causal pathway, this third change in strategic stability reinforces the lack of requirements to obtain nuclear capability variations in order to drive changes in strategic stability.

4.4 Conclusion

The Cuban Missile Crisis is still the quintessential Cold War case involving nuclear capabilities and changes to strategic stability. However, as a Type-II case, the Cuban Missile Crisis breaks the bond between variations in nuclear capabilities driving changes in strategic stability. Table 4-3 below shows the Cuban Missile Crisis broken into three separate stages. None

of the stages exhibited variations in nuclear capabilities while changes in strategic stability occurred.

Table 4-3: Analysis Summary: Cuban Missile Crisis, 1962

OBSERVED CHANGE	1962		
	CMC - 1/1 to 10/15	CMC - 10/16 to 10/28	CMC - 10/29 to 12/31
Nuclear Capability	N	N	N
Utility	/	/	/
Incentives	/	/	/
Strategic Stability	Y	Y	Y

Could the actual or threatened use of nuclear capabilities explain strategic stability changes occurring at the same time? As a Type-II case, the easy answer to this question is no, actual or threatened use of nuclear capabilities played no role in changes in strategic stability. Strategic stability was already reduced prior to 16 October through Kennedy’s call-up of ready-reservists. As a Type-II case, strategic stability did not change due to variations in nuclear capabilities. There were, however, perceptions that a significant change was afoot. This was the only instance in my research where perceptions, not quantifiable variations in nuclear capabilities, were the primary driver of changes in strategic stability. In this case, Kennedy’s perceptions of Khrushchev’s actions on Cuba, not actual nuclear capability changes, spawned a change in strategic stability.

Can changes in strategic stability during the Cuban Missile Crisis be explained by causal mechanisms other than variations in nuclear capabilities? Yes, as a Type-II case, the Cuban Missile Crisis exhibited changes in strategic stability over four instances outside of variations in the CRNC score. The Cuban Missile Crisis did not show an unadulterated representation of the effects that changes in nuclear capabilities had on strategic stability. When examining the four

incidents where strategic stability either did or potentially could have changed because of changes in nuclear capabilities, the first incident stands out as different from the others. The first incident, occurring on 3 October, exhibited changing strategic stability when Kennedy signed the public law allowing him the ability to mobilize the 150,000 ready-reservists. This act represented a shift from Escalation Level-1 to Level-3 as the troops mobilized, thereby reducing strategic stability. What made this strategic stability reduction unique was Kennedy's willingness to walk closer to war with the Soviet Union independently of any known changes to nuclear capabilities. Existing theories based on changes in nuclear capabilities cannot explain a change in strategic stability that does not originate from a change in nuclear capabilities.

Outside the scope of this dissertation, the 1962 Cuban Missile Crisis presents two tangential areas for further research. The first is whether the Soviet Union, specifically Khrushchev, intended to place the missiles on Cuba as a means of forcing a *fait accompli* in Berlin. Although presented in this chapter as the justification for the Soviet movements onto the island of Cuba, the evidence presented is circumstantial and potentially biased. All the evidence used in this chapter comes from sources based in the United States, such as the intelligence community, the former United States Ambassador to Moscow, Llewellyn Thompson, various members of EXCOM, and others. The circumstantial evidence is overwhelming, but direct evidence from Khrushchev and the Soviet Union is lacking. Understanding why the Soviet Union proceeded with such a bold move onto Cuba will provide a building block to identify state intentions during long-duration great power conflicts.

The second area for potential future research delves into a counterfactual examination of Kennedy's institution of SIOP-63 and his nascent flexible response strategy. The question is as follows: Had President Kennedy kept Eisenhower's massive retaliation doctrine, would the

breaking of the quarantine line by the Soviet chartered ship on 26 October have caused an armed response leading to general war? One of the goals of President Kennedy's flexible response strategy was the avoidance of an immediate reaction to aggression with general war, especially since each side knew such an undertaking would have meant certain nuclear annihilation. However, Eisenhower's strategy, on paper, was unforgiving and similar to Khrushchev's, leaving little room for gradual escalation with hopes of negotiated de-escalation. Comparing the actual events of the Cuban Missile Crisis, a confirmed case where variations in nuclear capabilities influenced strategic stability, with its counterfactual, would allow for a stronger comparison of the merits each nuclear strategy offered.

The Cuban Missile Crisis reflects the results found in the previous chapter; not all cases of dyadic state strategic stability changes were caused by variations in nuclear capabilities. Consistent with the findings from the last chapter, the historic tight bonding between changes in strategic stability and variations in nuclear capabilities requires relaxing to accommodate those instances where changes to strategic stability occurred outside of variations in nuclear capabilities. If this trend continues, as suspected, the cases in the following chapter will present the same conclusion regarding the necessity or sufficiency of nuclear capabilities in changes in strategic stability.

5.0 Post-Cuban Missile Crisis, 1963–1967

The years following the Cuban Missile Crisis, 1963–1967, continued to see both American and Soviet military challenges to strategic stability. This chapter examines changes to strategic stability in the dyadic state system immediately following the 1962 Cuban Missile Crisis and the causal mechanisms driving said changes. The analysis in this chapter weighs three Type-I cases against five changes in nuclear capabilities between the United States and the Soviet Union over five years as a means of continuing to investigate the causal connection between variations in nuclear capabilities and changes in strategic stability. Given the high number of variations in nuclear capabilities and the continued presence of strategic stability changes, this timeframe provides another data-rich opportunity to validate the capability–stability bond if one exists. Consistent with Chapters 3 and 4, the multiple causal mechanisms identified in each of the three cases contributed to this chapter’s analysis results, resulting in a continued reinforcement that nuclear capabilities are sometimes sufficient to cause changes in strategic stability but are not a necessary component.

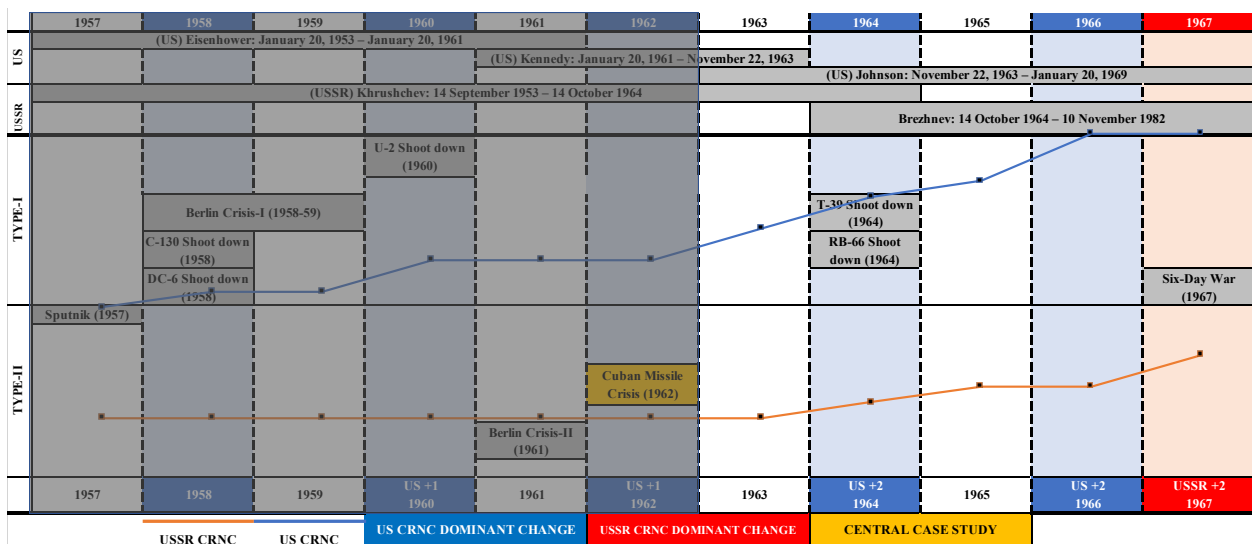
Unique to this chapter, only Type-I cases occurred between the United States and the Soviet Union between 1963 – 1967. Significant political changes occurred in both the United States and the Soviet Union, underpinning each of this chapter’s cases while spawning a new period of increases in nuclear capability. In the United States, the assassination of President Kennedy brought about the Johnson administration and a shift to the assured destruction policy, fueling nuclear capability growth. Across the globe, Khrushchev was forced from power and replaced by Brezhnev, a military hawk who saw the expansion of nuclear capabilities as imperative to keep up with the United States. In the midst of the political turmoil, the CRNC score increased for both

the United States and the Soviet Union during each of the five years examined in this chapter. Significantly, only three cases of strategic stability change occurred.

The unshaded area on the right of Figure 5-1 supplies an overview of the events reported in this chapter while providing context over the entire timeframe covered by this dissertation. Significant to the unshaded area of Figure 5-1 is the graphical representation of each case showing a change in strategic stability coupled with each variation in CRNC score. The CRNC changes that occurred without any associated changes in strategic stability emphasize the point that nuclear capabilities are sometimes sufficient to change strategic stability, but not necessary.

Finally, under the leadership of Brezhnev, the Soviet Union obtained its first CRNC score change in 1967. Throughout the entire timeframe, 1963–1967, the United States continued to dominate the Soviet Union with nuclear capability. However, in comparison to the years 1957–1962, the frequency of cases decreased while the rate of variation in nuclear capabilities increased. This divergence between cases and CRNC score changes drives a further wedge in the capability–stability connection.

Figure 5-1: Post-Cuban Missile Crisis in Context, 1963–1967



This chapter proceeds in three sections, which analyze three case studies that occurred between 1963 and 1967, immediately following the Cuban Missile Crisis. Section 5.1, Nuclear capabilities, provides an overview of each state's nuclear capabilities, growth that took place from the beginning of the timeframe to the end, and any significant changes in the CRNC score. Section 5.2, Case studies, provides details for each of the three cases, and process-traces the causal factors using existing theories of strategic stability. Finally, Section 5.3, Analysis and Conclusion, provides a summarized overview of the findings, looking across all of the cases; the section also presents a summary table showing how each case's data points classified against existing theories of strategic stability.

5.1 Nuclear capabilities

In the years following the Cuban Missile Crisis, both the United States and the Soviet Union made two significant changes to how they approached the nuclear competition. The first is that both states changed their nuclear policies to actively deter either side from making any moves that increased the risk of war. The second is that each state significantly increased its strategic nuclear ICBM productions, yielding CRNC scores that climbed aggressively. According to scholarship, during 1963–1967, each state's assertive approach to nuclear policy and nuclear capability expansion should yield a change to strategic stability occurring each time variance in nuclear capabilities arises. However, discussed later in this chapter, the promise of strategic instability as the result of nuclear capability variances never materialized.

Table 5-1 below outlines the relative nuclear capabilities for the United States and the Soviet Union between 1963 and 1967. As with Chapters 3 and 4, the score represented in Table

5-1 is a two-state comparative CRNC score based on relative values assigned to fielded nuclear payload capacities and strategic warheads. During the six-year timeframe covered in Chapters 3 and 4 (1957 – 1962), the CRNC score climbed twice, both times in favor of the United States and both by an increment of one. In a shorter period, 1963–1967, over five years with each side aggressively addressing strategic ICBM production, the CRNC score climbed five times, four times in favor of the United States, and, for the first time, once for the Soviet Union in 1967.

Table 5-1: US and USSR Nuclear Capabilities, 1962–1967²⁵⁸

		ICBM		SLBM		Bombers		CALCULATED SCORE		
		Payload Capacity	Strategic Nuclear Warheads	Payload Capacity	Strategic Nuclear Warheads	Airframe Payload Capacity	Strategic Nuclear Warheads	Relative Payload	Relative Warhead	Combined Relative Nuclear Capability
United States	1962	203	203	144	144	2920	3104	6	6	12
	1963	597	597	160	160	2855	3293	7	7	14
	1964	907	907	384	384	2953	3427	8	8	16
	1965	854	854	736	736	3013	3465	9	8	17
	1966	1004	1004	1264	1264	3043	3476	10	10	20
	1967	1054	1044	1552	1552	3192	3630	10	10	20
Soviet Union	1962	38	36	104	69	263	392	1	1	2
	1963	96	99	104	69	271	440	1	1	2
	1964	193	191	104	69	275	522	2	1	3
	1965	226	281	104	72	276	532	2	2	4
	1966	420	416	104	75	268	546	2	2	4
	1967	820	818	143	72	238	576	3	3	6

Nuclear capability growth in the United States between 1963 and 1967 outpaced that of the previous six years thanks to the policies ushered in by McNamara under the Johnson administration. Defining his concept of assured destruction, McNamara used the 1963 budget process to begin shaping American capabilities to “destroy, after a well planned and executed Soviet surprise attack on our Strategic Nuclear Forces, the Soviet government and military controls, plus a large percentage of their population and economy.”²⁵⁹ Table 5-1 shows aggressive

²⁵⁸ Podvig and Bukharin, *Russian Strategic Nuclear Forces*; Norris and Cochran, *US-USSR/Russia Strategic Offensive Nuclear Forces, 1945-1996*.

