Tactical Nuclear Weapons: Their Purpose and Placement

BY

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A THESIS SUBMITTED TO THE FACULTY OF THE
SCHOOL OF ADVANCED AIR AND SPACE STUDIES
FOR COMPLETION OF GRADUATION REQUIREMENTS

SCHOOL OF ADVANCED AIR AND SPACE STUDIES
AIR UNIVERSITY
MAXWELL AIR FORCE BASE, ALABAMA
JUNE 2015

APPROVAL

The undersigned certify that this thesis meets master's-level standards of research, argumentation, and expression.

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DISCLAIMER

The conclusions and opinions expressed in this document are those of the author. They do not reflect the official position of the US Government, Department of Defense, the United States Air Force, or Air University.

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Major Edward G. Ferguson was commissioned a Second Lieutenant in the United States Air Force in 2001 out of ROTC Detachment 105 following the completion of a Bachelor of Science degree in Engineering Physics from the Colorado School of Mines. In 2003, he completed his Master's of Science degree in Physics (Applied) from the Air Force Institute of Technology authoring a thesis entitled "Optical Characterization of Antimony-Based, Types-I and -II, Multiple Quantum-Well Semiconductor Structures for Mid-Infrared Laser Applications." Major Ferguson was subsequently assigned to the Air Force Research Laboratory's Directed Energy Directorate, Laser Effects Division, Laser Effects Branch. During this assignment he was deployed to the 379th Expeditionary Mission Support Group. In 2006, Major Ferguson was selected for a Missile Operations Assignment. He held a variety of positions in the 12th Missile Squadron, the 341st Operations Support Squadron, and the 341st Operations Group. During this period Major Ferguson was deployed as an Operations Analyst in the Strategy Division of the U.S. Air Forces Central Command Air and Space Operations Center. Following his time in the missile field, Major Ferguson was an Operations Analyst in the Capabilities and Resource Integration Directorate of United States Strategic Command. In 2014, he graduated from the Naval War College Navy Command And Staff program. While in attendance Major Ferguson was selected as a Gravely Scholar and completed research on methods for improving Navy Space Cadre development and employment. In 2014, he began studies at the School of Advanced Air and Space Studies as a member of Class XXIV. Major Ferguson is married and has been blessed with wonderful boys.

ACKNOWLEDGMENTS

I would like to thank my classmates, advisor, reader, and the staff at the School of Advanced Air and Space Studies. Without you I could not have completed this study or this program. The help and support of these wonderful individuals would be meaningless without the support of my wife and our sons. You have made and continue to make this all possible and worthwhile. I thank God everyday that I have my family, live in this country, and am able to capitalize on these opportunities.

ABSTRACT

This study answers the question -- Why does America have tactical nuclear weapons (TNWs) in Europe today? – treating America and the North Atlantic Treaty Organization (NATO) as unitary actors and using a comparative history of three time periods. In the 1950s, the United States, in conjunction with NATO, placed atomic weapons in several European locations. As the Soviet empire began to falter in the 1990s, NATO and the United States reexamined the role of TNWs in their respective strategies. By the 2000s, various aspects of the weapons in Europe needed to be refurbished for them to remain viable. The need for a life extension program drove the latest reappraisal of TNWs in NATO and the United States' security strategies. Answering questions on threats, value, emplacement, and employment is facilitated through an examination of the evolution of TNWs as a character in these strategies. An intricate cycle of interaction between diplomatic, economic, and military concerns was uncovered. As the threats to state's interests diminish and reappear the value of TNWs in countering these dangers fluctuates, but the presence of these nuclear weapons always induces uncertainty in an adversary with extremely high consequences for making the wrong decision. The value of TNWs lies in their ambiguity. In the 1950s NATO and American security strategies relied heavily on their destructive power to deter the USSR and defeat an attack should deterrence fail. The dissolution of the Soviet Bloc in the 1990s changed the value of TNWs. In light of the uncertainty and threat of regional disputes expanding into global conflicts, TNWs were maintained in Europe to stabilize NATO and ensure the Alliance had the means to enforce its security strategy. In the 2000s, the rise of terrorism and a resurgent Russia are increasing both the desire to rely on the destructive power of TNWs and the threat of a non-state actor using them. TNWs are an irreplaceable military capability in tilting an adversary's calculation on the use of violence in the favor of the United States and NATO. Today, NATO needs TNWs to reassure itself of America's commitment to European security and to deter Russian aggression.

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Tactical Nuclear Weapons

Many would argue that a nuclear detonation is a strategic event, politically and militarily, regardless of the yield or delivery means.

- Richard Weitz, "The Historical Context" in *Tactical Nuclear Weapons and NATO*

War has occupied man's thoughts, ambitions, dreams, and nightmares since the advent of civilization. In 1832, the wife of Carl von Clausewitz published *On War*, which has since become a seminal text in strategy. The great Prussian dedicated an entire book in his first chapter to the danger of war. He begins, "To someone who has never experienced danger, the idea is attractive rather than alarming."[1] Clausewitz then proceeded to follow a fictional novice on the battlefield in what is possibly one of literature's most powerful descriptions of 19th century warfare. The more important insight Clausewitz offers is his concluding thought: "Danger is a part of the friction of war. Without a conception of danger we cannot understand war."[2] The invention of nuclear weapons forever altered the dangers present in war. The unprecedented and unmatched destructive power of these weapons gives humanity the ability to destroy the globe. Studying the need for nuclear weapons and the conditions for their employment is vital to prevent the attraction described by Clausewitz which could result in the annihilation of man.

Beyond questioning the necessity and utility of nuclear weapons writ large is an argument against attempting to qualify nuclear weapons as *strategic* or *tactical*. Since the invention of the nuclear weapon, scientists, engineers, politicians, and soldiers have debated its use and utility. At the end of World War II, nuclear scientists argued against the development of fusion weapons.[3] In the 1970s, politicians debated the use of *neutron bombs*, weapons capable of annihilating organic matter leaving everything else

1. Carl von Clausewitz, *On War* (Princeton, N.J: Princeton University Press, 1976), 113.
2. Clausewitz, *On War*, 114.
3. Lawrence Freedman, *The Evolution of Nuclear Strategy*, 3rd ed (Houndmills, Basingstoke, Hampshire ; New York: Palgrave Macmillan, 2003), 63.

apparently untouched[4] These are only portions of the larger discussion on nuclear weapons. Focusing on tactical nuclear weapons (TNWs) facilitates a discussion free from many of these historical arguments. The value of *all* nuclear weapons is covered in depth by many more adept researchers elsewhere. This study reduces the question--Why does America have TNWs in Europe today?--to an examination and analysis of three discreet time periods: the 1950s, 1990s, and 2000s. Between 1953 and 1954 America, in conjunction with the North Atlantic Treaty Organization (NATO), placed its first TNWs in Europe based on a perceived threat and a desire to establish a leadership role in the international community. In the 1990s, the dissolution of the Communist Bloc altered the international system, and, while the United States reduced the number and type of TNWs in Europe, the weapons were not removed. In the 2000s, American TNWs required life extension programs, and the platforms needed to employ them increasingly became obsolete. The emergence of religious fundamentalism and associated terrorism drove the military, politicians, economists, and analysts to ponder the value of TNWs in Europe. Examining American and NATO security strategies during these three time periods illuminates the environment and logic that led to TNWs being deployed and retained, which in turns helps explain why these weapons are still in Europe today. Before proceeding, terms and constraints require definition and justification.

Definition of Tactical Nuclear Weapons

TNWs have been given various names and have been defined multiple ways. Amy Woolf and Paul Schulte review many of these attempts to categorize tactical weapons. Reviewing these and a history of the differentiation between *strategic* and *tactical* facilitates an updated definition that will be used in this study.

In a report prepared for the 113th Congress, Amy Woolf defines nonstrategic nuclear weapons as delivered by shorter-range systems with low-yield warheads intended to attack the battlefield, and have in the past included mines, artillery, sub-intercontinental ballistic and cruise missiles, and gravity bombs.[5] Woolf's use of the term nonstrategic is consistent with other analysts' and journalists' use of *tactical* to define this class of weapons. For the purposes of consistency this work will only use the

4. Freedman, *The Evolution of Nuclear Strategy*, 367.
5. Amy Woolf, *Nonstrategic Nuclear Weapons* (Washington, D.C.: Congressional Research Service, January 3, 2014).

term *tactical* to describe these types of weapons and will note the change when necessary in other authors' works.

Paul Schulte offers an overview of previous definitions for TNW before creating his own. In "Tactical Nuclear Weapons in NATO and Beyond: A Historical and Thematic Examination" as a part of *Tactical Nuclear Weapons in NATO* Schulte claims, "The most cited criteria [for TNWs] involve(s) a short range (under the 500 kilometer lower limit established by the Intermediate Nuclear Forces [INF] Treaty of 1987) and a low yield."[6] He acknowledges a myriad of other possible definitions. Some analysts delineate between *strategic* and *tactical* nuclear weapons based on treaties. *Tactical* weapons are unaddressed in existing nuclear weapons treaties. Additionally, some authors define TNWs by their intended target. *Tactical* weapons are employed against fielded forces or interdiction targets.[7] The controversy amongst TNW definitions centers on whether range, yield, target, or some combination is the best method to delineate *strategic* from *tactical* weapons. Schulte's work led him to create his own definition:

> [TNWs are] Nuclear devices and delivery systems with relatively short range and low yield by contemporary standards, which are intended for employment against conventional, or nuclear, ground, naval, air targets or transport assets, on the battlefield, or across the theater, to contribute to total conventional and nuclear campaign capability, yet which are not expected to inflict strategically decisive damage to enemy military, economic, or regime targets, but whose use would nevertheless be an unmistakable signal that the stakes in a crisis were regarded as serious enough to transform it into, or continue it, as a nuclear conflict, and so, unavoidably, to risk possible escalation to a strategic level.[8]

The problem with Schulte's and Woolf's definitions is their implicit reduction of the argument. These definitions highlight two biases common in TNW definitions. Deployment Bias is basing the definition on the platform used to deploy it. In contrast, Employment Bias is basing the definition on the target the weapon is aimed at. Schulte's extensive definition would classify a B61-12 dropped from an F-16 differently than the

6. Army War College (U.S.), *Tactical Nuclear Weapons and NATO*, ed. Thomas M. Nichols, Douglas T. Stuart, and Jeffrey D. McCausland (Carlisle, PA: Strategic Studies Institute, U.S. Army War College, 2012), 13–14.
7. Army War College (U.S.), *Tactical Nuclear Weapons and NATO*, 13–15.
8. Army War College (U.S.), *Tactical Nuclear Weapons and NATO*, 15.

same bomb dropped from a B-2, even when aimed at the same target. Likewise, Woolf's definition carries deployment bias and includes assumptions on the ability to define a geographical boundary for the battlefield. As quoted above, Weitz observes that using any nuclear weapon creates strategic effects outside of military objectives after it explodes. This study will not examine post-use implications; it will focus on the reasons TNWs are in Europe and why they would be used. Airmen have struggled over the differentiation between *strategic* and *tactical* weapons and platforms throughout their history. These theorists and strategists debated whether the power of the airplane is in its ability to enhance the capabilities of naval and land forces or in its inherent ability to bypass these forces?

Lawrence Freedman cited early airpower advocates as the cause of debate over *strategic* versus *tactical* weapons and platforms. In *The Evolution of Nuclear Strategy,* Freedman attributes the use of *strategic* as an adjective to the evolution of airpower after World War I.[9] Following the Great War, the whole of society became intimately involved in war. Strategic thought turned to the airplane as a tool to end war rapidly, and airpower theories began to include society as a target. Theorists like Giulio Douhet advocated targeting civilians to incite rebellion against the government and force an end to war.[10] In a departure from previous strategic theory, fielded forces were no longer the key to victory.[11] The ability to target from the air without first going through ground forces and thereby independently achieve victory was termed *strategic bombing.* This term evolved to include the platforms used to execute it, and so *strategic bomber* came into use. The advent of nuclear weapons employed from *strategic bombers* brought with them the term *strategic bomb,* a single weapon capable of such destruction it was sufficient to end a war. The delineation between *strategic* and *tactical* arose from attempts to differentiate between airpower employed in support of operations on land or at sea versus capabilities used in separate campaigns aimed at ending the conflict outright. *Tactical bombs* were used to support land and sea offensives and *strategic* ones

9. Freedman, *The Evolution of Nuclear Strategy*, 5.
10. Giulio Douhet, *The Command of the Air* (University of Alabama Press, 2009).
11. Clausewitz, *On War*; Antoine Henri Jomini, *The Art of War* (Mineola, N.Y: Dover Publications, 2007); Alfred T. Mahan, *The Influence of Sea Power Upon History, 1660 - 1783* (Cosimo, Inc., 2007).

were dropped in pursuit of independent objectives.[12] A definition for *tactical* nuclear weapons emerges from this lineage.

TNWs are lower-yield weapons aimed at targets whose destruction creates advantage for forces in another domain rather than independent victory. The pertinent domains are land, sea, air, space, and cyberspace. American military strategy and doctrine increasingly relies on cross-domain effects, in part to mitigate an inability to define the battlefield. American military experiences in Operations IRAQI and ENDURING FREEDOM demonstrated the impossibility of bounding the battlefield by geometric lines (e.g. front line, support area, etc.). Instead it has become common to define a battlespace or area of operations (AOO) and differentiate operations within the AOO by their intended purpose. The *three-block war* is possibly the most common expression for this concept. In 1999, General Charles Krulak characterized the twenty-first century battlefield as increasingly complex and lethal with blurred lines between combatant and non-combatants resulting in a reality requiring military forces to perform a range of military functions from stability to combat operations in a confined temporal and geographic space.[13] Given this setting, the purpose and effects of military operations defines them, rather than the type of forces being employed. In this environment, TNWs are differentiated from *strategic* weapons by their intended cross-domain effects. Currently the United States' nuclear capability in this mission set is represented in a single weapon, with multiple variants. Before continuing to address why these weapons are in Europe, a review of where TNWs developed is helpful in understanding their role in various security strategies.

The Evolution of Tactical Nuclear Weapons

The evolution of tactical nuclear weapons is the result of technological and social interaction reducing the explosive power and weight of these weapons, in part to give multiple Department of Defense components active roles in nuclear employment. Currently, the United States actively uses a single weapon family for its TNW needs, the B-61 gravity bomb, shown in Figure 1. This section will briefly describe the technological evolution of TNWs starting with the first atomic weapon produced in large

12. Freedman, *The Evolution of Nuclear Strategy*, 5.
13. Charles Krulak, "The Strategic Corporal: Leadership in the Three Block War," *Marines Magazine*, January 1999, http://www.au.af.mil/au/awc/awcgate/usmc/strategic_corporal.htm.

numbers, moving to the first *tactical* weapon, and concluding with the B-61, demonstrating a clear path from the earliest atomic weapons to those deployed in Europe today.

Figure 1: Image of the B-16 Mod 12 on a wind tunnel stand for testing at Arnold Engineering Development Center, Tennessee.

Source: Reprinted from "B61-12 Life Extension Program Undergoes First Full-Scale Wind Tunnel Test | National Nuclear Security Administration," *NNSA*, April 14, 2014, http://nnsa.energy.gov/mediaroom/pressreleases/windtunnel.

The first atomic warhead produced in significant numbers was the Mark-3 (Figure 2). This was the configuration employed in the *Fat Man* device dropped on Nagasaki. It was an 18 to 49 kiloton bomb produced between 1945 and 1949. It was a *strategic* weapon because it was the largest in the arsenal, and it was intended to be sufficient to end a conflict. Additionally, the Mark-3 was a large and heavy weapon requiring a dedicated B-29 to drop it. A *strategic* aircraft could not drop a *tactical* weapon, or could it? The Mark-7 was the first weapon to highlight this paradox.

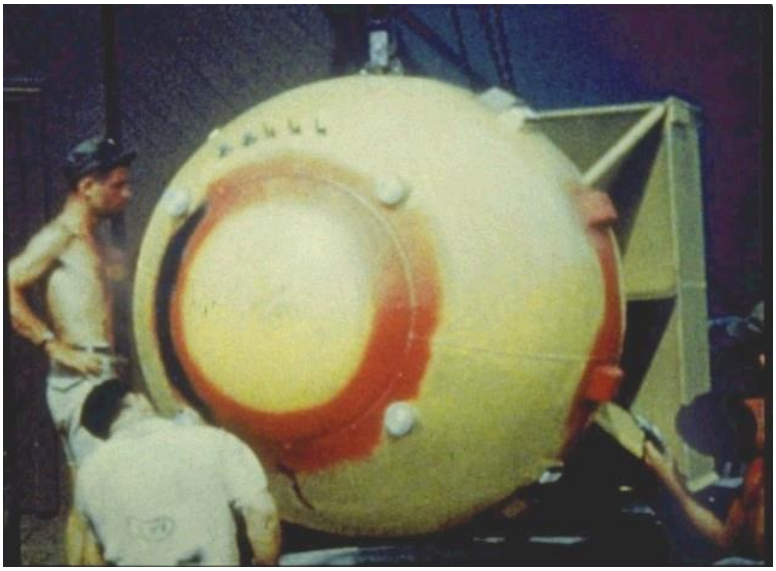

Figure 2: Fat Man being prepared for loading onto *Bock's Car* for mission to Nagasaki.