²⁵⁹ “Draft Memorandum from Secretary of Defense McNamara to President Johnson; Document 151, 6 December 1963,” 7.

nuclear capability growth for the United States during 1963–1967, including ICBM payload development from 597 in 1963 to 1,054 in 1967, and an increase in SLBM payload capacity from 160 in 1963 to 1,552 in 1967. The dramatic growth experienced by the United States in such a short period across ICBMs and SLBMs yielded two increases in CRNC score, both instances adding two points each. According to available scholarship, each instance of CRNC score change in 1964 and 1966 should have yielded changes in strategic stability. The reality is, however, that the 1966 CRNC score change went unanswered and did not have any associated changes in strategic stability.

The Soviet Union during the same 1963–1967 timeframe was just as aggressive in expanding its nuclear capability growth under the new direction of Brezhnev as the Americans had been under Johnson. The policies put in place under Brezhnev, focusing heavily on ICBM growth, initiated in the mid-1960s and carried the Soviet nuclear capability expansion well into the 1980s.²⁶⁰ The Soviet ICBM payload capacity growth was nothing short of impressive, increasing from 94 in 1963 to 820 in 1967. Over the five years considered, the Americans' 177% growth in ICBM payload capacity paled in comparison to the Soviets' 854% growth. Soviet nuclear capability growth during this timeframe also yielded the first increase in the Soviet CRNC score, increasing by two points in 1967. Under the leadership of Brezhnev, the Soviets put their full effort behind ICBM production in ways that Khrushchev never had and, in the process, started a path of growth that outpaced American efforts.

²⁶⁰ Catudal, *Soviet Nuclear Strategy from Stalin to Gorbachev*, 60.

5.1.1 Congruence Testing

Here, as in Chapters 3 and 4, congruence testing compared the details of each case against the hypothesis to determine if a state's nuclear capabilities were sometimes sufficient to cause changes in strategic stability but not a necessary component.²⁶¹ With three changes in the CRNC score, the 1963–1967 timeframe covered in this chapter should be fertile ground for DV changes caused by variations in the IV. However, this was not the case. With only three incidents of strategic stability change occurring during this timeframe and five variations in nuclear capabilities, it became quickly evident that not all variations in nuclear capabilities drove changes in strategic stability.

In 1963, 1965, and 1966, the CRNC score changed with no associated cases of change in strategic stability. The changing of CRNC scores without associated cases showing changes in strategic stability, was possibly due, in part, to the states' progression toward MAD throughout the 1960s, which reinforces the breaking of the capability–stability bond; although nuclear capability variations are sometime sufficient to change strategic stability, they are not necessary. With the highest number of nuclear capability changes and least number of cases showing change in strategic stability, the data presented in this chapter did not support tight causality between changes in strategic stability driven by changes in nuclear capabilities.

²⁶¹ George and Bennett, *Case Studies and Theory Development in the Social Sciences*, 181–204.

Table 5-2: Congruence Testing Case Stratification: 1963–1967

	Date	Case	CRNC	CRNC Favored	Rationale
TYPE-I	1964	T-39 Shoot Down RB-66 Shoot Down	+2	US	US continues to dramatically increase ICBM and SLBM production over the efforts of the USSR.
	1967	Israeli Six-Day War	+3	US	US increase in SLBM and Bomber available payload capacity and nuclear warhead availability.
TYPE-II					NONE

Using congruence testing against the three cases of strategic stability change during 1963–1967, Table 5-2 shows that all three cases passed and were labeled as Type-I cases. Used in the previous chapters, Type-I represents those cases where strategic stability occurred at the same time as nuclear capability variance, whereas Type-II cases are those where strategic stability changed but not at the same time as a variation in nuclear capability. No cases of strategic stability change occurred during the same timeframe that met the criteria as a Type-II case. Furthermore, the Israeli Six-Day War case, occurring in 1967, represents the first case to match to the first Soviet CRNC score change without an associated change in the United States’ CRNC score. The following section, organizing the cases according to their congruence testing typology, uses process tracing to examine each case to either confirm or deny the existence of the causal relationships suggested by the congruence testing results.

5.2 Case studies

In the years immediately following the Cuban Missile Crisis (1963–1967), three additional cases of change in strategic stability occurred.²⁶² Typological classifications resulting from

²⁶² Consisted with analysis performed in Chapters 3 and 4, as outlined in Chapter 2, Escalation Levels are the selected means of measuring the proximity of an event to full strategic stability or the absence of strategic stability

congruence testing between 1963 and 1967 determined all three cases were Type-I, each occurring at a time when changes in nuclear capabilities ensued. Similar to the previous analytical chapters, this section accomplishes three tasks: it presents historical data on each of the three cases of conflict, applies data from each case to process tracing, and finally conducts an in-case analysis.

The three cases presented in this section yielded twelve data points representing nine changes in strategic stability. Analysis of this data revealed two results. First, none of the twelve changes in strategic stability were traceable to variations in nuclear capabilities; all changes have explanations that are non-nuclear in nature. Second, during this timeframe, nuclear variations occurred on three separate occasions: in 1964, 1966, and 1967, whereas changes in strategic stability only occurred in 1964 and 1967. Furthermore, 1963, 1965, and 1966 were years of variation in nuclear capability without any associated changes in strategic stability. These three years alone break the causal pathway by having variations in nuclear capabilities occur without any follow-on strategic stability change.

Data analysis from this chapter revealed consistency with that reported in Chapters 3 and 4. Analysis of all three Type-I cases could not tie variances in nuclear capabilities with strategic stability change data points. Overwhelmingly, this chapter casts doubts on the existence of the tight bond between strategic stability and nuclear capabilities.”

manifested in interstate war. As previously outlined, thresholds defining each of the Escalation Levels are based on a ranking from 1, full strategic stability, to 5, the complete absence of strategic stability or interstate war.: Kahn, *On Escalation*; Carlson, “A Theory of Escalation And International Conflict”; Maoz et al., “The Dyadic Militarized Interstate Disputes (MIDs) Dataset Version 3.0.”

5.2.1 Type-I Cases

5.2.1.1 1964: T-39 and RB-66 border incursions

Following the Cuban Missile Crisis, a little over a year passed with no departure from Escalation Level-1 in the dyadic state system. Just as normalization settled in, however, issues surrounding tensions in East Germany began heating up. Over three months, the Soviet military took part in two separate acts of aggression against United States military planes, yielding three total service member deaths and three prisoner exchanges. By 1964, the Soviet government had communicated through their actions that they were willing to continue activities that could potentially draw each state closer to Escalation Level-5 and a complete lapse in strategic stability.

During the final week of January 1964, Soviet forces in East Germany shot down an American T-39 Sabreliner training jet in East-German airspace.²⁶³ During the flight, the T-39 aircraft drifted inside East-German airspace, drawing the attention of Soviet air defense forces. Immediately upon identifying the foreign aircraft, Soviet military forces launched fighters and shot down the errant training jet outside of Vogelsberg. Soviet officials instantly took the opportunity to label the flight hostile because it was a military aircraft that had crossed into East-German airspace and demanded the United States apologize for the overt border incursion by militarized forces. In response, the United States admitted to only an errant navigation error and publicly lambasted the willingness of the Soviet government to drive escalation levels higher haphazardly.²⁶⁴ By 30 January, the United States was able to gain access to the wreckage and

²⁶³ Jack Raymond, "U.S. Says Soviet Shot Down Jet," *New York Times (1923-Current File)*, January 30, 1964.

²⁶⁴ Ibid

recover the downed service members bodies, bringing this episode to a rapid conclusion and return to Escalation Level-1.

Just over a month after the January 1964 incident, on 10 March, another aircraft shootdown threatened the strategic stability between the United States and the Soviet Union. In this second incident, a United States RB-66 photoreconnaissance aircraft set out to fly an operational mission along the inter-German border when equipment malfunctions caused it to drift into East Germany.²⁶⁵ After identifying the suspect aircraft, Soviet fighters launched and immediately began the process to bring it down through force. Knowing the aircraft was about to be shot out of the sky, all three crewmembers ejected safely and were captured once they hit the ground. Held prisoner for 17 days, the crew's release only occurred after direct negotiations between the Soviet Union and the United States.²⁶⁶ As with the January incident, the Escalation Level between the United States and the Soviet Union returned to Escalation Level-1 following the release of the imprisoned aircrew.

Nuclear capabilities

Leading up to 1964, the CRNC score increased for the United States during a period of significant growth in missile platforms. Noteworthy for the size of growth that occurred, the 1964 growth represented the first time that substantial progress in nuclear capabilities led to a score

²⁶⁵ At the same time the RB-66 flew through the area, the Soviet military began demonstrating simulated nuclear attacks for high-level leadership. Based on documentation available, crossing the border was not intentional, and nothing explicitly links the RB-66 mission to the Soviet nuclear exercise. However, references in Peterson's work regarding this incident insinuate that the border incursion was an intentional aspect of this mission. Since Peterson's information is presented as undocumented conjecture, this incident is classified as an unintentional elevation of the Escalation Level. Peterson, "Maybe You Had to Be There: The SIGNIT on Thirteen Soviet Shootdowns of US Reconnaissance Aircraft"; Marcelle Size Knaack, *Encyclopedia of U.S. Air Force Aircraft and Missile Systems: 1945 - 1973*, vol. Volume II, Reference Series (Washington, D.C.: United States Air Force, Office of Air Force History, 1988), 429–30.

²⁶⁶ Arthur J. Olsen, "Soviet Returns 2 Downed Airmen," *New York Times (1923-Current File)*, March 28, 1964, ProQuest Historical Newspapers: The New York Times.

increase of 2 for either state. Data presented in Table 5-1 show that the United States, from 1963 to 1964, made significant increases in the number of fielded strategic nuclear missiles. Starting with an ICBM payload capacity of 597 in 1963, just one year later the United States added 310, yielding a total payload capacity of 907 in 1964. This pattern repeated itself with the payload capacity of SLBMs, starting with 160 in 1963, then 224 were added to bring the 1964 payload capacity of SLBMs to 384. On a much smaller scale, even the bomber capability increased between 1963 and 1964. Beginning with a payload capacity of 2,855 in 1963 and ending with 2,953 in 1964, bombers had 98 payload capacity slots added during this timeframe. Taking all three components of the nuclear triad together, the United States expanded its payload capacity by 632 during 1963–1964, justifying the significant jump in the CRNC score and Type-I designation for both shootdown cases.

Show in Table 5-1, to a smaller degree than the United States' nuclear capability growth, the Soviets increased ICBM and bomber assets along with an associated increase of one in their CRNC score in 1964. The Soviet ICBM payload capacity started at 96 in 1963 and grew by 97 in just one year to 193 in 1964. During the same timeframe, bomber payload capacity only increased by four. Although this ICBM payload capacity growth was small in comparison to the United States, it is notable for the Soviets as the first of many high production years, where the increase in nuclear capability grew from the previous year.

Strategic stability

Undoubtedly, the strategic stability changed with both 1964 shootdowns. Examination of the case details showed that not only did the strategic stability change multiple times, but the changes followed the same pattern as the 1958 shootdowns of the DC-6 and C-130 as well as the

1960 U-2 shootdown.²⁶⁷ Consistent with the previous shootdown cases, the details of both the T-39 and RB-66 shootdowns followed the same pattern of heightened Escalation Levels driven by nonhostile United States border incursions prompting Soviet militarized responses. Resumption of full strategic stability occurred in all cases following a period of political negotiations or public apologies. In all the shootdown cases presented in this dissertation, especially the T-39 and RB-66 cases outlined in this chapter, the actions of the United States, either intentionally or unintentionally, drew hostile fire from the Soviet military resulting in a momentary decline in strategic stability.

The first change in strategic stability for both the T-39 and RB-66 cases was the United States' unintentional border incursion into East-German territory. The crossing of the border, constituting an Escalation Level-4 event, drew an immediate identification of the intruders by Soviet forces and launching of a Soviet militarized response. Spawning a second Escalation Level-4 event, the Soviet militarized response in both cases involved shooting down the aircraft. The United States' actions of border incursion acted as the causal node, yielding an armed Soviet militarized response.

Finally, following the two Escalation Level-4 events, a return to Escalation Level-1 occurred following the intervention of diplomacy for the return of either the remains of the service members, as in the T-39 case, or the return of the living RB-66 aircrew. In both cases, tensions melted between the United States and the Soviet Union, resulting in the reinstatement of full strategic stability.

Case Analysis

²⁶⁷ See Chapter 3 for details on each of these cases

The 1964 shootdowns of the T-39 and RB-66 followed the precedent established during similar type cases that occurred in 1958 and 1960. The pattern begins with peaceful strategic stability broken during a border incursion by aircraft from the United States. This Escalation Level-4 event drew a militarized Soviet response, and then a second Escalation Level-4 event, resulting in a shootdown. Restoration of full strategic stability, Escalation Level-1, followed a brief period of heightened tensions at Escalation Level-4, and then state-level diplomacy occurred, resulting in a transfer of casualties or prisoners.

Was a causal mechanism from an indicator of strategic stability identified? Nuclear capabilities in 1964 increased for the United States, triggering the significant capability gap between the two states to grow even larger, placing the Soviets further behind. This significant shift in nuclear capabilities, if theories are correct, should have been part of the causal pathway leading to a change in strategic stability. However, examining both the T-39 and RB-66 shootdown cases, no causal mechanisms for any of the indicators of strategic stability match either case. Both cases are credited to unintentional aircrew errors causing Soviet and East-German troops to perceive American military aircraft as hostile in nature, and the errant turns that brought the aircraft into East-German airspace and the resulting shootdowns.²⁶⁸ The T-39 and RB-66 shootdowns differed from the Type-I 1960 U-2 shootdown in that no connections to nuclear capabilities were clear. Classification for both cases was non-nuclear, based on evidence suggesting errant aircrew actions.

²⁶⁸ Peterson, "Maybe You Had to Be There: The SIGNIT on Thirteen Soviet Shootdowns of US Reconnaissance Aircraft," 37.

5.2.1.2 1967: Israeli Six-Day War

Whereas the confrontation between the United States and the Soviet Union led to multiple exchanges of direct hostilities, the states' interactions during the 1967 Israeli Six-Day War started indirectly. Nestled firmly amid unfriendly neighboring states, Israel found itself in the summer of 1967 preparing for an offensive operation on two fronts. Backed loosely by the United States, Israel was preparing for a confrontation in the south with Soviet-backed Egypt, and to the north with Syria and Jordan.

Beginning in 1950, Egypt closed access to the Straits of Tiran, provoking Israel in 1956 into an attack on the Sinai Peninsula. In return for renewed access to the straits, Israel agreed to withdraw from the Sinai and a tenuous peace ensued. Eleven years later, in May 1967, Egypt announced a new closure to the Straits of Tiran, compelling Israel to respond similarly to the way it had done in 1956.

On 23 May 1967, upon indications of heightened tensions in the Middle East, the United States dispatched the USS Liberty, an electronics intelligence gathering ship, to observe any potential conflict by taking up watch in the Mediterranean Sea off the coast of Israel.²⁶⁹ Moscow, seeing both the interest from the United States and the actions of Israel, began a public campaign to lay the blame for any hostilities on the shoulders of Jerusalem.²⁷⁰ Before the USS Liberty's arrival on station during the morning of 5 June 1967, Israel began successful and devastating military operations both on the Sinai Peninsula against Egyptian forces and in the north against Syrian and Jordanian troop emplacements near the Golan Heights. Using the established 'hotline'

²⁶⁹ Schnabel, Watson, Condit, and Poole, *History of the Joint Chiefs of Staff*, 9:175.

²⁷⁰ Peter Grose, "Moscow Blames Israelis in Crisis," *New York Times (1923-Current File)*, May 24, 1967, 117434258, ProQuest Historical Newspapers: The New York Times with Index.

between Washington, DC and Moscow, President Johnson began direct communications with Soviet Chairman Kosygin as a means of reducing potential miscommunications regarding each superpower's actions in the region.²⁷¹

On the morning of 8 June 1967, the USS Liberty arrived in the Mediterranean Sea, setting anchor 15 miles off the coast of Israel. Israel commenced attacks on the USS Liberty in the early afternoon with fighter jet strafing runs followed up by multiple torpedo boat attacks. The Israeli government, amid confusion and fog of war on land, claimed to have mistaken the USS Liberty for an Egyptian naval vessel of war.

Israel's mistake cost the United States the lives of 34 sailors and wounded another 171. Johnson used the hotline to Moscow following the attack to inform Kosygin that the United States was redirecting the Sixth Fleet to the region in order to establish control. The Soviet Union, reacting to the movement of the United States' Sixth Fleet, proceeded with a movement toward Escalation Level-2 by threatening direct involvement in the region on 10 June 1967. The Soviet threat to interject themselves in the Mediterranean drove the Chairman of the JCS, General Earle Wheeler, to consider an additional increase to Escalation Level-3 by composing orders directing the United States airborne nuclear forces under Strategic Air Command (SAC) to initiate an airborne alert posture.²⁷² Simultaneously to both the actions of the Soviets and General Wheeler, the Israelis independently initiated a ceasefire with the Egyptians. Upon consultation with the

²⁷¹ The "Hotline" was established in the wake of the Cuban Missile Crisis. In June 1963, Khrushchev and Kennedy instituted a hotline, or direct line of communications, between the White House and the Kremlin as a means of decreasing tensions during times of crisis, cutting time when each needed to communicate with the other.: Khrushchev, "Chapter 10: The Military-Industrial Complex, 1953-1964."

²⁷² Schnabel, Watson, Condit, and Poole, *History of the Joint Chiefs of Staff*, 9:175.

Service Chiefs, Wheeler never executed the SAC alert and, with Israel's ceasefire in place, the Escalation Level between the Soviet Union and the United States returned to Level-1.

Nuclear capabilities

Data presented in Table 5-1 highlights the 1967 Israeli Six-day War as the very first time the Soviets increased their CRNC score while the Americans, with a CRNC score almost three times greater, remained the same from the year prior. The United States made only a minimal ICBM growth from 1966 to 1967 as the payload capacity of the weapon system increased by only 50. Furthermore, the SLBM payload capacity for the United States during this same timeframe increased notably to 1,552 from 1,264 in 1966, an increase of 288. Finally, American bombers increased their payload capacity by 149 from the year prior, totaling 3,192 in 1967.

Payload capacity and strategic nuclear warheads for the Soviets finally increased enough to push the CRNC score higher by two, the first time this had occurred since 1957. Prior to this point, the Soviets had not been able to sufficiently increase manufacturing to add nuclear capability, resulting in a CRNC score increase. The increase in Soviet capability was not enough to bring parity with the United States, as the Soviets lagged by seven CRNC score points, signifying continued American supremacy.

Strategic stability

The 1967 Six-Day War has become known as a war fought through proxies, with the United States aligning itself with Israel while the Soviet Union supported Egypt.²⁷³ Making this particular conflict unique is the indirect nature in which the United States and the Soviet Union

²⁷³ The Soviet Union, in addition to being political allies to Egypt, prior to the 1967 Six-Day War, also provided Egypt with military hardware.: Asaf Siniver, ed., *The Yom Kippur War: Politics, Legacy, Diplomacy* (New York: Oxford University Press, 2013), 2; Foy D. Kohler, Leon Gouré, and Mose L. Harvey, *The Soviet Union and the October 1973 Middle East War: The Implications for Detente*, Monographs in International Affairs (Coral Gables, Fla.: Center for Advanced International Studies, University of Miami, 1974), 30.

interacted with one another. The United States, following the bombing of the USS Liberty, was already in the midst of a complex international crisis with Israel but faced greater complications following the interjection of the Soviet Union as it interjected with the idea it was going to bring stability to the chaotic events in Israel.

Strategic stability between the United States and the Soviet Union, resulting from the forced involvement of the Soviet military, changed three times. The first change to strategic stability occurred on 10 June 1967 when the Soviets threatened involvement in the region after learning the Americans were sending the USS Liberty to observe the situation from the Mediterranean Sea. Had the Soviets become involved in the Arab–Israeli conflict, the United States would have come in on the side of the Israelis. The Soviet threat of bringing instability to the region, insinuating a militarized response, translated to an Escalation Level-2 event.

The second change to strategic stability, a shift to Escalation Level-3, occurred without the knowledge of the Soviet military. General Wheeler began the process of generating SAC forces in preparation for conflict with the Soviets while also providing orders to his staff for the initial phases of battle preparation.²⁷⁴ Although all the actions directed by Wheeler were put into motion, justifying an Escalation Level-3 designation, almost everything stayed internal. Two hours after initiating the planning process for conflict with the Soviet Union, the Israelis started a ceasefire. The cessation of hostilities by the Israelis against the Egyptians brought the conflict to a close, defusing the American–Soviet tensions and returning strategic stability to Escalation Level-1.

²⁷⁴ Schnabel, Watson, Condit, and Poole, *History of the Joint Chiefs of Staff*, 9:175.

Case Analysis

Analysis of the 1967 Six-Day War reveals that nuclear capability variations did not play a part in changing strategic stability. The first change in the Escalation Level was brought about by the Soviets threatening to interject militarily in the Arab–Israeli conflict. The second Escalation Level change occurred as the Americans prepared for war, and the third was a return to full strategic stability following the Israeli move to a ceasefire. All three Escalation Level changes can be explained through means other than variations of nuclear capabilities.

Did any indicator of strategic stability predict the outcome of the cases? Three changes to strategic stability occurred, but none could be tied back to variations in nuclear capabilities or the indicators of strategic stability causal mechanisms. Without any connection to the causal mechanisms, none of the indicators of strategic stability predicted the outcome of the cases.

The 1967 Israeli Six-Day War marks the first time a change in strategic stability occurred when variations of Soviet nuclear capabilities outpaced those of the United States. Facts and analysis from the war revealed no connection between variations in Soviet nuclear capabilities, represented through the CRNC score increase, and the three changes to strategic stability. Since the causal mechanisms for this case do not align with nuclear capability variances, the non-nuclear column provides the best explanation for each change in strategic stability.

5.3 Conclusion

During the 1963–1967 timeframe, variations in nuclear capabilities did not change strategic stability. Both the United States and the Soviet Union aggressively expanded their nuclear capabilities, resulting in five CRNC changes. If variations in nuclear capabilities drive changes in

strategic stability, this would have been an easy period in which to prove the connection exists. The cases presented in this chapter did not support the capability–stability connection. Across all three cases, nine changes to strategic stability occurred, but none were credited to changes in nuclear capabilities. Below, Table 5-3 shows each of the three cases presented in this chapter according to the results from congruence testing and evaluated against accepted theories of strategic stability.

Table 5-3: Analysis Summary: Post-Cuban Missile Crisis, 1963–1967

OBSERVED CHANGE	1963	1964		1965	1966	1967
	NO INCIDENTS	T-39 Shoot Down	RB-66 Shoot Down	NO INCIDENTS	NO INCIDENTS	Israeli Six-Day War
Nuclear Capability	Y	Y	Y	Y	Y	Y
Utility	/			/	/	
Incentives	/			/	/	
Strategic Stability	/	Y	Y	/	/	Y

Consistent with Chapters 3 and 4, an examination of each case resulted in the discovery of multiple changes in strategic stability under the guise of a single case. Also consistent with previous chapters, some changes in strategic stability occurred laterally. Lateral strategic stability changes resulted from a second event occurring during a case yielding an equal Escalation Level from the preceding one.

5.3.1 Hypothesis Comparison

Hypothesis 1 stated that actual or threatened use of nuclear capabilities explain strategic stability changes occurring at the same time. All three Type-I cases were not attributable to either

a threatened or actual use of nuclear weapons and therefore this hypothesis was invalid. The 1964 shootdown causes were navigational errors, not anything closely related with actual or threatened use of nuclear capabilities. Likewise, the 1967 Six-Day War was caused by a disagreement between Israel and Egypt where the United States and the Soviet Union were only tangentially involved. The 1967 returned to Escalation Level-1 followed the movement toward peace made by the Israelis and before the Soviet Union could become involved militarily. Of all nine changes to strategic stability during 1963–1967, none were associated with actual or threatened use of nuclear capabilities.

Can strategic stability be explained through the perceived or actual incentives received by the state and occurring at the same time? In the cases covered between 1963 and 1967, no changes in strategic stability could be attributed to perceived or actual incentives received by the state causing variations in nuclear capabilities. None of the actors in the three case studies outlined in this chapter used nuclear capabilities, or changes in nuclear capabilities, to justify changes in strategic stability.

Can changes in strategic stability between 1963 and 1967 be explained by causal mechanisms other than variations in nuclear capabilities? In none of the three cases outlined in the chapter do variations in nuclear capabilities connect to changes in strategic stability through the causal mechanisms hypothesized by scholars who have asserted such a connection. Process-tracing the 1964 shootdown cases highlighted errant navigation issues as the causal mechanism that resulted in immediate elevation to Escalation Level-4 when the United States' aircraft was shot down over East Germany. During the Six-Day War, the Soviet threat of direct involvement following the commitment of the United States' Sixth Fleet coupled with American General Wheeler's generation of SAC personnel and equipment both increased the Escalation Level while

simultaneously decreasing strategic stability. The changes to strategic stability were not caused by variations in nuclear capabilities by either the United States or the Soviet Union, but rather by a host of non-nuclear activities.

Finally, the cases in this chapter and the subsequent analysis spawn three questions for future research. The first is whether by 1967 a normative prohibition on the use of nuclear weapons had developed. The lack of nuclear-weapon use in the midst of episodes of strategic instability prior to 1967 feeds into Nina Tannenwald's nuclear taboo theory.²⁷⁵ Implied in this question is that consistent and multiple conflicts occurred within the dyadic state system between 1957 and 1967, although no conflicts spawned the use of nuclear weapons, despite proliferation and availability.

The second question is whether nuclear weapons still hold a preeminent and unique status among policymakers today.²⁷⁶ Contemporary news headlines questioning the need for a functioning nuclear triad, or the price tag of modernization in the face of peer competitors, call into question the importance that nuclear capabilities have today.

The third and final question is whether the nuclear taboo, if it does exist, translates to new weapons of technological mass destruction.²⁷⁷ The CRNC score for both the United States and the Soviet Union changed each year, five times, during this chapter's timeframe, but only nine changes in strategic stability occurred across three cases in two years. As a relatively new technological weapon, neither state was willing to use the massive destruction power of its nuclear arsenal.

²⁷⁵ Nina Tannenwald, "The Nuclear Taboo: The United States and the Normative Basis of Nuclear Non-Use," *International Organization* 53, no. 3 (1999): 433–68.