Source: Reprinted from James N. Gibson, "Complete List of All U.S. Nuclear Weapons," *Nuclearweaponsarchive.org*, October 14, 2006, http://nuclearweaponarchive.org/Usa/Weapons/Allbombs.html.

The Mark-7 was the first nuclear warhead used in *tactical* weapons. It presented an opportunity for non-Air Force organizations to gain an active role in the use of nuclear weapons. The Mark-7, shown in Figure 3, was employed by all three services in the Navy's BOAR[14] rocket, the Army's Corporal and Honest John missiles, and as a bomb on the Air Force's B-45, B-57, F-84, F-100, and F-101.[15] In service from 1952 until 1967, it was deployed in a total of 15 different designations.[16] The Mark-7 could be employed from both *tactical* and *strategic* aircraft, making it difficult to assign the weapon to either category. It had a yield of between 8 and 61 kilotons, a low yield in the age of megaton weapons.[17] The Mark-7 facilitated the use of nuclear weapons on intermediate range ballistic missiles, a class of weapons later prohibited by the 1987 Intermediate Nuclear Force (INF) Treaty. The treaty prohibited ballistic missiles with

14. Bombardment Aircraft Rocket, or Bureau of Ordnance Atomic Rocket
15. "Mark 6 Nuclear Bomb," *GlobalSecurity.org*, accessed March 4, 2015, http://www.globalsecurity.org/wmd/systems/mk6.htm.
16. James N. Gibson, "Complete List of All U.S. Nuclear Weapons," *Nuclearweaponsarchive.org*, October 14, 2006, http://nuclearweaponarchive.org/Usa/Weapons/Allbombs.html; "Historical United States Nuclear Weapons," *GlobalSecurity.org*, accessed March 4, 2015, http://www.globalsecurity.org/wmd/systems/nuke-list.htm.
17. "Historical United States Nuclear Weapons."

ranges between 500 and 5,000 kilometers.[18] Consequently, it limited TNWs in Europe to bombs, mines, artillery shells, torpedoes, and air-to-air missiles. The Mark-7 was the first nuclear weapon to illustrate the complexity of distinguishing between *strategic* and *tactical* nuclear weapons. It was also the forerunner of what would become the B-61.

Figure 3: Mark-7 on a weapons cart.

Source: Reprinted from "Mark 6 Nuclear Bomb," *GlobalSecurity.org*, accessed March 4, 2015, http://www.globalsecurity.org/wmd/systems/mk6.htm.

The only TNW deployed in Europe today is the B-61; in reality, the B-61 is a versatile and varied *family* of weapons.[19] In service since 1966, it has been modified 12 times. After the current life extension program (LEP) is complete, the stockpile will contain two B-61 variants, the Mod 11 and Mod 12. Accepted into America's stockpile in 2001, the Mod 11 is designed to hold hardened deeply buried targets at risk. Field-testing for the bomb was accomplished using B-2A, B-52, F-15E, and F-16 aircraft.[20]

18. Bureau of Public Affairs Department Of State. The Office of Website Management, "Intermediate-Range Nuclear Forces Treaty INF Treaty," Other Release, *U.S. Department of State*, (March 24, 2008), http://www.state.gov/t/avc/trty/102360.htm.
19. "U.S. Tactical Nuclear Weapons in Europe Fact Sheet," *The Center for Arms Control and Non-Proliferation*, January 2011, http://armscontrolcenter.org/issues/nuclearweapons/articles/US_Tactical_Nuclear_Weapons_Fact_sheet/.
20. "B61-11 Earth-Penetrating Weapon," *GlobalSecurity.org*, accessed March 19, 2015, http://www.globalsecurity.org/wmd/systems/mk7.htm.

Some analysts categorize the Mod 11 as a *strategic* weapon, while considering the other variants *tactical*.[21] The Mod 12 will replace four currently fielded bombs, but will not affect the Mod 11 (Figure 4). Over the life of the B-61 program, its yield has been reported to range from 0.3 to 500 kilotons.[22] The anticipated yield of the Mod 12 is a maximum of 50 kilotons.[23] The B-61 is presently deployed in five versions and can be employed from Air Force, Navy, and European fighters and bombers as shown in Figure 5. Current planning calls for the B-2, B-52, F-15, F-16, and F-35 aircraft to drop the B-61 Mod 12.[24] Just like the Mark-7, it is a nuclear weapon that blurs the line between *strategic* and *tactical*, and it is crucial to the stockpile.

During its 2013 Congressional testimony, the National Nuclear Security Administration (NNSA) described the critical importance of the B-61 LEP to nuclear stockpile strategy. The stockpile currently consists of two submarine-launched ballistic missile (SLBM) warheads, two intercontinental ballistic missile (ICBM) warheads, and three air delivered warheads. In the future, it will consist of three interoperable ballistic missile and two air-delivered warheads. This new *3+2 strategy* ensures further reductions in the number of warheads and increases the flexibility of those retained. Interoperability also reduces the risk to any individual weapon system in the face of uncertainty. The NNSA described the B-61 refurbishment as "critical modernization activity to sustain the health of the nuclear deterrent" for two reasons: it is 50% of the air dropped and 20% of the total planned nuclear capability, and is also one of America's oldest weapons.[25] Without a viable B-61 Mod 12 weapon, the *3+2 strategy* is not practicable without significant cost and time increases.

21. "Historical United States Nuclear Weapons."
22. "Historical United States Nuclear Weapons"; Gibson, "Complete List of All U.S. Nuclear Weapons."
23. Hans M. Kristensen, "B61 LEP: Increasing NATO Nuclear Capability and Precision Low-Yield Strikes," *Federation Of American Scientists*, June 15, 2011, http://fas.org/blogs/security/2011/06/b61-12/.
24. "B61 Nuclear Bombs in Turkey," *Eurasian Hub*, May 11, 2013, http://eurasianhub.com/2013/05/11/b61-nuclear-bombs-in-turkey/; Kristensen, "B61 LEP," 61.
25. "Statement on B61 Life Extension Program and Future Stockpile Strategy before the House Armed Services Subcommittee on Strategic Forces | National Nuclear Security Administration," *National Nuclear Security Administration*, October 30, 2013, http://nnsa.energy.gov/mediaroom/congressionaltestimony/lep.

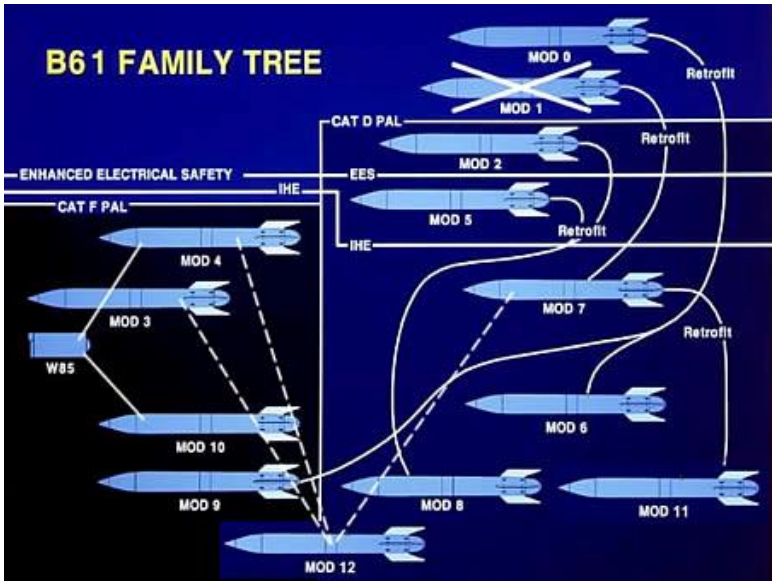

Figure 4: Visual depiction of the B-61 Mod 12 program.

Source: Reprinted from Hans M. Kristensen, "The Nuclear Weapons Modernization Budget," *Federation Of American Scientists*, February 17, 2011, http://fas.org/blogs/security/2011/02/nuclearbudget/.

The B-61 LEP is not creating a new nuclear weapon. The Mod 12 is a "refurbished weapon" grounded on the B61-4 (Figure **6**).[26] The decision to consolidate previous versions into a single weapon took 18-months between 2009 and 2010. Discussions and deliberations included stakeholders from both domestic and NATO organizations. According to a 2011 Government Accountability Office report, "had the allies opposed the guided tailkit, then the strategy to consolidate the different versions of the bomb may have been in jeopardy."[27] NATO and America jointly developed and approved the requirements for the B-61 Mod 12 LEP. While it is unlikely that every NATO member or American stakeholder supported these decisions with equal vigor, there is precedent in American and European literature to treat NATO and America in accordance with a rational actor model.

26. *Nuclear Weapons: DoD and NNSA Need to Better Manage Scope of Future Refurbishments and Risks Maintaining U.S. Commitments to NATO*, Nuclear Weapons (Washington, D.C.: Government Accountability Office, May 2011), http://www.gao.gov/new.items/d11387.pdf.
27. *Nuclear Weapons: DoD and NNSA Need to Better Manage Scope of Future Refurbishments and Risks Maintaining U.S. Commitments to NATO*, 13.

B61 Nuclear Bomb Versions			
Design	**Platform**	**Yield (kt)**	**Estimated Numbers** [a]
Existing Versions			
B61-3 tactical bomb	F-15E, F-16C/D, F-16A/B(MLU), PA-200	0.3, 1.5, 60, 170	200 in stockpile, ~90 deployed in Europe
B61-4 tactical bomb	F-15E, F-16C/D, F-16A/B(MLU), PA-200	0.3, 1.5, 10, 50	200 in stockpile, ~90 deployed in Europe
B61-7 strategic bomb	B-2, B-52H	10-360	430 in stockpile, 215 active
B61-10 tactical bomb	(F-15E, F-16C/D, F-16A/B(MLU), PA-200)	0.3, 5, 10, 80	100 in inactive stockpile
B61-11 strategic bomb [b]	B-2	400	36
Future Version			
B61-12 [c]	B-2, F-15E, F-16C/D, F-16A/B(MLU), F-35, PA-200	0.3, 1.5, 10, 50	~ 400 [d]

[a] The stockpile is divided into active and inactive weapons, each with many sub-categories. Active weapons include weapons deployed in Europe and on strategic delivery vehicles, as well as reserve weapons in the Responsive Force for upload in a crisis. Inactive weapons consists of weapons where the limited-life components such as tritium have expired or been removed. Retired weapons are eventually dismantled, but many of their components are kept in storage.

[b] The B61-11 is an earth-penetrating modification of the B61-7 but is not part of the planned B61 LEP.

[c] The nuclear explosive package of the B61-12 design is based on B61-4 but with significant surety upgrades such as multi-point safety and additional use-control features.

[d] Of a total of 660 B61-4s originally built, approximately 440 remained in the stockpile by 2000. The number has since dwindled to about 200, so the B61-12 production will have to also use nuclear explosive packages from retired B61-4s.

Key: kt = kilotons; LEP – Life Extension Program; MLU = Mid-Life Upgrade

Federation of American Scientists, 2011

Figure 5: Overview of the existing variations of the B-61 including platform, yield, and estimated numbers.

Source: Reprinted from Hans M. Kristensen, "B61 LEP: Increasing NATO Nuclear Capability and Precision Low-Yield Strikes," *Federation Of American Scientists*, June 15, 2011, http://fas.org/blogs/security/2011/06/b61-12/.

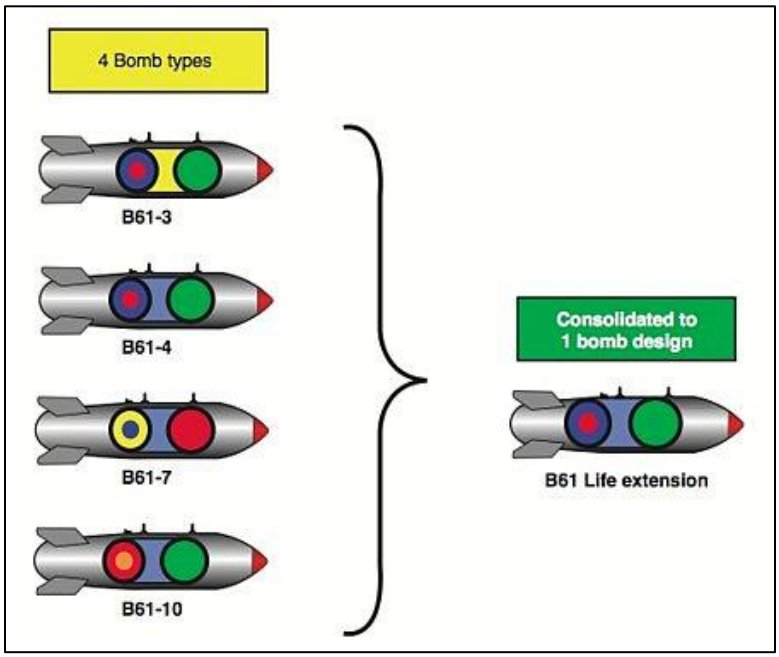

Figure 6: The B-61 LEP replaces four variants with the Mod 12 weapon.

Source: Reprinted from *Nuclear Weapons: DoD and NNSA Need to Better Manage Scope of Future Refurbishments and Risks Maintaining U.S. Commitments to NATO*, Nuclear Weapons (Washington, D.C.: Government Accountability Office, May 2011), 12, http://www.gao.gov/new.items/d11387.pdf.

NATO and the United States as Rational Actors

The Rational Actor Model (RAM) will be used to characterize the interests and actions of the United States and NATO. As described by Graham Alison and Philip Zelikow in *The Essence of Decision Making,* the RAM is characterized by the following assumptions about the state: it is a unitary actor, with a coherent utility function, acting in relation to threats and opportunities, to maximize value. These assumptions lead to questions about: threats and opportunities, who the actor is, what the utility function is, and what maximizes the actor's objectives. The RAM is used in both Realist and Liberal international theory to explain state action and interaction.[28] While this model offers great utility, it is admittedly reductionist.

In reality, NATO is an alliance whose decisions are made by consensus. These pronouncements are influenced by a myriad of formal and informal groups,. As cited by Simon Lunn in "The Role and Place of Tactical Nuclear Weapons – A NATO

28. Graham Allison and Zelikow Philip, *Essence of Decision: Explaining the Cuban Missile Crisis*, Second Edition (New York: Longman, 1999), chap. 1.

Perspective" as part of *Tactical Nuclear Weapons in NATO*, "By its very nature, the process of consensus lacks transparency and is frequently impenetrable for those outside of the formal policy process."[29] A solution to being outside the process is to treat NATO as a unitary actor, whose official documents express the desires of all its members. This same logic applies to American intricacies in the relationships between branches of government, civil groups, lobbyists, and citizens. The RAM facilitates a simplified comparison between American and NATO policy in three time periods.

Time Periods

There are three critical periods in the timeline of TNWs in Europe. A comparative history between these periods will explain why America initially deployed TNWs to Europe and why these weapons have remained there in spite of dramatically changed international circumstances. In the 1950s, the United States, in conjunction with NATO, placed atomic weapons in several European locations. As the Soviet empire began to falter in the 1990s, NATO and the United States reexamined the role of TNWs in their respective strategies. By the 2000s various aspects of the weapons in Europe needed to be refurbished for them to remain viable. The need for a LEP decision drove the latest reappraisal of TNWs in NATO and the United States' security strategies. Answering a prescribed set of questions in each of these three time periods facilitates an examination of the evolution of TNWs as a character in these strategies.

Comparative Questions

The role of nuclear weapons has evolved; asking a set of questions over time and examining pertinent state and news documents provides insight into this evolution. The first question for any national security examination is: what is the threat? Follow-up questions begin to determine the value of TNWs in countering that threat. Inquiring when and how TNWs would be used gives an indication of whether they were considered weapons of last resort or an integral part of the total war plan. Examining where the nuclear and conventional forces were located combines with the previous answers to indicate whether TNWs were effective. The efficacy of nuclear weapons need not be limited to military concerns. As observed by Weitz, TNWs have a political effect no matter the military intent. This study examines both impacts, but is limited to the

29. Army War College (U.S.), *Tactical Nuclear Weapons and NATO*, 238.

decisions and plans prior to employment and obviously cannot discuss the impact of having used a TNW.

Conclusion

The impact of TNWs has varied over time. Answering the question--why does America have TNWs in Europe today?--is best approached by first defining *tactical* weapons as: lower-yield weapons aimed at targets whose destruction creates advantage for forces in another domain rather than attempting to achieve victory independently. Given this definition, America's TNW in Europe is the B-61, which is in fact a family of weapons. At the end of the current LEP, the B-61 family will consist of two variants. This life extension consolidates four previous versions, but does not alter the B-61 Mod 11. Convoluting possible definitions for *tactical* weapons, the B-2, B-52, F-15, F-16, and F-35 aircraft are expected to drop the B-61 Mod 12.[30] Using this study's definition resolves this possible ambiguity. Reducing complexity, the actors affecting TNW placement in Europe are limited to the United States and NATO. Treating these two larger entities as unitary actors both prevents being waylaid by the intricacies of the interactions of their constituent parts, and allows for comparison focusing on the published strategic documents. The strategic documents from three time periods used to answer consistent questions in a comparative history will illuminate why America has TNWs in Europe today. The endeavor must start at the beginning, the initial decision to place atomic weapons in Europe.

30. "B61 Nuclear Bombs in Turkey"; Kristensen, "B61 LEP," 61.

Chapter 2

The Decision to Forward Deploy

> *Anciently the skillful warriors first made themselves invincible and awaited the enemy's moment of vulnerability. Invincibility depends on one's self; the enemy's vulnerability on him.*
>
> - Sun Tsu, *The Art of War*

In the immediate aftermath of World War II the United States appeared invulnerable as the sole possessor of atomic weapons. This period of indomitability would be fleeting. America's strategic documents in the 1950s predicted the United States and the USSR would achieve nuclear parity by 1954.[1] In the late 1940s though, the United States wielded unrivaled military power. John Mearsheimer defines military power in *The Tragedy of Great Power Politics* as directly related to the size of military forces.[2] In the aftermath of World War II the combat potential of military forces depended more on firepower than on numbers. Nuclear forces provided an avenue to generate larger combat potential than an equal number of conventional forces. These weapons quite literally offered "more bang for the buck." This ability presented the United States with the question of how best to employ and emplace its military power.

America chose to establish international institutions and share its military power to preserve its influence in global affairs. In attempting to explain the post-World War II peace in his 2001 work *After Victory*, G. John Ikenberry advocates, "The character and stability of postwar order hinge on the capacities of states to develop institutional mechanisms to restrain power and establish binding commitments—capacities that stem from the political character of states and prevailing strategic thinking about the sources of international order."[3] On April 4, 1949 Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, the United Kingdom, and the

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1. The Executive Secretary, *National Security Council Report (NSC-68): United States Objectives and Programs for National Security*, NSC (Washington, D.C., April 14, 1950), 19, https://www.trumanlibrary.org/whistlestop/study_collections/coldwar/documents/pdf/10-1.pdf.
2. John J Mearsheimer, *The Tragedy of Great Power Politics* (New York, NY: W.W. Norton & Co, 2014), 3.
3. G. John Ikenberry, *After Victory: Institutions, Strategic Restraint, and the Rebuilding of Order After Major Wars*, Princeton Studies in International History and Politics (Princeton, NJ: Princeton University Press, 2001), 10.

United States established a new international order when the North Atlantic Treaty was signed. The mutual defense agreement committed its signatories to treat an attack on one as an attack on all.[4] Moving forward, the security of the United States would be tied to that of Europe. Examination of America's security strategy during the 1950s illustrates the importance of the North Atlantic Treaty Organization (NATO) in providing allies and installations to achieve its aims. The Alliance's strategic documents detailed its need for the United States' tactical nuclear weapons (TNWs) to provide Western Europe, in the words of Robert Art in his article "The Fungibility of Force" in *The Use of Force*, enough security against the Soviets to "have the political will to rebuild themselves economically."[5] An analysis of these security strategies and the documents that preceded them, highlight the importance of the United States' nuclear weapons in Europe for maintaining NATO and American security. Both had security strategies explained using twentieth century maritime military theory on the ability of a weaker power to contest control over disputed territory. Additionally, America's and NATO's security strategies relied on deterrence and should deterrence fail, the ability to defeat the adversary. These concepts presented NATO and the United States with decisions on where to emplace TNWs and how they should be employed. In 1953-1954, NATO and America emplaced TNWs in Western Europe to mitigate the threat posed by larger Soviet Bloc conventional military forces.

The Greatest Threat

In the 1950s, the Union of Soviet Socialist Republics (USSR) was the primary security concern for NATO and America. Mitigating this threat required combat potential. NATO documents as early as August 1949 acknowledged, "most Western military planners believed NATO was greatly inferior in conventional military strength to the Soviet Union and its Eastern European satellites."[6] By April of 1950, NATO had published the *North Atlantic Treaty Organization Midterm Plan* (DC-13), which identified NATO's defense policy objectives "to convince the USSR that war does not

4. *NATO Strategy Documents 1949- 1969* (Mons, Belgium: Supreme Headquarters Allied Powers Europe, October 1997), XI, http://www.nato.int/docu/stratdoc/eng/intro.pdf.
5. Robert J. Art and Kenneth N. Waltz, eds., *The Use of Force: Military Power and International Politics*, 7th ed (Lanham, MD: Rowman & Littlefield Publishers, 2009), 16–17.
6. *NATO Strategy Documents 1949- 1969*, XI.

pay, and, should war occur, to insure a successful defense."[7] This was a fundamental tenet of NATO strategy. DC-13 was described by Dr. Gregory Pedlow, Chief of the Supreme Headquarters Allied Powers Europe History Office, as the basis for all subsequent NATO strategic planning.[8] Many historians ascribe similar significance to the *National Security Council Report: United States Objectives and Programs for National Security* (NSC-68) with similar significance to the United States' Cold War security strategy. Preceding NCS-68, George Kennan's *Foreign Affairs* article entitled "The Sources of Soviet Conduct" defined America's perceptions of Soviet communism. Under the pseudonym X, Kennan declared, "there (could) never be on Moscow's side any sincere assumption of a community of aims between the Soviet Union and powers which are regarded as capitalist."[9] For this reason, the United States "must continue to regard the Soviet Union as a rival, not a partner, in the political arena."[10] Kennan officially expressed his ideas in the *X article* in a telegram to Secretary of State George Marshall.

The 1946 telegram entitled "Moscow via War" contained the foundational ideas of later United States policy for countering Soviet expansion. Kennan broke his telegram into five parts; basic features of the post-war Soviet outlook, background of this outlook, Soviet policy projections at the official and unofficial level, and recommendations for American policy. The central tenet of Moscow's post-World War II outlook was the perception that capitalist countries, which by their very nature existentially threatened the Soviet Bloc, were encircling the USSR. Conflict was inevitable and every effort must be made to strengthen the USSR's international position, while simultaneously taking every opportunity to weaken the capitalists. Kennan presents the Soviets as realists motivated by fear and power, willing to participate in international organizations to the extent that they helped to consolidate and project Soviet power. He described Soviet power, as "Impervious to logic of reason, and it is highly sensitive to logic of force."[11] Kennan

7. The Military Committee, *Military Committee Report (DC-13): North Atlantic Treaty Organization Medium Term Plan*, DC (Brussels, Belgium: North Atlantic Defense Committee, March 28, 1950), 7, http://www.nato.int/docu/stratdoc/eng/a500328d.pdf.
8. *NATO Strategy Documents 1949- 1969*, XIV.
9. X., "The Sources of Soviet Conduct," *Foreign Affairs* 65, no. 4 (July 1947): 858, doi:10.2307/20043098.
10. X., "The Sources of Soviet Conduct," 867.
11. George Kennan, "Moscow via War," Telegram, (February 22, 1946), 15, http://www.trumanlibrary.org/whistlestop/study_collections/coldwar/documents/pdf/6-6.pdf.

established the Soviet-American relationship as a zero-sum power struggle for control of the international system.

The United States policy in 1950 for the military's role in establishing and retaining a leadership role in the international system was specified in NSC-68. It reflected Kennan's ideas from his February 22, 1946 telegram. In a continuation of ideas from the *X article* and the *Long Telegram*, NSC-68 presented the Kremlin as the major threat facing the United States. This belief was grounded in Soviet actions. The 1948-1949 Berlin blockade demonstrated Moscow's desire to consolidate its hold on Eastern Europe. In 1948, the Soviets supported a communist coup in Czechoslovakia. Mao's consolidation of power in 1949 massively increased the spread of global communism. These events validated a belief in communism's desire to expand and contest the West in an aggressive manner. To counter this threat, American policy established the following objectives: America must make itself strong by developing its military and economic strength, build an international system based on American political and economic values, and enlist the support of this system in pressuring the Soviet Union. The role of military force in reaching these objectives was deterrence, but if it should fail in the task, it needed to compel the Soviets to "accept terms consistent with our [America's] objectives."[12] The Joint Chiefs of Staff assessed the USSR could overrun Europe, drive to the oil-bearing Near and Middle East, and "prevent any allied 'Normandy' type amphibious operations" to restore Western Europe.[13] To counter this, the United States needed to strengthen its positions and those of NATO. Unless action was taken, NSC-68 reported it was unlikely for Western Europe to prevent Soviet aggression even by 1960. With the prediction of a Soviet nuclear stockpile consisting of 200 fission weapons by mid-1954, the policy advocated a strong military posture.[14] The key to victory in this conflict would be combat potential.

Early Reliance on Atomic Weapons

In the 1950s, the United States and NATO relied on the use of nuclear capable forces to counter the Soviet threat. NATO's initial strategic concept, *The Strategic Concept for the Defense of the North Atlantic Treaty Area (MC-3),* listed to "Insure the

12. The Executive Secretary, *NSC-68*, 12.
13. The Executive Secretary, *NSC-68*, 18.
14. The Executive Secretary, *NSC-68*, 19.

ability to deliver the atomic bomb promptly" as the first "basic undertaking" to defend the North Atlantic Treaty area.[15] MC-3 acknowledged the necessity of atomic weapons and relied on America to employ them "assisted as practicable by other nations."[16] To fulfill its responsibilities, European nations would provide "the bulk of tactical air support and air defense in being."[17] The concept of a *force in being* was also present in America's security strategy. NSC-68 called for "other like-minded nations" to build "superior aggregate military strength, in being and readily mobilizable."[18] Both American and NATO strategies can be explained using the *in being* concept from twentieth century maritime theory.

Force in Being

Sir Julian Corbett conceptualized a *fleet in being* in 1911 to describe the capability of a weaker power to deny control of the sea to a stronger power. In American and NATO strategy in 1950, Europe was synonymous with the sea and the western powers were weaker. In *Some Principles of Maritime Strategy,* Corbett describes the capabilities of a *fleet in being*. The most a belligerent can hope for is to control the sea for a given period of time in a specific location. Between these moments, each vies for control using their available strength. Using a *force in being* concept "…a Power too weak to win command by offensive operations may yet succeed in holding the command in dispute by assuming a general defensive attitude."[19] The counter to these principles is, "If the *fleet in being* can be contained in such a way that it is impossible for it to reach the invading line of passage, it will be no bar to invasion."[20] In order for America and NATO to attain their aims, sufficient combat potential had to be possessed and it had to be in a position to block Soviet aggression. Corbett's theory of a *fleet in being* is a template to explain a NATO and American *force in being.* The purpose of nuclear and conventional forces in Europe is consistent with Corbett's theories.

15. The Secretary, *Military Committee Document (MC-3): The Strategic Concept for the Defense of the North Atlantic Treaty Area*, MC (Brussels, Belgium: North Atlantic Military Commitee, October 19, 1949), 6, http://www.nato.int/docu/stratdoc/eng/a491019a.pdf.
16. The Secretary, *MC-3*, 6.
17. The Secretary, *MC-3*, 6.
18. The Executive Secretary, *NSC-68*, 22.
19. Julian Stafford Corbett, *Some Principles of Maritime Strategy* (Annapolis, Md.: Naval Institute Press, 1972), 209.
20. Corbett, *Some Principles of Maritime Strategy*, 224.

The nuclear and conventional forces in Europe were not intended to defeat the USSR, only to deter them and barring that, to contest control of the continent until follow-on forces could arrive. Neither the United States nor NATO could field conventional forces in Europe sufficient to counter the USSR. The NATO strategy presented in DC-13 called for 90 ½ divisions, 7,640 land-based night fighter and bomber aircraft, and 1,089 ships by 1954 for the defense of treaty areas.[21] According to the Unites States Army Center of Military History, "In June 1950, the strength of the active Army stood at about 591,000 and included ten combat divisions."[22] Of these divisions, "In Europe, approximately 80,000 U.S. soldiers were stationed in Germany."[23] America did not have enough forces to achieve its strategic objectives. NSC-68 recognized the lack of forces required to reach these goals, and advocated for a build-up of strength.[24] NATO had fielded 25 active divisions and 5,200 aircraft by 1953."[25] Likewise, according to Tim Kane's *Heritage Foundation* report "Global U.S. Troop Deployment, 1950-2003," during this same period the United States' troop levels tripled.[26] Even with this growth, there was little chance of fielding the conventional forces required by DC-13. Atomic weapons presented the solution to inadequate conventional combat potential.

Military Use

The foundation for employing atomic weapons in Europe was laid in 1949. Both NATO and American strategic documents dictated the use of atomic weapons. MC-3 called for NATO forces to "counter as soon as practicable the enemy offensives against North Atlantic Treaty powers by all means available, including air, naval, land and psychological operations."[27] "All means available" was the language NATO used for atomic and later thermonuclear weapons.[28] In NSC-68, the United States recognized atomic weapons as vital to achieving its objectives and called for "substantially

21. James F. Schnabel, *Policy and Direction: The First Year* (Washington, D.C.: Center of Military History, United States Army, 1992), chap. III.
22. Schnabel, *Policy and Direction*, 44.
23. Schnabel, *Policy and Direction*, 44.
24. The Executive Secretary, *NSC-68*, 31.
25. John Whiteclay Chambers, *The Oxford Companion to American Military History* (Oxford University Press, 1999), sec. NATO.
26. Tim Kane, "Global U.S. Troop Deployment, 1950-2003," *The Heritage Foundation*, October 27, 2004, http://www.heritage.org/research/reports/2004/10/global-us-troop-deployment-1950-2003.
27. The Secretary, *MC-3*, 5.
28. *NATO Strategy Documents 1949- 1969*.

increased…atomic capabilities…to deter war and to provide reasonable assurance, in the event of war…[to] go on to the eventual attainment of its objectives."[29] With the need for nuclear weapons to counter the Soviets agreed upon, their location needed to be determined.

In the 1950s, The United States did not have adequate deployment of its atomic weapons to achieve its strategic objectives. America wanted to prevent the North Atlantic Treaty Area from being overrun by Soviet Bloc forces. NSC-68 recognized the United States did not have "tenable positions from which to employ its forces in the event of war and munitions power in being and readily available."[30] According to the December 3, 1952 update to MC-3, MC-3/5, the United States could expect European nations to provide "the hard core of ground forces" and "the bulk of tactical air support."[31] To achieve America's strategic object of deterring and if necessary preventing a Soviet offensive, the United States needed to place atomic weapons in Europe. Strategic objectives combined with a reliance on European forces influenced the emplacement of nuclear weapons.

TNWs provided the means to halt or delay a Soviet assault on the North Atlantic Treaty area, but needed to be placed in Europe for the weapons to have maximum effect as a *force in being*. The Soviets could invade Western Europe before the United States could mass forces from America on the continent. According to Corbett, America's *force in being* needed to "To hover near the enemy, keep him at bay, and prevent his attempting anything but at risk and hazard; to command their attention, and oblige them to think of nothing but being on their guard against your attack."[32] Consequently, America needed to forward deploy forces to mitigate this risk. Fielding forces capable of delivering TNWs in Europe would provide a sufficient threat to command Soviet attention. Their positioning was chosen to thwart predicted Soviet attacks.

29. The Executive Secretary, *NSC-68*, 60.
30. The Executive Secretary, *NSC-68*, 31.
31. The Secretary, *Military Committee Document (MC-3/5): The Strategic Concept for the Defense of the North Atlantic Treaty Area*, MC (Brussels, Belgium: North Atlantic Military Commitee, December 3, 1952), 5, http://www.nato.int/docu/stratdoc/eng/a521203a.pdf.
32. Corbett, *Some Principles of Maritime Strategy*, 222.

Emplacing Tactical Nuclear Weapons

TNWs were placed in front of the USSR's lines of advance predicted in DC-13. Western Europe was of central importance to NATO, and the USSR was expected to attack Western Germany, Luxemburg, Belgium, the Netherlands, France, and Denmark simultaneously with all component forces, and the United Kingdom by sea and air. Moscow's aim would be to cut off the Western Powers and deny them the ability to contest the USSR. Concurrent with the attacks on Western Europe, the Soviets were expected to launch offensives against Turkey, and the Near and Middle East to establish lines of communication for supply before the onset of winter. In the event of violent Soviet aggression, DC-13 argued the defense of NATO territory would be less costly than reconquest.[33] Combined with the tenet to engage in combat as far east as possible, DC-13 required more combat potential than NATO possessed to execute. Without enough conventional forces, NATO looked to expansion and TNWs to aid in its defense.