²⁷⁶ Schelling, *Strategy of Conflict*, Appendix A.

²⁷⁷ Gartzke and Lindsay, "Thermonuclear Cyberwar."

6.0 Conclusion

This dissertation questions existing scholarly assumptions that variations in nuclear capabilities cause changes in strategic stability. Challenging the tight capability–stability coupling, this research used qualitative case study methods to examine the highly volatile dyadic nuclear state interactions between the United States and the Soviet Union from 1957 to 1967, a period when confrontation between the nuclear powers was most likely. This chapter offers a summary of the findings previously outlined across the ten cases examined in Chapters 3 through 5, representing twenty-nine individual changes to strategic stability.

At the core of this dissertation is the following question: Are variations in nuclear capabilities both necessary and sufficient to drive changes in strategic stability? To examine the capability–stability connection, this dissertation used a two-step qualitative case analysis process. The first step identified periods of variations in nuclear capabilities on either side of the dyadic state complex. Process-tracing techniques were used as a means of identifying causal mechanisms during instances of strategic stability change identified as occurring concurrently with periods of nuclear capability variations. Analysis of the research conducted found that only three out of twenty-nine instances of strategic stability change were attributable to variations in nuclear capabilities.

6.1 Findings

This section critically summarizes the causal chain from nuclear capability variations to strategic stability change. Figure 6-1 describes the capability–stability causal chain implicit in existing scholarship. The causal chain begins with variations in nuclear capabilities, a numerically represented summation of strategic nuclear warheads and launch vehicle payload capacity. For those cases with calculated nuclear capability changes, the causal chain moves onto changes in utility. The utility component describes the possible usage state leaders leverage on nuclear capabilities, represented either offensively through brinkmanship or defensively through deterrence. For states showing changes in utility, the next step in the causal chain measures changes in incentives for those states. The incentives encompass both political stability and crisis stability. State leaders pursuing incentives cause changes in strategic stability. The escalatory actions taken by one or both states as they moved to or from war affords a tool of measurement of changes to strategic stability, originating from variations in nuclear capabilities.

If the causal chain developed from strategic stability research is accurate, instances of change in strategic stability would start at variations in nuclear capabilities. Next, instances of strategic stability change would continue to decrease as determinations of changes in utility occur. Finally, a further decrease in instances of strategic stability change would occur as deviations in incentives are determined. After conducting each of the first three stages of this causal chain, only cases showing variations in nuclear capabilities driving changes in strategic stability would remain.

Figure 6-1: Capability–Stability Causal Chain



Using the analysis found in Chapters 3 through 5, case details were applied to the causal chain, determining how many cases had a connection between variations in nuclear capabilities driving changes in strategic stability. The results from this analysis revealed that only two Type-I cases met all phases of the causal chain. However, all seven Type-I cases and all three Type-II cases had changes in strategic stability, regardless of variations in nuclear capabilities.

Nuclear capability variations occurred often during the 1950s and 60s. Table 6-1 below contains data showing CRNC scores from 1957 to 1967; numbers annotated with (*) denote instances where the state CRNC score changed from the year prior. The years 1964 and 1965 appear to be unique in so far as the CRNC for both the United States and the Soviet Union increased at the same time. However, during 1964, the United States CRNC score change of +2 was proportionately greater than the USSR's CRNC change of +1. The eleven years represented in Table 6-1 yielded only four years where no change in strategic stability occurred and seven where a measurable change could be observed. Had existing assumptions been correct in tightly binding changes in nuclear capabilities with changes in strategic stability, every year where nuclear capabilities changed, a corresponding change in strategic stability should have also occurred. This assumption did not hold true in 1963, 1965, and 1966 when variations in nuclear capability occurred without any corresponding changes in strategic stability. Furthermore, in 1957, 1961, and 1962, changes in strategic stability occurred without any corresponding variations in nuclear capabilities.

Table 6-1: US vs. USSR Nuclear Capability Score Comparison

United States		Soviet Union
9	1957	2
10*	1958	2
10	1959	2
12*	1960	2
12	1961	2
12	1962	2
14*	1963	2
16*	1964	3*
17*	1965	4*
20*	1966	4
20	1967	6*

* Denotes state changing nuclear capability

The analysis conducted over the course of this dissertation revealed that variations in nuclear capabilities were never necessary and only sometimes sufficient to drive changes in strategic stability. The results from my research run contrary to those of existing scholarship that have held that variations in nuclear capabilities are both necessary and sufficient for changes in strategic stability. The point where my research diverged from existing scholarship on this topic was found in the number of years where either variations in nuclear capabilities occurred without any corresponding changes in strategic stability, or where strategic stability changes occurred without any prodding from varying nuclear capabilities. The fact that changes in nuclear capabilities were only sometimes sufficient to cause, and explain, changes in strategic stability suggested that any relationship between the variables was quite weak indeed.

Nuclear capability variations

Not all years with changes in nuclear capabilities had corresponding changes in strategic stability. Three years, 1963, 1965, and 1966, all had variations in nuclear capability occur but did not have corresponding changes in strategic stability. Moreover, years when nuclear capabilities did not vary, changes in strategic stability still occurred. Over the course of 1957, 1961, and 1962,

nuclear capabilities did not have any measurable variations, yet changes in strategic stability still occurred.

Validating the capability–stability connection prevalent in available scholarship resulted in congruence testing being applied to all examined cases between 1957 and 1967. According to modern research, each of the ten cases researched for this dissertation should be classified as Type-I, superficially representing a connection between capability and stability. However, this was not the case. Three cases that occurred in 1957, 1961, and 1962 had to be designated as Type-II following analysis showing the lack of ability to anchor changes in strategic stability to variations in nuclear capabilities. Only the seven Type-I cases continued onto process-tracing analysis as a means of seeking a capability–stability connection. The congruence testing allowed for the first cut to be made among all ten cases and provided the first indication that nuclear capability variations were not necessary and only sometimes sufficient to change strategic stability.

Utility changes

Changes in utility refer to how states with varied nuclear capabilities had the ability to drive changes in strategic stability. Specifically, scholarship points to varied nuclear capabilities manifesting in a states' ability to change strategic stability through two distinct avenues: brinkmanship and deterrence. States wanting to use varied nuclear capabilities as a means of changing the status quo, through capitulation while instilling a mutual risk of war, will engage in brinkmanship.²⁷⁸ Likewise, states looking to use varied nuclear capabilities as a means of maintaining the status quo through dissuasion rely on deterrence.²⁷⁹

²⁷⁸ Kroenig, “Nuclear Superiority and the Balance of Resolve”; Schelling, *Arms and Influence*; Powell, “Nuclear Brinkmanship, Limited War, and Military Power”; Kahn, “Escalation as a Strategy”; Williams, *Crisis Management*.

²⁷⁹ Wohlstetter, “The Delicate Balance of Terror”; Goldstein, *Deterrence and Security in the 21st Century*; Mazarr, “Perspective: Understanding Deterrence”; Mearsheimer, “Nuclear Weapons and Deterrence in Europe,” 19.

Of the seven Type-I cases analyzed in this dissertation, only two represented actual changes in utility, which then led to confirmed cases where strategic stability change could be traced back to a nuclear capability variation. In both cases, changes occurred when either deterrence or brinkmanship drove changes in the incentives to use nuclear means. The result was a change in strategic stability.

The 1958 Berlin I case exemplifies brinkmanship resulting from changes in the United States' nuclear capabilities. During 1958, the United States had a quantified increase in nuclear capabilities, driving a CRNC change of +1, while the Soviet Union did not change at all. Additionally, beginning in 1957, Secretary of State Dulles began pushing to enact with NATO allies Eisenhower's policy of placing nuclear-capable missiles in Europe, which contributed to Khrushchev's decision to shut down access to Berlin and means of attempting to push the Western states out of the city.²⁸⁰ In response to the shutting down of Berlin, Eisenhower began a public campaign of pushing back on Khrushchev to the point of threatening war. Out of view from the public, Eisenhower continued his threats of war by approving a war plan focused solely at dealing with the Soviet Union's closure of Berlin.²⁸¹

The brinkmanship that ensued after the Soviets cut off American and Allied access to Berlin increased the potential for war, which would have turned nuclear. In the Berlin I case, the Americans had the ability to start a war with the Soviets over access to Berlin not only through the local conventional forces but also the newly strengthened strategic nuclear forces. By 1959, Eisenhower had at his disposal new ICBMs with the ability to strike the Soviet mainland from the

²⁸⁰ Watson, *Secretaries of Defense Historical Series; Into the Missile Age, 1956-1960*; Schnabel, Watson, Condit, Fairchild, et al., *History of the Joint Chiefs of Staff*.

²⁸¹ Slusser, "The Berlin Crisis of 1958-59 and 1961."

continental United States. Additionally, Eisenhower adopted a set of graduated attack plans that included the ability to use nuclear capabilities to counter the Soviet aggression.²⁸² Likewise, the Soviets had the ability to start a war with the Americans over access to the city while also having the ability to drive a crisis within the West German population if they decided to halt food and supplies over a longer period of time.

In 1959, the American CRNC score grew, increasing their ability to stand up to potential Soviet aggression in Berlin. The Soviets responded to the bolstered American arsenal through brinkmanship, risking war through imposing a blockade on the city. The American CRNC score increase drove the Soviets to enact a brinkmanship scenario, mutually heightening the risk of war, as each had the ability to escalate the tensions and make the situation worse.

In 1960, the United States, believing an international gap existed with the Soviet Union in the numbers of nuclear weapons and available missiles, continued increasing nuclear capabilities, resulting in an elevated CRNC score of +2 from the year prior.²⁸³ The American government wanted the ability to keep the Soviet's from attacking but did not have the appropriate information to determine whether current nuclear capabilities were sufficient to deter a potential Soviet attack. The United States expanded nuclear capabilities blindly while in pursuit of the Soviet Union's unknown arsenal.

Eisenhower's fear of a potential missile gap resulted in his initiating brinkmanship-like behavior. To confirm the ability to deter the Soviets, the United States in 1960 authorized the high-flying U-2 spy plane to overfly the Soviet Union as a means of gathering intelligence.²⁸⁴

²⁸² Slusser; Lockwood and Lockwood, *The Russian View of U.S. Strategy*.

²⁸³ Director of Central Intelligence, "National Intelligence Estimate, NIE 11-8-59, Document #88, 9 February 1960."

²⁸⁴ Peterson, "Maybe You Had to Be There: The SIGNIT on Thirteen Soviet Shootdowns of US Reconnaissance Aircraft."

Wanting to keep the status quo and verify what needed to be done to deter the Soviets going into the future, the United States' leadership decided to encroach the sovereign borders of the Soviet Union, driving an armed response.²⁸⁵ Information gathered from previous U-2 flights began painting a picture that the suspected missile gap did not exist and the United States obtained a sizable lead over the Soviet Union. The significant American lead in strategic missiles and nuclear warheads bolstered the ability of the United States to keep the Soviets at bay and maintain the status quo.

The remaining five Type-I cases did not represent changes in utility, breaking the capability–stability bond for these cases. The 1958 and 1964 DC-6, C-130, T-39, and RB-66 United States aircraft shootdown cases all represent instances of heightened Escalation Levels and decreasing strategic stability. The 1967 Israeli Six-Day war case was not initiated by changes in nuclear capabilities either; the United States arrived off the coast of Israel to observe the conflict before being erroneously attacked. However, unlike the Berlin I and U-2 cases highlighted above, the causal mechanisms driving each of these cases were unintentional mistakes and not intentional actions taken by one government against another. Although each of the Type-I shootdown incidents decreased strategic stability, these five cases did not decrease strategic stability due to changes in nuclear capabilities.

Incentive changes

For the two cases driving changes in the states' utility, did the nuclear-capability variation change the incentives each set of leaders had to change strategic stability? The closing off of Berlin by the Soviets was an attempt to change the status quo in response to the United States'

²⁸⁵ Troyanovsky, "Chapter 9: The Making of Soviet Foreign Policy."

policy to place nuclear-capable missiles in Europe and another attempt to end the continued occupation of West Berlin by France, Great Britain, and the United States. The enhanced nuclear capabilities of the United States bolstered the incentives for the Soviets to draw an end to American occupation of West Berlin.

The United States sought to maintain the status quo in Germany. Supported by NATO alliance members abroad and faced with an expanding nuclear capability at home, the Americans pushed back on the Soviet Union through various threats of war. Prior to the Berlin I incident reaching crisis instability, both the United States and the Soviet Union sought political stability through the 1959 Geneva Conference. The Geneva conference did not yield tangible results as Khrushchev continued to advocate for the United States to remove the missiles promised to NATO partners.²⁸⁶ However, a cooling of tensions occurred when Eisenhower invited Khrushchev for a tour of the United States.²⁸⁷ Following Eisenhower's invitation to Khrushchev, the Berlin crisis subsided and the status quo in Germany resumed.

The changes in utility during the U-2 shutdown case resulted in a change in incentives for the United States. Research into the potential nuclear capability gap caused the United States to encroach on Soviet borders while Eisenhower believed he was far behind in both growth and development. Changes in utility resulting from the U-2 shutdown case resulted in Eisenhower's push to obtain political stability with the Soviet Union, where he promised Khrushchev that the United States would cease border violations through Soviet territory flyovers.