Early NATO enlargement and the emplacement of TNWs established the Alliance's deterrent against projected communist aggression. In 1952, Greece and Turkey joined NATO, followed by West Germany in 1955. The admittance of Greece and Turkey strengthened NATO's southern flank, and, according to NATO's public affairs website, not only "curb[ed] communist influence in Greece…it also relieved Turkey from Soviet pressure for access to key strategic maritime routes."[34] Along the predicted routes of Soviet Bloc advance, the Allies bolstered their defenses with TNWs. These weapons were a collection of surface launched "Matador" missiles, MGR-1 "Honest John" surface-to-surface missiles, M65 "Atomic Annie" artillery shells, and Mark 6 and Mark 7 gravity bombs.[35] The gravity bombs could be deployed from B-29, B-36, B-45, B-50, B-57, F2H, F3H-2N, F-84, F-100, A-1, and A-3 bombers and fighters.[36] In 1953 through 1954, the United States placed TNWs in Belgium, West

33. The Military Committee, *DC-13*.
34. "Member Countries," *NATO*, August 20, 2013, http://www.nato.int/cps/en/natohq/topics_52044.htm.
35. Unclassified specific deployments could not be found. These statements are based on a listing of nuclear weapons in America's arsenal at the time. Gibson, "Complete List of All U.S. Nuclear Weapons"; "Mark 6 Nuclear Bomb."
36. "Mark 6 Nuclear Bomb"; "Mark 7 Nuclear Bomb," *GlobalSecurity.org*, accessed March 4, 2015, http://www.globalsecurity.org/wmd/systems/mk7.htm; Andreas Parsch, "Directory of U.S. Military Rockets and Missiles: MGR-1," 2002, http://www.designation-systems.net/dusrm/r-1.html; "M65 Atomic Cannon," *GlobalSecurity.org*, accessed April 16, 2015, http://www.globalsecurity.org/military/systems/ground/m65.htm.

Germany, Turkey and the United Kingdom.[37] The placement of nuclear missiles, artillery shells, and bombs in Turkey provided the forces required to prevent the USSR from overrunning the Near and Middle Eastern oil resources. TNWs in the United Kingdom ensured the Soviets could not rely on overwhelming ground forces to overrun all TNW locations in Western Europe. The weapons in Germany and Belgium provided a capability to rapidly counter the large buildup of communist forces in East Germany. These locations delivered military utility; they provided both dispersion and the ability to concentrate forces, ensuring TNWs were able to mobilize rapidly in the event of Kremlin aggression. The combination of the capabilities of TNWs and the positions they occupied gave NATO and the United States the combat potential to fulfill the Alliance's military strategy, but this was not the only benefit.

Other Uses

TNWs in Europe provided a critical component in deterring the Soviets, but they were also a key linkage between the United States and its European partners. In their report entitled *U.S. Non-Strategic Nuclear Weapons in Europe: A Fundamental NATO Debate,* the NATO Parliamentary Assembly recognized "The deployment (of TNWs) was also intended to reassure European member states of the US nuclear guarantee. European members – at that time [in the 1950s] – never doubted US resolve to defend them conventionally, but they were seriously concerned about its willingness to threaten or employ nuclear weapons in their defense."[38] Likewise, NSC-68 identified. "The frustration of the Kremlin design requires the free world to develop a successfully functioning political and economic system and a vigorous political offensive against the Soviet Union. These, in turn, require an adequate military shield under which they can develop."[39] TNWs provided reassurance in addition to security to establish the international system counter to communist intentions.

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[37] Tom Sauer and Bob Van der Zwaan, *U.S. Tactical Nuclear Weapons in Europe after NATO's Lisbon Summit: Why Their Withdrawal Is Desirable and Feasible*, Belfer Center Discussion Paper (Cambridge, MA: Harvard Kennedy School, May 2011), 6, http://belfercenter.ksg.harvard.edu/files/us-tactical-nuclearweapons-in-europe.pdf.

38. NATO Parliamentary Assembly, *U.S. Non-Strategic Nuclear Weapons in Europe: A Fundamental NATO Debate,* accessed 5 December 2014, http://www.nato-pa.int/default.asp?SHORTCUT=2083

39. The Executive Secretary, *NSC-68*, 54.

Conclusion

At the end of World War II, America found itself in possession of unrivaled economic and military power. The United States established international institutions to maintain this new global leadership. American security strategy for the post-war environment was founded in George Kennan's *Long Telegram* to Secretary of State George Marshall in 1946 and his *Foreign Affairs* article published in 1947 under the pseudonym X. The official annunciation of these ideas and policies was NSC-68. Published in 1950, NSC-68 specified the USSR as the primary threat to the United States.[40] This statement was echoed in NATO's foundational security strategy, DC-13, also published in 1950.[41] Both of these documents leveraged twentieth century maritime theory on a *force in being* to contest control over disputed territory. Sir Julian Corbett outlined the theory for a weaker power to confound the intentions of a stronger power through the judicious exercise of its *fleet in being.*[42] Additionally, DC-13 presented expected Soviet courses of action in the event of hostilities. Countering the anticipated simultaneous attacks on multiple Western European states concurrent with attacks on Turkey and the Near and Middle East required more conventional forces than NATO could field. American TNWs were deployed to close this combat potential gap. The weapons were emplaced between 1953 and 1954 in locations that provided both dispersion and the ability to concentrate in the face of Soviet Bloc aggression. In addition to their military utility, TNWs reassured European allies that America was committed to its defense through conventional and nuclear means. This confidence would become the preeminent purpose of TNWs in Europe in the 1990s.

40. The Executive Secretary, *NSC-68*.
41. The Military Committee, *DC-13*.
42. Corbett, *Some Principles of Maritime Strategy*.

Chapter 3

Retention and Reduction

> *The first factor that confounds debate on tactical nuclear weapons (TNWs) is a lack of consensus on the role that they can and do play. On the one hand, there is widespread agreement that TNWs are of little or no military value. On the other hand, the European allies disagree on the political and psychological value of these weapons.*
>
> - Douglas Stuart, "Introduction of European Policies and Opinions Relating to Tactical Nuclear Weapons" in *Tactical Nuclear Weapons and NATO*

During the 1990s, the rationale for deploying tactical nuclear weapons (TNWs) in Europe changed. In the 1950s, TNWs were placed in Europe to counter the overwhelming conventional threat posed by the Soviet Bloc. The weapons provided a deterrent and, if required, a counter to a rapid, multi-front Soviet assault. In the early 1990s, the communist threat to Western Europe fundamentally changed. On November 9, 1989, the Berlin Wall was torn down. As a symbol of the Soviet Bloc, its fall was a portent of the end of the Union of Soviet Socialist Republics (USSR). In anticipation of German reunification, East Germany withdrew from the Warsaw Pact in September 1991. By December 1991, the Soviet Union had dissolved and the Warsaw Pact had disbanded. Communism was no longer the primary threat facing the United States and the North Atlantic Treaty Organization (NATO). No one predicted these events, and the security strategies of the United States and NATO developed during this period were reactive to them rather than proactive. These strategies continued to rely on the forces and international structures used to counter the USSR.

In the intervening years between 1954 and 1989 international institutions and norms of behavior developed which relied on TNWs. In addition to providing a military counter to overwhelming Soviet conventional forces, these weapons visibly demonstrated America's nuclear commitment to Europe.[1] A February 15, 1989 United States National Security Review memorandum recognized, "The structures erected on these foundations

1. International Secretariat, *U.S. Non-Strategic Nuclear Weapons in Europe: A Fundamental NATO Debate* (Brussels, Belgium, November 14, 2010), 5.

[of the Cold War] now provide much of the political and economic architecture for our modern world."[2] The impending fall of the USSR would place the international order in fluctuation. *The Alliance's New Strategic Concept* was NATO's strategy for mitigating risk in the face of this post-Cold War uncertainty. Its examination will illuminate the evolving role of TNWs in the post-Cold War world. Likewise, a review of American strategic documents between 1989 and 1993 will clarify the position of TNWs in the United States' strategy for a post-USSR reality. These documents provide insight into the strategic thinking behind maintaining TNWs in Europe, and their ability to counter the most pressing threats of the 1990s. TNWs were retained in Europe to minimize uncertainty and insecurity brought on by the dissolution of the USSR; their purpose was political.

NATO's Lens

In the face of insecurity as a result of the USSR's dissolution, NATO's strategic concept during the 1990s focused on responding to uncertainty.[3] On August 26, 1990, NATO published *The Alliance's New Strategic Concept* specifying the perceived threats to the Alliance's interests and how it would approach mitigating them. According to *The Alliance's New Strategic Concept*, the largest threat to NATO was, "the adverse consequences of instabilities that may arise from the serious economic, social and political difficulties, including ethnic rivalries and territorial disputes, which are faced by many countries in central and eastern Europe" as a result of the dissolution of the Soviet Bloc.[4] At the same time the demise of the USSR reduced the likelihood of East-West violence, it increased the probability of conflict within the Eastern Bloc. Even with the increased warning the West could expect as a result of increased transparency into the Kremlin's former satellites and clients, that NATO still perceived the potential spread of these clashes as a threat to its security. Volatility was expected to come from ethnic, religious, cultural, and historic tensions previously tempered by authoritative communist rule. Oppressive and authoritarian leadership had reduced travel, information, and free expression, all of which were suddenly opened in the 1990s. The culmination of these

2. George Bush, "Comprehensive Review of US-West European Relations" (The White House, February 15, 1989), 1.
3. "NATO - The Alliance's New Strategic Concept (1991)," *NATO*, August 26, 1990, http://www.nato.int/cps/en/natolive/official_texts_23847.htm.
4. "NATO - The Alliance's New Strategic Concept (1991)," para. 9.

events threatened the international order. This uncertainty within the international system percolated down to the role of TNWs.

Incorporating the uncertainty of the post-Cold War international system, *The Alliance's New Strategic Concept* reaffirmed NATO's nature as a defensive alliance and acknowledged "The threat of a simultaneous, full-scale attack on all of NATO's European fronts has effectively been removed and thus no longer provides the focus for Allied strategy."[5] The concept did not rebuke TNWs, but instead described the weapons in Europe as "vital to the security of Europe."[6] These comments were made despite the fact that strategic conditions driving the deployment of TNWs to Europe had largely dissipated by 1991. When the Berlin Wall fell, the Alliance gained transparency into Soviet staging areas for invasion preparations. This intelligence increased NATO's potential invasion warning and reduced the need for the rapid response TNWs in Europe provided. East Germany's withdraw from the Warsaw Pact further increased the potential warning time and reduced the forces available to the Soviets. Developments in America's strategic nuclear forces further decreased the threat of Soviet Bloc conventional forces. By the 1960s, the United States had obtained intercontinental ballistic missiles (ICBMs) capable of striking targets in the Soviet Bloc from bases in America within 30 minutes. In the years between 1954 and 1991 America's strategic nuclear triad of ICBMs, bombers, and ballistic missile submarines had been developed and refined to provide *strategic* deterrence without relying on TNWs. NATO forces had largely achieved conventional parity with Soviet Bloc forces by the 1990s. The military reasons for TNWs in Europe were largely non-existent by 1991 and serious questions about their efficacy had also been raised.

Exercises and studies conducted between 1954 and 1991 demonstrated the marginal utility of using TNWs for defense. According to Paul Schulte's essay entitled "Tactical Nuclear Weapons in NATO and Beyond: A Historical and Thematic Examination" in *Tactical Nuclear Weapons and NATO,* by the 1960s, the United States

5. "NATO - The Alliance's New Strategic Concept (1991)," para. 7.
6. "NATO - The Alliance's New Strategic Concept (1991)," para. 36.

had concluded that TNWs did *not* favor the defense.[7] Lawrence Freedman develops this logic in his 2003 book.

The Evolution of Nuclear Strategy describes the tension between the offensive and defensive contribution of TNWs. Initially, nuclear weapons were seen as a way to counter larger conventional forces, giving the defense the advantage. As more tests and wargames were conducted, the realization took hold that using nuclear weapons on one's own territory rendered the ground unlivable due to radiation effects. Strategic thought turned to using nuclear weapons in the adversary's territory. In order to execute these strikes with a reasonable probability of eliminating enemy forces, the assaults needed to be preemptive. The dilemma between a first-use versus second-strike capability lay in the fact that the best defense was a high probability attack on the adversary's nuclear forces.[8] Further complicating the issue was ambiguity about whether a first strike using TNWs would trigger a *strategic* nuclear response. The question of when to use TNWs was intimately tied to the question of where to employ them.

The best use of TNWs was in the adversary's territory. NATO exercises between 1955 and 1957 confirmed fallout and blast effects from even limited nuclear employment would devastate Germany. Additionally, according to Schulte, the 1969 Healey-Schröder Report "saw NATO's TNWs as having a political signaling function rather than being designed to assure battlefield victory."[9] In 1986, the NATO body responsible for the employment strategy for nuclear weapons, the Nuclear Planning Group, approved guidelines that recognized, according to Schulte, "the principle purpose (of TNWs) would be to signal NATO resolve to escalate to the strategic level if necessary."[10] Prior to 1991, TNWs in Europe had become an instrument to deter, signal, and barter with rather than employ. This new strategic effect was precisely what was needed in the emerging security environment of the 1990s.

Nuclear weapons held a special position with the Alliance. NATO leveraged the fact that "Nuclear weapons make a unique contribution to rendering the risks of any

7. Tom Nichols and Douglas Stuart, *Tactical Nuclear Weapons and NATO* (Military Studies Press, 2012).
8. Freedman, *The Evolution of Nuclear Strategy*.
9. Nichols and Stuart, *Tactical Nuclear Weapons and NATO*, 48.
10. Nichols and Stuart, *Tactical Nuclear Weapons and NATO*, 39.

aggression incalculable and unacceptable."[11] Whereas TNWs in 1950s provided a deterrent, in the 1990s they would induce ambiguity into the calculations of potential adversaries. Likewise, TNWs would continue to provide certainty within the Alliance that the United States was committed to the defense of the North Atlantic Treaty Area. For NATO in the 1990s, the purpose of TNWs became "political: to preserve peace and prevent coercion and any kind of war."[12] Months before the fall of the Berlin Wall, the United States recognized the importance of NATO in maintaining American leadership in the international system.

America's Lens

America's security strategy during the 1990s focused on mitigating the international tumult brought on by the dissolution of the USSR, and maintaining the United States' leadership in international institutions, both existing and newly formed. The foundation for Washington's post-Cold War strategy was produced between 1989 and 1993 in the form of annual National Security Strategies (NSSs) and a single National Military Strategy in 1992. These documents addressed the changing threats to America's interests and the corresponding way forward to achieve its objectives. Collectively they categorized the United States' interests, objectives, and threats as diplomatic, military, or economic. The order in which interests, opportunities, and uncertainties were presented would be used to determine the priority of threats to American interests according to the NSSs and NMS. The highest priority was given to the first mentioned threat, handling uncertainty, followed by alliances and friendships, economic stability, and ensuring America's leadership.

The *National Security Strategy of the United States – 1990* (1990 NSS) does not explicitly prioritize the threats to America's interests; instead they must be gleaned from the document. The United States' broad objectives are contained in the section "Our Interests and Objectives in the 1990s." These aims are sovereignty, economic growth and stability, a stable and secure world, and strengthened relationships with allies and friendly nations. According to the 1990 NSS, threats to America's sovereignty derived

11. "NATO - The Alliance's Strategic Concept Approved by the Heads of State and Government Participating in the Meeting of the North Atlantic Council in Washington D.C.," *NATO*, April 24, 1999, 46, http://www.nato.int/cps/en/natolive/official_texts_27433.htm.
12. "NATO - The Alliance's New Strategic Concept (1991)."

from military attack, terrorism, instability, Soviet adventurism, proliferation of weapons of mass destruction (WMD), and illegal drugs. At the time, America believed unstable regional military balances would encourage states to pursue regional dominance. These hegemonic intentions would destabilize the international system and upset America's global leadership. The section of the 1990 NSS entitled "Trends in the World Today: Opportunities and Uncertainties" implies, by order of appearance, "The Crisis in Communism" is the preeminent hazard to America's security interests. The crisis emanates from "fundamental political change [that] will likely be turbulent" with "setbacks and new sources of instability" in the former Soviet Union and Eastern Europe. The second most pressing threat was posed by political and security strain driven by a shifting balance of economic power and trade disputes resulting from the convergence of a changing East-West dynamic, and emerging Western European and East Asian democracies and economies. The first use of the word *danger* in the 1990 NSS occurs in its description of Third World Conflicts. In the future, these "highly destructive regional wars … may no longer take place against the backdrop of superpower competition," and they may threaten American lives or countries friendly to the United States. The Cold War backdrop provided an avenue to contain regional conflicts. Without Russo-American dialogue and management, a fear of regional disputes escalating into global wars became very tangible. Such conflicts would originate in poverty, injustice, racial, religious, or ethnic fanaticism, whether or not exploited by the communists, and would leverage expanding armed forces. These armed groups potentially had access to chemical, biological, and nuclear weapons. The possibility these forces would resort to terrorism concluded the threats posed by the Third World.[13] This myriad of threats and trends constituted what the 1991 *National Security Strategy of the United States* (1991 NSS) would call the New Era.