Strategic stability change

²⁸⁶ Slusser, "The Berlin Crisis of 1958-59 and 1961."

²⁸⁷ Slusser; Schnabel, Watson, Condit, Fairchild, et al., *History of the Joint Chiefs of Staff*.

The only two Type-I cases in which changes in nuclear capabilities drove changes in strategic stability are the Berlin I and the U-2 case. However, following this study's analysis, the reality of each Type-I case was that while each had variations in nuclear capabilities in addition to changes in strategic stability, the IV was not associated with the identified DV. The causal chain outlined did not apply to the majority of the Type-I cases. In each of the five Type-I cases outside of Berlin I and the U-2 shutdown, although nuclear capability variations had been present, changes in strategic stability occurred because of causal mechanisms not associated with nuclear capability variations.

In addition to the Type-I cases with variations in nuclear capabilities not associated with changes in strategic stability, all three Type-II cases changed strategic stability without variations in nuclear capabilities. The fact that changes to strategic stability occurred without nuclear capability variations calls into question the necessity of any suspected capability–stability bonding. Changes to strategic stability occurring independently of variations in nuclear capabilities eliminates, at a minimum, the necessity of nuclear capabilities driving any changes to strategic stability while leaving sufficiency intact.

Summary

My research analyzed ten cases but focused on the Cuban Missile Crisis. This crisis, an emblematic display of changes in nuclear capabilities driving changes in strategic stability, did not yield the results the majority of modern research said that it should. As a single case, the Cuban Missile Crisis, like all the other cases in my research, was consistent with my overall findings. Because there was no change in nuclear capabilities during 1962, any change to strategic stability

could only be credited to non-nuclear capability causal mechanisms.²⁸⁸ As an isolated case, changes in nuclear capabilities occurred at a low level, insignificant to drive any change in the CRNC score. Lacking a significant change to nuclear capabilities, analysis of the Cuban Missile Crisis reinforced that changes in nuclear capabilities are neither necessary nor sufficient to change strategic stability. However, an examination of the Cuban Missile Crisis as a part of the entire set of ten cases revealed it contributed to the conclusion that variations in nuclear capabilities were sometimes sufficient to change strategic stability but never necessary.

During the entire 1957–1967 timeframe, war did not occur between the United States and the Soviet Union, meaning strategic stability in some variation maintained. Concurrently, numerous variations in nuclear capabilities occurred for each state in the nuclear dyad. The majority of available academic work suggests a tight causal link between strategic stability changes and nuclear capabilities given the high number of hostile interactions between the United States and the Soviet Union. This assumed tight capability–stability causal relationship simply did not materialize. Below, Table 6-2 shows a consolidated view of each of the ten cases discussed in this dissertation, along with the twenty-nine instances of changes to strategic stability. Congruence testing, coupled with process tracing, found only two of the ten cases researched held changes in strategic stability attributable to variations in nuclear capabilities.

²⁸⁸ I am not intending to say nuclear capabilities played no role in the Cuban Missile Crisis, they most certainly did. However, using CRNC score calculations, my point is that nuclear capabilities did not start the Cuban Missile Crisis.

Table 6-2: Case Study Summary, 1957–1967

	1957	1958			1959	1960	1961	1962			1963	1964		1965	1966	1967
OBSERVED CHANGE	Sputnik Launch	DC-6 Shoot Down	C-130 Shoot Down	Berlin Crisis (I)	NO INCIDENTS	U-2 Shoot Down	Berlin Crisis (II)	CMC - 1/1 to 10/15	CMC - 10/16 to 10/28	CMC - 10/29 to 12/31	NO INCIDENTS	T-39 Shoot Down	RB-66 Shoot Down	NO INCIDENTS	NO INCIDENTS	Israeli Six-Day War
Nuclear Capability	N	Y	Y	Y	/	Y	N	N	N	N	Y	Y	Y	Y	Y	Y
Utility	/			Y	/	Y	/	/	/	/	/			/	/	
Incentives	/			Y	/	Y	/	/	/	/	/			/	/	
Strategic Stability	Y	Y	Y	Y	/	Y	Y	Y	Y	Y	/	Y	Y	/	/	Y

6.2 Hypotheses

The Table 6-3 below represents classifications of the ten cases according to either H1 or H2 based on analysis of individual case details. This section evaluates each of the hypotheses in addition to the statements of necessity and sufficiency presented in Chapter 2. It is shown that variations in nuclear capabilities are not needed as part of the causal chain driving changes in strategic stability.

Table 6-3: Hypotheses Comparison

	1957	1958			1959	1960	1961	1962			1963	1964		1965	1966	1967
STRATEGIC STABILITY CHANGE CAUSAL HYPOTHESES	Sputnik Launch	DC-6 Shoot Down	C-130 Shoot Down	Berlin Crisis (I)	NO INCIDENTS	U-2 Shoot Down	Berlin Crisis (II)	CMC - 1/1 to 10/15	CMC - 10/16 to 10/28	CMC - 10/29 to 12/31	NO INCIDENTS	T-39 Shoot Down	RB-66 Shoot Down	NO INCIDENTS	NO INCIDENTS	Israeli Six-Day War
NUCLEAR CAPABILITY VARIATION				X	/	X								/	/	
NON-NUCLEAR CAPABILITY VARIATION	X	X	X		/		X	X	X	X	X	X	X	/	/	X

Can a state’s variations in nuclear capabilities drive changes in potential usage, affecting state leaders’ incentives, and resulting in a direct correlation to changes observed in strategic

stability? Stated differently, does the causal chain, starting with variations in nuclear capabilities and ending with strategic stability changes, make sense? The short answer is yes but only in a small percentage of cases. Supporting this answer is a vast trove of scholarship drawing tight causal connections between variations in nuclear capabilities and changes in strategic stability. However, the results of my research created a strong caveat to existing scholarship by indicating that the capability–stability connection was only accurate in a small number of cases. Put differently, variations in nuclear capabilities are not necessary to change strategic stability. Often, variations in nuclear capability were not even sufficient to change strategic stability. On occasion, however, as with the Berlin I and U-2 shootdown cases, it sometimes had the ability to drive a change in strategic stability.

The scholarship speaking to strategic stability tightly draws the capability–stability connection. Additionally, given the high number of changes in strategic stability that occurred between the United States and the Soviet Union, the timeframe of 1957–1967 should have supplied more than enough evidence to confirm nuclear capability variations driving changes in strategic stability.

The first hypothesis, H1, is based on the premise that all cases of nuclear capability variations have correlated changes in strategic stability. This direct correlation tying variations in nuclear capabilities to changes in strategic stability existed, but only in two out of ten cases, not all seven Type-I cases and certainly not all ten cases overall. The Berlin I and U-2 case both showed a causal capability–stability connection, but these two cases were in the minority among the ten cases examined. The remaining eight cases were unable to support H1 since they did not tie capability variations to changes in strategic stability. Since two cases did show capability–

stability connections, H1 was not fully discredited. However, for the majority of cases analyzed over the course of this dissertation, H1 was not considered true for all cases.

Can changes in strategic stability be explained by causal mechanisms other than variations in nuclear capabilities? The majority of the cases analyzed over the course of this dissertation confirmed that causal mechanisms, other than variations in nuclear capabilities, drove changes in strategic stability. As with H1 above, nuclear capabilities may have been sufficient to sometimes cause changes in strategic stability, but they were not sufficient all the time and were never necessary. For the majority of the eight cases, the causal mechanism driving changes in strategic stability was an accidental provocation of hostilities between the United States and the Soviet Union that led to a sharp increase in the Escalation Level while decreasing strategic stability.²⁸⁹ The facts contained in eight of the ten cases, all showing changes of varying degrees in strategic stability, supported H2 by having changes in strategic stability caused by a wide array of different causal factors, which did not include variations in nuclear capabilities.

Definitively, the absolute claims of necessity and sufficiency of nuclear capabilities when referencing changes to strategic stability were disproved during the analysis of the ten cases covered in this dissertation. The claim that variations in nuclear capabilities are both necessary and sufficient at all times for changes in strategic stability was not proven true when referencing any Type-II case in addition to any Type-I case that was not the Berlin I crisis or the U-2 shootdown. Furthermore, case analysis proved false the statement that variations in nuclear capabilities are never sufficient or necessary for changes in strategic stability. Variation in nuclear

²⁸⁹ Specifically, the cases caused by accidental provocation of hostilities include the 1958 shootdowns of the DC-6 and C-130, 1964 shootdowns of the T-39 and RB-66, and the 1967 Israeli Six Day War.

capabilities was sufficient on some occasions to drive changes in strategic stability but, across all cases during 1957–1967, it did not prove to be a necessary component.

6.3 Limitations in the Research

The research conducted for this dissertation had three limitations: sample size bias, subjective measurement, and timeline restraints. The first, sample size bias, refers to both the states selected for this research and the timeframe from which I harvested data. The data presented in Chapter 2 confirmed that 1957–1967 was a period when the greatest number of acts of hostility occurred between the United States and the Soviet Union. This high level of hostility coupled with nuclear capability build-up is not repeated in any other nuclear state dyadic match-up. Furthermore, given the high number of nuclear weapons both the United States and the Soviet Union stockpiled during this timeframe, a possible bifurcated tension in the balance of power arises among nuclear states, between the ‘haves’ and the ‘have nots,’ or worse yet, the ‘haves’ and the ‘have more.’

One of the most difficult tasks undertaken in this research was finding a suitable method for conducting relative nuclear capability measurements. Two reasons for this difficulty existed: access to nuclear stockpile numbers and a lack of widely accepted measurement methodologies. The first cause of difficulty, access to nuclear capability numbers, is one of the largest possible areas of concern. All nuclear capability numbers were obtained through open source data, meaning

through nonmilitary or nonstate data sources.²⁹⁰ Data obtained through open source or public afford easy access to information that is, by tradition, a closely guarded state secret, even years after the fact. It is possible to imagine that future research may gain access to better, different, or more exact numbers than those used in my studies.

In addition, future researchers uncovering nuclear capability numbers from dissimilar sources that do not match my research will cause the CRNC tables and measurements to skew, altering the analytical outcome. According to the explanation of how the CRNC is calculated in Chapter 2, variations of as little as 580 payload capacity slots and 623 strategic warheads for either the United States or the Soviet Union will change the entirety of the CRNC calculation table. Given the secretive nature of the nuclear bomb industry in the 1950s and 1960s, these variations may not be too unrealistic. If new numbers are applied to the existing method of CRNC calculation, it is suspected that cases will shift into and out of Type-I and -II designations. However, regardless of type, the overall findings should remain the same; nuclear capability variations are never necessary to change strategic stability and are only sometimes sufficient.

The second cause of difficulty, a lack of widely accepted means of measuring nuclear capability and how it was addressed in this research, is less of a risk. Without any widely accepted means of measuring comparative nuclear capabilities in a dyadic state system, I took the basic components presented in this research and used a scale of ten as a source of measurement. Another researcher may decide to use a different scale, different nuclear components, or other factors not included in this research. Every effort was made, exhaustively in many instances, to ensure the greatest level of accuracy in the numbers and formulas used for relative nuclear capability

²⁹⁰ Norris and Cochran, *US-USSR/Russia Strategic Offensive Nuclear Forces, 1945-1996*; Catudal, *Soviet Nuclear Strategy from Stalin to Gorbachev*; Podvig and Bukharin, *Russian Strategic Nuclear Forces*.

comparison. Additionally, the framework for analysis was presented in its entirety to be as transparent as possible for future use or adoption by other researchers.

This is a good point at which to readdress the topic of perceptions explained in Chapter 2 and occasionally mentioned throughout the case studies in Chapters 3 and 4. A review of my research and analysis showed that perceptions were undeniably part of many of the state leaders' decision-making processes as they shifted Escalation Levels. However, the model presented in Chapters 1 and 2 of this dissertation specifically addressed the focal point in my research, variations in nuclear capabilities as a driving factor in strategic stability changes. Where nuclear-capability changes can be consistently quantified throughout each state's leadership administration, perceptions are highly based on the views of the individuals making decisions and change with each new leader, making accounting difficult at best to maintain consistently. Incorporating perceptions to my more objective measure of change in nuclear capabilities would have added little analytical leverage to each case while needlessly increasing the complexity of analysis, thereby reducing my goal of creating a parsimonious examination of the effects that nuclear-capability variations had on changes to strategic stability.

Finally, the timeframe itself posed one of the biggest limitations to the research conducted for this dissertation. More precisely, the years 1957–1967 represent a unique period when there were few external constraints placed upon the United States and the Soviet Union by multinational treaties or obligations. Following 1967, the two nations underwent an extended period of bilateral and multilateral peace initiatives aimed at constraining the numbers, type, and deployment of nuclear weapons.

A common theme emerged in the years following 1967, codified in multiple international agreements such as the 1972 and 1979 Strategic Arms Limitation Talks I and II, the 1987

Intermediate Nuclear Forces Treaty, the 1991 and 1993 Strategic Arms Reduction Talks I and II, the 2002 Strategic Offensive Reductions Treaty, and the 2010 New Strategic Arms Reduction Talks.²⁹¹ The common theme after 1967 was a normalization of either nuclear capability non-use or controlled use. The data collected to draft this dissertation were premised on pre-1967 free and unconstrained development and the use of nuclear capabilities by both the United States and the Soviet Union. Normalizing a constrained nuclear capability as it occurred following 1967, coupled with drastic reductions in bilateral conflicts at any level, means many of the scenarios analyzed in this dissertation are less likely to be replicated.

6.4 Implications for Future Scholarship

Outlined in this dissertation is a causal path starting with variations in nuclear capabilities leading to changes in utility, yielding changes in leaders' incentives, driving changes in strategic stability. Describing changes to strategic stability using this causal pathway allows for a suitable linear explanation of how the IV leads to changes in the DV. However, the following questions must still be answered: Does this causal pathway remain consistent across all cases of strategic stability change? Can skipping any of the intermediary steps still yield the same results in changes in strategic stability? Is it possible to measure smaller variations in nuclear capabilities yielding changes in strategic stability? If smaller variations are effective, what effect does they have on utility and incentives?

²⁹¹ Arms Control Association, "U.S.-Russian Nuclear Arms Control Agreements at a Glance," Fact Sheets and Briefs, accessed September 17, 2019, <https://www.armscontrol.org/factsheets/USRussiaNuclearAgreements>.

I believe the causal path presented in this dissertation is not an absolute path from varied nuclear capabilities to changed strategic stability since varied nuclear capabilities are not sufficient and only sometimes necessary, as discussed in my findings. However, changing the incremental measurements of the CRNC score could have significant effects on the outcome. It is possible, if seeking greater precision of measurement, to incrementally dissect each state's nuclear capabilities so tightly that every minor increase in nuclear capability should yield a change in strategic stability. However, this may not matter as nuclear capability change is only sometime sufficient. Studying this causal path is important to understanding how, in some limited scenarios, variations in nuclear capabilities directly translate to changes in strategic stability.

Does size matter? Can the causal path still drive changes in strategic stability when nuclear states of divergent sizes confront one another? These questions connect the causal path to nuclear dyadic state balances of power. My research focused on the United States and the Soviet Union, two large nuclear states with a high number of dyadic state conflicts and outsized nuclear arsenals compared with the rest of the world. However, conducting this same research using India and Pakistan during the 1990s might yield different results because India was a larger nuclear power compared with Pakistan. Similarly, can the causal pathway put forth in this dissertation explain interactions between the United States and North Korea over the past five years? Finally, between two competitive states, is there a point when the size of a state's nuclear arsenal matters more or less? The research covered in this dissertation covered near-peer competitors, but the outcomes may have been different had one state been drastically larger than the other.

The research conducted for this dissertation led me to suspect that size does matter, but only for a brief period at the very beginning of a new nuclear state's growth. This is a balance-of-power scenario applied exclusively to divergent-sized nuclear states. In situations where two states

confront one another, one representing a mature large nuclear arsenal and the other representing a new or fledgling nuclear arsenal, size matters significantly.²⁹² Even if the smaller nuclear state happens to fire a single nuclear weapon against the larger state, the balance of power is in favor of the larger state that has the ability to inflict considerable harm to the smaller competitor.²⁹³ However, as parity develops in nuclear capability numbers and technological advancements, the power dominance once enjoyed by the larger state will slip away as the smaller state increases in capability.²⁹⁴

Would the causal pathway outlined in this dissertation hold true if some other form of weaponized technology supplanted nuclear capabilities? Put differently, does this causal pathway hold true for all technological innovations of war or is it just applicable to nuclear weapons? Or, is it just applicable to significant technological innovations? Recently, a tremendous amount of research has been published that has contended that space, cyber, and artificial intelligence all can either individually or in conjunction with one another cause equally devastating effects on society as seen with nuclear weapons.²⁹⁵ Is this true? Are nuclear weapons only an emblematic display of technological destruction in war? Nuclear capabilities have been around for over seventy years and have only used twice at the very beginning. However, warfare and technology continue to

²⁹² Kroenig, “Nuclear Superiority and the Balance of Resolve”; Erik Gartzke and Matthew Kroenig, “Nukes with Numbers: Empirical Research on the Consequences of Nuclear Weapons for International Conflict,” *Annual Review of Political Science* 19, no. 1 (2016): 397–412.

²⁹³ Narang, “What Does It Take to Deter?”

²⁹⁴ Erik Gartzke and Matthew Kroenig, “A Strategic Approach to Nuclear Proliferation,” *The Journal of Conflict Resolution* 53, no. 2, (2009); Horowitz, “The Spread of Nuclear Weapons and International Conflict; Does Experience Matter?”

²⁹⁵ Examples of said scholarship include: Austin Long, “A Cyber SIOP? Operational Considerations for Strategic Offensive Cyber Planning,” *Journal of Cybersecurity* 3, no. 1 (2017); Mark Reith, “Brandishing Our Air, Space, and Cyber Swords,” *Air and Space Power Journal* 31, no. 4 (2017): 103–14; Gartzke and Lindsay, “Thermonuclear Cyberwar”; Richard A. Clarke and Robert K. Knake, *Cyber War: The Next Threat to National Security and What to Do About It*, 1st ed (New York: Ecco, 2010); Paul Scharre, *Army of None: Autonomous Weapons and the Future of War*, First edition (New York: W. W. Norton & Company, 2018).

advance at an exponential pace. It is possible, even though nuclear capabilities have had a taboo imposed upon a state's usage, that other technologies are waiting in the wings to come forward and supply a shift in the balance of power.

I strongly suspect that the causal path outlined in my research transcends nuclear weapons but only in instances when a technological advancement is so great that it can cause widespread death or destruction. In other words, technological advancements need to mimic the results of nuclear weapons in order to be treated like nuclear weapons. The causal path outlined in my research would not go very far if a researcher was evaluating a cyber virus that shut down a single bank or turned off all the streetlights in any city. None of those effects mimic the destruction of nuclear weapons, and therefore, they would not change strategic stability. However, if a cyber weapon was used to shutoff the power grid in northern Wisconsin during a winter deep-freeze, the results would be drastically different. Keeping the population from escaping the reaches of an arctic blast because there is no fuel, power, food, or means to escape would have devastating effects on some, if not many. The loss of life from a well-placed cyber weapon may have widespread and deadly effects that drive state leadership to consider a decrease in strategic stability.

Finally, in bipolar conflict with more than two nuclear states, do changes in nuclear capabilities occurring on one side or the other drive changes in utility? This question seeks two different answers, the first being whether the causal path applies when more than two states take part in an interstate conflict. In a conflict scenario where two states ally against a third, does this swell of power on one side negate the causal path or does the causal path maintain as a constant? Second, this primary question seeks to determine if variations in nuclear capabilities in a multistate war (greater than two participants) have any effect on the interior components of the causal path.

Nuclear conflict is traditionally addressed in a dyadic state role, but modern warfare values international coalitions when entering conflict. Thus, does multilateralism change the causal path between variations in nuclear capabilities and changes in strategic stability?

The research conducted for and presented in this dissertation led me to suspect that nuclear state multilateralism resulting from interstate conflict may mimic traditional dyadic state conflict, but only in instances when the confrontation is bipolar. Stated differently, as long as three or more states distribute between only one of two sides of a conflict, the causal path outlined in my research will continue to make sense. I also suspect that the outlined causal pathway will continue to hold up if three or more divergent states come into conflict with one another. Nothing about changes in either perception or incentives require a dyadic state relationship. However, in a multistate conflict with more than two states at war with each other, a state's ability to conduct either brinkmanship or deterrence becomes greatly reduced depending on the amount and quality of resources available at that time.

Bibliography

- Allison, Graham T. "Conceptual Models and the Cuban Missile Crisis." *The American Political Science Review* 63, no. 3 (1969): 689–718.
- Arms Control Association. "U.S.-Russian Nuclear Arms Control Agreements at a Glance." Fact Sheets and Briefs. Accessed September 17, 2019. <https://www.armscontrol.org/factsheets/USRussiaNuclearAgreements>.
- Arnett, Robert. "Chapter 33, Soviet Thinking on Nuclear War." In *Strategic Power: USA/USSR*, edited by C. G. Jacobsen, 370–81. New York: St. Martin's Press, 1990.
- Bell, Mark S. "Beyond Emboldenment." *International Security* 40, no. 1 (2015): 87–119.
- Bell, Mark S., and Nicholas L. Miller. "Questioning the Effect of Nuclear Weapons on Conflict." *Journal of Conflict Resolution* 59, no. 1 (2015): 74–92.
- Bennett, Andrew. "Process Tracing and Causal Inference." In *Rethinking Social Inquiry: Diverse Tools, Shared Standards*, edited by Henry E. Brady and David Collier, 179–89. Lanham, Maryland: Rowman & Littlefield Publishers, 2010.
- Bennett, M. Todd, ed. *Foreign Relations of the United States; National Security Policy, 1969-1972*. Vol. XXXIV. Foreign Relations of the United States 1969–1976. Washington, D.C.: United States Government Printing Office, 2011.
- Betts, Richard K. *Surprise Attack: Lessons for Defense Planning*. Washington, D.C.: Brookings Institution, 1982.
- Blechman, Barry M., and Stephen S. Kaplan. *Force Without War: U.S. Armed Forces as a Political Instrument*. Washington: Brookings Institution, 1978.
- Bundy, McGeorge. "National Security Action Memoranda 109, U.S. Policy on Military Actions in a Berlin Conflict." National Security Advisor, October 23, 1961. JFKNSF-332-011-p0004. John F. Kennedy Presidential Library.
- Bundy, McGeorge, and Dean Acheson. "National Security Action Memoranda: NSAM 40, Policy Directive Regarding NATO and the Atlantic Nations." Meetings and Memoranda. Papers of John F. Kennedy. Presidential Papers. National Security Files. John F. Kennedy Presidential Library, 1961.
- Burns, John F. "Nuclear Anxiety: The Overview; Pakistan, Answering India, Carries Out Nuclear Tests; Clinton's Appeal Rejected." *The New York Times*, May 29, 1998, sec. World. <https://www.nytimes.com/1998/05/29/world/nuclear-anxiety-overview-pakistan-answering-india-carries-nuclear-tests-clinton.html>.

- Carlson, Lisa J. "A Theory of Escalation And International Conflict." *Journal of Conflict Resolution* 39, no. 3 (1995): 511–34.
- Caruthers, Osgood. "Malinovsky Vows Rocket Reprisals On Air Incursions." *New York Times*. May 31, 1960.
- Catudal, Honoré Marc. *Soviet Nuclear Strategy from Stalin to Gorbachev: A Revolution in Soviet Military and Political Thinking*. Militärpolitik Und Rüstungsbegrenzung 6. Berlin: Berlin-Verl. Spitz, 1988.
- Central Intelligence Agency. "Memorandum for File, Discussions in Secretary Rusk's Office; Document #382, August 21, 1962." In *Foreign Relations of the United States; Cuba, January 1961–September 1962*, edited by Louis J. Smith, Vol. X. FRUS 1961–1963. Washington, D.C.: United States Government Printing Office, 1997.
- . "Memorandum: The Crisis USSR/Cuba; Information as of 0600." Memorandum. Washington, D.C.: Central Intelligence Agency, October 27, 1962.
- Chivvis, Christopher, Andrew Radin, Dara Massicot, and Clint Reach. *Strengthening Strategic Stability with Russia*. Washington, D.C.: RAND Corporation, 2017.
- Clarke, Richard A., and Robert K. Knake. *Cyber War: The Next Threat to National Security and What to Do About It*. 1st ed. New York: Ecco, 2010.
- "Cold War Foreign Policy Series; Evolution of the Secretary of Defense in the Era of Massive Retaliation: Charles Wilson, Neil McElroy, and Thomas Gates, 1953-1961." Cold War Foreign Policy Series. Washington, D.C.: Office of the Secretary of Defense: Historical Office, 2012.
- Collier, David. "Understanding Process Tracing." *PS: Political Science & Politics* 44, no. 04 (2011): 823–30.
- Davenport, Kelsey, and Kingston Reif. "Nuclear Weapons: Who Has What at a Glance." Arms Control Association, July 2019. www.armscontrol.org.
- Department of Defense. "Summary of the 2018 National Defense Strategy of the United States of America; Sharpening the American Military's Competitive Edge." US Government, 2018.
- "Department of State Bulletin, 15 December 1958." In *Department of State Bulletin*, Vol. XXXIX:941–85. Publication 6740, No. 1016. Washington, D.C.: U.S. Government Printing Office, 1958.
- "Department of State Bulletin, 19 January 1959." In *Department of State Bulletin*, Vol. XL:45–76. Publication 6756, No. 1021. Washington, D.C.: U.S. Government Printing Office, 1959.