The 1991 NSS was the first strategy document to list America's threats and mitigations in a post-Cold War context. It was published in August 1991, mere months before the recognized dissolution of the Soviet Union, yet still started with the statement: "The bitter struggle that divided the world for over two generations has come to an

13. The White House, *National Security Strategy of the United States (1990 NSS)* (Washington, D.C.: The White House, March 1990), http://nssarchive.us/NSSR/1990.pdf.

end."[14] The 1991 NSS established the foundational security principle of never negating or marginalizing the ability of the USSR, or its successor state, to threaten the United States existentially with a single attack. In 1991, this appeared less and less likely compared to the threats posed by the ambiguity of power vacuums and regional instabilities, proliferation of advanced weaponry, and the need to reduce America's conventional forces. In foreign policy, the 1991 NSS specified that America's solidarity with its allies and friends was the first priority. This indicates the most probable catastrophic threat to the United States' interests and objectives would be the loss of its alliances and friendships.[15] The 1992 *National Military Strategy of the United States* (1992 NMS) translated these threats into military priorities.

The 1992 NMS proposed a drastic change in the alignment of America's military forces. It recognized global war was less likely as a result of the dissolution of the Soviet Union, and proposed a regionally oriented military strategy. According to the 1992 NMS, the security environment in the 1990s would be defined by WMDs, proliferation, Third World conflicts, drug trafficking, democratization in Eastern Europe and Latin America, unconstrained historic enemies, and increased cooperation in Europe and the Pacific. The United States could not afford to confront all of these threats with conventional approaches and would need to increase its regional alliances and partnerships to preserve America's interests.[16] These requirements necessitated a different mindset, a different posture, and a different force structure to counter.

The 1990s required a Base Force. According to the 1992 NMS, "The Base Force acknowledges the changing world order, domestic fiscal constraints, and the needs of our new military strategy."[17] The Base Force concept integrated Active Duty and Reserve forces, as well as those offered by friends and allies, into a globally effective military capability. The Base Force was comprised of four conceptual force packages (Strategic, Pacific, Atlantic, and Contingency Forces) as well as four supporting capabilities (space, transportation, research and development, and reconstruction). The Strategic Force was

14. The White House, *National Security Strategy of the United States (1991 NSS)* (Washington, D.C.: The White House, August 1991).
15. The White House, *1991 NSS*.
16. Chairman Joint Chiefs of Staff, *National Military Strategy of the United States (1992 NMS)* (Washington, D.C.: Department of Defense, January 1, 1992).
17. Chairman Joint Chiefs of Staff, *1992 NMS*, 19.

comprised of the nuclear triad and did not include tactical nuclear forces. The Atlantic Force was geographically oriented on Europe, the Mediterranean, the Middle East, Africa, and Southwest Asia. It was a forward presence force in recognition of the fact, "the security of the United States remains linked to that of Europe, and our continued support of the Atlantic Alliance is crucial."[18] The Pacific Force was focused on the Pacific, Southeast Asia, and the Indian Ocean. Its forward presence served as a stabilizing influence and while principally maritime, it included forward deployed forces in Japan, the Philippines, South Korea, Alaska, and Hawaii. The Contingency Force was comprised of both Active and Reserve forces both forward stationed and United States-based. The Contingency Force "compliment[s] our [America's] forward deployed assets [and] can provide an initial response capability where we have no forward deployed forces."[19] Nowhere in the 1992 NMS do these forces explicitly rely on TNWs. The strategy did however provide insight into how these weapons would be utilized.

In 1992, deterrence was "the primary and central motivating purpose underlying our [America's] national military strategy" and TNWs were a key component to the United States' ability to utilize it.[20] According to Thomas Schelling's seminal work *Arms and Influence*, "deterrence is about intentions – not just *estimating* enemy intentions but *influencing* them."[21] TNWs in Europe served multiple purposes; a power projection capability, hedging against a still possible communist conventional assault, confronting opponents with uncertainty about when TNWs would be used, and demonstrating commitment to America's allies and collective security agreements. The 1992 NMS advocated for TNWs in Europe with the statement, "Our [the United States'] forward presence forces in Europe must be sized, designed, and postured to preserve our active and influential role in the Atlantic Alliance and in the future security framework on the continent."[22] TNWs provided these forces in lieu of General Purpose forces, which were being deployed out of Europe in response to out of theater contingencies like Operations NORTHERN and SOUTHERN WATCH. The final contribution of European deployed TNWs to America's security strategy was to deter an arms race.

18. Chairman Joint Chiefs of Staff, *1992 NMS*, 20.
19. Chairman Joint Chiefs of Staff, *1992 NMS*, 24.
20. Chairman Joint Chiefs of Staff, *1992 NMS*, 6.
21. Thomas C. Schelling, *Arms and Influence* (New Haven, CT: Yale University Press, 2008), 35.
22. Chairman Joint Chiefs of Staff, *1992 NMS*, 20.

The removal of TNWs would have withdrawn capabilities from NATO and altered the Alliance's force posture. A significant conventional military build up would have been required to achieve similar combat potential without TNWs. An arms race could have ensued as countries procured additional conventional forces or expanded alliances and mutual defense agreements in relationships reminiscent of Europe prior to World War I. This ran counter to America's strategic desires.

A constant priority throughout American strategic documents between 1989 and 1993 is the need to preserve and expand alliances. The United States' defense priorities between 1990 and 1993 were Deterrence, Strong Alliances, Forward Defense, and Force Projection.[23] The "Flexible Response" approach to Deterrence "demands that we [the United States] preserve options for direct defense, the threat of escalation, and the threat of retaliation."[24] Alliances facilitated burden sharing. Forward Defense ensured American combat potential was rapidly available for the defense of its allies, and was a visible reminder of America's commitment.[25] An ability to move forces where and when needed, Force Projection, would balance the United States' global security interests against economic and physical constraints. These four defense priorities ensured the United States' overarching aims of safeguarding sovereignty, promoting economic growth, ensuring alliances and friendships, and continuing a stable and secure world.[26] In the early 1990s American aims required TNWs in Europe, but not in the numbers and types deployed prior to 1991.

Changes to Military Forces

In the early 1990s, as a result of treaties and changes in the diplomatic environment the composition of conventional and nuclear forces in Europe changed dramatically. Signed on November 19, 1990 the Treaty on Conventional Armed Forces Europe (CFE) limited the number of conventional forces by type and provided for compliance verification.[27] *The Alliance's New Strategic Concept* credits the treaty with

23. The White House, *1990 NSS*, 23; The White House, *National Security Strategy of the United States (1993 NSS)* (Washington, D.C.: The White House, January 1, 1993).
24. The White House, *1990 NSS*, 23.
25. The White House, *1990 NSS*, 1.
26. The White House, *1990 NSS*, 2–3; The White House, *1991 NSS*, 3–4; The White House, *1993 NSS*, 3.
27. Bureau of Public Affairs Department Of State. The Office of Website Management, "Conventional Armed Forces in Europe Treaty CFE Treaty," Other Release, *U.S. Department of State*, (August 13, 2008), http://www.state.gov/t/avc/trty/108185.htm.

removing "the Alliance's numerical inferiority" and "an unprecedented degree of military transparency in Europe, thus increasing predictability and mutual confidence."[28] Article IV of the treaty stipulates that, "each State Party shall limit and, as necessary, reduce its battle tanks, armoured combat vehicles, artillery, combat aircraft and attack helicopters so that, 40 months after entry into force of this Treaty and thereafter, for the group of States Parties to which it belongs, as defined in Article II, the aggregate numbers do not exceed: 20,000 battle tanks; 30,000 armoured combat vehicles; 20,000 pieces of artillery; 6,800 combat aircraft; and 2,000 attack helicopters."[29] The CFE set conventional force limits within NATO's spending capability. Compliance with the treaty would remove the requirement for TNWs to offset a larger communist conventional capability. In addition to the CFE, the United States made unilateral initiatives in nuclear armaments as well.

On September 27, 1991, President George H. W. Bush announced changes in America's strategic and tactical forces collectively known as the Presidential Nuclear Initiatives (PNIs). The TNW initiatives included: the elimination of the entire United States worldwide inventory of ground-launched short-range theater nuclear weapons; the withdraw of all tactical nuclear weapons from surface ships, attack submarines, and those weapons associated with land-based naval aircraft.[30] The intent was to "dramatically shrink the arsenal of the world's nuclear weapons, … more effectively discourage the spread of nuclear weapons, … enhance stability and actually reduce the risk of nuclear war."[31] President Bush recognized the world was changing and desired a leadership role for America in ensuring a safe, secure, prosperous, and stable future.

Addressing nuclear stability was a primary purpose of the PNIs. In August 1991, a coup attempt in the Soviet Union raised concerns in the United States about the security of Moscow's nuclear weapons.[32] The dissolution of the Soviet Bloc left nuclear weapons spread throughout its former empire. These newly independent countries represented a real risk of nuclear proliferation. Changing the Russo-American relationship was

28. "NATO - The Alliance's New Strategic Concept (1991)."
29. Department Of State. The Office of Website Management, "Conventional Armed Forces in Europe Treaty CFE Treaty."
30. George Bush, "Address to the Nation on Reducing United States and Soviet Nuclear Weapons" (Washington, D.C., September 27, 1991), http://www.presidency.ucsb.edu/ws/?pid=20035.
31. Bush, "Address to the Nation on Reducing United States and Soviet Nuclear Weapons."
32. Susan Koch, "The Presidential Nuclear Initiatives of 1991-1992" (National Defense University Press, September 2012), 3.

imperative to increasing global security and stability through the incorporation of former communist countries into the international system. The PNIs offered unilateral concession on nuclear weapons in the hopes of making material gains.

Concession on *sacred values* in the hopes of material gains is a concept explored by Scott Atran in *Talking to the Enemy.* He defines *sacred values* as "concerned with sustaining tradition for posterity."[33] Nuclear weapons hold such value to the Soviet Union, NATO, and the United States. Atran's recommendation is to identify a *sacred value* that holds more importance for one's adversary than oneself and to make concessions on it. TNWs held less value for America after a Single Integrated Operational Plan (SIOP) review in April 1991 determined the United States had far more nuclear weapons than required to deter the Soviet Union.[34] Accordingly, the TNWs in Europe could be reduced unilaterally in the hopes that these reductions would compel the USSR to reduce their stockpile, and draw Moscow into a dialogue. Additionally, giving former Soviet Bloc countries aid and assistance in controlling their nuclear arsenals provided America insight into where their *strategic* and *tactical* nuclear weapons were. Combined with America's TNW reductions, these incentives were leverage to induce former Soviet allies, clients, and satellites to relinquish their nuclear weapons. Reducing the number of nuclear weapons in the world was a key component of America's global nuclear stockpile reduction strategy.

Conclusion

The unpredicted demise of the USSR threw the world into uncertainty and anxiety. The dissolution of the Soviet Union was anticipated to result in increased regional conflict due to religious, economic, ethnic, education, and political tensions tamped by decades of oppressive communist control. In 1991, NATO published *The Alliance's New Strategic Concept, which* acknowledged the threat of full-scale simultaneous attack on the Alliance in Europe was marginal. While at first glance this acknowledgement seemed to mitigate the need for TNWs, the strategy went on to point out the criticality of these weapons to NATO's security. TNWs had become a binding agent for the Alliance; their importance evolved to become more diplomatic than

33. Scott Atran, *Talking to the Enemy: Faith, Brotherhood, and the (Un)Making of Terrorists*, 1 edition (New York: Ecco, 2010), 344.
34. Koch, "The Presidential Nuclear Initiatives of 1991-1992," 2.

military. In 1989, America recognized the importance of Cold War institutions and structures to maintaining the international system. NATO was the United States' main alliance. It was also a template for future institutions. TNWs provided tangible evidence of America's commitment to Europe, and could not be eliminated. After a review of the SIOP, America determined that it could reduce the number and type of TNWs deployed in Europe, while maintaining the diplomatic effect. The 1991, PNIs eliminated older weapons and cut spending on newer systems to replace them. The existing B-61 gravity bombs could provide the benefits America's strategy needed. These TNWs would not last forever, and in the 2000s critical decisions about refurbishment, replacement, or redeployment would need to be made.

Chapter 4

A Place in the Twenty-first Century

Tactical nuclear weapons still exist because NATO and Russia have not fully resolved their fears about how a nuclear war might arise, or how it might be fought.

- Tom Nichols, *Tactical Nuclear Weapons and NATO*

The three most important and broadly-based categories of missions for nuclear weapons are to deter, to prevail in conflict, and to assure allies.

- Jeffery Larson, "The Role of Non-Strategic Nuclear Weapons: An American Perspective" in *Tactical Nuclear Weapons and NATO*

President Obama's 2009 speech in Prague changed the debate on nuclear weapons. It advocated a world without nuclear weapons based on a belief that the risk of a nuclear attack has gone up due to proliferation and terrorist intentions. The President cited a growing black-market trade in nuclear secrets and materials that is spreading technology to build a bomb. He also credited the increasing risk from terrorists, who are determined to buy, build, or steal a nuclear weapon, making the threat of a nuclear event more likely. President Obama advocated a world without nuclear weapons in light of the fact that countries and individuals were breaking international agreements aimed at preventing the spread of nuclear weapons technology. Yet, he stopped short of declaring unilateral measures to reduce America's arsenal, and in fact committed to maintaining a United States stockpile as long as these weapons exist.[1]

Potential adversaries with nuclear, chemical, and biological capability drive the need for the nuclear stockpile. The President's speech in Prague did not mention Russia. Instead it focused on North Korea and Iran.[2] Yet, significant numbers of analysts,

1. "Remarks By President Barack Obama In Prague As Delivered," *The White House*, April 5, 2009, http://www.whitehouse.gov/node/2628.
2. "Remarks By President Barack Obama In Prague As Delivered."

strategists, and political leaders tie American TNW reductions to reciprocal actions by the Russians, supporting the observation made by Tom Nicholas above. Collectively, these ideas raise several questions: Why will America maintain a stockpile as long as nuclear weapons exist? What will that stockpile look like? Where will that stockpile be kept? And what is the role of tactical nuclear weapons moving forward? This last question is the topic of this chapter. Answering it provides insight into the rationale for maintaining TNWs in Europe.

While the 1990s were defined by the dissolution of the Soviet Bloc and the collapse of the Soviet Union, the early part of the twenty-first century is being defined by international religious fundamentalism and terrorism. The use of commercial airplanes for the September 11, 2001 terrorist attacks on the United States became a catalyst, which brought a fight against terrorist organizations to the forefront of NATO's and the United States' use of military power. The response to the September 11, 2001 attacks was the first use of NATO's Article 5 obligation, wherein an attack on one member is considered an attack on all. A review of strategic documents issued between 1999 and today illuminates the role of tactical nuclear weapons in this new global environment. NATO's 1999 and 2010 strategic concepts describe a change in concern from the spillover threats of the 1990s, to proliferation and terrorism. These documents specify a need for TNWs, but lack specific insight into what role they fulfill. Analysts hoped NATO's 2010 *Deterrence and Defense Posture Review* would clarify the part TNWs play in the Alliance's security strategy. Unfortunately, the review largely reiterated previous statements. In the absence of specific nuclear policy, these three documents provide insight into the expectations of American provided TNWs in NATO's strategy. The United States' most recent nuclear policy was addressed in the 2010 Nuclear Posture Review (2010 NPR). This is the definitive policy document on TNWs and their role in securing American objectives. America's 2015 National Security Strategy (2015 NSS) does not change the policies set by the 2010 NPR. In an environment characterized by radical religious fundamentalism, a resurgent Russia, and nuclear proliferation, the role of tactical nuclear weapons is to deter attacks on the United States and its allies by providing forward deployed capability and demonstrating commitment.

NATO's Nuclear Vision

The only alliance partners with American TNWs on their soil are within NATO, and NATO's position on these nuclear weapons is contained in the 1999 and 2010 security concepts, and the 2012 *Deterrence and Defense Posture Review*.[3] These three documents detail the Alliance's purpose, its perception of the threat, and methods to counter it. NATO's strategic priorities changed between 1999 and 2010.

The first strategic concept published after the end of the Cold War established NATO's policy to leverage Euro-Atlantic cooperation, and commit to new activities. It did this without abandoning old activities. The primary threats addressed by the 1999 document, *The Alliance's Strategic Concept,* were instabilities and uncertainties arising from economic, social, and political difficulties driven by ethnic rivalries and territorial disputes originating from central and Eastern Europe. This strategic concept viewed Russia as a security partner; thus, NATO "committed themselves to developing their relations…to achieve a lasting and inclusive peace."[4] Yet, it also required NATO, "above all, [to] maintain the political will and the military means required by the entire range of missions."[5] In short, NATO needed to maintain its current partners and capabilities, including TNWs, in addition to developing new partners and adding alliance members. The purpose of NATO's military force posture continues to be to deter, defend, and terminate aggression against member states. *The Alliance's Strategic Concept* recognized that a mix of conventional and non-conventional forces was required to achieve this objective. The concept explicitly ruled out the use of chemical and biological weapons, but omitted nuclear weapons from this prohibition. The absence of TNWs implied nuclear capabilities were an integral part of NATO's military strategy. The purpose of TNWs in Europe was to support conventional forces to deter a myriad of threats. In this concept, unknown dangers required the largest possible mix of capabilities and forces to counter them. Over the next decade these uncertain threats would coalesce into tangible dangers.