- “Department of State Bulletin, 25 January 1954.” In *Department of State Bulletin*, Vol. XXX:1–497. Publication 6740, No. 758-770. Washington, D.C.: U.S. Government Printing Office, 1954.
- Department of the Navy. “Telegram from the Chief of Naval Operations (Anderson) to the Department of State; Document #389, August 24, 1962.” In *Foreign Relations of the United States; Cuba, January 1961–September 1962*, edited by Louis J. Smith, Vol. X. FRUS 1961–1963. Washington, D.C.: United States Government Printing Office, 1997.
- Desmond Ball. “United States Strategic Policy Since 1945: Doctrine, Military-Technical Innovation and Force Structure.” In *Strategic Power: USA/USSR*, edited by Carl G. Jacobsen, 85–105. New York: St. Martin’s Press, 1990.
- Director of Central Intelligence. “National Intelligence Estimate, NIE 11-8-59, Document #88, 9 February 1960.” In *Foreign Relations of the United States, 1958–1960, National Security Policy; Arms Control and Disarmament*, edited by Edward C. Keefer and David W. Mabon, Vol. III. Foreign Relations of the United States 1958–1960. Washington, D.C.: United States Government Printing Office, 2018.
- “Draft Memorandum from Secretary of Defense McNamara to President Johnson; Document 151, 6 December 1963.” In *Foreign Relations of the United States; National Security Policy, 1961-1963*, VIII:28. Foreign Relations of the United States 1961–1963. Washington, D.C.: United States Government Printing Office, 1996.
- Drea, Edward J. *Secretaries of Defense Historical Series; McNamara, Clifford, and the Burdens of Vietnam, 1965-1969*. Vol. VI. IX vols. Secretaries of Defense Historical Series. Washington, D.C.: Historical Office, Office of the Secretary of Defense, 2011.
- Eckstein, Harry. “Case Study And Theory In Political Science.” In *Strategies of Inquiry*, edited by Fred I. Greenstein and Nelson W. Polsby. Handbook of Political Science, v. 7. Reading, Mass: Addison-Wesley Pub. Co, 1975.
- Eisenhower, Dwight D. “A Report to the National Security Council - NSC-162/2.” US Government, 1953.
- . *Waging Peace, 1956-1961: The White House Years*. 1st ed. Book, Whole. Garden City, N.Y: Doubleday, 1965.
- Frankel, Max. “U.S. Hands Soviet Note On 9 Airmen: Requests Prompt Release Of Fliers Forced Down By Russian Fighters.” *New York Times*. 1958.
- Freedman, Lawrence. *The Evolution of Nuclear Strategy*. 3rd ed. Houndmills, Basingstoke, Hampshire, New York: Palgrave Macmillan, 2003.
- Gallagher, Matthew, and W. P. Southard. “Khrushchev on Nuclear Strategy.” Current Intelligence Staff Study. Washington, D.C.: Central Intelligence Agency, January 19, 1960.

- Gartzke, Erik, Jeffrey M. Kaplow, and Rupal N. Mehta. "The Determinants of Nuclear Force Structure." *Journal of Conflict Resolution* 58, no. 3 (2014): 481–508.
- Gartzke, Erik, and Matthew Kroenig. "A Strategic Approach to Nuclear Proliferation." *The Journal of Conflict Resolution* 53, no. 2, (2009).
- . "Nukes with Numbers: Empirical Research on the Consequences of Nuclear Weapons for International Conflict." *Annual Review of Political Science* 19, no. 1 (2016): 397–412.
- Gartzke, Erik, and Jon R. Lindsay. "Thermonuclear Cyberwar." *Journal of Cybersecurity* 3, no. 1 (2017): 37–48.
- George, Alexander L., and Andrew Bennett. *Case Studies and Theory Development in the Social Sciences*. BCSIA Studies in International Security. Cambridge, Mass: MIT Press, 2005.
- Gibler, Douglas M. *International Conflicts, 1816-2010: Militarized Interstate Dispute Narratives*. Vol. 1 & 2. 2 vols. Lanham: Rowman & Littlefield, 2018.
- Goldstein, Avery. *Deterrence and Security in the 21st Century: China, Britain, France, and the Enduring Legacy of the Nuclear Revolution*. Stanford, Calif: Stanford University Press, 2000.
- Gray, Colin S. "Strategic Stability Reconsidered." *Daedalus* 109, no. 4, (1980): 135–54.
- Grose, Peter. "Moscow Blames Israelis in Crisis." *New York Times (1923-Current File)*. May 24, 1967. 117434258. ProQuest Historical Newspapers: The New York Times with Index.
- Hershberg, James G. "Chapter 4; The Cuban Missile Crisis." In *The Cambridge History of the Cold War*, edited by Melvyn P. Leffler and Odd Arne Westad, Vol. 3. Cambridge: Cambridge University Press, 2012.
- Hines, John, and Ellis M. Mishulovich. "Soviet Intentions 1965-1985, Volume I: An Analytical Comparison of U.S.-Soviet Assessments During the Cold War." Prepared for: OSD-Net Assessment. McLean, VA: BDM Federal, Inc., September 22, 1995.
- "History of the Joint Strategic Target Planning Staff: Background and Preparation of SIOP-62." History and Research Division: Headquarters Strategic Air Command, n.d.
- "History of the Joint Strategic Target Planning Staff: Background and Preparation of SIOP-63." History and Research Division: Headquarters Strategic Air Command, 1964.
- Horowitz, Michael. "The Spread of Nuclear Weapons and International Conflict; Does Experience Matter?" *Journal of Conflict Resolution* 53, no. 2 (2009): 234–57.
- Jacobsen, Carl G. "Chapter 7, Soviet Strategic Policy Since 1945." In *Strategic Power: USA/USSR*, 106–20. New York: St. Martin's Press, 1990.

- Jervis, Robert. *Perception and Misperception in International Politics*. Princeton, N.J: Princeton University Press, 1976.
- . “Why Nuclear Superiority Doesn’t Matter.” *Political Science Quarterly* 94, no. 4 (1979): 617–33.
- Joint Resolution. Congressional Authorization for 150,000 Ready Reserve Troop Recall, Pub. L. No. PL 87-736, 1 (1962).
- Kahn, Herman. “Escalation as a Strategy.” *Fortune* 71, no. 4 (1965): 110–12, 243–54.
- . *On Escalation: Metaphors and Scenarios*. New York: Praeger, 1965.
- Kaplan, Edward. *To Kill Nations: American Strategy in the Air-Atomic Age and the Rise of Mutually Assured Destruction*. Ithaca: Cornell University, 2015.
- Kaplan, Lawrence S., Ronald D. Landa, and Edward J. Drea. *History of the Office of the Secretary of Defense; The McNamara Ascendancy, 1961-1965*. Vol. V. IX vols. History of the Office of the Secretary of Defense. Washington, D.C.: Historical Office, Office of the Secretary of Defense, 2006.
- Kaufmann, William W. *The McNamara Strategy*. 1st ed. New York: Harper & Row, 1964.
- Kennedy, John F. “Letter from President Kennedy to Chairman Khrushchev; Document #60, October 22, 1962.” In *Foreign Relations of the United States; Kennedy-Khrushchev Exchanges, 1961-1963*, edited by Charles S. Sampson, Vol. VI. FRUS 1961–1963. Washington, D.C.: United States Government Printing Office, 1996.
- . “National Security Action Memorandum Number 196: Establishment of an Executive Committee of the National Security Council,.” Office of the President, October 22, 1962. <https://www.jfklibrary.org/asset-viewer/national-security-action-memorandum-number-196>.
- . “Presentation to a Combined Sessions of Congress.” Speech presented at the Combined session of Congress, US Capital, Washington, DC, May 25, 1961.
- . *Public Papers of the Presidents of the United States: John F. Kennedy; Containing the Public Messages, Speeches, and Statements of the President, 1961-1963*. Vol. 2. 3 vols. Washington: US Government Printing Office, 1963.
- . “Remarks of the President at American University Commencement Ceremony.” Keynote Speech presented at the University Graduation, Washington, D.C., June 10, 1963.
- Khrushchev, Nikita. “Letter from Chairman Khrushchev to President Kennedy; Document #63, October 24, 1962.” In *Foreign Relations of the United States; Kennedy-Khrushchev Exchanges, 1961-1963*, edited by Charles S. Sampson, Vol. VI. FRUS 1961–1963. Washington, D.C.: United States Government Printing Office, 1996.

- . “Letter from Chairman Khrushchev to President Kennedy; Document #65, October 26, 1962.” In *Foreign Relations of the United States; Kennedy-Khrushchev Exchanges, 1961-1963*, edited by Charles S. Sampson, Vol. VI. FRUS 1961–1963. Washington, D.C.: United States Government Printing Office, 1996.
- . “Letter from Chairman Khrushchev to President Kennedy; Document #66, October 27, 1962.” In *Foreign Relations of the United States; Kennedy-Khrushchev Exchanges, 1961-1963*, edited by Charles S. Sampson, Vol. VI. FRUS 1961–1963. Washington, D.C.: United States Government Printing Office, 1996.
- . “Message from Chairman Khrushchev to President Kennedy; Document #73, Undated (Suspected July 5, 1962).” In *Foreign Relations of the United States; Berlin Crisis, 1962–1963*, edited by Charles S. Sampson, Vol. XV. FRUS 1961–1963. Washington, D.C.: United States Government Printing Office, 1993.
- Khrushchev, Nikita Sergeevich. *Khrushchev Remembers*. Translated by Strobe Talbott. Boston: Little, Brown, 1970.
- Khrushchev, Sergei. “Chapter 10: The Military-Industrial Complex, 1953-1964.” In *Nikita Khrushchev*, edited by William Taubman, Sergei Khrushchev, and Abbott Gleason. New Haven, Conn: Yale University Press, 2000.
- Kissinger, Henry. *Nuclear Weapons and Foreign Policy*. Abridged edition. New York: W. W. Norton & Company, 1969.
- Knaack, Marcelle Size. *Encyclopedia of U.S. Air Force Aircraft and Missile Systems: 1945 - 1973*. Vol. Volume II. II vols. Reference Series. Washington, D.C.: United States Air Force, Office of Air Force History, 1988.
- Kohler, Foy D., Leon Gouré, and Mose L. Harvey. *The Soviet Union and the October 1973 Middle East War: The Implications for Detente*. Monographs in International Affairs. Coral Gables, Fla.: Center for Advanced International Studies, University of Miami, 1974.
- Kokoshin, Andrei. “Ensuring Strategic Stability in the Past and Present.” Harvard Kennedy School, 2011.
- Kristensen, Hans M., and Robert S. Norris. “Nuclear Notebook.” *Bulletin of the Atomic Scientists*. Accessed December 10, 2016. <http://thebulletin.org/nuclear-notebook-multimedia>.
- Kroenig, Matthew. “Nuclear Superiority and the Balance of Resolve: Explaining Nuclear Crisis Outcomes.” *International Organization* 67, no. 1 (2013): 141–71.
- . *The Logic of American Nuclear Strategy: Why Strategic Superiority Matters*. New York City: Oxford University Press, 2018.

- Kurochkin, P. “The Nature of Modern Armed Combat and the Role and Place in it of the Various Branches of the Armed Forces.” Translated by Central Intelligence Agency. *Voyennaya Mysl (Military Thought)*, 1960, 18.
- Leighton, Richard M. *History of the Office of the Secretary of Defense; Strategy, Money, and the New Look, 1953-1956*. Vol. III. IX vols. History of the Office of the Secretary of Defense. Washington, D.C.: Historical Office, Office of the Secretary of Defense, 2001.
- Levine, Robert A. *The Strategic Nuclear Debate*. Santa Monica, CA: RAND Corporation, 1987.
- Levy, Jack S., and William R. Thompson. *Causes of War*. Chichester, West Sussex, U.K.; Malden, MA: Wiley-Blackwell, 2010.
- Liddell Hart, Basil Henry. *The Revolution in Warfare*. New Haven: Yale university press, 1947.
- Lieber, Keir A., and Daryl G. Press. “The Rise of U.S. Nuclear Primacy.” *Foreign Affairs* 85, no. 2 (2006): 42–54.
- Lockwood, Jonathan Samuel, and Kathleen O’Brien Lockwood. *The Russian View of U.S. Strategy: Its Past, Its Future*, 2017.
- Lodal, Jan, Keir A. Lieber, Daryl G. Press, JAMES M. ACTON, HANS M. KRISTENSEN, MATTHEW McKINZIE, and IVAN OELRICH. “Second Strike: Is the U.S. Nuclear Arsenal Outmoded?” *Foreign Affairs* 89, no. 2 (2010): 145–52.
- Long, Austin. “A Cyber SIOP? Operational Considerations for Strategic Offensive Cyber Planning.” *Journal of Cybersecurity* 3, no. 1 (2017).
- Mahoney, James. “The Logic of Process Tracing Tests in the Social Sciences.” *Sociological Methods & Research* 41, no. 4 (2012): 570–97.
- Maoz, Zeev, Paul L. Johnson, Jasper Kaplan, Fiona Ogunkoya, and Aaron P. Shreve. “The Dyadic Militarized Interstate Disputes (MIDs) Dataset Version 3.0: Logic, Characteristics, and Comparisons to Alternative Datasets.” *Journal of Conflict Resolution*, 2018.
- May, Ernest R., and Philip Zelikow, eds. *The Kennedy Tapes: Inside the White House During the Cuban Missile Crisis*. Concise Edition. New York: Norton, 2002.
- Mazarr, Michael J. “Perspective: Understanding Deterrence.” RAND Corporation, 2018.
- McDougall, Walter A. *The Heavens and the Earth: A Political History of the Space Age*. Johns Hopkins paperbacks ed. Baltimore, Md: Johns Hopkins University Press, 1997.
- McNamara, Robert. “Statement Made on Saturday, 5 May by Secretary McNamara at the NATO Ministerial Meeting in Athens.” Speech presented at the NATO Ministerial Meeting, Athens, Greece, May 5, 1962.