The current NATO strategy, released in November 2010, classifies six categories of threats and proposes actions to mitigate them. *Active Engagement, Modern Defense*

3. Throughout this study the NATO alliance is considered as a unitary actor.
4. "The Alliance's Strategic Concept," para. 36.
5. "The Alliance's Strategic Concept," para. 4.

perceives proliferation as the highest priority security threat. It also identifies terrorism, transnational crime, cyberattacks, threats to energy supplies, and environmental and resource constraints as menacing. The approach to alleviating these challenges is based on three core tasks: collective defense, crisis management, and cooperative security.[6] The main effort of collective defense is to prevent any aggression against alliance members. A mix of conventional and nuclear forces provides this deterrence. The 2010 strategic concept recognized strategic nuclear weapons provided the supreme security guarantee. The concept highlights the reductions made to the number of TNWs in Europe since the end of the Cold War, and specified, "In any future reductions [in TNWs], our [NATO's] aim should be to seek Russian agreement to increase transparency on its nuclear weapons in Europe and relocate these weapons away from the territory of NATO members."[7] *Active Engagement, Modern Defense* did not specify the role of TNWs, and tied future reductions to reciprocal Russian actions. The world hoped this ambiguity in NATO's intentions for TNWs would be clarified by follow-on strategy documents.

In May 2012, NATO released the *Deterrence and Defense Posture Review*. The review did not redress the lack of specific guidance on the role of TNWs in the alliance's strategy. The section on the contribution of nuclear forces states, "Nuclear weapons are a core component of NATO's overall capabilities for deterrence and defense," and the nuclear force posture "currently meets the criteria for an effective deterrent," but the same section states the Alliance is "seeking … further reductions of non-strategic nuclear weapons assigned to NATO."[8] This combination of statements indicates the review determined TNWs in Europe were currently necessary for effective deterrence, but the Alliance was actively looking to reduce or remove them in the future. This begs the question: under what conditions are TNWs no longer required?

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6. "NATO - 'NATO 2020: Assured Security; Dynamic Engagement' - Analysis and Recommendations of the Group of Experts on a New Strategic Concept for," *NATO*, May 17, 2010, http://www.nato.int/cps/en/natolive/official_texts_63654.htm.
7. "NATO - Active Engagement, Modern Defence - Strategic Concept for the Defence and Security of the Members of the North Atlantic Treaty Organisation Adopted by Heads of State and Government in Lisbon," *NATO*, November 19, 2010, http://www.nato.int/cps/en/natolive/official_texts_68580.htm.
8. "NATO - Deterrence and Defence Posture Review," *NATO*, May 20, 2012, http://www.nato.int/cps/en/natolive/official_texts_87597.htm.

According to Guy Roberts' chapter in *Tactical Nuclear Weapons and NATO*, the Alliance's nuclear "deterrence posture is such that we believe no regime, no matter how aggressive and risk-inclined, would be so foolish as to attack the Alliance, a move that would yield little advantage, and thereby incur an attack's clear consequence—utter destruction."[9] James Blackwell's essay, "American Perspectives on Tactical Nuclear Weapons" in the same text echoes this statement.[10] Roberts' and Blackwell's language is consistent with Schelling's description of the value of nuclear weapons in coercion. In *Arms and Influence,* Schelling breaks coercion into two components: deterrence and compellence. Both rely on violence. Deterrence is the threat of violence so great it dissuades an adversary from taking action because the potential cost vastly exceeds the possible benefit.[11] NATO has used TNWs for coercion since their initial emplacement. It has counted on deterrence to prevent war. Should deterrence fail, NATO has never limited its options by ruling out first use or limiting the scenarios in which it would use nuclear weapons. This ambiguity and changes in the European environment are generating debate over the fate of these weapons.

The deliberation over TNWs in Europe centers on the overall role of nuclear weapons and the requirement for *tactical* weapons to perform these functions. Roberts credits TNWs with daily demonstrating "incalculable consequences of aggression" in addition to solidarity and burden sharing within NATO.[12] Proponents of removing the remaining TNWs in Europe cite the ability of precision guided munitions, NATO's overwhelming conventional might, and the inability of nuclear weapons to prevent terrorism, transnational crime, or energy shortages as justification for their position.[13] These arguments neglect that TNWs are a component within a holistic approach to America's and NATO's security strategies

A holistic diplomatic, military, and economic approach is required to achieve American and NATO aims. TNWs fill a gap between *strategic* nuclear weapons and conventional forces. These weapons offer America a deterrence benefit, and increase uncertainty in an adversary's decision calculus. In Schelling's terms, the threat of

9. Army War College (U.S.), *Tactical Nuclear Weapons and NATO*, 389.
10. Army War College (U.S.), *Tactical Nuclear Weapons and NATO*, 323–326.
11. Schelling, *Arms and Influence*.
12. Army War College (U.S.), *Tactical Nuclear Weapons and NATO*, 396.
13. Army War College (U.S.), *Tactical Nuclear Weapons and NATO*, chap. 12.

violence is what makes deterrence work and there is no weapon more violent than a nuclear one. It would take hundreds of conventional munitions to equal the destructive capability of a single TNW.[14] The economics of this reality cannot be overlooked by the United States in the fiscal environment of the early twenty-first century.

American Interests in European Based TNWs

Current American nuclear policy and strategy is expressed in the April 2010 *Nuclear Posture Review* (2010 NPR). The primary intent of the review was to reduce nuclear risk to America, its allies, partners, and the international community. Accordingly the United States' nuclear agenda is characterized by the desire to prevent nuclear terrorism and proliferation. The review declares the purpose of America's nuclear stockpile is to: maintain regional and international stability; deter aggression against itself, and its allies and partners; and reassure those same allies and partners of America's commitment to mutual defense. The primary method of achieving these objectives is to reduce the role of nuclear weapons in American strategy and expand the concept of deterrence to include other capabilities like missile defense and conventional forces. These desires are complicated by the need to deter adversaries and maintain regional stability.[15] The 2010 NPR identifies Russia as a particular focus. Given that America's policy on TNWs depends largely on Russia, Moscow's policy on the use of nuclear weapons needs to be examined.

Russia is increasingly turning to TNWs to reclaim its former influence and is therefore unlikely to negotiate their reduction. The authors of *U.S. Nuclear and Extended Deterrence* cite Moscow's February 2010 military doctrine as supporting "first use" in the event regional or large-scale war manifests into an existential threat to the Russian state.[16] These are similar to the conditions under which the United States and NATO would utilize nuclear weapons. In a European conflict, Russia would likely rely on TNWs due to engineering constraints on the use of its strategic weapons; its ICBMs

14. The GBU-43/B has a reported yield of approximately 10 tons of TNT compared to the reported minimum 0.3 kiloton yield of the B-16 Mod 12.
15. Department of Defense, *Nuclear Posture Review Report* (Washington, D.C.: Department of Defense, April 2010), http://www.defense.gov/npr/docs/2010%20nuclear%20posture%20review%20report.pdf.
16. Steven Pifer et al., "U.S. Nuclear and Extended Deterrence: Considerations and Challenges" (Brookings, May 2010), 22–23, http://dspace.africaportal.org/jspui/bitstream/123456789/28828/1/US%20Nuclear%20and%20Extended%20Deterrence%20-%20Considerations%20and%20Challenges.pdf?1.

could not be launched from Russia and impact Europe without first circling the globe. Recent events in the Ukraine demonstrate Russia's intent to involve itself in European conflicts in attempts to re-exert influence. The combination of embroiling itself in regional conflicts and a willingness to employ "first use" demonstrate Russia is unlikely to negotiate for reductions of its TNWs in the near-term. Bernard Brodie recognized this same juxtaposition of a desire for a nuclear weapons free world and reality in a 1954 *Foreign Affairs* article: "Universal atomic disarmament, which is still the official aspiration of the United States, is clearly not possible. We therefore need to maintain and develop further our strategic striking power, even if our only use of it in a war of the future is to command observance of the ground rules we lay down."[17] This is the logic that explains America's decision to fund the B-61 life extension program (LEP). The NPR's linkage of America's nuclear reductions to parallel efforts in Russia, and Russia's reliance on nuclear rather than conventional forces ensures TNWs will maintain their current role into the future, but it is not the sole driver for keeping TNWs in Europe.[18]

There are political and non-proliferation justifications for keeping TNWs in Europe. Iranian attempts to obtain nuclear weapons present a threat to Turkey and other Middle Eastern states. Turkey is unique among Near and Middle Eastern states because it alone has American nuclear weapons on its soil. According to the authors of *U.S. Nuclear and Extended Deterrence*, "Those who believe Ankara would find itself under pressure to acquire its own nuclear deterrent if Iran becomes a nuclear power argue that the presence of U.S. nuclear weapons in Turkey counters such pressure by providing reassurance of a U.S. commitment."[19] History demonstrates that a state determined to obtain nuclear capability is unlikely to be dissuaded by economic or diplomatic initiatives. Further reductions in American TNWs are linked to reciprocal actions.

The 2010 NPR advocates for equal Russian stockpile reductions before any further American redeployment. This is a divergent approach to the PNIs in the 1990s, which unilaterally reduced America's nuclear arsenal. Current American policy requires binding and verifiable Russian action because, in the intervening years, Moscow did not

17. Bernard Brodie, "Nuclear Weapons: Strategic or Tactical?," *Foreign Affairs*, January 1954, http://www.foreignaffairs.com/articles/71079/bernard-brodie/nuclear-weapons-strategic-or-tactical.
18. Pifer et al., "U.S. Nuclear and Extended Deterrence: Considerations and Challenges," 27.
19. Pifer et al., "U.S. Nuclear and Extended Deterrence: Considerations and Challenges," 26.

comply with its agreed to, but non-compulsory, 1990s reduction commitments. While the end of the Cold War provided the United States with an opportunity to realize its ambitions to reduce nuclear weapons, without reciprocal Russian actions no such condition exists today.

On December 11, 2014 in the *Washington Free Beacon*, Bill Gertz disclosed that the Pentagon was considering the re-deployment of nuclear cruise missiles in Europe. The article cites Russia's development of a cruise missile, which violates the 1987 Intermediate Nuclear Force (INF) treaty as the motivation.[20] The INF treaty bans ballistic and cruise missiles with ranges between 500 and 5,500 kilometers, and was a foundational agreement in facilitating the 1991 PNIs. Russia's non-compliance threatens assumptions and trends on NATO's reliance and need for TNWs to achieve security objectives. Moscow's development of treaty violating technology is not limited to these cruise missiles. Gertz points out Russia "has violated seven other treaties and agreements in addition to the INF treaty."[21] These aggressive actions have facilitated a response from the United States.

America's response to increased Russian hostility was the subject of Ashton Carter's written reply to questions raised during his confirmation hearing as the Secretary of Defense. An article on *Politico's* website by Philip Ewing on February 23, 2015 reported the Secretary's statement: "U.S. responses must make clear to Russia that if it does not return to compliance, our responses will make them less secure than they are today."[22] Ewing went on to say that Carter did not eliminate the possibility of America deploying additional assets to Europe, and even suggested these future deployments might include additional TNWs. These statements come on the heels of the United States' pivot to the Pacific, which resulted in a reduced conventional forward deployed footprint in Europe and an increase in America's rotational deployments in both regions. In a return to the logic of the 1950s, the United States and NATO could be looking to TNWs to provide a force multiplier to mitigate threats to budget constrained conventional

20. Bill Gertz, "Pentagon Considering Deployment of Nuclear Missiles in Europe," *Washington Free Beacon*, December 11, 2014, http://freebeacon.com/national-security/pentagon-considering-deployment-of-nuclear-missiles-in-europe/.
21. Gertz, "Pentagon Considering Deployment of Nuclear Missiles in Europe."
22. Philip Ewing, "Ash Carter Warns Russia on Nukes," *POLITICO*, February 23, 2015, http://www.politico.com/story/2015/02/ash-carter-russia-vladimir-putin-defense-115421.html.

forces. The importance of economic strength to America's national security was reiterated in the latest National Security Strategy.

Released in February 2015, the most recent National Security Strategy (2015 NSS) of the United States is the latest statement of the Administration's position on American and global security. The strategy lists violent extremism and terrorist threats, threats to cybersecurity, Russian aggression, climate change, and infectious disease as the prioritized "anxieties" to global security. In response, the 2015 NSS links success to "an undeniable truth – American leadership," and recognizes that "we [America] are stronger, when we mobilize collective action."[23] These two threads in the United States' security strategy emerged in the aftermath the major conflicts of the twentieth century.

The United States' connection of security to its leadership has been prominent in American security strategy since the end of World War II. This leadership has been expressed in economic form in the Marshall Plan, diplomatic form in alliances, and military form in nuclear weapons. Since the Great Recession the United States no longer enjoys the large economic advantage it had when it supported the Marshall Plan. In fact, American military dominance is being threatened by domestic policies like Department of Defense budget reductions. In part to mitigate the United States' desire to spend less on military expenses, its policy is to rely more on partners.

While believing that the United States is an integral part of maintaining global stability, America is increasingly relying on regional partners to share the burden. There are over 60 countries participating in the fight against the Islamic State in the Iraq and Syria. The United States is enforcing sanctions against Russia in response to its actions in the Ukraine and treaty violations previously mentioned in concert with America's European partners. These actions are described by the 2015 NSS as "lead[ing] with capable partners."[24] In addition to these efforts, America remains committed to NATO. In the words of Lawrence Freedman, "The major task for the future must be to address the problems of nuclear arsenals in a world of political change. There can be no purely nuclear strategies, but there remains a continuing need for strategies that take nuclear

23. The White House, *National Security Strategy of the United States (2015 NSS)* (Washington, D.C.: The White House, February 2015), i.
24. The White House, *2015 NSS*, 3.

weapons into account."[25] This sets the stage for a discussion of TNW's role in Europe today.

Conclusion

In 2009, President Barack Obama expressed the desire to live a world without nuclear weapons, but committed the United States to retaining a safe, effective, and reliable stockpile as long as nuclear weapons existed. The President's speech raised the question: what is the role of TNWs in the twenty-first century? Expressed another way, in an international environment defined by international religious fundamentalism expressed as terrorism, what purposes do and can TNWs serve? The answer to this question was gleaned from several NATO and American strategic documents. NATO's 1999 and 2010 strategic concepts specified a need for TNWs, but lacked specificity on what role they held. The international community hoped NATO's *Deterrence and Defense Posture Review* would clarify this ambiguity. Unfortunately, the review did not provide additional insight and only reiterated the criticality of TNWs to the Alliance. In the absence of specific nuclear policy, NATO's leverage of TNWs must be gleaned from analysis. *Active Engagement, Modern Defense* identified proliferation, terrorism, transnational crime, cyberattacks, threats to energy supplies, and environmental and resource constraints the prioritized list of threats facing NATO. *The Alliance's Strategic Concept* recognized that countering twenty-first century threats required NATO to maintain the same diverse capabilities to execute operations across the possible spectrum of conflict the Alliance has always maintained. *Active Engagement, Modern Defense* tied future reductions to reciprocal Russian actions. These documents asserted that TNWs provide the same diplomatic and security reassurances they have since the 1950s and any further reductions or eliminations would require similar Russian actions to temper the threat of nuclear exchange. Similar thoughts were expressed in American strategic documents during this period.

The current NSS and the NPR contain American strategic concepts for TNWs in Europe. The definitive policy document on America's nuclear weapons is the 2010 NPR. The United States' 2015 NSS does not change the policies set by the 2010 NPR. America's nuclear agenda is characterized by the desire to prevent nuclear terrorism and

25. Freedman, *The Evolution of Nuclear Strategy*, 463,464.

proliferation in order to reduce nuclear risk to America, its allies, partners, and the international community. Future American nuclear reductions are tied to Russia, which is increasingly turning to TNWs to reclaim its former influence and is therefore unlikely to negotiate their reduction. Russian actions in the Ukraine are demonstrating its growing belligerence towards the international system. The United States needs to maintain its TNWs to possess the capability to enforce the standards it sets in the event they are threatened or ignored. In a return to the logic of the 1950s, the United States and NATO could be looking to TNWs to provide a cost effective force multiplier to mitigate threats posed from hostile states and economic realities.

Chapter 5

Funding a Life Extension Program

The essence of strategy is determining priorities.

- George H. W. Bush, *National Security Strategy of the United States - 1990*

The current policy to extend the life of America's tactical nuclear weapons (TNWs) was expressed in the 2010 Nuclear Posture Review (2010 NPR).[1] Without funding, however, policy is meaningless. Under the current budgeting process, the President requests and Congress allocates funding annually, meaning the decision to extend the life of TNWs in Europe must be reaffirmed every year.[2] Why has America continued to support these weapons?