- McNamara, Robert S. "Commencement Speech, June 1962 by Secretary of Defense McNamara at Graduation Commencement of the University of Michigan in Ann Arbor." Speech presented at the Graduation, University of Michigan, Ann Arbor, June 1962.
- Mearsheimer, John J. "Nuclear Weapons and Deterrence in Europe." *International Security* 9, no. 3 (1984): 19.
- . "Numbers, Strategy, and the European Balance." *International Security* 12, no. 4 (1988): 174.
- . "Structural Realism." In *International Relations Theories: Discipline and Diversity*, edited by Timothy Dunne, Milja Kurki, and Steve Smith. Oxford ; New York: Oxford University Press, 2007.
- . *The Tragedy of Great Power Politics*. New York: W. W. Norton & Company, 2001.
- . "Why We Will Soon Miss the Cold War." *The Atlantic Monthly* 266, no. 2 (1990): 35–50.
- Mikoian, S. A. *The Soviet Cuban Missile Crisis: Castro, Mikoyan, Kennedy, Khrushchev, and the Missiles of November*. Edited by Svetlana Savranskaya. Washington, D.C.: Stanford, California: Woodrow Wilson Center Press; Stanford University Press, 2012.
- Morgan, Forrest E. *Crisis Stability and Long-Range Strike: A Comparative Analysis of Fighters, Bombers, and Missiles*. Santa Monica, CA: RAND, 2013.
- . *Deterrence and First-Strike Stability in Space: A Preliminary Assessment*. RAND Corporation Monograph Series. Santa Monica, CA: RAND, 2010.
- Morgan, Forrest E, Karl P Mueller, Evan S Medeiros, Kevin L Pollpeter, and Roger Cliff. *Dangerous Thresholds: Managing Escalation in the 21st Century*. Project Air Force. Pittsburgh, PA: RAND Corporation, 2008.
- Morgenthau, Hans J. "The Four Paradoxes of Nuclear Strategy." *American Political Science Review* 58, no. 01 (1964): 23–35.
- Narang, Vipin. "What Does It Take to Deter? Regional Power Nuclear Postures and International Conflict." *The Journal of Conflict Resolution* 57, no. 3 (2013): 478–508.
- Nitze, Paul H. "Assuring Strategic Stability in an Era of Detente." *Foreign Affairs* 54, no. 2 (1976): 207–32.
- Norris, Robert Standish, and Thomas B. Cochran. *US-USSR/Russia Strategic Offensive Nuclear Forces, 1945-1996*. Nuclear Weapons Databook. Washington, D.C.: Natural Resources Defense Council, 1997.
- Nye, Joseph S. "Nuclear Learning and U.S.-Soviet Security Regimes." *International Organization* 41, no. 3 (1987): 371–402.

- Olsen, Arthur J. "Soviet Returns 2 Downed Airmen." *New York Times (1923-Current File)*. March 28, 1964. ProQuest Historical Newspapers: The New York Times.
- Oppenheimer, J Robert. "Atomic Weapons and American Policy." *Foreign Affairs* 31, no. 4 (July 1953): 525–35.
- Papp, Daniel S. "Chapter 14, Soviet Views of Escalation/Limited War." In *Strategic Power: USA/USSR*, edited by C. G. Jacobsen, 162–68. New York: St. Martin's Press, 1990.
- "PART 1: Nuclear Terms and Definitions in English." In *NATO-Russia Glossary of Nuclear Terms and Definitions*. North Atlantic Treaty Organization, 2007.
<https://www.nato.int/docu/glossary/eng-nuclear/>.
- Peterson, Michael L. "Maybe You Had to Be There: The SIGNIT on Thirteen Soviet Shootdowns of US Reconnaissance Aircraft." *Cryptologic Quarterly* 22 (1993): 1–44.
- Podvig, P. L., and Oleg Bukharin, eds. *Russian Strategic Nuclear Forces*. Cambridge, Mass: MIT Press, 2001.
- Powell, Robert. "Nuclear Brinkmanship, Limited War, and Military Power." *International Organization* 69, no. 3 (2015): 589–626.
- Quester, George H. "Crises and the Unexpected." *The Journal of Interdisciplinary History* 18, no. 4 (1988): 701–19.
- Rapport, Aaron. "Hard Thinking about Hard and Easy Cases in Security Studies." *Security Studies* 24, no. 3 (July 3, 2015): 431–65.
- Raymond, Jack. "U.S. Says Soviet Shot Down Jet." *New York Times (1923-Current File)*. January 30, 1964.
- Rearden, Steven L. *Council of War: A History of the Joint Chiefs of Staff - 1942 - 1991*. History of the Joint Chiefs of Staff. Washington, D.C.: National Defense University Press, 2012.
- Reiter, Dan, Allan C. Stam, and Michael C. Horowitz. "A Revised Look at Interstate Wars, 1816–2007." *Journal of Conflict Resolution* 60, no. 5 (2016): 956–76.
- Reith, Mark. "Brandishing Our Air, Space, and Cyber Swords." *Air and Space Power Journal* 31, no. 4 (2017): 103–14.
- Rosenberg, David Alan. "The Origins of Overkill: Nuclear Weapons and American Strategy, 1945-1960." *International Security* 7, no. 4 (1983): 3–71.
- "Russian National Security: Perceptions, Policies, and Prospects." Carlisle Barracks, PA: U.S. Army War College, 2001.
- Sagan, Scott D. "SIOP-62: The Nuclear War Plan Briefing to President Kennedy." *International Security* 12, no. 1 (1987): 22.

- Sampson, Charles S., ed. *Foreign Relations of the United States; Kennedy-Khrushchev Exchanges, 1961-1963*. Vol. VI. Foreign Relations of the United States 1961–1963. Washington, D.C.: United States Government Printing Office, 1996.
- Sarkees, Meredith Reid, and Frank Whelon Wayman. *Resort to War: A Data Guide to Inter-State, Extra-State, Intra-State, and Non-State Wars, 1816-2007*. Correlates of War Series. Washington, D.C.: CQ Press, 2010.
- Scharre, Paul. *Army of None: Autonomous Weapons and the Future of War*. First edition. New York: W. W. Norton & Company, 2018.
- Schelling, Thomas C. *Arms and Influence*. New Haven, CT: Yale University Press, 1966.
- . *Strategy of Conflict*. 1st edition. Cambridge: Oxford University Press, 1960.
- Schlesinger, Arthur. “Memorandum from the President’s Special Assistant (Schlesinger) to the President’s Special Assistant for National Security Affairs (Bundy); Document #383, August 22, 1962.” In *Foreign Relations of the United States; Cuba, January 1961–September 1962*, edited by Louis J. Smith, Vol. X. FRUS 1961–1963. Washington, D.C.: United States Government Printing Office, 1997.
- Schnabel, James F., Robert J. Watson, Kenneth W. Condit, Byron R. Fairchild, and Walter S. Poole, eds. *History of the Joint Chiefs of Staff: The Joint Chiefs of Staff and National Policy - 1957-1960*. Vol. 7. 11 vols. Washington, D.C.: US Government Printing Office, 2000.
- Schnabel, James F., Robert J. Watson, Kenneth W. Condit, and Walter S. Poole, eds. *History of the Joint Chiefs of Staff: The Joint Chiefs of Staff and National Policy - 1965-1968*. Vol. 9. 11 vols. Washington, D.C.: US Government Printing Office, 2012.
- Sechser, Todd S., and Matthew Fuhrmann. “Crisis Bargaining and Nuclear Blackmail.” *International Organization* 67, no. 1 (2013): 173–95.
- Security Resource Panel. “Deterrence And Survival In The Nuclear Age (‘The Gaither Report of 1957’).” Washington, D.C.: Office of Defense Mobilization, November 7, 1957.
- Singer, J. David, ed. *The Correlates of War*. New York: Free Press, 1978.
- Siniver, Asaf, ed. *The Yom Kippur War: Politics, Legacy, Diplomacy*. New York: Oxford University Press, 2013.
- Slusser, Robert M. “The Berlin Crisis of 1958-59 and 1961.” In *Force Without War: U.S. Armed Forces as a Political Instrument*, edited by Barry M. Blechman and Stephen S. Kaplan, 343–438. Washington: Brookings Institution, 1978.
- Small, Melvin, and J. David Singer. *Resort to Arms: International and Civil Wars, 1816-1980*. 2nd Edition. Beverly Hills, Calif: Sage Publications, 1982.

- Smith, Louis J., ed. "Editorial Note; Document #436." In *Foreign Relations of the United States; Cuba, January 1961–September 1962*, Vol. X. FRUS 1961–1963. Washington, D.C.: United States Government Printing Office, 1997.
- Snow, Donald M. "Current Nuclear Deterrence Thinking: An Overview and Review." *International Studies Quarterly* 23, no. 3 (1979): 445.
- Snyder, Glenn H. "The Balance of Power and the Balance of Terror." In *Balance of Power*, edited by Paul Seabury. Chandler Publications in Political Science. San Francisco: Chandler Pub. Co, 1965.
- Sokolovskii, Vasilii Dani, ed. *Soviet Military Strategy; Translation from Russian and Originally Published by the Military Publishing House of the Ministry of Defense of the USSR*. Translated by Herbert S. Dinerstein, Leon Goure, and Thomas W. Wolfe. Englewood Cliffs, N.J: Prentice Hall, 1963.
- Tannenwald, Nina. "The Nuclear Taboo: The United States and the Normative Basis of Nuclear Non-Use." *International Organization* 53, no. 3 (1999): 433–68.
- Topping, Seymour. "A-War Threat Hurlled; Russia Cites Rockets; September 12, 1962 (Page 1 of 34)." *Pittsburgh Post-Gazette, Sun-Telegraph (1960-1978)*. 1962, sec. Front Page.
- Troyanovsky, Oleg. "Chapter 9: The Making of Soviet Foreign Policy." In *Nikita Khrushchev*, edited by William Taubman, Sergei Khrushchev, and Abbott Gleason. New Haven, Conn: Yale University Press, 2000.
- Truman, Harry. "A Report to the National Security Council - NSC 68." US Government, April 12, 1950.
https://www.trumanlibrary.org/whistlestop/study_collections/coldwar/documents/pdf/10-1.pdf.
- Trump, Donald. "National Security Strategy 2017." US Government, 2017.
- US State Department. "Memorandum of Conversation between Secretary of State Dean Rusk and Soviet Ambassador Anatoli Dobrynin, US State Department; Document #59, May 30, 1962." In *Foreign Relations of the United States; Berlin Crisis, 1962–1963*, edited by Charles S. Sampson, Vol. XV. FRUS 1961–1963. Washington, D.C.: United States Government Printing Office, 1993.
- . "Memorandum of Conversation between Secretary of State Dean Rusk and Soviet Ambassador Anatoli Dobrynin, US State Department; Document #64, June 18, 1962." In *Foreign Relations of the United States; Berlin Crisis, 1962–1963*, edited by Charles S. Sampson, Vol. XV. FRUS 1961–1963. Washington, D.C.: United States Government Printing Office, 1993.
- Van Evera, Stephen. *Guide to Methods for Students of Political Science*. 1st Edition. Ithaca: Cornell University Press, 1997.

- Walton, C. Dale, and Colin S. Gray. "Chapter 3: The Geopolitics of Strategic Stability: Looking beyond Cold Warriors and Nuclear Weapons." In *Strategic Stability: Contending Interpretations*, edited by Elbridge A. Colby and Michael S. Gerson, 85–115. Strategic Studies Institute. Carlisle Barracks, PA: U. S. Army War College, 2013.
- Waltz, Kenneth N. "The Stability of a Bipolar World." *Daedalus* 93, no. 3 (1964): 881–909.
- Waltz, Kenneth Neal. *Realism and International Politics*. Transferred to digital print. New York, NY: Routledge, 2009.
- Watson, Robert J. *Secretaries of Defense Historical Series; Into the Missile Age, 1956-1960*. Vol. IV. IX vols. Secretaries of Defense Historical Series. Washington, D.C.: Historical Office, Office of the Secretary of Defense, 1997.
- Williams, Phil. *Crisis Management: Confrontation and Diplomacy in the Nuclear Age*. New York: Wiley, 1976.
- Wohlstetter, Albert. "The Delicate Balance of Terror." *Foreign Affairs* 37, no. 2 (1959): 211–34.
- Wohlstetter, Albert, and Fred Hoffman. "Defending a Strategic Force After 1960." Santa Monica, CA: RAND, 1954.
- Wohlstetter, Albert J, Roberta Wohlstetter, and Strategic Studies Institute. *Nuclear Heuristics Selected Writings of Albert and Roberta Wohlstetter*. Edited by Robert Zarate and Henry D Sokolski. Washington, D.C.: US Government, 2009.
- Wolfers, Arnold, Percy E. Corbett, and William T. R. Fox. *The Absolute Weapon: Atomic Power and World Order*. Edited by Bernard Brodie. New Haven, CT: Yale Institute of International Studies, 1946.
- Zaks, Sherry. "Relationships Among Rivals (RAR): A Framework for Analyzing Contending Hypotheses in Process Tracing." *Political Analysis* 25, no. 3 (July 2017): 344–62.