The logic of the 1950s, the uncertainty of the 1990s, and the emerging reality of the 2000s converge in justifying the B-61 Mod 12 life extension program (LEP). Reviewing Congressional debate on TNWs illuminates the need to plan and budget for LEPs. Whether one views the world through a Liberal or Realist international relations theory lens the decision to fund a LEP makes sense. Examination of the works of Robert Keohane, Kenneth Waltz, and G. John Ikenberry demonstrates that TNWs offer a unique opportunity to create and perpetuate an American-led international system. Examining the interaction of NATO and American strategic documents demonstrates that while they share many common interests their priorities are different. It is the ability of TNWs to mitigate risk for these varying priorities that make them attractive. Stability has been a central tenet of American and the North Atlantic Treaty Organization (NATO) security strategy since the 1990s. While TNWs cannot be ascribed as a causal factor for stability, they cannot be ruled out and the risk of being wrong is large-scale conventional or nuclear war. This inability to rule out the effects of TNWs in preserving the peace has led America's European partners to desire a return to the assurance they provide. TNWs are not without detractors, however, and an argument can be made that their presence

1. Department of Defense, *2010 NPR*.
2. Amy Woolf, *Nuclear Weapons in U.S. National Security Policy: Past, Present, and Prospects* (Washington, D.C.: Congressional Research Service, December 30, 2008), 14.

reduces global security by increasing the likelihood a terrorist organization may obtain a nuclear device. In the twenty-first century, with an international environment characterized by resurgent aggressive state behavior and the threat of religious fundamentalism, a combination of theory, experience, and potential may explain why the United States has TNWs in Europe today.

Congressional Commissions on Nuclear Weapons

The current Congressional interest in TNWs is rooted in inquires on the location and security of Soviet weapons in the 1990s. In preparation for the 113th Congress, the Congressional Research Service compiled a report defining TNWs and detailing their role in Russian, American, and NATO policy and strategy. This report was provided to aid in debating, forming, and funding policy for TNWs deployed in Europe. Concerns about the security and need for TNWs have been raised multiple times since 1990s with no immediate results. The latest round of inquiry has been sparked not by a change in national security interests, but rather by the news media. Woolf cites a 2007 article in the *Wall Street Journal* as the source of current TNWs in Europe deliberation.[3]

Woolf's article called for the elimination of nuclear weapons starting with the eradication of TNWs. "A World Free of Nuclear Weapons" was co-authored by: George Shultz, the US Secretary of State from 1982 to 1989; William Perry, who was Secretary of Defense from 1994 to 1997; Henry Kissinger, who was Secretary of State from 1973 to 1977; and Sam Nunn, a former chairman of the Senate Armed Services Committee. These four distinguished statesmen possess vast experience in America's nuclear strategy and policy. Shultz's, Kissinger's, Perry's, and Nunn's article detailed a Presidential precedent of calling for the abolishment of nuclear weapons, cited the need for reductions now in response to increased threats to national security, and listed immediate actions to pursue this path. These statesmen pointed to the risk of a terrorist obtaining nuclear weapons as a call to eliminate them. Apart from this, they highlighted the challenge of a viable deterrent strategy in a multipolar world, and increasing proliferation as further drivers for the elimination of nuclear weapons. The authors called for the global elimination of TNWs as an immediate action along a path to a nuclear free world. These statesmen drew on the tenets of the Non-Proliferation Treaty and Presidential statements

3. Woolf, *Nonstrategic Nuclear Weapons*, 4.

on the abhorrence of nuclear weapons dating back to the Eisenhower Administration to support their claims. They cited the efforts of Ronald Reagan and Mikhail Gorbachev in drafting the Intermediate Nuclear Force Treaty (INF) treaty, which forbid an entire class of nuclear weapons, as evidence of global support for elimination.[4] These former statesmen highlighted the threat of a terrorist group gaining possession of nuclear weapons and traced a path back to President Eisenhower calling for their elimination to make a case for the eradication of TNWs. In 2008, a Congressional commission on the prevention of weapons of mass destruction (WMD) proliferation and terrorism came to different conclusion.

The Commission on the Prevention of WMD Proliferation and Terrorism was given 180 days to assess the nation's efforts to prevent WMD proliferation and terrorism. Their findings did not recommend the reduction or elimination of TNWs. The commission scoped its work to focus on biological and nuclear weapons believing these posed the greatest threat. They then conducted over 250 interviews, held eight major commission meetings and one public hearing, to determine the scope, scale, strengths, and weaknesses of America's current efforts in preventing WMD proliferation and terrorism. The commission derived 13 recommendations, three of them directed at nuclear proliferation and terrorism. These recommendations were: to strengthen non-proliferation measures along seven initiatives, review the United States' cooperative nuclear security programs, and stop North Korean and Iranian nuclear weapons programs.[5] The commission did not mention the possibility of a terrorist organization obtaining a TNW. While great deference must be made to the prestigious authors of the 2007 *Wall Street Journal* article, a commission specifically chartered to determine the greatest risks to American interests posed by WMD did not recommend any action with respect to TNW reductions. Whether this omission is in deference to the strategic capabilities TNWs offer cannot be determined.

Woolf's 2014 Congressional Research Service report lists some of the impact TNWs provide to national security strategy. She cites a 2009 Congressional commission

4. George P. Shultz et al., "A World Free of Nuclear Weapons," *Wall Street Journal*, January 4, 2007, sec. Opinion, http://www.wsj.com/articles/SB116787515251566636.
5. Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism (U.S.), *World at Risk: The Report of the Commission on the Prevention of WMD Proliferation and Terrorism*, 1st ed (New York: Vintage Books, 2008), 43–64, http://purl.access.gpo.gov/GPO/LPS106135.

report on the strategic posture of the United States, which found that TNWs helped assure allies of America's commitment to their security.[6] This same benefit was attributed by NATO's 1991 strategic concept.[7] Woolf also notes the 2009 commission's report raised the issue of Moscow's increased strategic reliance on Russian TNWs and the numerical superiority they possessed over America.[8] The combination of reliance and superior numbers makes Russia unlikely to enter into any arrangements limiting their TNW capability. Moscow is not the only barrier to TNW reductions.

The western powers rely on TNWs for their security strategies. America's 2010 NPR and NATO's *The Alliance's Strategic Concept* both addressed the importance of TNWs. The 2010 NPR determined three purposes for America's stockpile; maintain stability, deter aggression, and reassure allies. Accordingly, the report affirmed the United States would, "Retain the capability to forward-deploy U.S. nuclear weapons on tactical fighter-bombers and heavy bombers, and proceed with full scope life extension for the B-61 bomb including enhancing safety, security, and use control."[9] The NPR also committed to consultation with America's allies and partners before making any further changes to its TNW posture. Since the 1950s, TNWs have been a method of linking North American interests to Europe, bridging the gap between conventional forces in Europe and strategic nuclear capabilities. This American view is mirrored in NATO's strategic documents. NATO's 2012 *Deterrence and Defense Posture Review* did not recommend any changes to NATO's nuclear posture and solidified the role of nuclear weapons as a "core component" that "currently meets the criteria for an effective deterrence and defense posture."[10] The decision to extend the life of the B-61 is, in the words of the 2010 NPR, to ensure that the United States will retain the capability to forward deploy non-strategic nuclear weapons in support of its Alliance commitments."[11] In order to continue to meet NATO's security requirements, the Alliance and the United States need to plan and budget for TNW Life Extension Programs. These decisions, like the one to emplace TNWs, are supported by theory.

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6. Woolf, *Nonstrategic Nuclear Weapons*, 4.
7. "NATO - The Alliance's New Strategic Concept (1991)," *NATO*, November 8, 1991, para. 54–55, http://www.nato.int/cps/en/natolive/official_texts_23847.htm.
8. Woolf, *Nonstrategic Nuclear Weapons*, 4.
9. Department of Defense, *2010 NPR*, xiii.
10. "Deterrence and Defense Posture Review."
11. Department of Defense, *2010 NPR*.

Theory Explains European Deployment

At the end of WWII, the United States found itself with enormous military, political, and economic advantage. What to do with those advantages was undecided and undetermined; the decision the United States made can be explained using theory. America believed then, as it does today, that its leadership is key to preventing repetition of the events resulting in World War I (WWI) and World War II (WWII). The body of theory explaining how state power can be translated into international leadership and the established international system can be maintained is International Relations (IR) theory. Realism and Liberalism are the two main schools of thought in IR theory. In both schools international interaction is anarchical, there is no over arching governing body. Liberalism and Realism also ascribe agency in the international order to states, minimizing the influence of non-state actors, e.g. transnational corporations, religions, and criminal organizations.[12] The schools diverge on the fundamental motivations of humanity. Realists believe man is violent by nature and seeks to maximize security through the accumulation of power. Liberalists believe man has the potential for non-violence and may seek to maximize security through institutions, cooperation, and standards of behavior, with war as a last resort. The ability to explain the decisions to deploy and retain TNWs in Europe using both theories provides strong credence for continuing the policy into the future.

American decisions in the late-1940s and 1950s to create international organizations, fund economic reconstruction, and forward deploy forces to prevent communist expansion can be explained through the lens of IR theorist Robert Keohane. Keohane believes states make decisions based on life, liberty, and property once survival is assured. In the immediate aftermath of WWII the United States was in sole possession of atomic weapons and was a dominant economic power. These two traits ensured the United States' position as a hegemon. Keohane describes a hegemon in *After Hegemony* as a dominant power. In his theory, the hegemon determines the international order, and for the western world, the United States fulfilled this role. According to Keohane's theory, stability in the international system is maintained by the continued dominance of

12. The treatment of NATO as a Unitary Actor facilitates analysis of the Alliance as a state actor.

the hegemon or the existence of strong international regimes.[13] International institutions could maintain such a regime and leadership of those organizations would ensure hegemonic leadership in the global order after a hegemon's relative power diminished. Through Keohane's lens, NATO was formed and the United States emplaced TNWs in Europe to create an international institution in perpetuity. NATO would then extend American leadership of the international system without the effort required for the United States to retain it alone. The decision to keep TNWs in Europe was driven by the need to maintain NATO's stability and authority to ensure the international regime. No weapons carry the same diplomatic or military authority as nuclear arms, a fact of great importance to Realist IR theories.

Decisions made based on power can be explained by the theories of Kenneth Waltz. Waltz is considered the father of Structural Realism. He would explain the decision to emplace TNWs in Europe as a reaction to maintain the balance of power. The United States' conventional military advantage quickly disappeared in comparison to the Soviet Bloc's capabilities. In early 1950, analysts predicted NATO would need 90 divisions to counter the conventional forces of the Soviets. The realities of the Korean War drove the United States to the realization that it could not field that many forces, even if supported by thriving European partners, who at the time were still in the midst of post-World War II reconstruction. In 1950, the western powers could not counter the Soviets' strength. Placing TNWs in Europe gave NATO military parity with Moscow. In accordance with Waltz's theory, overreaction is better than miscalculation.[14] TNWs traded destructive power for manpower, and gave the Alliance the combat potential to deter or defeat the Union of Soviet Socialist Republics (USSR). Even with the demise of the USSR, Waltz's theory still explains the presence of TNWs in Europe, given Russia's retention of nuclear capabilities. As opposed to liberalism, the realist lens interprets all actions solely on the basis of power. Both of these conflicting theories offer potential explanations for America's decision to place TNWs in Europe and provide insight into keeping them there.

13. Robert O. Keohane, *After Hegemony: Cooperation and Discord in the World Political Economy*, 1st Princeton Classic Ed, A Princeton Classic Edition (Princeton, N.J: Princeton University Press, 2005), chap. 3.
14. Kenneth N. Waltz, *Theory of International Politics*, 1st ed (Boston, Mass: McGraw-Hill, 1979), 173.

Both schools of IR theory can explain the merits of the continued deployment of TNWs in Europe. The Russians maintain many more TNWs than America or NATO do.[15] Through a realist lens, this Russian combat potential must be countered with NATO capability, either conventional or nuclear. Twenty-first century budget realities preclude the United States from deploying additional conventional forces to Europe; TNWs are a method of preserving combat potential without additional troops. In addition, Moscow's military strategy is believed to have become increasingly dependent on the capabilities their TNWs provide.[16] To maintain a balance of power, NATO must be capable of fielding a sufficient mix of nuclear and conventional forces to deter and defeat Russian aggression. Given the United States' strategic pivot to the Pacific, there are fewer American conventional forces available for deterrence in Europe. Maintaining NATO's perpetuity is critical in ensuring future American leadership in the international system. TNWs maintain the strength and authority of the Alliance in regional and global affairs. Just as in the 1950s, TNWs provide cost efficient stability in the Alliance and the international system.

NATO's solidity lies in part with the way TNW strategy, policy, and employment are decided, the importance of which is explained by G. John Ikenberry. In *After Victory,* he explains the paradox of a hegemon willfully giving up some of its power in order to retain and prolong its dominance. Ikenberry credits the character of the international order that emerges after great wars to the restraint of hegemonic powers and their willingness to bind themselves to long-term commitments. According to this theory, "The leading state gives up some freedom on the use of its power in exchange for agreed-upon principles and institutional processes that ensure a durable and predictable postwar order."[17] This explains the United States' decision to give up unilateral decisions on the use of TNWs. In the 1950s, NATO gave initial responsibility for its nuclear missions to the United States in recognition that America was best suited to deploy the weapons. As European capability developed, a *dual key* was established whereby the United States and the host nation jointly made the decision to employ TNWs. Today, Europe is struggling

15. "U.S. Tactical Nuclear Weapons in Europe Fact Sheet."
16. Pifer et al., "U.S. Nuclear and Extended Deterrence: Considerations and Challenges," 27.
17. Ikenberry, *After Victory*, 53.

with the decision to maintain a dual-capable aircraft capability.[18] Without this capability, NATO aircraft cannot employ TNWs. The United States' policy, laid out in the 2010 NPR, is that "No changes in U.S. extended deterrence capabilities will be made without close consultations with our allies and partners."[19] TNWs are in Europe today because the Alliance has not decided to remove them, and by giving that decision to NATO, the United States retains the power and legitimate leadership it has established over the past 60 years. Moving forward, the need for these policies and capabilities is being questioned, partially based on priorities.

Strategic Priorities

Between 1950 and today the perceived greatest threat to America and NATO has changed, as have their strategies for mitigating these dangers. The earliest twentieth century American strategic policies preceded the formation of NATO. In the 1950s however, the Alliance's foundational security strategy (DC-13) was published the month prior to America's adoption of NSC-68[20]. These documents were relative echoes of one another with NATO relying on American nuclear weapons to deter the USSR. NSC-68 likewise emphasized the importance of meeting Soviet aggression with military force. As the Cold War came to an end, the United States' strategic policy led NATO's and the two began to diverge. As America became less dominant and the relationship between it and Europe became more comfortable, NATO strategy reverberated America's policies less. *The Alliance's New Strategic Concept* recognized regional instability as the greatest threat to NATO and its reliance on TNWs was intended to induce uncertainty into an adversary's calculations when considering violent aggression. Differing from this point of view, the 1990 NSS[21] focused on maintaining America's leadership in the face of uncertainty resulting from the dissolution of the Soviet Bloc through economic growth, stability, allies, and partnerships. For the United States, TNWs were a tool to maintain stability and assure allies of America's commitment to their security. Neither American nor NATO security strategies contained explicit language on the triggers for employing

18. Otfried Nassuer, "Germany's Tornado Nuclear Weapons Carrier," *Berlin Information Centre for Transatlantic Security - BITS*, January 2013, http://bits.de/public/unv_a/orginal-tornado_eng.htm.
19. Department of Defense, *2010 NPR*, xiv.
20. NSC-68 – National Security Council Report: United States Objectives and Programs for National Security
21. 1990 NSS - National Security Strategy of the United States published in March 1990

TNWs. This language is also noticeably absent from the security strategies adopted in the 2000s. Even in the face of increasing Russian aggression and the proliferation of nuclear capable adversary state actors, the tenor and content of TNW policy has not matched the certainty of the 1950s. The reliance on TNWs during the Cold War has given way to a policy of ambiguity. The 2010 NPR[22] committed America to a policy prohibiting the use of or threat of nuclear weapons against non-nuclear capable states compliant with the Nuclear Non-Proliferation Treaty while preserving the right to employ them in response to biological attacks.[23] Even in reducing the role of nuclear weapons in American strategy, the United States maintains ambiguity on the circumstances under which it would employ nuclear weapons. Part of preserving this uncertainty is retaining the range of nuclear capability from *strategic* to *tactical.* This juxtaposition of TNWs as a tool to create certainty amongst American allies and uncertainty in the calculus of its adversaries makes TNWs critical to the United States' security strategy. This characteristic does not define the full range of possible twenty-first century roles for TNWs.

Strategic Impact

In the twenty-first century TNWs are a viable military capability to counter increasingly asymmetric threats to America's conventional strength. In a fight with a *near peer* competitor, America expects to face conventional forces that rival its own. These forces are either expected to be large quantities of lesser capable systems, equal numbers of equally capable systems, or some combination of both. In either case the United States cannot afford to procure the conventional capability required to defeat these threats. There is an alternative to expensive conventional forces.

TNWs offer an alternative to increasingly expensive capabilities that can be countered using relatively inexpensive means. In a 2008 report, *Nuclear Weapons in the U.S. National Security Policy,* Amy Woolf described the process the Pentagon uses to determine America's nuclear requirements:

> The United States would identify potential future conflicts, review the capabilities of its possible adversaries, identify those capabilities that the United States might need to attack or threaten

22. 2010 NPR – Nuclear Posture Review published in April 2010
23. Department of Defense, *2010 NPR*, viii.

> with nuclear weapons, and develop a force posture and nuclear weapons employment strategy that would allow it to attack those capabilities.[24]

TNWs constitute a cost effective force multiplier with unique capabilities. According to Woolf, Bush Administration officials "noted the United States may need a greater number of lower-yield weapons, so that it could minimize collateral damage while destroying these types [hardened and deeply buried] of targets."[25] The United States may need warheads capable of destroying stocks of chemical, biological, or nuclear weapons in addition to a capability to counter large numbers of conventional forces. Additionally, TNW emplacement can convey commitment to an ally or friend, and deter adversary aggression.

Deployed in Europe, TNWs alter the decision calculus of an enemy by threatening asymmetric violence and altering the political landscape. Nuclear weapons are by their nature an asymmetric response to conventional actions. Their explosive potential vastly exceeds the largest conventional munitions'. TNWs alter an enemy's decision calculus because a single weapon can destroy large raids of ballistic missiles or aircraft over an adversary's territory. In the case of an attack, Article V of the North Atlantic Treaty guarantees an attack on one member will be treated as an attack on all, but it does not require unanimity in the decision to employ nuclear weapons. The *dual key* arrangement in Europe requires the concurrence of the United States and the host nation to employ TNWs. This creates some measure of international legitimacy for the use of TNWs. In the twenty-first century there is also an increasing international legitimacy for forward deploying these weapons.

America's Pacific partners are increasingly interested in the assurance provided by TNWs. In his essay "U.S. Nuclear Weapons Policy and Policy Making: The Asian Experience," Elbridge Colby in *Tactical Nuclear Weapons in NATO*, describes the changing nuclear landscape in Asia emerging in the 2000s. Both South Korea and Japan are clamoring for nuclear guarantees in the face of increasingly aggressive neighbors. Chinese threats in the Senkakus are raising tensions with Japan. Recent North Korean aggression dates back to 2009 and includes the sinking of a South Korean vessel and the

24. Woolf, *Nuclear Weapons in U.S. National Security Policy: Past, Present, and Prospects*, 11.
25. Woolf, *Nuclear Weapons in U.S. National Security Policy: Past, Present, and Prospects*, 17.

shelling of multiple islands. Colby cites the Japanese government as breaking from its traditional stance to "importune the United States to reaffirm its nuclear element of its security umbrella;" he highlights Japan's unsuccessful attempts to persuade America to retain the nuclear variant of the Tomahawk (TLAM-N).[26] According to Colby, "As U.S. conventional military superiority comes under increasing challenge…its allies will be compelled to chose between appeasing those rising powers that enjoy leverage from the diminishment of U.S. conventional superiority on one hand, and threatening to impose unacceptable costs upon an aggressor… on the other hand."[27] The argument is between reliance on TNWs and capitulation to the will of an adversary. Traditional Asian partners of the United States are increasingly looking to America's nuclear capability to prevent appeasement. Since WWII the idea of appeasement has not been a popular political solution to international tensions.

The Case to Remove TNWs

Advocates of eliminating TNWs in Europe often cite the disappearance of the original threat, declare nuclear deterrence obsolete, or cite an increasing chance of terrorist possession as compelling reasons for such actions. A 2013 article by Julian Borger entitled "Obama accused of nuclear U-turn as guided weapon plan emerges" quotes Joseph Cirincione, President of the Ploughshares Fund, a group that typifies the anti-TNW argument, as saying, "The billions of dollars we are lavishing on the B61 is criminal. This is billions of dollars spent on a weapon whose mission evaporated at the end of the Cold War."[28] A September 2014 *New York Times* article by William Broad and David Sanger cited the decision to fund nuclear life extension programs as the result of complex domestic politics whereby Congressional support for strategic arms reduction treaties was dependent on funding for these programs.[29] This would mean national security concerns had little to do with funding decisions. Amy Woolf gives another side of the argument for eliminating TNWs in Europe.

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26. Army War College (U.S.), *Tactical Nuclear Weapons and NATO*, 94.
27. Army War College (U.S.), *Tactical Nuclear Weapons and NATO*, 97.
28. Julian Borger and Diplomatic Editor, "Obama Accused of Nuclear U-Turn as Guided Weapons Plan Emerges," *The Guardian*, April 21, 2013, http://www.theguardian.com/world/2013/apr/21/obama-accused-nuclear-guided-weapons-plan.
29. William J. Broad and David E. Sanger, "U.S. Ramping Up Major Renewal in Nuclear Arms," *The New York Times*, September 21, 2014, http://www.nytimes.com/2014/09/22/us/us-ramping-up-major-renewal-in-nuclear-arms.html.

In her 2008 Congressional Research Service report, Amy Woolf cites analysts as arguing that no threat of nuclear use is credible because such an attack would produce intolerable collateral damage and potentially destabilizing political fallout.[30] The use of a nuclear device by a terrorist organization is the gravest threat posed to the United States or its allies.[31] Tom Sauer and Bob van der Zwann use this scenario as justification for the elimination of TNWs in Europe. Their argument follows a logical path from TNWs in Europe preventing Russian aggression, through a desire for other states to procure these weapons for the same purpose, to larger numbers of weapons increasing the chances that a terrorist organization will gain possession of one. However, there are logical fallacies to this argument. More TNWs would increase the likelihood that a terrorist organization could obtain one if all other factors remained the same: the number of terrorists, the desire to procure a weapon, the security of the weapons, the failsafe devices to prevent nuclear detonation, etc. All of these variables are constantly in flux though and so a blanket statement on the likelihood of a nuclear terrorist attack is impossible to make.

Conclusion

The combination of theory, experience, and potential explain why the United States retains TNWs in Europe in an international environment increasingly threatened by resurgent aggressive state behavior and religious fundamentalism. The policy to do so was contained in the 2010 NPR. The decision to do so is reaffirmed by annual Congressional allocation. Congress has debated the importance of TNWs since the dissolution of the Cold War, with the current examination driven by a *Wall Street Journal* article authored by four prestigious former United States statesmen. Shultz, Perry, Kissinger, and Nunn advocated for the elimination of all nuclear weapons along a path that started with the eradication of TNWs. A year after this article was published a Congressional commission chartered to asses America's efforts to prevent WMD proliferation and terrorism came to a different conclusion on the fate of TNWs. The commission focused on biological and nuclear weapons, conducting 250 interviews, eight major meetings, and a public hearing to determine the scale, scope, strengths, and weaknesses of America's current efforts in preventing proliferation and terrorism in these

30. Woolf, *Nuclear Weapons in U.S. National Security Policy: Past, Present, and Prospects*, 16.
31. Department of Defense, *2010 NPR*.

areas. The Commission on the Prevention of WMD Proliferation and Terrorism made no recommendation on the reduction or elimination of TNWs. This body of work did not conclude that TNWs threatened American security. Additional Congressional research has highlighted the importance of TNWs to NATO and American security strategies. This importance is explained by IR theory.

Realism and Liberalism offer insight into the decision to emplace TNWs and keep them in Europe. Keohane's theory on the development of international systems explains the formation of NATO and the decision to deploy TNWs on Allied soil. Waltz elucidates the need for TNWs to counter the USSR's superior conventional strength. Ikenberry provides clarification for the decision to make TNW employment and disposition a matter for NATO decision makers as opposed to a unilateral American evaluation. These theories hold, even in the tumultuous twenty-first century. In the 1950s NATO and the United States security strategies echoed many of the same threats and mitigations with equal priority. As the relationship between the partners and global circumstances has changed, their strategies have begun to differ. In 2015, the United States is focused on retaining its international leadership through alliances and partnerships, while NATO is focused in preventing instability and aggression from a resurgent Russia. Advocates of removing TNWs from Europe cite the possibility of terrorist possession, the disappearance of the USSR, and the development of a multipolar world. A 2009 Congressional commission chartered to address the threat of nuclear terrorism did not cite TNWs as a source of concern. Russia has assumed the mantle of USSR aggression as demonstrated by its actions in the Ukraine. The risk of pronouncing deterrence as a failed strategy due to a multipolar world is nuclear war. That is a mistake too large to bequeath humanity. TNWs in Europe have a place in twenty-first century security strategy. Remarkably this is the same role it has fulfilled since 1950…deterrence and assurance.

The value of TNWs lies in their ambiguity. In the 1950s, NATO and American security strategies relied heavily on their destructive power to deter the USSR and defeat an attack should deterrence fail. The dissolution of the Soviet Bloc in the 1990s changed the value of TNWs. In light of the uncertainty and threat of regional disputes expanding into global conflicts, TNWs were maintained in Europe to stabilize NATO and ensure the

Alliance had the means to enforce its security strategy. In the 2000s, the rise of terrorism and a resurgent Russia is increasing both the desire to rely on the destructive power of TNWs and the threat of a non-state actor using them. TNWs are an irreplaceable military capability in tilting an adversary's calculation on the use of violence in favor of the United States and NATO.

Chapter 6

Deductions

TNWs in Europe offer a holistic approach to countering the threats of the twenty-first century. This study set out to answer the question--why does America have tactical nuclear weapons (TNWs) in Europe today?--hoping for a simple rejoinder along the lines of political assurance or military capability. Instead, an intricate cycle of interaction between diplomatic, economic, and military concerns was uncovered. Reviewing the initial comparative history questions about threats, use, positioning, and diplomatic effect demonstrates the enduring impact TNWs have on security strategies. As state threats diminish and reappear the value of TNWs in countering them fluctuates, but the presence of these nuclear weapons always induces uncertainty in an adversary with extremely high consequences for making the wrong decision. No other weapon generates the assurance in the minds of allies that a nuclear weapon does. As a professor once told me, "nothing says I love you like a TNW." Likewise, placing TNWs in the path of aggression is a significant deterrent to taking the first step along it. Finally, the presence of TNWs has a diplomatic effect. Just as Weitz cited the use of nuclear weapons would have effects beyond their military impact, so too do placement and employment agreements. However, the use of TNWs only makes rational sense in response to a threat.

Threats

Since the end of World War II, the primary threat to the North Atlantic Treaty Organization (NATO) and the United States has cycled from definite, to ambiguous, and is currently congealing. Commensurately, the role of TNWs has sequenced from military, to diplomatic, and is increasingly becoming military again. In the 1950s, the NATO and American security strategies as specified in DC-13 and NSC-68 focused on mitigating the threat of the Union of Soviet Socialist Republics (USSR). TNWs were deployed to Europe to deter and, if needed, defeat numerically superior Soviet Bloc conventional forces. These communist forces seemed to dissipate in the 1990s as the USSR dissolved and the Warsaw Pact crumbled. The United States took this opportunity to announce unilateral TNW reductions and withdrew all such weapons with the exception of gravity bombs. These remaining TNWs ensured America could redeploy weapons if required in the future and maintained the stability of NATO. In the

uncertainty of a post-Cold War world, any semblance of continuity in the international system built confidence and increased the perception of security. As the TNWs in Europe aged, their components degraded and the platforms used to employ them became technologically inferior. These two conditions forced debates on the required life extension programs (LEPs) to maintain a tactical nuclear capability. The need for this ability is determined by the weapon's intended use.

Use

Employment of TNWs in Europe has transitioned from integral and definite, to unlikely, and is now edging back to more feasible. NATO and American security strategies in the 1950s called for the immediate use of TNWs to counter expected massive multi-front assaults. NATO's first strategic concept listed prompt employment of TNWs as basic.[1] In America's 1950 strategy, NSC-68, the use of TNWs was assumed in the event of general war with the USSR.[2] These views changed considerably with the fall of the Soviet Union. In the 1990s, NATO's strategic documents declared TNWs as militarily useless and proclaimed the value of the weapons was purely diplomatic; the weapons provided assurance to America's allies of its commitment.[3] The 1992 NMS proposed a regionally oriented military strategy and force structure; it realigned America's military forces into a Base Force composed of mission-oriented packages.[4] One of these packages, the Strategic Force, was comprised of America's strategic nuclear forces, but did not include its TNWs. The Atlantic and Pacific Forces did not explicitly contain TNWs either. In failing to address the responsibility of TNWs within the Base Force construct, the 1992 NMS left America's TNWs in Europe unmolested by policy change. The primary role of TNWs would be as a diplomatic tool rather than a military capability. In the *Deterrence and Defense Posture Review*, NATO affirmed the ability of TNWs to meet the Alliance's need for effective deterrence, but also advocated for reducing their number assigned to Europe. [5] This juxtaposition raised a question on what commensurate changes needed to appear in the international environment to justify the hoped for TNW reductions. Today, NATO needs TNWs to reassure itself of America's

1. The Secretary, *MC-3*, 6.
2. The Executive Secretary, *NSC-68*, 39.
3. "NATO - The Alliance's New Strategic Concept (1991)."
4. Chairman Joint Chiefs of Staff, *1992 NMS*.
5. "Deterrence and Defense Posture Review."

commitment to European security and to deter Russian aggression.[6] Deterring rival Soviet hostility dictated the initial basing of TNWs in Europe.

Deployed

TNWs were positioned to counter perceived USSR aggression. Their initial emplacement was based on predicted Soviet Bloc courses of action in DC-13. In 1950, NATO predicted simultaneous attacks across Western Europe, Turkey, and the Near and Middle East.[7] Placing TNWs in England, West Germany, Belgium, and Turkey dispersed the weapons, preventing them from being susceptible to a single strike or advance, while at the same time allowing them to be concentrated on the perceived lines of Russian advance. The collapse of the Soviet Union drastically reduced any threat from these predicted scenarios. In the 1990s, the United States removed multiple types of TNWs from Europe in the hope such actions would encourage reciprocal acts by Russia and encourage increased dialogue.[8] Where the weapons were positioned was not as important as their mere presence in Europe. The TNWs staying in Europe remained in their pre-1991 basing even as NATO membership expanded eastward. As the membership of NATO increases, the diplomacy of TNWs becomes commensurately more complex.

Diplomatic

In addition to their military virtues, TNWs offer unique diplomatic opportunities. NSC-68 recognized the need for a functioning international system based on American values to counter the USSR.[9] This was a longer-term goal that required international cooperation to achieve. In the 1950s, Western Europe was still economically and militarily recovering from WWII and relied on America to establish the international order. TNWs gave NATO the confidence in its security to recover economically.[10] In the 1990s, NATO still required assurance of America's commitment, and TNWs provided that stability. In the words of *The Alliance's New Strategic Concept,* TNWs

6. Gertz, "Pentagon Considering Deployment of Nuclear Missiles in Europe."
7. The Military Committee, *DC-13*.
8. Koch, "The Presidential Nuclear Initiatives of 1991-1992."
9. The Executive Secretary, *NSC-68*, 54.
10. David S. Yost, "The US Debate on NATO Nuclear Deterrence," *International Affairs* 87, no. 6 (November 2011): 1403, doi:http://dx.doi.org.aufric.idm.oclc.org/10.1111/j.1468-2346.2011.01043.x.

became "political: to preserve peace and prevent coercion and any kind of war."[11] The 1991 NSS highlighted the importance of America's allies and friends in maintaining stability in the uncertainty left by the dissolution of the Soviet Union.[12] TNWs were a method of signaling continued commitment to these partnerships. The number of weapons could be reduced without irreparably harming that communication, but some TMWs had to stay in Europe. In the 2000s, there is debate on how low this number can get while retaining the security benefits provided by TNWs. The *Deterrence and Defense Posture Review* advocated for reductions in Europe's TNWs but recognized the current number and basing as meeting the needs of NATO's security strategy.[13] In a continuation of policy from the mid-1990s, there would be no change in the basing of TNWs. As Germany's Tornado fighters become obsolete there is the real possibility that TNWs in that country will not have a platform to be employed from. This country specific reaction to continued TNWs in Europe highlights an area of exploration lacking in the study and makes a compelling case for further research.

The Way Ahead

The value of tactical nuclear weapons (TNWs) in Europe today is a direct result of the ambiguity in the conditions that would instigate their use. This has resulted in a lack of discussion on the specifics of their employment. A preference for the status quo is quickly being strained by degradation of the weapons and technology obsolescence in the platforms used to deploy them. Moving forward, the United States needs to make a decision on the military utility of TNWs and communicate it to its adversaries. In developing this decision there is a need for further academic and diplomatic work. Academic work needs to be done that examines the process used by the United States and NATO in making strategic decisions. While in a compromise, no one participant is completely satisfied and there are some who are more satisfied than others. Which of these are proponents for TNWs and why they sway the consensus are important in determining the value of European based TNWs in the future.

The invention of nuclear weapons altered the fate of humanity. Whether this is unique to nuclear weapons or applies to all technologies that alter the character of war is

11. "NATO - The Alliance's New Strategic Concept (1991)."
12. The White House, *1991 NSS*.
13. "Deterrence and Defense Posture Review."

uncertain. Albert Einstein said, "The unleashed power of the atom has changed everything save our modes of thinking, and we thus drift toward unparalleled catastrophes."[14] This study has demonstrated that between 1950 and today NATO and American thinking on TNWs has changed. There may come a day when these weapons no longer hold a place in security strategy, but it is not today.

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